

# Radu's Rides: A Lesson in Humility

**Radu Craiu writes:** The ancient Greeks believed that a philosopher's most impactful work happens in the *agora*: debating endlessly, correcting misconceptions and solving problems for their peers. Among STEM-ers, statisticians and data scientists are the ones who align the most with this noble tradition by virtue of dealing with data, the most valuable currency of our times. This allows us to tackle some of the world's most pressing issues: exploration of the large (astronomical) and small (molecular) universes, health and socio-economic studies, making predictions for pretty much everything under the sun (or on it!). At least, this was the situation until a few months ago, when one of the biggest threats to humankind materialized as an invisible, yet incredibly vicious creature.

There is no doubt that a trip to the *agora* of our times would reveal that the questions haunting our fellow citizens concern the COVID-19 pandemic: how contagious it really is, what is the mortality rate across age groups and health conditions, what is the best strategy to safeguard the well-being of a society as a whole, and so on. Some of these questions clearly belong to the domain expertise of a statistician or biostatistician while others involve political, philosophical, economical, psychological, and sociological considerations which cannot be answered by merely inspecting the data. The last time the world felt a threat of this reach and severity was during World War II, and that was also a time of great impetus for developing statistical thinking and methods. A question that begs asking is, *will we rise to the challenge once again?*

The inquiry is relevant also because this particular crisis placed a large onus on statisticians, or if you prefer, data scientists, to sort out the mess. The world needs answers and there is a large consensus that many will likely come from data. Alas, there is a fly in the ointment: some of the data are unreliable and most of the data are dark (see David Hand's book, *Dark Data: Why what you don't know matters*). There is little in a statistician's arsenal to use when so much of the truth is hidden. Methods predicated on the idea that answering questions is just a matter of dipping our hands in a bucket of informative data are certainly not of use here—worse, they may mislead. In this case, the idea that tomorrow is a replica of any day more than one month, or even a week ago is certainly passé, and our missing data mechanisms cannot come close to what we are currently witnessing. This is a very large lesson in humility that we, as a professional organisation, should pay heed to. Much has been said these days about how the world would never be the way it was. Every century or so, humanity goes through yet another loss of innocence that triggers pledges of fervent devotion to changing the ways of the world. One can be skeptical about ultimate success, but one should never stop trying.

Predicting the world's future priorities is a dangerous game and should be played carefully. But for the sake of discussion, let's speculate where we're going from here:

1. It is becoming increasingly apparent in this deepening crisis that our record keeping is vastly unprepared for the pace and scale of the spread. In this digital world, it is almost ironic that we have a hard time figuring out who got in touch with whom. Is this the event that will force the world to trade privacy boundaries for more accuracy and speed in data collection, as we already see in some countries (see <https://www.bbc.com/news/world-asia-51733145>)?
  2. Will the sobering realization that health truly matters most push governments to channel massive funding towards disciplines directly related to fighting the next virus-induced global crisis that we all know is waiting in the wings? And if so, how will we mitigate the sacrifice of other disciplines and their potential to serve in other global challenges that we cannot foresee?
  3. As I write this, prominent world leaders have sent mixed messages around the false dichotomy: save lives or livelihoods? To put it in more crass terms, should we sacrifice the economy by plunging into a deep recession, possibly a depression, or the lives of those who will perish if a stringent lockdown is not imposed? With questions like these we open serious ethical and moral dilemmas. The risk inherently implied by the two paths or their various variants, is not only vastly asymmetric but, given the uncertainty around us, essentially impossible to compute. The black swan of COVID-19 is spreading its wings and is darkening the future in ways we have not seen in more than 100 years. Will the researchers of tomorrow take more seriously the fact that many statistical or economic models cannot be disentangled from ethical, moral, or political questions?
  4. When the world burns around you it is hard to work on anything else but a top-notch extinguisher. I wonder how many of us feel a certain detachment from their old passion projects and how many will take on work related to the challenges we are going through now. [See the article on the following pages!] This reaction may be blamed on the atavism deeply buried in all of us which is not necessarily wrong. But then how do we save ourselves from consuming only one kind of passion fruit, thus overlooking the fact that only a balanced diet can protect us in the future?
- Traumatic periods in a person's life have long been responsible for changing trajectories due to their eye-opening qualities. Similarly, I know that the scientific community will start an introspection process that will take into consideration the fundamental litmus test that has emerged these days for our ideas and methods: *are you willing to bet your life on it?*