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Victor Christianto

Florentin Smarandache

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Remark on Artificial Intelligence, *humanoid* and *Terminator* scenario: A Neutrosophic way to futurology

Victor Christianto ^{1,*}, Florentin Smarandache ²

¹ Satyabhakti Advanced School of Theology – Jakarta Chapter, Jakarta 10410, Indonesia

² Dept. Mathematics and Sciences, University of New Mexico–Gallup, Gallup, NM, USA;
email: smarand@unm.edu

* Correspondence: victorchristianto@gmail.com

Abstract

This article is an update of our previous article in this SGJ journal, titled: *On Gödel's Incompleteness Theorem, Artificial Intelligence & Human Mind* [7]. We provide some commentary on the latest developments around AI, humanoid robotics, and future scenario. Basically, we argue that a more thoughtful approach to the future is "*techno-realism*."

Keywords: Neutrosophic Logic, Neutrosophic Futurology, artificial intelligence

1. Introduction

Indeed among the futurists, there are people who are so optimistic about the future of mankind with its various technologies, such as Peter Diamandis with his "*Abundance*." But there are also skeptics, predicting "*dystopia*," like George Orwell's 1984 etc. [4]

At my best, our response is: we must develop a view of technology that is not very optimistic but also not pessimistic, perhaps the right term is: "*Techno-realism*." [3]

We mean this: with a lot of research on robotics, humanoid etc., then emerged developments in the direction of *transhumanism and human-perfection*. [6]

There is already a fortune-telling that AI will be established with psychological and spiritual science, so as to bring up the AI/robotic consciousness. [7]

But lest we become forgetting our past, and building the tower of Babylon.

For example, last year the world's robotics experts were made yammer because there was a "tactical-robot" report developed in one of the labs on campus in South Korea. It means this tactical robot is a robot designed to kill. Then Elon Musk and more than 2000 AI researchers raised petitions to the UN to stop all research on the tactical robotic. [2]

Roughly it's a true story that we can recall, although it is not our intention here to give foretelling that the world would be heading for the *Terminator* movie scenario.... but there's a chance we're heading there.

A Neutrosophic perspective

As an alternative to the above term of "techno-realism", our problem of predicting future technology that is not very optimistic but also not pessimistic, is indeed a Neutrosophic problem.

First, let us discuss a commonly asked question: what is Neutrosophic Logic? Here, we offer a short answer.

Vern Poythress argues that sometimes we need a modification of the basic philosophy of mathematics, in order to re-define and redeem mathematics [8]. In this context, allow us to argue in favor of Neutrosophic logic as a starting point, in lieu of the Aristotelian logic that creates so many problems in real world.

In Neutrosophy, we can connect an idea with its opposite and with its neutral and get common parts, i.e. $\langle A \rangle \wedge \langle \text{non-}A \rangle = \text{nonempty set}$. This constitutes the common part of the uncommon things! It is true/real—paradox. From neutrosophy, it all began: neutrosophic logic, neutrosophic set, neutrosophic probability, neutrosophic statistics, neutrosophic measures, neutrosophic physics, and neutrosophic algebraic structures [9].

It is true in a restricted case, i.e. Hegelian dialectics considers only the dynamics of opposites ($\langle A \rangle$ and $\langle \text{anti-}A \rangle$), but in our everyday life, not only the opposites interact, but the neutrals $\langle \text{neut-}A \rangle$ between them too. For example, if you fight with a man (so you both are the opposites to each other), but neutral people around both of you (especially the police) interfere to reconcile both of you. Neutrosophy considers the dynamics of opposites and their neutrals.

So, neutrosophy means that: $\langle A \rangle$, $\langle \text{anti-}A \rangle$ (the opposite of $\langle A \rangle$), and $\langle \text{neut-}A \rangle$ (the neutrals between $\langle A \rangle$ and $\langle \text{anti-}A \rangle$) interact among themselves. A neutrosophic set is characterized by a truth-membership function (T), an indeterminacy-membership function (I), and a falsity-membership function (F), where T, I, F are subsets of the unit interval [0, 1].

As particular cases we have a single-valued neutrosophic set {when T, I, F are crisp numbers in [0, 1]}, and an interval-valued neutrosophic set {when T, I, F are intervals included in [0, 1]}.

From a different perspective, we can also say that neutrosophic logic is (or "Smarandache logic") a generalization of fuzzy logic based on Neutrosophy (<http://fs.unm.edu/NeutLog.txt>). A proposition is t true, i indeterminate, and f false, where t, i, and f are real values from the ranges T, I, F, with no restriction on T, I, F, or the sum $n = t + i + f$. Neutrosophic logic thus generalizes:

- Intuitionistic logic, which supports incomplete theories (for $0 < n < 100$ and $i = 0, 0 \leq t, i, f \leq 100$);

- Fuzzy logic (for $n = 100$ and $i = 0$, and $0 \leq t, i, f \leq 100$);
- Boolean logic (for $n = 100$ and $i = 0$, with t, f either 0 or 100);
- Multi-valued logic (for $0 \leq t, i, f \leq 100$);
- Paraconsistent logic (for $n > 100$ and $i = 0$, with both $t, f < 100$);
- Dialetheism, which says that some contradictions are true (for $t = f = 100$ and $i = 0$; some paradoxes can be denoted this way).

Compared with all other logics, neutrosophic logic introduces a percentage of "indeterminacy"—due to unexpected parameters hidden in some propositions. It also allows each component t, i, f to "boil over" 100 or "freeze" under 0. For example, in some tautologies $t > 100$, called "overtrue." Neutrosophic Set is a powerful structure in expressing indeterminate, vague, incomplete and inconsistent information.

Therefore, from Neutrosophic Logic perspective, "our problem of predicting future technology that is not very optimistic but also not pessimistic" can be rephrased as follows:

(Opposite 1) pessimism – pess-optimism — optimism (Opposite 2)

While the term pess-optimism may be originated in engineering (perhaps in geotechnical engineering), but it has become one term in urban dictionary, see:

"A philosophy that encourages forward-thinking optimism with an educated acceptance of a basic level of **pessimism**. **Optimism's** fault is its *naïveté*, while **pessimism's** fault is its *blind jadedness*. We live on Earth and are human. There is, was and will be good and bad." [10].

That would mean a more balanced view of the future (futuresology), something between too optimistic view and too pessimistic view. It is our hope that Neutrosophic perspective may shed more light on this wise term of pess-optimism, although for us "*techno-realism*" term may bring more clarity with respect to technology foretelling.

Alternatively, we can also consider a few new terms, such as:

- a. *Less-optimism*: somewhat less than optimism, although it is not pessimism.
- b. Merging optimism and realism: *opti-realism*. It can be somewhat better term compared to pess-optimism, because *realism* brings a more pragmatic view into the conventional dialogue between pessimism and optimism.

Then may be we can call this new approach: Neutrosophic Futuresology.

What about AI fever?

In line with it, a Canadian mathematics professor wrote the following message a few days ago:

"I am appalled by the way how computer science damaged humanity. It has been even worse than nuclear bombs. It destroyed the soul of humanity and

I have less than 0% interest in doing anything in this evil field.

Now something more destructive than data mining is coming up. Yes AI,

Probabilistic AI. It says we don't know why but somehow it works. So we

Started to have air plane malfunction because of the AI program failure. "

Of course you can agree or not with the expression of that mathematics professor, but reportedly the employees of Google also demanded strict rules for AI to be freed from weaponry purposes, or called "*weaponized AI*" [1].

Meanwhile, it is known that the development of science and technology has a positive and negative facet as well as the Robotics & AI. Although positive contributions are obvious, but the side effects are spiritual and mental aspects; and it needs to be prepared so that people can still take the positives, for example the planner of robotic Intelligence must have a code of ethics: *Intelligence robotics should not harm or kill humans, rob banks etc.* For other ethical issues of AI, see for example [5].

Are there practical examples of the realism attitude in technology?

If you got free time, read the periodicals around the industry in Japan. There are at least 2 interesting phrases that are worth a study: *Ikigai and Monozukuri*.

The ikigai may be a bit often we hear, meaning: The reason we wake up early, consisting of a balance between passion, work, profession etc.

Then what is Monozukuri? According to a source:

"Monozukuri is a Japanese word derived from the word " mono "means product or item and " Zukuri "means the creation, creation or production process. However, this concept has far broader implications than its literal meaning, where there is a creative spirit in delivering superior products as well as the ability to continuously improve the process... "

What is the implementation? Let's look at 2 simple examples:

A. Sushi: Though simple at a glance, sushi is carefully designed so that the size is a one-stop meal. No more and no less. That is the advantage of many innovations that are typical of Japanese, because they think carefully from the usefulness, size, artistic value of the product. And so on.

B. Shinkansen: The uniqueness of this train is not only about speed, but also on time (punctual). Even reportedly, the time lag between train sets is less than 5 minutes. And everything is designed by Japanese railway engineers even before there is a personal computer or AI. Then how did they design such an intricate system? Answer: They use dynamic control theory ("*Dynamic control Theory*").

Concluding remarks

Of course this is just a brief comment on a complicated topic that needs to be carefully examined and cautiously thought of.

Let the authors close this article by quoting the sentence of a wise man in the past centuries:

"Lo, this only have I found, that God hath made man upright; but they have sought out many inventions."

Wishing you all a happy a new year 2020. Hopefully next year there will be not a robot to greet you. Yes it is indeed a great paradox in the 21st century: "*Robots are increasingly proficient at imitating humans, but many humans live like robots.*"- personal quote.

Acknowledgement

One of these authors (VC) is really grateful to Prof. Iwan Pranoto and Prof Liek Wilardjo for starting this discussion, and to Prof. The Houw Liong who has been willing to read and give valuable advice.

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