

Editorial

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The science of yesterday, today and tomorrow

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On the 150th anniversary of the original publication of NATURE magazine, Philip Ball, a former editor of and contributor to that prestigious English language publication, wondered about what the scientific contributions of humankind have been since 1869, are today and should be in the future. This is a worthy and timely subject to deal with by all those who care about our planet at large as a unique niche of life in the universe. In addition, given the precarious state of our biosphere, it behooves us to address what role we humans have played, are playing and may play in an uncertain Earth’s future while still practicing this unique privilege called science.

The crux of the subject that Ball addressed is summarized on the following quote: “Some of the key questions that confront science today are about whether its methods, practices and ethos, pursued with very little real change since Maxwell’s day, are fit for purpose in the light of the challenges — conceptual and practical — we now face. Can science continue to fulfil its social contract and to reach new horizons by advancing on the same footing into the future? Or does something need to shift?”^a

Of significance in this paragraph is, of course, the “something (that) need to shift”. What is that “something”? The vastness of the subject of science prevents any commentator to be exhaustive in rendering a focused and balanced analysis of the advances and the many unknowns waiting to be “discovered” by the sciences. However, this enormous task should not prevent observers and practitioners like us, at the risk of being wrong, from, first, parceling out segments within the sciences that deserve criticisms while, when warranted,

offering probable candidates to “the something” that Ball refers to in his elegantly constructed analysis.

Philip Ball addresses what is wrong in his view with the way science is practiced. He claims that all along it should be “acknowledge(d) that there are assumptions embedded, often invisibly, in the way we develop models, deploy metaphors, apportion priorities, recognize and reward achievement, and recruit participants that must be questioned.”

He is getting closer to identifying “the something” (at least in the biological sciences) when he states that “... It might be that the genome tells us no more about how an organism builds and sustains itself than a dictionary does about how a story unfolds”.

Finally, he offers an alternative to his “glass half-full” assessment of the current state of the practice of science by suggesting that in the future “the something” might be resolved by replacing current approaches to answering basic questions. From our perspective, we identify “the something” with a variety of reductionisms underlying current research in biology. As an alternative, what about giving a chance to organicism as a productive way of answering “...what is life? What is consciousness? What makes individuals who they are? Why does our Universe seem fine-tuned for our existence?”

As wisely suggested by Ball, it will take “creative and diverse thinking” to replace the current “something”. We trust that organicism will do it...

^a Ball P. Science must move with the times. NATURE 575; 29-30, 2019