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MA23c

The data we analyzed is generated from a population simulation which is programmed to take into account different variables such as its environment like food or number of predators and prey as well as the organism’s genes and alleles and how that contributes to its survival. Although less sophisticated, the ethical implications of our simulation resonate with many of the ethical quandaries we face in the modern world as technology advances.

In general, the ethical discussion surrounding models and simulations is lackluster. While models and simulations can be extremely useful and informative, they are not infallible and are heavily influenced by who develops them. It is becoming clearer that models and simulations are the future; however, without a serious discussion about the use and reliance on models and simulations, the potential ethical implications of the aforementioned become infinite and daunting. Chiefly, many are concerned about how models and simulations might be used in order to justify or influence decision-making, particularly since many of these models and simulations are being designed for health care. Inequity and social injustice are hard to capture in such models and one of the ethical issues at the core of health care is choosing between maximizing health care efficiency or giving equitable health care. This is reflected in the pharmaceutical industry where corporations are motivated to develop drugs to combat illnesses that affect the most amount of people and rarer illnesses remain ignored. Chiefly, the main concern is how these simulations could be used to influence or justify decisions.

Another obvious consideration is the tracking of genes. For one, in order to model and simulate any of the data, we would need genetic tracking. Big data and privacy issues are ethical issues that remain at the forefront of the news and politics. Genetic tracking has huge ethical implications in terms of privacy and the violation of GINA (the Genetic Nondiscrimination Act of 2008) and HIPPA. Furthermore, a simulation like ours tracks generations of populations which leads to the issue involving eugenics, gene editing, and genetic discrimination. Technologies like CRISPR have allowed us to enter into the world of gene editing and genetic screening. Although prenatal screening for genetic defects in babies has become a common practice in health care, many consider the termination of a child with a genetic defect to be genetic discrimination and immoral. Gene tracking and the ability to edit genes coupled with a simulation like ours could lead to a problem in the future with eugenics. Nevertheless, our simulation would be informative to many fields like health care of climate policy and useful to track evolution which is the natural process of getting rid of unfavorable traits.

In conclusion, everything has many ethical implications to consider and as the world and technology become more complex, interoconnected, and sophisticated, more ethical issues arise. We were particularly interested in delving into the ethical implications of our simulation and data in the terms of the responsible use of such simulations and data as well as in health care; however, we are sure that there are many more and hope this sparks the discussion of the ethical implications of models and simulations as well as big data collection and genetic tracking.