



EDITORIAL

May Numbers be the Voice of Gods? - May Artificial Intelligence Replace Human Intelligence and Bring Man Back to the Future?

Enrico Giustiniano, MD and Fulvio Nisi, MD

Department of Anesthesia and Intensive Care Units, IRCCS Humanitas Research Hospital, via Manzoni 56, Rozzano, Milan, Italy

*Corresponding author: Enrico Giustiniano, MD, Department of Anesthesia and Intensive Care Units, IRCCS, Humanitas Clinical and Research Hospital, Via Manzoni 56, 20089, Rozzano, Milan, Italy, Tel: +39-0282247459, Fax: +39-0282244190



Knowing the future has been a challenge for humans since the dawn of time. Divination or *Mantics* is an ancient practice based on the idea that humans could ask gods about the future, and it was practiced in two ways. First, a priest, directly in contact with the divinity, interpreted its objective signs. Second, the 'gods' will manifest themselves in a more immediate way, through the words uttered by a human figure directly inspired by the god. In both cases, it was a leap of faith, with only the passage of time revealing the real future.

Nowadays, weather forecasting derives from the collection of a large amount of data related to the atmosphere both past and present, later to estimate the evolution of the atmosphere itself. More than 11,000 observation stations worldwide record data on temperature, air pressure, humidity, wind speed and direction, precipitation and other weather conditions on an hourly basis. Despite such a huge amount of data, weather forecasting is often erroneous but everyone listen it on the media. Thereafter, personal experience is unavoidably important to fill the gap between number manipulation predictability and the "real future", otherwise the people of London wouldn't go outside with an umbrella even though on a sunny day.

Medicine is one of the fields increasingly permeated by artificial intelligence (AI). This is due to the fact that every physician would like to know in advance whether an adverse event will occur or the therapy being administered will be successful.

Nowadays many companies are endavouring to satisfy this desire. Among those, Edwards Live science (Irwin, CA, USA) released the platform Hemosphere™ for hemodynamic monitoring which provides the Hypotension Prediction Index (*Index*), aimed at alerting the doctor of an incoming hypotensive event within a few minutes. This predictive model derives from AI application principles and is based on 23 proprietary model features extrapolated from big data analysis [1]. A few times later, the *Index* was criticized because of the risk of a selection bias due to the exclusion of the range 65-75 mmHg of mean arterial pressure (MAP) from the building process of the model. The main concern was with regards to the possible overestimation of the risk of hypotension and consequently potential overtreatment [2]. But it would occur if the operator blindly follows the alarming *Index*. The Hemosphere™ platform, provides also the classical hemodynamic parameters which can help to understand the cause of cardiocirculatory impairment and aid the doctor in deciding the correct choice of treatment, before the blood pressure drops [3,4].

Blood pressure is the epiphenomenon of the interaction between cardiac function, blood volume and vascular bed. Every time one or more of these three items start to fail, the pressure of the blood on the vessel wall reduces and the arterial pressure decreases. Inevitably, if the compensatory mechanisms which usually work to sustain the blood pressure fail, then



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hypotension will occur [5]. Thereafter, the *Index* could be considered as a marker of an incoming hemodynamic failure. However, it is the clinical skill and physiology knowledge, along with the help of the machine, which will make the doctor to take the best possible decision.

An infallible device or system does not exist to date and everything is improvable. An example of this occurred recently in the Paris underground when a driverless train stopped due to a signaling issue. This resulted from a computer system failure which regulates the circulation of the trains with remote governance. Many people were forced to leave the train after being trapped for hours and walk along the tracks to reach the exit [6]. Would the same thing have happened if there had been a human driver on board or if the control was not wholly computerized?

Similarly, the concern about the risk of blindly following numbers on a monitor is only warranted if doctors do not integrate those numbers with personal scientific knowledge, the clinical background of the patient and the clinical setting.

Therefore, we should not consider AI outcomes like oracles in the past. Those were no-scientific interpretations of Nature and leap of faith. These are mathematics-based tools whose purpose is to help physicians in the interpretation of the current situation in “light” of the past behavior of the same numeric parameters. Then, Artificial Intelligence will not replace Human Intelligence, at least not in the near future. In any case, doctors need to be alert with a critical mind when monitoring patients hemodynamics, and not abdicate in favor of artificial intelligence.

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<https://profesor-ingles-online.com/home-english-teacher-online/>

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