

We must find some way to ensure that the advent of digital superintelligence is symbiotic with humanity, and that is the biggest and most pressing existential crisis we face.

While I am not an advocate of "regulation and oversight," there is a very serious risk to the public here, far greater than the risk of nuclear warheads on land. The state should therefore find a way to ensure internal and external oversight to ensure that all those developing AI are doing so safely.

The AI that exists now is not that dangerous; it just affects the job market and professions, and jobs will be lost. But digital superintelligence is the danger, and there should be safety valves for harmonious coexistence with humans.

The close coupling between collective human intelligence and digital intelligence should be done with great care and with the consent of humanity.

2.3 The mainstream media (MSM)

One would expect the media to inform the public about events that concern the public. Instead, they parrot what is dictated to them. In the link below is a video showing journalists from different channels in different locations parroting the exact same text and apparently using the same database or AI that dictates what to say [12].

They are sharing bias and false news; after all, become too common in social media worldwide; some media outlets publish the same fake stories without checking the facts first...



Fig. 7. The breakdown of official journalism [12].

3 The moral dilemmas

These high-tech views and developments are fine, except for the problem associated with the machine evolving into an entity with its own initiatives, will, and motivations [9], which could happen through self-learning. For example, AI applications on battlefields allow machines such as drone swarms and sophisticated weapons to act

independently without human control and decide how to behave.

However, machines being trained on the battlefield to exterminate humans begs the question: Is it ethical for humans to want to exterminate other humans and train the machine to do so? Another question could be: Can humans reach such an educational or intellectual level that they can resolve their differences without trying to destroy each other and use their intelligence and AI in machines to improve the quality of life? Moreover, the final question could be: Is it possible to develop a scientifically based morality of general acceptance to help people raise their educational and intellectual level and use their intelligence for constructive rather than destructive actions? So that they do right (good) and avoid wrong (bad)?

A positive answer to the last question could help humans follow virtue and transfer it through artificial intelligence to machines, thereby avoiding exterminating humanity and gaining a better quality of life. The idea is to build human morality on a scientific basis to achieve quality life so that there is no danger to humans by transferring artificial intelligence to machines.

The scientific way of searching for such foundations is to examine the laws and rules that govern the proper functioning of entities in Nature.

3.1 Laws and Rules in Nature

We observe that the laws in Nature are mandatory and absolute, and all entities must obey them. If, for example, some people say, "I do not recognize the law of gravity," and fall over a cliff immediately face the consequences of not recognizing the gravity law.

On the other hand, rules regulate the proper functioning of entities in Nature and have tolerance limits and exceptions [13]. Such limitations are usually expressed scientifically by statistical parameters (variance, standard deviation, specification limits, etc.).

A fundamental rule in Nature is balance, which applies to all entities in Nature to function correctly in harmony with Nature and includes all the rules.

Take, for example, the Earth's orbit from its rotation around the Sun. It balances two forces of attraction due to gravity and repulsion due to the centrifugal force developed by rotation around the Sun. As a result, the Earth's orbit is never the same. Each year, the Earth follows a slightly different orbit than all the previous ones. Nevertheless, we can observe many Earth orbits over several years and calculate a mean value and a standard deviation. Therefore, we can conclude that the optimal orbit of

the Earth is the average of all orbits, and the specifications, as designed in Nature to be in equilibrium, are expressed by the standard deviation multiplied by a constant to obtain a confidence interval with a certain probability. For example, suppose the Earth exceeds three times the standard deviation of the mean limits. In that case, the Earth can escape the mean tolerance limits and either collide with the Sun or be lost in space.

In general, if the factors that regulate the smooth functioning of entities in Nature are balanced, then there is a healthy state, while out of balance, there is a disaster. Similarly, if the stomach has more or less acid than necessary, there is a disease. Also, there is a disease if the blood pressure is below or above certain limits or if the heartbeats are out of bounds, there is a problem, etc. We observe that tolerance limits and exceptions to the rules create the conditions for freedom, diversity, and the evolution of entities. Therefore, scientific bases for morality cannot be dogmatic or absolute to support freedom.

4 The scientific basis for ethics - education

The scientific basis for ethics should create rules with tolerance limits that help human reason and actions resulting from it to be constructive and correct. We can achieve such a result by establishing the internal balance for the performance of human intellect and the external balance for the performance of human action [13]. But, before we get there, let us present the basic features of education and then two scientific structures developed by famous philosophers, Plato and Aristotle, necessary to raise human intellect to higher levels.

The main characteristics of education that aim at the virtuous person (Greek education) are:

(a) Education is the therapy of the spirit (developing values), and when the body is sick, it needs medical treatment; when the spirit is sick, it needs education.

(b) Education should be in harmony with Nature, aim at virtue with the Least Prejudice, and obey the laws and rules of Nature, especially the rule of balance, which contains all rules.

(c) Education must cultivate the sense of the Beautiful.

4.1 Plato's Model

Here is Plato's model of internal balance:

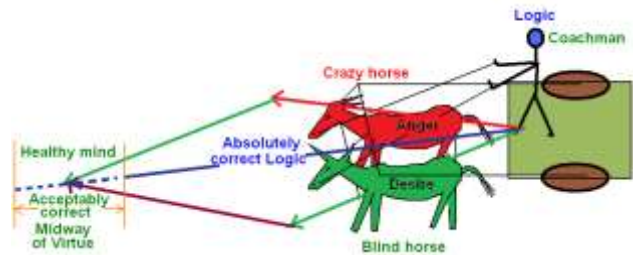


Fig. 8. Plato's model. Two horses, one blind being the desire, and one crazy the anger, pull a carriage where the driver, the logic, leads the way to virtue (internal balance - intellect).

Plato, in his work "The Republic," [6], [3], [7], [4], [14] considers the human spirit to be composed of three parts: logic, desire, and anger. He also considers a healthy mind as an effort to have sufficient logic to balance desire and anger. Plato gives the following example (Fig. 8) to explain their meaning further. He considers desire to be a blind horse, anger to be a crazy horse and logic to be the coachman trying to move the cart in the right direction, which is the mid-space of virtue (Fig. 8). Thus, Plato's work helps us to define the three-dimensional space of the intellect with coordinate axes of logic, desire, and anger. All thoughts and all feelings are expressed in the intellect space with three values on the respective axes: logic, desire, and anger. Note that emotions depend on whether or not desires are satisfied. Also, notice that desire and anger are the most uncultivated part of one's self and need sufficient logic for culture and management.

4.2 Aristotle's model

Aristotle provides the basis for what we call external balance here, and it concerns the acting behavior of the virtuous person. Aristotle, in his work, "Nicomachean Ethics," [1], [3], [7], [4], [14] defines a virtuous person as one whose actions are not deficient or excessive but lie in an interval between deficiency and excess that he calls the mid-space of virtue.

Aristotle gives the following example: In the mid-space between the cowardly and the provocative lies the virtuous brave (correct). Accordingly, we can say that the mid-space between stingy and overspending lies in the virtuous (correct) thrifty.

According to Aristotle, virtuous persons constantly try to keep their actions within the mid-space limits of virtue, learning from their mistakes and trying to minimize them. From this point of view, every person at any time (never too late) can try to be virtuous.

Aristotle states that mid-space is not a fixed region for everyone, and probably every person has a different view of its limits. Therefore, he uses statistical methods to define it: "...the location of the mid-space limits is stochastic". It means determining the limits of the mid-space of virtue requires a wider public acceptance, achieved through democratic processes, and thus democratic processes are founded.

4.3 modeling human error

A close look at Aristotle's mid-space of virtue gives us an idea for modeling human error by considering human actions correct or acceptably correct within the mid-space of virtue limits. However, Fig. 9 illustrates such modeling. Assuming a person without physical limitations walks on level ground and meets an obstacle that must pass by raising the foot. If the foot is lower than the obstacle, a false step or an error with a negative sign occurs; if the foot is raised too high, an overthrow or an error with a positive sign occurs. The impact of a false step (error) could vary from a temporary loss of balance and instant recovery to a severe injury [4], [13], [14].

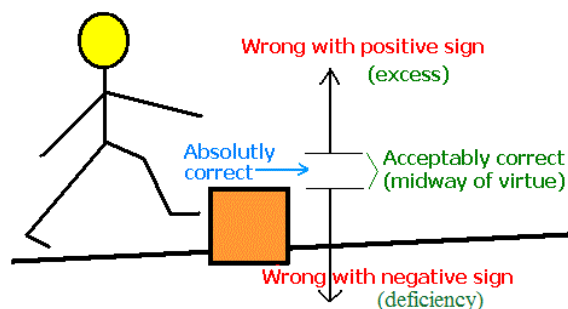


Fig. 9. Aristotle's mid-space of virtue (external balance - action).

Therefore, as shown in Fig. 9, the following observations regarding human error are valid:

- It varies between minus infinity and plus infinity.
- The boundaries of right/wrong are defined.
- An uneducated person may have a false step the first time and the next time a better performance.
- The absolute correct could be the mean of all possible acceptably correct efforts.
- Mid-space of virtue could be the standard deviation from the average of all correct efforts.
- Right and wrong coexist in any human action and are quantities inverse proportional.
- Freedom is defined as the alternatives to pass correctly the obstacle (theoretically infinite).

- Bias and deception are defined if, on purpose, someone has a false step.
- Democratic processes are defined as the consensus required to determine the mid-space limits.

4.3 Discussion on the two models

In conclusion, considering all the above analyses, we can define a person's internal balance as the continuous effort to maintain sufficient logic to balance desire and anger within the mid-space of virtue limits [13].

Also, we can define a person's external balance as the continuous effort that thoughts and actions are not deficient or excessive but are within an interval between deficiency and excess, defined by Aristotle as the mid-space of virtue [13].

Note that internal and external balance is in harmony with Nature and defines the virtuous person. Such balances are a measure of comparison, and what disturbs them is an injustice and must be condemned. Injustice is expressed by the scales held in one hand by the goddess of justice, Themis. In this way, those who disturb the balance (internal/external) of the scales are the guilty ones and, with the sword held by the goddess Themis, are punished (Fig. 10).



Fig. 10. Themis, the goddess of justice, holding the scales and the sword.

Looking around us, we can find that injustice has the upper hand almost everywhere. The news media,

e.g., with marketing, magnifies desire at the expense of logic. Hollywood cowboy-type movies magnify anger also at the cost of logic. The endless discussions we see on TV, the narratives, and the propaganda to push narratives devalue logic; similarly, the formal school promotes sexism and similar issues at the expense of logic. Therefore, all such unfair events and many more disturb the internal balance.

Regarding the external balance, according to the Nobel Peace Prize laureate Muhammad Yunus [8], five people own half the wealth of the planet, a colossal extravagance out of the mid-space of virtue. Also, the considerable exaggeration is the threat from the reckless development and use of AI by the evil kind of people that Muhammad Yunus mentions.

Therefore, education must develop the ability to distinguish right from wrong by considering wrong, whatever disturbs the internal and external balance, and right the effort to have internal and external balance.

5 The training of the virtuous

It is of great importance that the official school's education helps the trainees face the challenges of AI so that, on the one hand, there is a harmonious symbiosis and, on the other hand, they can move comfortably in the labor market.

Therefore, training should aim to create skills that the learner strives to be smarter than the machine. It can be achieved [10] when the didactic combination (of problem analysis with mathematics) – (synthesis with informatics, and software creation) – (running the system and verifying the theoretical analysis) is used at all levels of education (Fig. 11).



Fig. 11. The proposed learning module structure helps the learner to be smarter than the machine.

Note that mathematics gives the limited human mind unlimited capabilities and is the driving force of Philosophy, and philosophy separated from mathematics as of today is dead. Therefore, the knowledge of informatics and, specifically, the development of software creation skills in learners at all levels of education is perhaps the only way for man to make the best and most harmonious connection with the machine.

An example of preparing a learning unit is given in Fig. 11, where the issue under study is defined. Then, the scientific material necessary for analyzing the issue is drawn from the literature's bottomless well of scientific knowledge. An algorithm is then created with understandable steps that, when followed, solve the problem and are implemented to create a computer program (software). Finally, we run the software and get the results. The results are evaluated and verified, consolidating the knowledge about the scientific analysis done and incentivizing further scientific deepening. At the link [10] is a five minute example of this kind.

6 Conclusions

With whatever development it might have, AI can improve the quality of life, as long as humans put scientifically the necessary moral framework of principles that determine these developments. But to be able to do this, humans must eliminate the elements that maintain their misery and prevent them from following the path of virtue. These elements are structural and easily detectable with the simple criterion that they disturb the internal and

external balance or the scales held by the Themis, the goddess of justice (Fig 10).

Therefore, to avoid threats from machines, people should first become educated and build their moral structure on the internal and external balance, as discussed above, to be virtuous, and then create and transfer AI into machines.

Secondly, they should be trained to acquire skills, always aiming to be more intelligent than the machines so that they can coexist harmoniously with the machines and have comfortable access to the labor market.

Further studies may use the proposed ethics to model human error and education methods for self detect to minimize it. Also didactics may create improved methods to help the educated to be smarter than the machine.

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