

The science of uncertainty

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The disruption caused by the coronavirus pandemic has now affected most aspects of life for an immense proportion of the world. From health to economics, jobs, moods, routines and communication, everything has been touched by a tiny 200 nanometer particle consisting of only a single piece of RNA and its envelope. Among these changes, science has acquired an unprecedented level of attention from outside its own community. Those who might have never even heard the words “genetic material”, became suddenly eager to learn about viruses, the immune system and vaccine development. Nevertheless, **being in the loop does not come free of responsibility or criticism**, and we now encounter the need to put this new found interaction between scientists and the general public into perspective.

This Student Focus piece represents the views of the writer. Having a society desperate for answers has resulted in a double-edged sword. On the one hand, there has been an opportunity to reach a number of people otherwise unreachable through social media, TV and radio, amid other channels. However, on the other hand, no matter the volume of data produced, it did not appear to be enough to satisfy the audience. Such an insatiable demand for information has ended up fuelling the generation of a lot of content, both high quality and low quality, with the latter being the main reason for concern.

Science, unlike many forms of religion, does not portray itself as all-knowing. Thus, it seems pointless for individual scientists to do so, particularly, in light of knowing that far-fetched statements tend to be amplified by the press.

Then, it would appear to be unwise to become overly clear-cut or vehement when communicating with non-scientists or those outside the scientific community. When doing so, we are inevitably inducing society to incur in a *fallacy of authority* by asking it to believe in scientists without actually making the effort of explaining the evidence. Moreover, what happens when new findings contradict a previous fervid statement? Suddenly, the scientific community looks inconsistent. By having a different,

more empathic and considered approach, science could easily avoid this strike in trust. Of course, this includes both scientific statements and what the media interprets, publishes and sells.

It cannot be stressed enough that **not being omniscient is not a weakness**. The primary point of research is to find and explain the unknown, which would be purposeless if everything was already known (obviously). Yet, dealing with communicating this uncertainty has proven itself quite complicated, especially in the context of so much pain, suffering and anxiety the coronavirus pandemic has brought. The lack of explanations, answers or the capacity to decisively predict the future has left a space which should be filled by trustworthy information as it emerges, but is sometimes clogged by questionably low-quality content such as fake news and conspiracy theories.

“...not being omniscient is not a weakness...”

Is there anything that can be done to combat this? It seems pretty clear that downgrading science to a level of irrational debate would be pointless. Overselling or vigorously preaching science as infallible would be unfaithful to the nature of science itself. In my own personal opinion, it would be far more valuable trying to install uncertainty as a challenge rather than a burden, and science as society’s tool to confront said challenge. Only then, **what may be perceived as a weakness could be turned into a strength**.

“Uncertainty is a challenge rather than a burden, and science is society’s tool to confront said challenge”

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