

Friday June 22, 2012

Scientific research goes beyond utility

I REFER to the letter ([Sunday Star, June 17](#)) by Marisa Demori asserting that the quality of research is ultimately determined by its utility. By this reasoning, only research that promises practicality or consumer convenience deserves to be supported.

Perhaps Demori has confused Research (R) with Development (D). We are so used to seeing the term “R&D” being bandied about that we often confuse one with the other.

Scientific research is activity that uncovers facts and truths governing the operation of natural laws. On the other hand, development in the R&D context is the application of science to advance technologies for industrial or commercial purposes.

The latter is the “utility”, “practicality” and “convenience” that Demori speaks of.

R and D are conceptually linked, but they are quite different nonetheless.

The general idea is for research to broaden our understanding in science, and then to harness the new knowledge (the “Development” part) to bring about novel applications and technologies.

Scientific research satisfies our natural curiosity to understand the world around us. Hence, by its nature, research does not always lead to application.

For example, it is difficult to see how the exciting images of distant galaxies produced by space telescopes can be put to practical use. Even where scientific research does lead to successful application, its realisation may not be immediate.

In 1771, Galvani observed that static electricity caused a frog’s leg to twitch. Had Demori been Galvani’s patron, this is precisely the type of research that would have been axed.

Of what imaginable utility is research on a twitching frog’s leg? Yet more than a century on, Edison invented the commercial light bulb powered by electricity.

Edison was the quintessential “Development” man who made no cutting-edge scientific discoveries himself, but amassed more than a thousand US patents in his illustrious career. He found application for the research findings of Galvani and the many others who followed in their research on electricity.

The early scientists anticipated neither utility nor consumer convenience as reward for their research efforts.

Back in those days, no one could have imagined the immense opportunities in technology that electricity would unleash in the years to come.

If, today, we rebuff fundamental research that we cannot imagine a practical use for, we would be all the poorer in scientific intellect. More than that, we would never know what unimaginable opportunities in new technologies we would be missing.

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