

AI systems in contemporary medical diagnosis: ethical mediation and hybrid hermeneutics

Today's medical diagnostic is complex. It includes a wide variety of components (problem-solving, pattern recognition, decision making, a judgment under uncertainty) and involves the collection of facts coming from the patient interview, the results of laboratory exams, or the clinical examination. Moreover, nowadays, medical diagnostic mostly deals with formalization. As a consequence, intelligent decision-support systems (in further text abbreviated as IDSS) appeared to be a significant component of the doctor's medical reasoning. Said differently, the doctor's decision-making is constituted by the combination of human actions and artifactual behavior. This sort of technological mediation leads to a swarm of ethical concerns that deal with artificial moral agency, distributed morality, technological determinism, etc.

There is a wide variety of different IDSS technologies. In the core of this system lays machine learning (ML) techniques. Today, one of the most popular ML techniques for the IDSS systems is so-called artificial neural networks (ANN) and "deep learning" mechanisms. The most important feature of neural networks is the ability to learn over time. As this comes together, it shows that IDSS possess a certain type of moral agency to define which we need an extended version of the technological mediation that will include agents with a specific type of moral behavior. In what follows, I will name this type of mediation as 'algorithmic mediation'.

The ethical scheme of the IDSS implementation consists of three main elements: the doctor, the IDSS, and the patient. The direction of the moral dynamics may be described in terms of hermeneutic mediation. To oversimplify a little, one may say that at the beginning, the system 'interprets' the patient's medical data and provides the doctor with a 'readable' results about the patient's health. After this doctor, through its general frame of information, interprets the results of system behavior and chooses the best option. As a consequence, the behavior of IDSS influences a doctor's decision-making and possesses a specific sort of artificial moral agency.

In light of the above, the algorithmic mediation has many similarities with its hermeneutic counterpart. The latter, in term of Don Ihde, has a significant 'epistemic' component. The 'readable' results of technological hermeneutic influences our knowledge about the world, and so affect our scientific worldview. Algorithmic mediation also includes this 'epistemic' component; however, in this case, such an 'epistemic' component has a sharp ethical incline. Without information, there is no moral action. In other words, every agent to act morally needs information. The quality, amount, and accuracy of the information in question influence an agent's decision-making and hence, transform its moral behavior. The case of contemporary technologically mediated diagnosis stands in the front line of moral decision-making.

Consequently, one may suggest that today's AI systems in medicine represent another side of the hermeneutic mediation, namely, hybrid hermeneutics. I call it this way because the hermeneutic mediation, which these systems possess, leads us, on the one hand, to epistemic (scientific) discoveries, while on the other hand, expands the horizon of our moral norms and ethical behavior.