

The Limits of Science

We have been very wrong in the past

History is riddled with examples of scientific error. We have started with wrong premises, made mistaken assumptions, misread data, relied on biased perceptions, and worked within a field still too “embryonic” to fully grasp the nature of our experiments.

Sooner or later, faulty theories must be discarded in order for whole fields to advance. Common human cognitive distortions — selective perception, confirmation bias, vested interest, politics, competition for status and accolades, cronyism, and fear of change — tend to interfere with this advancement.

The history of science is littered with dichotomies that arose from some person or group’s intuitive stab in the dark, or within a context of limited or biased empirical data. These dichotomies often produced violent debate in their time but fade quietly as their conceptual underpinnings are found inadequate to model the complex phenomenon found in newer, rigorously gathered data. Unfortunately, it is the debate that sticks in the public consciousness.

These debates could go on in the same vein indefinitely— but the past century of breakthroughs has brought us to a completely new level of paradox and questions.

- ▼ ***Technology and science have been used for narrow political purposes, needlessly causing havoc and destruction.***
- ▼ ***Science and technology do not solve problems in and of themselves; rather they are essential tools for understanding problems and seeking effective solutions.***
- ▼ ***The Press often whittle down scientific concepts and advances into soundbites for the public, ignoring nuances and spawning unnecessary backlashes and polarization.***
- ▼ ***Over the last two decades, policies enacted by anti-science legislators have undermined or overturned many established standards for evidence in governmental agencies responsible for public health, environment, education, worker safety, emergency protocols, prevention, social services and justice.***