

Why journalism is failing the scientific age

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“Whenever you can, count.”

Unfortunately the vast majority of South African journalists and, dare I say, very few editors, fulfil the British scientist and statistician Francis Galton’s wish. If you want to count and interpret your world, whether it is by analysing the variables of the population, HIV statistics, the percentage of line-outs Victor Matfield has won in a match, how serious and how soon climate change will alter our water-scarce world, or any other statistical interpretation, at least you must be scientifically and numerically literate – which South African journalists are not.

The glaring and unpalatable truth is that not even one South African media institution, whether it is newspapers, radio, television or the Internet, has any logical and organised reporting structures in its newsroom to report accurately on science and technology.

Not even one South African newspaper or broadcasting station has a formal science desk headed by a science editor and with a team of well-trained science reporters. Newsrooms employ political editors, arts editors, sports editors, financial editors and life-style editors in abundance. Yet science, the most important field to change the circumstances of poverty and uplift communities in developing countries, is quite often ignored or just covered haphazardly.

Reporters with no experience in science, no understanding of statistics or the faintest idea how the scientific method works, what a scientific theory is, why peer review, observation, experimentation and independent verification of scientific evidence are non-negotiables in science, flourish in their ignorance in newsrooms and their editors are not able to even see the mistakes they make – because they are scientifically illiterate themselves.

It was not always like that. When the Titanic struck an iceberg in

April 1912, the famous managing editor of *The New York Times* between 1904-1932, Carr van Anda, analysed the first reports that the ship would still be afloat despite the gaping hole in its hull. His numerical literacy enabled him to calculate that the ship must have sunk within hours. His paper was the only one to report that the Titanic had sunk – others still believed the myth about its unsinkability.

Then there is the famous story when Albert Einstein first visited Princeton University and a reporter came back to the newsroom from New Jersey with an equation the world famous scientists wrote on the blackboard when giving a guest lecture.

Van Anda immediately saw that the equation was not right and persisted that Einstein be phoned to confirm he had written it as the reporter had noted it. When Van Anda at long last succeeded in getting hold of Einstein, he confirmed he had written it incorrectly on the blackboard.

No one would expect an editor to have these scientific literacy qualities in modern journalism today. Political astuteness, yes, good writing skills, also, managerial qualities, but please do not expect too much from him or her when it comes to understanding science and interpreting it.

In the early days of journalism, journalists were often compared to the Greek mythical hero Prometheus who stole fire from the gods to bring this vital piece of knowledge to the people.

Unfortunately editors have replaced the fire of basic knowledge that journalists should bring to the people with the burning desire to feed the masses with information about Paris Hilton, about celebrities and royalty, their sex lives and where they dined last night with whom.

What is the result of this total neglect of scientific news and the frenetic pursuit of *Paris hiltonitis*?

Let’s look at just one example, so starkly illustrated in 2009 when Charles Darwin’s birth 200 years ago was celebrated in the scientific community.

Enough scientific evidence exists to support Charles Darwin’s theory of evolution. This is a rather straightforward fact among reputable scientists who do not even debate the veracity of the statement put in 2009 to more than 10 000 adults from 10 countries by the British Council’s *Darwin Now* survey. The countries included Argentina, China, Egypt, India, Mexico, Russia, South Africa, Spain, Great Britain and the US.

In not even one of the countries more than 50% of the population believe that enough scientific evidence exists to support Darwin’s theory, formulated 150 years ago in *On the Origin of Species*.

Among the countries surveyed, the best informed populations about the overwhelming evidence for evolution as a scientific fact are Great Britain and Mexico (just above 45%) and China (39%). Only 12% – one in eight of the population – of South Africans believe that evolution is a fact, just beating Egypt in the race for being the most ignorant about science among the 10 nations.

How is it possible that probably the most important scientific discovery ever developed could still be so misunderstood and distorted by the general public? When Darwin’s theory, proven in thousands of peer-reviewed scientific publications through 150 years of research, first appeared in 1859, it became a “universal acid”, so “corrosive that it will eat through everything”, as the American philosopher of science, Daniel Dennett, described it in his book *Darwin’s Dangerous Idea*.

The reason for this ignorance about evolution must, unfortunately, largely be laid at the door of the media.

Various research studies have overwhelmingly shown that the serious neglect of science journalism in the media – very notably also in South Africa – to report the facts about evolution boldly and not to relent to pressure of creationists and the intelligent design movement to report that evolution is “just a theory”, leads to this ignorance in society.

In an extensive national study I undertook between



2000 and 2009 to determine the relationship between scientists and the media in South Africa, the Grand Canyon of distrust between journalists and scientists was very clear.

When you study the structures of the media in South Africa, one glaring fact about science reporting stares you in the face: the only two fields in science getting at least some regular exposure in the local media are environmental matters, mostly because of the dangers of climate change which can no longer be ignored, and health reporting.

Technological innovations are mostly put in business sections of newspapers and as part of financial programmes on radio and television.

Yet, if South Africa wants to compete with the best and become a nation solving its immense unemployment and unskilled workforce problems, our media should do better in the way we report on science.

We quite often only give attention to science when some medical "breakthrough" with bold headlines is announced, only for scientists to caution us that it was no breakthrough, rather preliminary results that have to undergo further research.

The measles, mumps and rubella medical scandal in the UK flourished mainly because journalists failed to interpret the fact that Dr Andrew Wakefield's study was fatally flawed and far too small to make any link between the MMR vaccine and autism.

Recently, after a year-long battle against the pseudoscientific claims of the British Chiropractic Association who took him to court for libel, the scientist Simon Singh at last won an important victory against pseudoscience in a British appeal court.

South African editors, like their counterparts in other countries, quite often do not know the distinction between textbook science and frontier science, treating the latter, despite its high level of uncertainty, as if it is textbook science. And pseudoscience flourishes in the media, often propagated as real science.

The time has come for editors to appoint informed science editors, and, secondly, not to let any reporter loose upon an ignorant public when science and technology news is being reported.

You do not send a rookie to a political gathering, an opera, or the Minister of Finance's budget speech. Why ignore science so blatantly?

It is easy for editors to blame the pseudoscientific thinking of former health minister Manto Shabalala-Msimang and former president Thabo Mbeki for the disastrous HIV/Aids figures in South Africa. But what is the share of South African editors in the dire figures of scientific ignorance our population regularly show in international surveys?

When Darwin's theory became known and the wife of a bishop in the Church of England realised how dangerous evolution would be to the world-view then accepted for nearly 1 500 years, she exclaimed: "Oh me dear, let us hope that what Mr Darwin says is not true. But if it is true, let us hope that it will not become generally known!"

It is the media's duty to inform their readers, listeners and viewers about the facts of science and to understand those facts ourselves. If for 150 years we could not even get the message right about an established scientific fact like evolution, no wonder people with HIV/Aids believe in quacks and natural healers and brewers of concoctions that endanger their lives.

"It is not so much knowledge of science that the public needs as a scientific worldview – an understanding that we live in an orderly universe, governed by physical laws that cannot be circumvented," the American scientist Robert Park wrote in his book *Voodoo Science – The Road From Foolishness to Fraud*.

The silence of South African editors to heed a recent call by the South African Science Journalists' Association to reform newsrooms to include science editors and trained science journalists, unfortunately fell on deaf ears.

Paris Hilton 1, Prometheus 0.