Hyping up science

Science when hyped loses credibility. Two separate incidents in a span of three weeks show how scientists who hype up and sensationalise their work end up diluting the significance of their discovery. In a paper published online in the *Science* journal in the first week of December ("A bacterium that can grow by using arsenic instead of phosphorus" by Felisa Wolfe-Simon, *et al*), authors from the National Aeronautics and Space Administration (NASA) and other institutions report that a particular bacterium isolated from California's Mono Lake was capable of substituting arsenic for a small percentage of phosphorus and still sustain its growth. This is a most surprising finding considering that arsenic is a toxic element and is not one of the six elements — carbon, oxygen, hydrogen, nitrogen, sulphur, and phosphorus — that make up most of the organic molecules in living matter. Days before publication of the paper, the worldwide web went wild with speculation about extra-terrestrial life. The reason: a media advisory sent out by NASA on a press briefing "to discuss an astrobiology finding that will impact the search for extra-terrestrial life." In consequence, most media reports following the publication of the paper dwelt on the issue of extra-terrestrial life. It turned out that the paper did not discuss the possibility of life outside Earth; nor did the accompanying news item published in the journal propose anything of the kind.

The second instance of hyping up science relates to a press release from Tel Aviv University. According to this, the earliest evidence of existence of modern humans has been found in Israel, predating evidence found in Africa by about 200,000 years. The conclusion contradicts the prevailing view of human evolution and migration out of Africa. What followed was sensationalist media coverage of an otherwise stodgy work of purely academic interest. The paper, which reports the morphological analysis of human teeth recovered from Israel's Qesem Cave, was recently published online in *The American Journal of Physical Anthropology* ("Middle Pleistocene dental remains from Qesem Cave [Israel]" by Israel Hershkovitz *et al*). The paper says the teeth cannot be conclusively identified as belonging to modern humans (*Homo sapiens*) or to Neanderthals or to other human species. While the journalists can be faulted for oversimplifying and hyping up the findings of science, the deliberate misleading of the media and the public by some scientists and their institutions must be condemned. Such acts by a few take a heavy toll on the credibility of science.

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