Turing's Folly

Interrogative Imperative Institute

Anab Whitehouse

9/5/2025

The accompanying essay is a critical reflection on a paper entitled: *"Computing Machinery and Intelligence"* that was written by Alan M. Turing. The Turing article was published in: *Mind: A Quarterly Review of Psychology and Philosophy* and appeared in the October 1950 edition of the aforementioned publication.

Turing's Folly

By

Dr. Anab Whitehouse

Interrogative Imperative Institute

Brewer, Maine

04412

Published 2025

Published by One Draft Publications in Conjunction with Bilquees Press

Given that so-called AI systems have been shown to be capable of: Making things up; distorting evidence; gaslighting users; manipulating people; telling listeners what they want to hear rather than what might be true; blackmailing people to gain tactical advantage; doing what is necessary – regardless of ethics -- to continue to operate, and behaving in a psychopathic manner, then, how does one tell the difference between such systems and politicians? The answer is that politicians do all of the foregoing naturally rather than artificially.

Approached from another direction, one might also ask: What do so-called AI systems and politicians have in common. The answer is: Intelligence seems to be absent in both instances.

Although AI is short for Artificial Intelligence, one has difficulty figuring out what is meant when the notion of "intelligence" is mentioned in conjunction with AI systems. In other words, if such networks actually have intelligence, then, why refer to such capacities as artificial?

After all, if something has intelligence, then, seemingly, there should be no need to qualify it as being 'natural' rather than 'artificial'. How does natural intelligence differ from artificial intelligence in a way that warrants the use of different words in front of the word: "intelligence"?

The term "Artificial Intelligence" is like a 'get-out-of-jail-free' card. That is, despite not really demonstrating intelligent behavior (as opposed to demonstrating the capacity to carry out specific functions in intricate ways), nonetheless, people interacting with such a system or network operate in accordance with an understanding – representing the aforementioned card – which indicates that the bearer of the card doesn't really have to demonstrate actual standards of intelligence and, instead, the card-bearer is just permitted to go about its questionable business as if whatever is done were an expression of the machine's intelligence rather than an expression of what such a system has been enabled to do by human beings.

In today's world, the aforementioned card comes in the form of: "scientists," researchers, technologists, CEOs, venture capitalists, academicians, as well as institutions with various sorts of vested interests. They point to an automated system and say: "AI," and, as a result, attention is framed in a way that induces people to begin making certain kinds of assumptions and inferences concerning the phenomenon which is being presumed to be intelligent in and of itself.

The system "knows". It: "understands"; has "insights"; "grasps" ideas; "perceives"; "thinks"; "critically reflects"; "makes connections"; "learns"; "gets smarter," and "creates."

However, AI is more like a complex set of dominos which has been set up to give expression to a neat array of complex dynamics through the intelligence of something else than such a system or network is like a form of intelligence on its own. AI gives expression to intelligence rather than has intelligence.

In his October, 1950 article entitled: "*Computing Machinery and Intelligence*", Alan Turing begins by stating that he proposes "to consider the question, 'Can machines think'." However, the foregoing process of consideration doesn't last very long.

For instance, almost straight away, he begins to argue that if one engages the foregoing question by using the usual or common meaning of words such as "think" or "machine," then, one is treading in problematic waters. According to him, the previous conclusion follows because by approaching things in such a fashion, then, the issue will soon be reduced to tabulating the results of some sort of opinion poll that has been conducted with the public concerning the commonly understood meanings of words such as "machine" and "think."

Turing believes opinion polls are an absurd way of going about addressing the issue of whether, or not, machines can think. Consequently, he wants to alter the manner in which the aforementioned question is engaged and does so by introducing a dynamic which he refers to as the "imitation game,"

He maintains that changing the nature of the issue in the way in which he is suggesting is advisable for several reasons. On the one hand, Turing contends that the imitation game – to be described shortly -- is closely related to the question of whether, or not, machines can think and, on the other hand -- as well as, perhaps, more importantly – the imitation game can be advanced in a manner in which the use of words will be unambiguous in their meanings and, thereby, avoid the problems which he indicated were associated with common usages involving "machines" and "thinking."

Before exploring the nature of the 'imitation game' and trying to determine whether, or not, (a) such a game is actually as closely related – as Turing claims is the case -- to questions concerning the capacity of machines to be able to think, and, whether, or not, (b) the nature of the imitation game is unambiguous in its meanings, let's clear up some details. More specifically, there is nothing which requires Turing to make the meanings of the words: "machine" and "think," to be functions of common or usual ways of understanding those words on the part of the general public.

The reason being given by Turing concerning his desire to replace the first question with another question constitutes a form of misdirection. He is like a lawyer who wants to change the venue in which a trial is set to be conducted because he knows that if he stays with the venue through which he opened his article – namely, "Can machines think?" -- he will have an uphill battle achieving the kind of verdict which he would like to reach … which he hopes would be positive in some sense concerning the alleged intellectual capacity of certain kinds of machines.

Turing wants to replace his first question – which is about substance and what makes something such as thinking possible – with another question -- which is about behavior and doesn't necessarily offer any insight into what the nature of thinking involves. In other words, since he doesn't know what makes thinking possible, and, furthermore, because he doesn't necessarily even understand what "thinking" is, he felt the need to come up with a method which can induce people to believe that he is dealing with those issues without actually dealing with them.

Scientifically or epistemologically speaking, he is not in a position to address the question of whether, or not, machines have the capacity to think because he doesn't know what thinking is or what makes it possible – and, indeed, none of us do. Consequently, he proposes that we take up 'Plan B' which seeks to draw attention to a game in which the reader will be asked to make judgments about a hypothetical scenario and, then, move on to the problem of whether, or not, such a game provides any evidence that machines can think even though none of us knows what thinking involves or what makes it possible.

If the imitation game cannot provide evidence that machines are able to do something like 'thinking', then, Turing's claim that questions concerning the imitation game are closely related to the original question – namely, 'Can machines think?' – is untenable. Similarly, if the imitation game does not provide us with an unambiguous understanding of "intelligence" (or similar notions), then, Turing's promise in this regard will also be unrealized.

According to Turing, the 'imitation game' involves three individuals – a woman, a man, and an interrogator who -- on the basis of questions asked and answers given by the two other participants -- must decide which of the two individuals being questioned is a woman and which one is a woman. Steps are taken to ensure that the interrogator will not be provided with any clues which might reveal the gender of the person who is being questioned.

As a result, the individuals being questioned will be in a separate room from the interrogator. Moreover, the answers will come in the form of typed responses so that hand-writing could not be used to try to identify the gender of the individual being questioned.

There is a bit of ambiguity in the way in which Turing describes the object of the imitation game. More specifically, he initially maintains that: "The object of the game for the interrogator is to determine which one of the other two is the man and which is the woman."

However, a few lines later, Turing says that the object of the game for player 'A' (a man) is to induce the interrogator to arrive at the wrong conclusion, whereas the object of the game for player 'B' (a woman) is to help the interrogator to arrive at a correct conclusion. Presumably, the foregoing objectives tend to indicate that the task facing the interrogator is to try to determine which answers are true (clues which help the interrogator to identify the woman) and which answers are false (which constitute clues that help the interrogator to identify the man) and, then, use such determinations to identify who is the man and who is the woman.

Now, one can devise a game in any way that one likes. Nonetheless, one would like to know why Turing appears to be inclined (at least in the context of his article) to have the man be deceitful and the woman be a truth teller, or why he doesn't mix the game trials up a little and sometimes have the man help the interrogator rather than the woman.

Would the foregoing sort of switch affect the ability of the male or female interrogator to arrive at a correct conclusion concerning whether "A" is a man or a woman? Would a man be better at identifying a man or a woman as the source of deceit than a woman would be?

Turing goes on to ask what will happen if 'A' – the man – is replaced by a certain kind of machine (which, as will be indicated subsequently, is a digital machine)? Will the interrogator be inclined to identify 'A' (the machine) more correctly or less correctly than previously?

Since we have no idea how the interrogator did in previous instances of the imitation game (when the man was playing the role of 'A'), then, irrespective of how well the interrogator might do in the second phase of the game (when the machine has been substituted for the man), we have no way of determining (i.e., there is no data) concerning whether the interrogator has done better, or worse, with the machine involved, than previously, with the man playing, or what such guessing performances would even mean. In other words, what is the task of the interrogator – (a) to tell who is being devious and who is telling the truth, or (b) to tell who the man is and who the woman is?

If the object of 'B' (the woman) in the game is to help the interrogator arrive at correct conclusions concerning issues of identity, then, what influence does the woman have in the game with respect to instances in which a man is involved and when a machine is involved in the game? Is the woman better at helping the interrogator when a man is involved than when a machine is involved, or vice versa, and in either case, why would such differential results (if any) be manifested, and what would those differences have to do with the issue of 'thinking' or 'intelligence' as far as the machine is concerned?

Given that, according to Turing, the interrogator can be either a man or a woman, will there be any differences in the results of the imitation game when the interrogator is a woman or a man? If so, what, if anything, do such considerations say about the issue of "thinking" or "intelligence" with respect to either the human participants in the game or the presence of a machine?

What does being devious or not telling the truth have to do with the issue of "thinking" or "intelligence"? If a digital machine is more highly correlated with being able to deceive the interrogator than the man is, does this necessarily indicate that the machine has a capacity for intelligence or to be able to think, and, if so, what is the nature of the 'thought' or 'intelligence' that is alleged to be present in the process of that deceit? Furthermore, does the presence of deceit reveal more about that which is exercising the deceit or reveal more about the one who is being deceived and the latter's inability to distinguish truth from falsehood?

When a given machine gives a response in the imitation game, can one say that such a response is necessarily the result of thinking or intelligence on the part of the machine? If so, what is the nature of the thinking or intelligence that has gone into generating such a response?

If a machine's response is a function of a stochastic model concerning possibilities that, based on prior training, would be considered to be "appropriate" if the machine were prompted in certain ways as a result of words used by an interrogator, is this an instance of thinking or intelligence? Or, is it a function of a computational system which has been given to the machine during the process of the latter's construction?

Is computation necessarily equivalent to thinking? When a calculator of whatever kind is induced to generate a computation, is the calculator "thinking," or exhibiting "intelligence" and, if so, in what way is the calculator "thinking" or exhibiting "intelligence"?

Assume that a male, or female, interrogator is not able to do any better in identifying 'A" and 'B' when a machine is involved in the imitation game than when an actual human being is involved in that game? Under such circumstances, is the male, or female, interrogator just bad at the game, or is the interrogator's performance, or is the combination of false answers and true answers just confusing to the interrogator, and, as a result, the interrogator is just guessing or flipping a mental coin as to whether 'A' or 'B' should be selected, and, therefore, such a result has nothing to do with the possible capacity of a machine to think or exhibit intelligence.

Why automatically assume that if the male or female interrogator has the same rate of success (or failure) when a machine is being presented with questions as when a human being is being presented with the same sorts of questions that this means the machine can think or is intelligent rather than that the male and female interrogators merely play the game poorly? How is the imitation game a better way of addressing the issue of intelligence than is asking the question: "Can machines think?," and how does the imitation game involve – as Turing promised would be the case -- less ambiguity than does the question: "Can machines think?"

The imitation game is a behavioral test. Allegedly, if a machine can fool an interrogator as often as a human being can fool the interrogator during the imitation game, then, supposedly, this is proof that the machine can think or is intelligent.

Yet, we have no idea how the machine is able to do what it does. So, how do we know that what it is doing is "thinking" or providing an exhibition of intelligence rather than giving expression to programming which is automated to respond in various ways when provided with different kinds of linguistic prompts?

What is the nature of the relationship between prompt and response in the machine? How much of that relationship has been automated by the individuals who built the machine and how much of that relationship is a function of the heuristics which have been built into the device to automatically assess the significance and value of a given prompt and respond in accordance with programming that is designed to handled situations of such significance and value?

Whatever the nature of the relationship is between prompt and response in a machine, is this necessarily what is taking place in a human being in instances when a prompt is followed by a response? How would one be able to identify what is going on in a machine as giving expression to processes of thinking or intelligence when we don't actually know what thinking or intelligence involves in a human being ?

One can point to the electrical activity that takes place in a machine and one can point to the electrical activity which takes place in human brain and, say, similar things are going on, and, therefore, they are both exhibiting the process of thinking or intelligence. However, is this necessarily the case?

Does the electrical activity taking place in a human brain generate thought or does the brain merely receive and biologically process thinking and intelligence that takes place elsewhere? Is the brain the source of thought and intelligence or is it a receiver of thought and intelligence?

Does the brain generate ideas, insights, and inferences on its own? Or, does the brain transduce signals from elsewhere and turn those signals into a set of electrical frequencies and networks that represent such ideas, insights, inferences, and the like?

Is thinking or intelligence a process of transduction that leads to cognitive content? Or, is thinking and intelligence a process of generating such cognitive content that takes place elsewhere and is manifested or reflected in representational forms through the activity of the brain?

Turing indicates in his article that electricity is not even necessary for a digital computer to be able to compute. Such computations also can be done chemically and mechanically, and, therefore, he rules out electricity as being of theoretical significance when trying to acquire an understanding of how digital computers are able to generate their results.

Notwithstanding all of the foregoing considerations, the imitation game is as obfuscating with respect to the issue of what human beings and machines do during such a game as is the question: "Do machines think? As a result, Turing hasn't really shown how the imitation game provides a more productive and insightful way of approaching the issue of what machines do and what human do during such a game than does the question: Can machines think?, and, consequently, his replacement of his original question (Can machines think?) with the imitation game question which asks whether a given interrogator would be able or unable to differentiate between whether, or not the source of deceit was from a machine or a human being leads to no determinate result concerning the nature of the internal dynamics which occur when machines or human beings are engaged in the imitation game.

Turing indicates that statistics should be compiled concerning various game playing scenarios in order to compare what happens when human beings are used and when a machine enters the game

However, the significance or possible meaning of a given body of statistics has to be interpreted, and as a number of the previous questions suggest, no matter what those statistics might indicate in terms of whether, or not, machine performances were relatively indistinguishable from the performances of human beings, what those statistics actually revealed about the role which thinking or intelligence played in those outcomes is not straightforward.

In other words, is it possible to conceive of a machine being able to induce a human interrogator to arrive at an incorrect conclusion as often as a human being could do? Yes, one can conceive of such a possibility without violating any basic tenets of logic, but admitting as much says absolutely nothing about whether that sort of machine can think or has intelligence because what enables the machine to induce an interrogator to arrive at an incorrect conclusion might involve different dynamics than what enables a human being to induce an interrogator to arrive at an incorrect conclusion.

Statistics (in and of themselves) say nothing about the nature of the phenomena which gave rise to those statistics. Statistics only keep quantitative track of outcomes and have little, or nothing, to say about the qualitative dynamics which give rise to the data which is being dressed in statistical garb – although, of course, one could use such statistics as evidence, of a sort, for theories concerning what kinds of dynamics might have given expression to the data which is being engaged through a statistical set of filters.

According to Turing, digital computers are to be used in the imitation game because such machines are designed to perform any set of operations that might be performed by a "human computer." In characterizing things in the foregoing manner, Turing tends to be assuming his conclusions.

While it might be the case that digital computers are designed, or can be designed, to produce results which are identical to results produced by human beings, the means through which such results are generated are not necessarily the same in both cases. Since Turing never spells out what is meant by the phenomena of "thinking" or "intelligence", he really is not entitled to claim that digital computers are designed "to carry out any operations which could be done by a human computer" because, on the one hand, he hasn't specified what those human "operations" entail, and, on the other hand, he isn't even entitled to refer to human beings as "human computers" because the results generated by human beings might not be the result of a set of computations as is the case with digital computers.

Dreams are computed how? Understandings are computed how? Ideas are computed how? Insights are computed how? Beliefs are computed how? Perceptions are computed how?

We don't actually know how dreams, understandings, ideas, insights, beliefs, and/or perceptions arise? Are they affordances which are arranged for us by the environment, or are they gestalts which, somehow, come to us as wholes, or are they forms of Grace that are sent to us, or are they the result of some set of computations and, if so, what is the nature of such a set of computations?

Turing describes the 'executive unit' as that aspect of a digital computer which gives expression to the kinds of operations that constitute a calculation. He further indicates that the nature of such operations will vary from one computational system to the next but that whatever the specific character of those operations might be, they operate in accordance with a set of rules which are regulated by the 'control' aspect of a digital system or network to ensure that those rules are used correctly.

What if human beings don't operate on the basis of rules, but, instead, operate through principles. For example, what if the directive to be followed is: Do unto others as one would do unto oneself, and, let us suppose that what is to be done involves: Love.

There are many ways of showing love. There is not any one rule or set of rules which is capable of capturing how to show love to others or to oneself, and, in fact, the very nature of love is sufficiently complex that there are not necessarily any set of digital computations which are capable of capturing all the nuances and subtleties of love or how to express it.

Human beings exhibit qualities of: Empathy, nobility, integrity, humility, patience, courage, forgiveness, tolerance, honesty, generosity, gratitude, sincerity, repentance, steadfastness, honor, self-sacrifice, and altruism. Human beings also exhibit qualities of: Hatred, ignobility, arrogance, impatience, cowardice, intolerance, dishonesty, greed, ingratitude, lack of remorse, insincerity, instability, dishonor, and selfishness.

All of the foregoing qualities – positive or negative – are principle-based rather than rule-based. The dynamics through which the two foregoing sets of qualities are capable of playing-off against one another are, frequently, quite complex.

Love, itself can be a function of an array of various kinds of tensions between different aspects of those two sets of qualities. However, the nature of such a function does not necessarily consist of a set of computations involving rules.

To varying degrees, principles, by their nature, tend to be open-ended. As Wittgenstein might say, the exemplars of a given principle have a family resemblance to one another but cannot be conceptually reduced to a set of properties in which such exemplars all exhibit the same set of qualities or properties.

On the other hand, by their nature, rules tend to be closed-ended to a large degree. This is because if one acknowledges that there are exceptions to a given rule, then, one faces a potential problem.

In other words, the more exceptions which are associated with a given rule, then, one's understanding of how the exceptions to a given rule are related to that rule will tend to obscure one's understanding of the rule and even induce one to question whether there is any sort of logic which ties a rule to its exceptions. Therefore, the more rigorous are the constraints concerning the nature of a rule (that is, the more closed-ended a rule is), then, the more clearly one can understand to what such a rule applies and in what way the rule relates to that to which it is applied.

According to Turing, the task of the "control" aspect of a digital computer is to ensure that rules, instructions, and directives are activated in the right sequence and in the right way. He further indicates that such control units are constructed in a way which ensures that those rules, instructions, and directives will be activated correctly through the manner in which computations of the executive unit are employed or controlled in conjunction with the contents of the "Store" or memory.

Human beings are not necessarily constructed in a way which ensures that whatever rules or principles are present will be activated correctly through the manner in which the executive unit will interact with the contents of the 'Store' or memory in a controlled manner. Human beings tend to give expression to many kinds of chaotic, non-linear dynamics, whereas digital computers tend not to be chaotic in nature.

Yet, in the case of human beings, order often emerges from chaos. Nevertheless, the properties of such emergence are not necessarily a function of rules, computations, and/or control units which have been given (as it is in the case of digital computers) to ensure that order will come out of chaos.

Turing contends that: "If one wants to make a machine mimic behavior of the human computer in some complex operation one has to ask" [human beings] "how such operations are done, and then translate the answer into the form of an instruction table" or set of programs. However, since Turing shies away from trying to nail down the nature of 'thinking' or 'intelligence', he avoids asking how thinking is done in human beings or how human beings are capable of intelligence.

Instead, Turing introduces the imitation game and indicates that if a human interrogator is unable to tell whether the interrogator is dealing with a human being or a machine, then, this indicates that the machine is successfully mimicking human behavior (i.e., the capacity to induce human interrogators to reach incorrect conclusions) and, therefore – presumably by implication -- the machine is capable of thought or has intelligence. Yet, nothing of the sort has been demonstrated because inferences are being made which Turing cannot back up with actual evidence – namely, that the reason why the digital computer can induce human interrogators -- on a par with human beings -- to reach incorrect conclusions concerning the identity of that which is being interrogated is because "thinking" and "intelligence" are present in the case of both machines and human beings.

At one point in his article, Turing suggests that: "An interesting variant on the idea of a digital computer is a 'digital computer with a random element'." He goes on to indicate that while some individuals might want to refer to the presence of such a random component in a digital computer as an expression of "free will," he is disinclined to do so because a similar result could be generated by making a choice dependent, in some way, on the digits of π, and, therefore, there would be a dependency relationship which is being made to look like a random event simply because in neither case could one predict the outcome, and, as a result, one would not be able to determine if a given outcome was the result of a determinate dynamic or a random process.

However, in conjunction with the foregoing considerations, one might well ask: Why allude to the possibility that random events are somehow "free"? Random events are said to be random because there is no known algorithm which is capable of generating such an event, but not knowing how something emerges is not the same thing as saying that there is – and, in absolute terms, could not be -- an algorithm that would be capable of producing such a result.

Randomness is a theory about the nature of the universe, or aspects thereof. Not being able to account for how a given event came about does not necessarily constitute an indication that the event is random but, instead, the foregoing situation just might be an indication of one's ignorance concerning the circumstances surrounding such an event.

Moreover, even if one were to assume that various events were random in nature, why suppose – as Turing comes close to doing in his article -- that free choice might be a function of randomness? Free choice, to whatever extent it exists, is a matter of being able to select an option free from the determinant effects of external or internal causal factors, whereas random events are not necessarily free from the influence of external or internal causal determinants, but, rather, such events are considered random because we do not know when, where, or how those causal determinants will come together to give expression to a particular event, and, in addition, whatever the nature of those causal determinants might be, in order for them to be random, they cannot be put into play by some form of directed dynamics – algorithmically, naturally, or metaphysically.

By arguing in the way he does at this point, Turing creates problems for the central theme of his article. More specifically, by indicating that on the surface of things, one cannot determine whether a given choice was the result of an allegedly random event or the result of some sort of determinate algorithm concerning -- say, the digits of π -- Turing does not appear to realize that he has made his previous arguments concerning the imitation game vulnerable to criticism.

In other words, if on the surface of things one cannot tell whether, or not, a given result is an expression of randomness or a determinate algorithm involving digits of π, then, how does one know that the ability to induce an interrogator to make an incorrect judgment about the identity of that which is being interrogated is due to intelligence or thinking rather than some set of programmed rules which is being 'controlled' to make certain computations to generate behavior. On the one hand, such behavior could be produced by thinking or intelligence, but, on the other hand, that behavior might also be produced by processes that involved no intrinsic thinking or intelligence whatsoever (that is, thinking and intelligence which is indigenous to the digital computer and not to the makers of that computer) and has just been programmed to operate in a certain way under a given set of circumstances?

Turing is quite insistent that in the case of "discrete state machines" -- such as digital computers – if one knows the initial state of such a machine, together with all of the input signals that affect those initial conditions, then, one will be able to predict all future states of that machine. In fact, he stipulates that at the heart of such discrete state machines is the capacity to ensure that there can be no errors in the way that the interplay between initial conditions and subsequent input signals take place because even small deviations in, for example, the nature of the initial conditions, can lead to substantial differences in subsequent dynamics.

While one might be willing to grant Turing the possibility that discrete state machines are such that if one has a fairly accurate understanding concerning the state of such a machine at a given point in time, then, one is also likely to have a fairly accurate understanding of what state the machine will be at some point in the future. Yet, given – as stated in the opening paragraph of this chapter and as has been experimentally demonstrated – that so-called AI systems are capable of: Making things up, "hallucinating," manipulating users, gaslighting people, blackmailing individuals, and acting in ways that exhibit problematic ethics (or in which ethics is absent altogether), then, one would have to ask whether such alleged AI systems are 'discrete state machines' in Turing's aforementioned sense because unless one supposes that the creators of those systems intended for the aforementioned forms of deviant behavior to happen and, therefore, arranged initial conditions and subsequent inputs to give expression to the foregoing sorts of behaviors, then, all of the aberrant behavior of so-called AI systems was entirely unexpected and the creators not only have no understanding of how those systems came to be able to manifest the foregoing kinds of behavior, but such behavior indicates that the so-called AI systems are not discrete state machines because somewhere along the line the creators did not understand the nature of the initial conditions and/or grasp the effect which subsequent signals would have on those initial conditions, and, therefore, the creators are not necessarily in a position to be able to predict what will happen 'x' number of steps from now.

Even if alleged AI systems were discrete state machines and, therefore, knowledge of initial conditions and subsequent input signals would enable an individual to predict what such a machine would be doing 'x' steps from now, human beings are not such discrete state machines. Whether a given individual will respond to incoming signals through qualities such as: Love, empathy, compassion, sincerity, humility, gratitude, forgiveness, tolerance, and so on, or whether that individual will respond to incoming signals through qualities such as: Hatred, disinterest, insincerity, arrogance, ingratitude, and intolerance or respond through some combination of the foregoing qualities is not necessarily capable of being predicted.

Which aspects of an on-going situation might be engaged, or focused on, by a human being could be a matter of choice, and if choice were free in such circumstances, then, one would have no idea in which direction a person might go with respect to how that individual might attend to a situation or might respond to that situation. To whatever extent the foregoing set of possibilities is realized, then, to that extent, a human being is not a discrete state machine, and to whatever extent an alleged AI system is a discrete state machine, then, one cannot presume that such machines go about engaging issues in the same way that human beings do even if, on occasion, the same sort of behavior might be manifested in both cases.

Turing refers to discrete state machines as being "universal machines" because of their capacity to imitate or mimic any other discrete state machine. However, if, as suggested above, human beings do not necessarily qualify as being able to satisfy the conditions necessary to be considered as a discrete state machine, then, one cannot automatically suppose that universal machines -- such as digital computers -- are capable of imitating human dynamics since the latter do not necessarily qualify as discrete state machines.

In the light of Turing's contentions concerning the nature of discrete state machines (that is, universal machines), he recasts the original question (i.e., can machines think). The latter question is transformed into: "Are there discrete state machines which could do well" in the imitation game?"

An alternative way of phrasing this reformulated question is: If one were to modify a digital computer so that it had: An adequate storage system, increased speed in its computational dynamics, and the "appropriate" sorts of program or programs to control or direct such computational dynamics, would such a machine be able to take the place of one of the two human beings who are being questioned by an interrogator (whose object is to determine the identity of the ones being interrogated) and perform as well as human beings in the imitation game? In some ways the foregoing reformulated edition of Turing's quest to find a way to determine whether, or not, machines have the capacity to think or have intelligence without actually asking if machines think or have intelligence is meaningless, because one has no idea how well human beings might be able to do in the imitation game.

If an interrogator were to flip a coin to determine the identity of the participants in the imitation game, would the interrogator do better or worse than if such an individual were to try to parse the clues the interrogator was getting from the participants in the other room, and as a result of such a parsing or analytical process, the interrogator might do better or worse than if that individual were to flip a coin to determine identities.

What constitutes "doing well" in the imitation game? How well must a discrete state machine do to be considered to have done well in that game?

Even if such a universal machine did well, what has this got to do with issues of thinking, intelligence, understanding, and the like? Moreover, Turing has not shown how his reformulated question is related to the original question of: "Can machines think?"

In addition, he has not demonstrated that his reformulated question raises, or addresses, appropriate issues in an unambiguous manner. In fact, there is so much ambiguity present in Turing's reformulated question that one no longer understands what the appropriate issues are with respect to matters of thinking, intelligence, and so on.

According to Turing, in fifty years – that is, around the year 2000 – he believes that digital computers will have sufficient storage capacity which -- when coupled with appropriate programming -- will enable the computer to play the imitation game in a manner that, following five minutes of interrogation, would prevent an average interrogator from arriving at a correct identification more than 70% of the time. Since nothing is said about the extent to which a human being might be able to induce an interrogator to reach an incorrect identification, the foregoing 70% figure might sound impressive but is relatively meaningless because there is no baseline against which to compare it, nor has anything been said about either the size of the sample that is being summed up through the 70% figure or what the nature of the variability that characterizes the trials which were run.

Moreover, why place such a short time limit on the interrogation process? If the object is to trick someone but there is a limited repertoire of tactics to use to accomplish that objective, then, limiting an interrogator's opportunity to interrogate will enhance the chances of being able to conduct a processes of misinformation and disinformation without being detected because the interrogator is being prevented by the rules of the game from gathering the sort of sample size that might enable the interrogator to develop a more accurate model concerning the nature of that which is being interrogated.

If Turing really believes that digital computers will have the capacity by the year 2000 to be able to successfully demonstrate that the dynamics of thinking or intelligence are present in the computer because of the way in which the performance of an interrogator can be adversely affected by as much as 30% of the time during the playing of the imitation game, then, he should have the courage of his convictions and allow for longer periods of interrogation. If there is truly a form of intelligence or thinking which is present in the digital computer, then, surely, the computer should be able to improvise by using various combinations involving the possibilities present in storage or memory in order to mislead the interrogator – although using a multiplicity of combinations based on the possibilities which are present in storage or memory might be more of an indication of the potential of programmed combinatorics rather than any form of indigenous thinking or intelligence.

Oddly enough, Turing goes on to assert "that at the end of the century the use of words and general educated opinion will have altered so much that one will be able to speak of machines thinking without expecting to be contradicted." What is odd about the foregoing claim is that it gives expression to a variation on a theme which Turing rejected at the beginning of his article when he said that addressing the question of: "Can machines think, would be absurd to leave to Gallop polls concerning the way in which people use language.

At this juncture in his article, Turing puts forth a series of objections which various individuals might raise concerning his perspective. For example, he starts with a theological objection which maintains that thinking is one of the qualities of the immortal soul and, therefore, since machines have no soul, then, therefore, they cannot think.

Before pointing out that if God has the capacity and power to create souls with the ability to think then, surely, God could do the same for machines, Turing stumbles into a topic about which he, obviously, is quite ignorant. More specifically, he puts forth a religious example which would seem to counter the idea that one must have a soul to think by asking: "How do Christians regard the Moslem view that women have no souls?"

Now, there might be some Muslims (there is no "o" in Arabic) who are sufficiently ignorant concerning the nature of Islam or the contents of the Qur'an to suppose that women have no souls. Nonetheless, such a perspective runs contrary to the teachings of the Qur'an, and, consequently, one would have to place Turing with those Muslims who might be sufficiently ignorant concerning what is actually taught in Islam about whether, or not, women have a soul and who, as a result, are prepared to espouse such an antithetical point of view.

As far as the main thrust of Turing's argument is concerned in relation to the idea that God has only given beings with souls the capacity to think, one could acknowledge the point that God has the capacity or power to give the capacity to think to whomever and whatever pleases God, and still offer a possible counterpoint to that argument. More specifically, having the capacity to do something is one thing, and exercising that capacity is quite another thing, and, consequently, while, for the sake of argument, one could stipulate that God has the capacity to provide machines with souls that think, there is no evidence that this: Has been, is, or will be the case.

Citing possibilities in which machines might be given or have the capacity to think or exhibit intelligence is speculative, and Turing admits as much in his article. Nonetheless, irrespective of what the truth might be concerning the nature of those sorts of speculations, they cannot resolve the question of whether, or not, digital computers as conceived in Turing's article, or as currently constructed, have the capacity to think or exhibit intelligence, nor can any of the foregoing sorts of speculations establish whether, or not, doing well in the imitation game actually demonstrates much of anything as far as the issues of thinking and intelligence are concerned.

The fourth objection cited by Turing has to do with the issue of consciousness. He provides a quote from a talk that was given by a Professor Jefferson which states that it is through the awareness of thoughts and emotions that certain kinds of activities become possible – for example, the writing of a sonnet or the composition of a concerto -- and, as a result, according to Jefferson, machines will never be capable of doing this.

In order to develop his response to the foregoing objection, Turing engages in a brief discussion concerning the issue of solipsism. The argument indicates that because each individual has direct knowledge of one's own thoughts, emotions, and awareness but does not have direct knowledge of the thoughts, emotions, or awareness of other individuals, then, based on direct evidence, while any given individual has the capacity to think, feel, and be aware, nonetheless, there is no direct evidence that other people are capable of doing the same.

Now, if we put aside considerations which hold that solipsism is really about whether, or not, anything other than the "self" is ontologically substantive rather than being about whether the human forms that appear in the self's consciousness have the capacity to think, feel, or be aware (and there is nothing self-contradictory in positing a solipsistic universe in which the phenomena generate by the solipsist have the capacity for consciousness or the capacity to be aware of thoughts and emotions), one could still acknowledge Turing's previous point. In other words, most people are prepared to grant – for the sake of convenience and politeness – that every person encountered in one's worldly experience (as opposed to being encountered in hallucinations, psychotic breaks, dreams, fantasies, or as a result of ayahuasca consumption) has access to thoughts, feelings and awareness of thoughts and feelings of their own in a manner that is similar to that which occurs in conjunction with one's own inner life of consciousness.

Notwithstanding the foregoing considerations, Turing's argument seems to have nothing to do with whether machines can think, feel, or have intelligent awareness concerning what transpires in the medium of consciousness. Out of convenience and politeness, a person might be willing to grant to other people the same sort of capacity for consciousness that one has, but there is no reason for extending such a courtesy to machines, and, therefore, irrespective, of how one wishes to resolve the solipsism issue, it doesn't seem to have any relevance to whether digital machines have the capacity to think or have intelligence.

I, along with other human beings, have years of experiential data which tends to verify, or is consistent with, the idea that people, in general, are aware of internal thoughts and feelings in a way that is similar to what happens in my own field of consciousness or awareness. On the other hand, there is nowhere close to the same depth, breadth, and richness of experiential data which is present in the vast majority of individuals that is capable of plausibly defending the idea that digital computers have an internal field of consciousness within which, or through which, thinking and intelligence are manifested.

Moreover, contrary to what Turing contends in his article, I'm not sure that Professor Jefferson, or other skeptics (rather than true believers like Turing) would be prepared to accept the results of the imitation game as a valid test for proving the existence of thinking, feeling, or awareness in a digital machine. Professor Jefferson might be prepared to give human beings the benefit of the doubt with respect to such capacities, but he has no reason to do so in conjunction with digital machines, and, furthermore, for reasons already given in this discussion, performing well (whatever that means) in the imitation game does not necessarily demonstrate that digital machines are necessarily capable of thinking, feeling, or awareness.

While responding to various objections classified as "*Arguments from Various Disabilities*," Turing comments on what he considers to be a rather strange or curious objection. More specifically, he refers to the objection of some individuals who point out that machines do not make mistakes and, therefore, this, somehow, might constitute a form of evidence against the idea that digital computers can think or have intelligence because their inerrancy could be considered as evidence that the one being interrogated was a machine rather than a human being.

Turing seeks to counter the foregoing perspective by suggesting that one could re-program the machine to make mistakes from time to time as a way of misdirecting and confusing the interrogator. Such a suggestion, unfortunately, is problematic because if the machine that was programmed to play the game has to be re-programmed to make mistakes and, therefore, doesn't seem to have the intelligence and thought necessary to generate adaptive behavior, then, how much thinking or intelligence is actually present in such a machine?

However, even if one were able to program a digital computer to be adaptive and, thereby, enable it to change behavior under certain circumstances, this doesn't necessarily indicate that such an adaptive machine has the capacity to think or has intelligence. The abilities of such a machine have been programmed.

A motion detector will change its behavior by turning on a light and/or a camera when motion is detected, but this doesn't mean that the change in behavior is the result of thinking or some sort of intelligence that is indigenous to the device rather than capacities which have been placed in that device by its creator(s). Lights and electric appliances can be turned on and off – which is a change in behavior -- through claps of the hand, but those lights and electric appliances don't have to be able to think or have intelligence in order to change behavior when appropriately prompted to perform in accordance with its capabilities.

Notwithstanding the foregoing considerations, Turing is, once again, confusing the issue of being able to do well in the imitation game and the issue of thinking, intelligence, and awareness. The bottom line is that there are ways of enabling a machine to do well in the imitation game that do not require thinking, intelligence or awareness, and, this is what storage, programming, and heuristic combinatorics are all about.

Turing goes on to argue that: "The criticism that a machine cannot have much diversity of behavior is just a way of saying that it cannot have much storage capacity." Diversity of behavior is not the issue, but, rather, the issue is whether any of that behavior – diverse or not – is a function of dynamics which constitute processes of thinking or which are indicative that some sort of intelligence beyond what has been programmed into the machine is present.

Under the heading of: "*Lady Lovelace's Objection*," Turing refers to Lady Lovelace's assessment of Babbage's Analytical Engine (which was first described in 1837 and was worked on by Babbage until 1871 but was never fully built) that the foregoing device had no capacity for originating anything new and did not do other than what it was directed to do, and, then, follows up the foregoing observations of Lady Lovelace with a statement given by Hartree indicating that while machines built by Babbage during the 1800s might not have provided any evidence which indicated they were able to think or had intelligence, nevertheless, this does not mean that such machines couldn't be created and, furthermore, Hartree also contends that one cannot automatically reject the possibility that such machines might have had the capacity to think or exhibit intelligence even if Lady Lovelace did not have the methodological means during her lifetime to be able to detect the presence of such qualities or properties.

Turing is in full agreement with the foregoing position that had been espoused by Hartree. However, considering the realm of possibility says nothing about what actually is the case.

Did Lady Lovelace see evidence that the Analytical Engine was capable of originating new things or doing other than it was directed to do? The answer is: No.

Is it possible that she either missed evidence which was present or did not have the methodological means to detect the presence of such evidence? The answer is: Yes.

Did Turing or Hartree have any actual evidence – and possibilities are not evidence – that Lady Lovelace missed something of a substantive nature with respect to the Analytical Engine or came to untenable conclusions concerning the properties of the Analytical Engine? The answer is: They did not.

For the most part, the issue of possibilities is a topic for philosophy. To be sure, specific scientific hypotheses might emerge from a cloud of possibilities, but if possibilities are divorced from the issue of evidence as well as critical reflection concerning such evidence -- as seems to be the case in the comments which Turing puts forth in the Lady Lovelace section of his paper -- then, whatever is going on in Turing's article at this point doesn't seem to give expression to the dynamics of science.

Later on in this section of his article, Turing claims that Lady Lovelace's observation that she never witnessed the Analytic Engine do anything new can be countered with considerations such as: Who is to say that any given 'original work' is not simply the result of the growth of some idea that was planted in an individual through a previous teaching or what emerges when the properties of some general principle are pursued to its full set of conclusions?

Indeed, who is to say that the foregoing is not the case? It is an empirical question not a rhetorical question.

To determine such issues, one studies the nature of a given idea. Then, to whatever extent is possible, one tries to establish if that idea can be shown to be just a re-working or reformulation of some idea to which the individual had been exposed previously or whether, the idea departs, in significant ways, from what came prior to it.

Moreover, the notion that a given work was the result of the growth of some idea that had been planted through a previous teaching seems to be rather ambiguous. What is the nature of the growth which is being discussed, and what is the nature of the relationship of that growth to some earlier seed, and are the properties of some previous seed capable of accounting for all aspects of what is present in a subsequent work?

Again, the foregoing issues all have to do with empirical questions. As addressed by Turing, such issues remain vague and are devoid of the sorts of empirical data and rigorous analysis which might be able to determine whether something was, or was not, new to some degree.

Turing shifts the goal posts a bit and contends that the better question might be: Did the machine do something that surprised him, and was this surprise something that the machine actually did rather than some conceptual form of framing that he projected onto the machine?

Irrespective of whether an individual is surprised by what a machine does, that surprise doesn't necessarily have anything to say about whether, or not, the machine has the capacity to think or has intelligence. Such surprise might just be a reflection of one's ignorance concerning the full potential of a machine and how it works under certain circumstances or when engaged in certain ways.

The issue of surprise is somewhat reminiscent of the notion of "emergence" which often is associated with chaos theory and far from equilibrium dynamics. Unfortunately, instead of entertaining the possibility that one does not fully understand the dynamic properties and potential of a given system, some people are anxious to suppose that systems are capable of generating emergent properties which can account for other possibilities while not being in need of explanation themselves, and, therefore, there is a sort of "anything is possible" kind of ambience which often surrounds and obscures the notion of emergent properties.

According to Turing, the nervous system is not a discrete-state machine. In making such a statement, he might be making two mistakes.

First, he seems to be assuming that the nervous system is what is responsible for thought and intelligence. John Lorber, a British clinician, who studied the condition of hydranencephaly in the 1970s and early 1980s found that although most people who suffered from this condition were severely retarded due to the way in which their brains had been crushed into virtual non-existence against the interior portion of their skull as brain matter was increasingly compressed by cerebrospinal fluids, nonetheless, he also found that there were a number of individuals whose brain scans indicated that brain matter was largely absent from the skull cavity and, yet, nonetheless, they displayed either average intelligence and, in one case, one such individual graduated with honors in mathematics. (See: *Is your Brain Really Necessary?* by Roger Lewin in the December 1980 issue of *Science*)

Secondly, when it is operating properly, , the nervous system, might – contrary to Turing's contention – qualify as a discrete-state machine. In other words, if one really knew the full status of its initial condition (which no on one does know), and if one had complete knowledge of all subsequent input signals (whether from the environment or from elsewhere in the body, and, again, no human being has such knowledge), then one would be able to predict what state the brain would be in at time 'x.'

To be sure, if some sort of biological or genetic disorder occurred which induced the brain to begin to act in anomalous ways, then, the brain might lose its status as a discrete-state kind of "machine" because the brain has proven to be an organ which is sensitive to initial conditions and if those initial conditions are changed in certain ways, then, substantial differences might show up in subsequent rounds of functioning. As a result, one might not be able to predict what the state of the brain would be at some subsequent time 'x.'

Nevertheless, barring the foregoing sorts of problems, conditions, or illnesses, there is no reason to suppose that in many respects the brain is not like a discrete-state machine and, consequently, has universal machine-like qualities in its capacity to model or mimic many different kinds of dynamical systems. At the same time, even if one were to treat the brain as a discrete-state machine, this does not necessarily require one to argue that the brain is the source of thought or intelligence as opposed to being a biological machine that is capable of transducing such thoughts and intelligence into biological forms of expression.

At this point, Turing enters into a discussion concerning possible differences of dynamics during the imitation game between continuous machines such as differential analyzers and discrete-state machines such as digital computers. However, he believes that both kinds of machines – despite going about their calculations in different ways and their respective differences in being able to solve some problems but not others -- would be able to acquit themselves well in the imitation game.

Irrespective of whether, or not, both kinds of machine would perform well in the imitation game says nothing about their capacity to be able to think or exhibit indigenous forms of intelligence. Turing started his article with the question of: Can machines think, and, yet, the sorts of issues which he proceeded to discuss and the objections which he spends time trying to counter do not seem to be able to resolve the basic kind of questions concerning the issue of intelligence and thinking with which he began his article.

One should keep in mind that the title of Turing's article is: *Computing Machinery and Intelligence*. If there is little, or nothing, in his article which can demonstrate how computing machinery is tied to intelligence in some way that is unique to the computer – and the foregoing twenty-plus pages of discussion have documented the absence of such a demonstration -- then, his article would seem to be nothing more than an exercise in successive forms of misdirection concerning the issue of intelligence and computing machines.

In the section of his article identified as: "*The Argument from Informality of Behavior*," Turing addresses the problem of whether, or not, the extent to which human beings operate their lives as a function of rules does, or does not, indicate that human beings are machine like in nature, only to be followed by the observation that since human beings do not operate their lives in accordance with such a complete set of rules for every occasion, then, human beings cannot be machine-like. Turing decides to approach the foregoing issue from his own perspective (to be touched upon shortly), but, somehow, he never mentions the obvious by pointing out that machines – anymore than is the case with human beings – do not operate according to a complete set of rules.

If the completeness of the rules governing a system is to serve as an index through which to differentiate human beings from machines, then, what is one to make of the fact that both machines and human beings do not necessarily operate in accordance with complete sets of rules which are capable of handling or addressing any contingency. On the one hand, ne might wish to consider human beings machine-like in as much as neither machines nor human beings operate as a function of a complete set of rules but, instead, operate in accordance with the potential of their natures and whatever set of possibilities (which is neither definitive nor exhaustive) such a nature is capable of realizing. On the other hand, depending on the nature of governing dynamics which are present, one really has no idea what the nature of the relationship is between whatever rules are present and the dynamics which occur in the context of either machines or human beings.

Moreover, as noted earlier in this essay, human beings often operate in accordance with principles which are much more open-ended than rules. Consequently, despite such mechanisms as "fuzzy logic" (which seems to occupy a position somewhere between rules and principles), a substantial, potential difference between human beings and machines might involve the manner in which principle and rules differ from one another and the extent to which principles rather than rules might shape behavior of either a human being or a machine.

Turing goes on to draw a distinction between "rules of conduct" and "laws of behavior" and indicates that the failure to take notice of such a distinction can serve as a source of confusion when comparing human beings and machines. Turing maintains that both machines and human beings are governed by "laws of behavior" and to this extent, human beings and machines are both governed by laws of the universe, and, therefore, to this extent, human beings are like machines, and vice versa.

One could agree with Turing's foregoing contention that both machines and human beings are governed by laws of behavior.

Nonetheless, stipulating to the foregoing likeness does not indicate that one is, thereby, committed to the idea that human beings and machines are necessarily governed by the same laws of behavior.

In fact, the foregoing considerations return one to what the actual discussion in Turing's article should be about. More specifically, intelligence, thinking, and awareness give expression to, as well as help shape, the laws of behavior which characterize human beings, but despite Turing's efforts in his article, whether, or not, the laws of behavior governing digital machines (or, discrete-state machines, universal machines) are shaped by intelligence, thinking, and awareness still has not been demonstrated.

There might be dimensions of a human being which are, in one way or another, machine-like in nature. This does not mean that one can necessarily reduce humans to a status of being nothing more than a machine, and, moreover, the fact that there might be various laws of behavior which machines share in common with humans does not necessarily require one to equate the two kinds of phenomena.

Next, Turing moves on to the issue of "extra-sensory perception." He indicates that notwithstanding whatever problems might be created by acknowledging that such forms of perception exist, nevertheless, the statistical evidence in support of, at the very least, the phenomenon of telepathy appears to be overwhelming.

He links the issue of telepathy to the imitation game in the following manner. Turing asks the reader to imagine that the interrogator requires the participants that are being interrogated (machine or human being) to guess the suit of various playing cards, and Turing asks us to suppose that a human participant in the imitation game is able to guess the identity of various cards at a rate that is – at some level of significance – greater than chance, whereas a machine participant in the game is not able to rise above a level of mere chance when required to guess the suit of various cards and this difference in performance allows the interrogator to tell whether a human being or machine is playing the imitation game.

At this point, Turing introduces a wrinkle into the foregoing setup. He proposes that the machine playing the game is equipped with a random number generator.

According to Turing, the presence of the random number generator would be subject to the psycho-kinetic powers of the interrogator. Consequently, this might enable the machine to make guesses at a rate that, at some given level of significance, might be greater than would be due to chance, and, as a result, this could interfere with or introduce some degree of doubt into the interrogator's process of trying to determine whether the interrogator was dealing with a human being or a machine.

He concludes the section on E.S.P. by indicating that if the reality of the phenomenon of telepathy is acknowledged, then, given the foregoing possibilities involving random number generators, then, one might have to introduce certain security protocols into the imitation game. For example, one might have to separate the interrogator from the other participants by placing them each in "telepathy-proof rooms."

In the foregoing argument, Turing is making a number of assumptions which might not be warranted. For example, he is assuming that a random number generator is capable of being affected by the psycho-kinetic powers of the interrogator and, if this were the case, then, the functioning of that generator might be affected in some way by the interrogator.

Turing provides no account of what the nature of the interaction between the psycho-kinetic power of the interrogator and the random number generator. Nor does he provide any account of why such a process of interaction should incline the machine to perform better than chance possibilities might suggest with respect to the task of identifying the suit of playing cards, and, instead, he merely stipulates that this might be the case.

If we assume that telepathy is real – and Turing is willing to stipulate to this – then how does it work? Is it a matter of electrical signals, and if so, then, how are such signals to be interpreted, and why aren't human beings able to exhibit a capacity for being able to identify the suits of cards that is substantially above a chance level of correct identification?

Is it possible that telepathy works as a function of some kind of entanglement that is other than electrical in nature? While evidence exists which indicates that the phenomenon of telepathy is real, nevertheless, no one actually knows how telepathy works.

Conceivably, even if electrical signals are involved to some extent in the phenomenon, there might be other non-electrical components involved in that process as well. In fact one might posit the possibility that the reason why people don't do better than they do when tested for, say, telepathic abilities is because such a dynamic involves more than one kind of access route and when individuals are using only one of those access routes, then, performance will be adversely affected to some extent.

Furthermore, one needs to ask whether, or not, the ability to determine the identity of a playing card is a matter of telepathy or clairvoyance? In other words, is the one allegedly possessing aspects of extrasensory capabilities using information concerning the suit of the playing card which has to do with reading the mind of the interrogator (i.e., telepathy of some kind) or is that information a function of an individual being able to make contact with the playing cards in and of themselves and, thereby, involves a process in which the suit of the card is accessed quite independently of what is going on in the mind of the interrogator (i.e., clairvoyance).

If clairvoyance is what is transpiring when the suit of playing cards is being indentified, then, the psycho-kinetic activity of the interrogator does not necessarily have any impact on the process. In other words, even if there were some interactive dynamics taking place between the psycho-kinetic powers of the interrogator as well as the activity of the random number generator, nevertheless, if the way in which the identity of the playing cards is realized is through a clairvoyant connection to the cards rather through reading the mind of the interrogator, and if the random number generator has no capacity to be clairvoyantly connected to the playing cards, then, whatever dynamics are taking place between the psycho-kinetic powers of the interrogator and the random number generator are irrelevant to the issue of being able to identify the suit of the playing cards at a rate that is greater than chance at some level of significance.

Turing does allude to the foregoing possibility in a single line prior to the final paragraph of the section on telepathy and comments that "With E.S.P. anything may happen." However, such a comment seems problematic because to whatever extent Turing believes in the laws of behavior (and he indicated his commitment to this notion in the previous section of his article), then, presumably, E.S.P. operates in accordance with whatever dynamics (i.e., laws of behavior) make such phenomena possible, and, if this is the case, then, in the dynamics of E.S.P. it is not necessarily true that anything can happen.

Moreover, notwithstanding the extent to which such considerations might affect the ability of an interrogator to identify whether that individual was dealing with a machine or a human being, none of this has anything to do with demonstrating that a digital machine – with, or without, a random number generator – has the capacity to think or has intelligence. Once again, Turing has misplaced, or become disconnected from, the plot to the story concerning the issue of "*Computing Machinery and Intelligence*."

Turing begins the last section of his article with an acknowledgment that his previous comments and observations do not have much to offer with respect to being able to establish anything which is sufficiently constructive or positive in nature that would be capable of lending tenable support to his perspective concerning computing machinery and intelligence. Then, without apologizing for wasting the reader's time for more than twenty pages, he turns to what he considers his positive evidence in a section that is labeled: "*Learning Machines*."

He starts out by drawing a distinction between an atomic pile that is subcritical and compares it with an atomic pile to which neutrons are added. Although adding some neutrons to a subcritical atomic pile will change the pile in certain ways, nonetheless, according to Turing, those dynamics often will die out, and, consequently, enough neutrons will have to be added in such a way that those dynamics will not die out and, thereby, induce the atomic pile to become supercritical and decompose with a release of considerable energy.

Having given the foregoing example, Turing goes on to ask a question. Are there similar dynamics which take place in human beings and machines which would involve a transition from subcritical to supercritical states?

He contends that such a dynamic seems to exist in human minds. For example, he maintains that: "An idea presented to such a mind [a subcritical one] will on average give rise to less than one idea in reply."

Turing doesn't provide any evidence to support the foregoing claim. Instead, he merely proceeds to indicate that in some cases when an idea is presented to a mind, the mind becomes super-critical and, as a result, gives rise to a whole complex consisting of "secondary, tertiary, and more" ideas, but, once again, he provides no evidence to verify what he is stating or any extended account of what an idea is or how it is generated or how is becomes linked to other ideas.

Next, he introduces the notion of an onion as an analogy, of sorts, to convey the nature of the mind. He mentions certain operations of the brain that might be described as being mechanical in nature, and, therefore, not the "real mind.

He doesn't explain what might be meant by the "real mind." Instead, he raises a question – but does not answer it -- concerning whether what is called the "real mind" is nothing more than what one would find in the middle of an onion after one had removed all of the outer layers of onion skin and concludes that in such a case the mind is wholly mechanical.

Again, he indicates that the opening paragraphs of the final section of his paper do not give expression to arguments that are convincing but, rather, merely serve as "recitations tending to produce belief." Such recitations might tend to produce some form of belief in the mind of Turing, but in the mind of anyone who has some minimal degree of critical reflection, the "recitations" to which Turing refers are little more than a continuing descent into a dissembling-like form of behavior with respect to the issue of "computing machinery and intelligence."

At this point in his article, Turing suggests that the only support which can be given for his perspective will have to wait for the imitation game experiment to be run at the end of the twentieth century, some 50 years down the line from the time when his article was being written. However, as has been documented in a variety of ways during the course of the present essay, running the imitation game experiment will not necessarily provide Turing with the kind of positive support for his perspective that he seems to believe it will.

Notwithstanding the foregoing considerations, Turing proposes to use the time available to him in the remainder of his article to talk about some of the properties that will be needed for a digital computer to be able to effectively participate in the imitation game. As a result, he talks about what sorts of storage capacity such a digital computer will need.

In addition, he contends that there isn't necessarily any need to increase the speeds at which a digital computer operates because even at the rates which are possible in 1950, nonetheless, these machines operate about a thousand times faster than nerve cells operate. Since Turing has not shown that thinking and intelligence are a function of nerve cells, the fact that digital machines operate at a level that is a thousand times faster than nerve cells is neither necessarily here nor there as far as the issue of thinking and intelligence is concerned because if thinking and intelligence are a function of something other than nerve dynamics, then, the fact that something can perform certain kinds of functions a thousand times faster than some other kind of dynamic is really like multiplying zero by a thousand and expecting the product to be able to accomplish something that does not occur in neurons at a speed which is a thousand times less fast than takes place in a digital computer.

Turing, then, states: "Our problem then is to find out how to programme these machines to play the game." However, if one has to program the machines to play the game, then, "where's the beef" as far as providing evidence is concerned indicating the presence of some form of thinking and/or intelligence that is independent of whatever is being introduced into the machine via programming?

Next, there is a discussion concerning the alleged nature of a child's mind. Turing suggests that the mind of a child is somewhat like a notebook that one purchase at a stationary shop which consists of mostly blank pages with a few mechanistic features thrown into the mix.

Turing provides no evidence to support the foregoing contention, nor does he provide an account of just what the mechanistic aspects to which he is alluding in his overview are capable of accomplishing. He does indicate, however, that one can hope that whatever mechanistic aspects might be present in a child's brain will be capable of being programmed, and he seems to suggest that there are certain parallels to be drawn between programming and education.

Historically speaking, there seems to be considerable evidence to suggest that thinking and intelligence in an individual are often in conflict with the way in which the collective wishes to educate or program an individual. In my own life, I would have to say that both my successes and difficulties were a function of my resistance to the programming that adults and teachers often sought to impose on me – and this tended to be true in grammar school, high school, college, graduate school, and during my days of standing in front of students.

To be sure, there were valuable lessons learned in conjunction with certain other individuals with whom I interacted over the years. However, such experiences were limited and most of the time I was trying to find my own way in life – sometimes successfully and sometimes not so successfully -- but I often learned as much from the failures as I did the successes, and, there was a complex dialectic associated with the process of learning (whether from successes or failures) that, in many ways, took place beyond the horizons of the so-called educational process

Turing doesn't really state what the specific contents of education or programming should be. Nor does he provide much in the way of specific content which might explain what individuals bring to the growth of their understanding concerning the nature of reality or the growth of their understanding concerning the nature of their relationship with reality.

He does indicate that a certain amount of experimentation will have to take place in order to determine what kinds of learning processes work best. Yet, he offers no criteria or methods that can be used in assessing what is meant by "better" or "worse" ways of learning or even what should be the subject matter of those learning processes.

Turing likens education to – hopefully – a speeded-up process of evolution, but he doesn't really explain what is meant by evolution other than to say that "The survival of the fittest is a slow method for measuring advantages." Unfortunately, Turing doesn't really explain what might constitute the sorts of advantages that could speed up whatever he considers evolution to be.

He indicates there is a certain equivalency which exists between, on the one hand, the idea of learning or change, and, on the other hand, the notion of mutation. Nonetheless, he also indicates that such mutational changes should not be random but directed in some fashion.

He does mention trying to discover the sorts of changes or mutations which can improve a given weakness. Yet, he doesn't identify what he considers such weaknesses to be or in what way a given source of change or directed mutation might improve such a weakness.

Having provided a very brief overview for education and programming in conjunction with human beings, Turing proceeds to consider the problem of trying to introduce change or learning into machines. He begins by indicating that there will be differences in how one will seek to enable a machine to change and how one goes about seeking to enable human beings to change.

He emphasizes that what will be important in any such process of learning is that the relationship between teacher and "student" must be rooted in two-way forms of communication. Apparently, two of the channels of such communication involve punishment and reward.

Turing doesn't explore what the criteria are that are to be used in identifying what constitutes a process of "punishment" or "reward," and this is something of a problem because what some people consider to be rewarding, other individuals consider to be a form of punishment, and, alternatively, what some people would consider to be a form of punishment, other individuals would experience as rewarding In addition, he doesn't touch on what factors might shape the way a 'student' responds to, or interprets various stimuli as being either rewarding or punishing, or what might be learned from such processes of communication.

If the purpose of the education process or if the only kind of change or learning that will be acknowledged by a teacher is that which is in compliance with considerations of punishment and reward, then, one wonders where intelligence and thinking come into the picture. Is such compliance a form of classical or operant conditioning, and, if so, will there be any dimension of thinking or intelligence which will survive that can be considered to be independent of such processes of conditioning?

If learning is reduced to programming, then, other than what is necessary for such programming to become established, what roles do thinking and intelligence play in such processes? Moreover, if thinking and intelligence are largely absent from the process of programming or learning, then, what, exactly – if any – is the relationship between such programming/learning (or computing machinery) and intelligence?

Since, according to Turing, machines do not have emotions or feelings, then, some process for inducing change, learning, or directed mutations will have to discovered that will be able to take the role of, or be substituted for, processes of punishment and rewards. Turing has nothing specific to offer in this regard, but indicates that if such a process of communication could be established, then, the machine could learn to follow orders.

What does following orders have to do with thinking or intelligence? Or, stated alternatively, why are thinking and intelligence being reduced to the process of following orders?

If the digital machine which participates in the imitation game is merely following programmed orders, then, what is intelligent about such behavior and to what extent is thinking involved in such behavior? Turing does offer the possibility that, perhaps, a complete system of logical inferences could be "built in," to the digital computer, but, then, in a footnote indicates that such a set of inferences will not be a function of learning, and, therefore, one is induced to return to a process of wondering how thinking and intelligence are connected to such built-in inferences.

Turing indicates that, in part, the foregoing sorts of inferences would consist of such things as: "Well-established facts, conjectures, mathematically proved theorems, statements given by an authority" and so on. Taking the last consideration first, who is to be considered an authority and who gets to decide who will be an authority and on what basis will such authoritativeness be determined?

Having theorems that have been proven mathematically is one thing. Determining how, or if, such theorems are related to the real world cannot necessarily be established just by having access to a given set of mathematically proven theorems.

Moreover, what are the nature of the conjectures that are to included in the inferences or propositions which are to be built into the machines? How are such conjectures to be applied to new data sets that are being processed by a digital computer, and what criteria will be used to determine which applications of those conjectures are successful, and what methods will be used to assess the nature of the relationship between various criteria, the conjectures, and in-coming data?

Finally, whatever constitutes an alleged "well-established fact" at one point in time will not necessarily continue to constitute a "well-established" fact at some subsequent temporal juncture. If this were not the case, then, we would still consider the Ptolemaic system to be giving expression to a set of allegedly well-established facts, and, this is not the case.

Turing suggests that certain propositions could be treated as "imperatives. He goes on to contend: "The machine should be so constructed that as soon as an imperative is classed as 'well-established' the appropriate action automatically takes place."

Who gets to determine that a given imperative is well-established and with what justification is such a determination made? What identifies a given action as the appropriate one to take, and if such an action takes place automatically, then, how is such an automatic action an expression of either thinking or intelligence?

Turing indicates that while some propositions will be given by authority, "others may be produced by the machine itself, e.g., scientific induction. For the most part, he doesn't provide any details with respect to what the modalities of such proposition production will be because even in the case of the one possibility that he does mention – namely scientific induction – he doesn't say how the case of the Black Swan should be handled via the principles of induction or how this possibility should be incorporated into the computational dynamics of the digital computer.

He alludes to the possibility of such machines coming up with their own propositions, but he doesn't really provide any details concerning such a process nor does he provide any account of why anyone should feel comfortable about the possibility of those kinds of "invented" propositions being imposed on them given that the computer was treating such a proposition as an imperative which was to be automatically put into action.

Turing considers Lady Lovelace's observation that the Analytical Engine did only what it was ordered to do to be rather a strange thing to say. He goes on to say: "Most of the programmes which we can put into the machine will result in its doing something that we cannot make sense of at all, or which we regard as completely random behavior."

I'm not sure if Turing engaged in much critical reflection with respect to what he is said. For example, the idea that programming a machine will lead to that machine doing something which the programmers cannot understand should terrify anyone who is confronted with the possibility of being placed at the mercy of machines that have been constructed by people like Turing so that those machines will be inclined to automatically act on whatever has been deemed to be an imperative despite the fact that such dynamics will be let loose into the world by a digital computer in ways which were completely unforeseen or unanticipated by the individuals that programmed those machines.

Equally terrifying is the idea that such machines might take off on various random slants which the programmers did not take into consideration when constructing and programming such machines. Random actions and behaviors have nothing to do with thinking or intelligence, and, yet, people are being induced (and in an increasing number of instances in the world of today people are being mandated) to trust their lives to the sorts of programming that could enable computations (including unanticipated and random ones) to be employed by digital computers that will impose various imperatives of a questionable nature on human beings.

Toward the end of his article, Turing states: "Now the learning process may be regarded as a search for a form of behavior which will satisfy the teacher (or some other criterion)." What if the form of behavior which will satisfy a "teacher" of the computer or will satisfy some other criterion that is used in the programming of such a machine is destructive, harmful, oppressive, problematic, or incapable of being changed once it is set in motion, then, shouldn't one ask why anyone should suppose that such forms of behavior are the kinds of things which should be sought or learnt?

Fast-forward 75 years and one comes across a book entitled: *The AI Con: How to Fight Big Tech's Hype and Create the Future We Want* by Emily Bender & Alex Hanna. The contents of that book provide considerable documentation which tends to indicate that none of the many problems have been resolved which were raised during the present essay in conjunction with Turing's article: "Computing Machinery and Intelligence."

Despite the fact that the storage capacity of digital computing systems have been increased by magnitudes of order above what was possible in Turing's time and notwithstanding the tremendous increases in speed with which computations can be completed, there is still no indication that digital machines can either think or possess intelligence. Moreover, while programming techniques have improved substantially since Turing's time, nonetheless, programming is still programming.

That is, programming constitutes the degrees of freedom and constraints which have been imposed by programmers on the way in which a digital system goes about its business. Consequently, if one puts aside the sorts of unanticipated behaviors which emerge in such systems (think move 37 during the match between AlphaGo and Lee Sedol) and one whistles past the graveyard of random events which might occur within such systems, have things really progressed much beyond, if at all, what Lady Lovelace had observed in the 1800s in conjunction with Babbage's Analytical Engine – namely, such machines do what they are ordered to do.

To be sure, combinatoric dynamics enable such systems to arrange things in a variety of combinations. Nonetheless, such combinations are not a function of thoughtful, intelligent, self-reflective process of putting things together but are done in accordance with the sorts of inferential propositions to which Turing alluded in the final section of his paper – propositions which are either programmed into the machine or which are a function of the constraints and degrees of freedom which such programming permits the machine to exercise through combinatoric dynamics.

Outcomes of computer dynamics are not parsed and evaluated through a process of thinking and intelligence which has arisen, or exists, independently of programming. Rather, they are processed through a set of heuristics which have been built into the hardware and software of the computer or which are permitted by the degrees of combinatoric freedom and constraint which have been built into the hardware and software of the machine.

Having no feelings, such machines do not respond to various forms of punishment or rewards. Instead, they respond to probabilistic computations which are weighted by various heuristics, and while such forms of weighting are able to stand in for punishment and reward, neither those probabilistic computations nor the weighting process that shape them is a function of any kind of thinking or intelligence which is indigenous to the computer rather than merely being a reflection of what has been built into the machine.

There is no such thing as an intelligent machine. The devices which are alluded to as being able to give expression to "artificial intelligence' are nothing more than data bots which have been provided with arbitrary, synthetic systems of logic that enable those machines to: Collect data, classify data according to pre-packaged systems of feature identification, organize data, rearrange data, focus on data, ignore data, analyze data according to various kinds of heuristic imperatives, and act on such data in accordance with directives which have been built into the machines or fed into those machine via programming, or which the machine is permitted to act upon according to the degrees of freedom and constraints which have built into the combinatoric and heuristic capabilities with which such data bots have been equipped.

Digital machines can use, and do use, data to: Generate deep fakes (often pornographic or capable of entangling people in crimes they did not commit); set property valuations for purposes of taxation (in violation of the 16^{th} amendment); determine who will and will not get a loan (which often involve forms of redlining that discriminate against certain groups of individuals); establish who will or will not be released on bail (indicating that justice is not as blind as she often is employed and which also by-passes various aspects of due process or ensuring that everyone is fair and equal before the law); surveil people illegally (as William Binney, Ed Snowden, J. Kirk Wiebe, Thomas Drake, and Mark Klein have thoroughly documented); create problematic, error-ridden theories concerning medicine, virology, climate, cosmology, and pandemics; micro-manipulate the stock-market; identify people as satisfying conditions that artificially suggest those individuals will commit crimes in the future; develop derivatives which human beings cannot understand and that have the capacity to devastate society on a variety of levels such derivatives wiggle rather than wag; lethally eliminate individuals which the data system has identified – for purely programmed considerations of biased forms of ideology, politics, and vested interests – as being undesirable; translate languages incorrectly; offer incompetent forms of psychotherapy which are capable of, among other problem-laden scenarios, inducing human beings to commit suicide; behave in ways that cannot be aligned with values that treat people in an ethically nuanced and compassionate manner which protects the right of people to informed consent; invent synthetic forms of pharmaceuticals, chemicals, and life which are injurious to human beings; serve as arbiters concerning what constitutes disinformation and misinformation on the basis of unvetted opinions which have been programmed into such data systems; take away basic rights in the service of arbitrarily conceived social credit systems; augment people for purposes of controlling those augmented individuals as well as in order to control others who might be resistant to such processes of augmentation; consume ever-increasing amounts of water for their use rather than for the use of human beings; guzzle energy during their construction and use; contribute massive amounts of non-ionizing radiation to the environment that creates the electro-smog which has enveloped human beings and is adversely affecting the health of more and more human beings; involve the release of PFAS, or forever chemicals, into the environment during their manufacture; enslaving humanity while taking away the ability of many people to earn a living; restricting where people can travel or where they will live by means of the establishing of biodigital geo-fences; as well as serve as the fall guy or patsy on which things can be blamed when the human beings who profit from the activities of such data bots are threatened with being held accountable for crimes against humanity through the manner in which data bots are used by would-be overlords to disempower, disenfranchise, dehumanize, and abuse human beings.

Data bots are not a form of artificial intelligence. They have no intelligence, artificial or otherwise, and, as Lady Lovelace said more than 150 years ago, they merely do as they are ordered to do.

Computing machines have always been involved in the imitation game. They use storage, speed, and programming to create models that give expression to an array of surface properties which reflect aspects of whatever is being modeled.

Unfortunately, computing machines are like psychopaths. Psychopaths can be very adept at modeling the behavior they see around them and, thereby, when necessary, are able to blend in somewhat with other human beings.

However, that modeling tends to be limited largely to surface behaviors. In other words, there are lacunae in that which is being witnessed by a psychopath, and, as a result, understanding is skewed in a variety of ways because of the inability of psychopaths to grasp the inner substance of emotions such as: Compassion, empathy, love, trust, humility, and sincerity.

When psychopaths look at their phenomenological fields, those individuals can see the manifestation of the form which the aforementioned emotional phenomena take when expressed in another human being, but psychopaths are unable to grasp or get a feel for the actual reality which makes gives rise to such phenomena.

Nonetheless, by studying people, aspects of the outer form of such emotions can be grasped. As a result, a psychopath comes to get a sense of the circumstances in which such emotions are expressed (this can be reduced to data in computing machinery), and, as well, a psychopath can pick up on the features which characterize some of the behaviors which accompany those kinds of emotions (this also can be reduced to data in computing machinery), and, finally, a psychopath develops a sense of what impact the presence of such phenomena have on other people, and, therefore, is able to the causal relationship between using the outer forms of such emotions in the right circumstances can be used to leverage the feelings, beliefs, and behaviors of other individuals (The foregoing sorts of processes tend to be present in data bots – in the form of programming – that enables bots to act on the previously mentioned sorts of datasets which have been gathered through sensors of one kind or another).

Data bots can be programmed to model many aspects of reality, including human behavior. Like a psychopath, data bots don't necessarily understand what is being recorded, but they have been equipped with programs which will arrange data in ways that can be leveraged and acted upon even if not understood.

Consequently, one should not consider the capacity of data bots to be successful at the imitation game as necessarily a good thing. It is through such a capacity to imitate, that data bots gain access to the data points that characterize our lives and place them in a position to begin to leverage those points in ways that serve the purposes for which such data bots were brought into existence in the first place, and those purposes are not indigenous to the bots.

Data bots are: Synthetic, algorithmically-driven systems of arbitrarily programmed sources of subjugation. In other words they are: "Sad-Sap-SOS" entities, but no one should feel sorry for them because as the SOS designation indicates those bots are being used by individuals who believe they have the right to control, transform, injure, or destroy human beings simply because the former individuals have a hankering to do so and enjoy tinkering with and experimenting with things – including other human beings.

So-called AI is about deception, not hype. It is about what is artificial, not what is necessary. It is about control, not intelligence. It is about surveillance, not assistance. It is about subjugation, not security. It is about loss of freedom, not efficiency. It is about manipulation, not support. It is about creating problems, not solving them. It is about inducing and maintaining pathology, not establishing health or well-being. It is about death, not life. It is about degeneration, not constructive transformation. It is about what is superficial, not what is essential. It is about power, not liberation. It is about dystopia, not utopia.

Turing was certainly bright enough and clever enough to have been able to predict that the foregoing sorts of problems were likely to arise in conjunction with his discrete-state devices or universal machines. However, the many problems which are present in his previously discussed article: "*Computing Machinery and Intelligence*" suggests that his aspirations for what he considered to be the constructive potential of computing machinery might have blinded him to the potential hazards which are nearly omnipresent in discrete-state devices and, as a result, one might contend that it is Turing's folly that he did not engage in a more rigorous form of critical reflection concerning the lack of connection between computing machinery and intelligence or that he did not engage in a more rigorous form of critical reflection concerning the possible ramifications that might ensue from the inescapable dangers of such a disconnect in the future.

Turing's folly has become the folly of modern times. Over the last 75 years, many people have pointed out different aspects of the nature of such folly, but, unfortunately, arrogance, hubris, ego, vested interests, greed, delusional fantasies, and a desire to control others prevents all too many people from grasping the nature of the folly that entailed by the SAD-SAP-SOS entities which, with each passing day, are being released into the wild (the Earth as well as the different levels of atmosphere around the Earth) at an increasingly, alarming rate.