When seeing is no longer believing

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Artificial Intelligence (AI) is polluting the world of science. Online teaching and reference resources are suddenly being populated by images of imaginary microbes, machinery full of mistakes, and human bodies that don't work. The shiny artwork is glistening, organic, voluptuous and detailed. But it's fake: it is too perfect to be real, cautions Brian J Ford.

We have always believed that, in science, the photograph proves the point. The new invasion of photorealistic imagery without a hint of truth has ended that convenient reassurance. This erosion of pictorial authority is a genuine threat to scientific integrity, and is already perverting the world of teaching.

The web is beginning to spread images of fabulously realistic impressions of machinery that cannot function, cells that defy cytology, like those human bodies that break all the laws of anatomy. It is an invasion, and one we need urgently to recognise. The future of science is at stake.

Ask image generating software to show how an engine works and it will produce something that looks breathtakingly magnificent, with a beautiful and bewildering array of exquisitely engineered components, oily, glistening, and convincingly realistic. But look closely at the image posted by kwiponline; the camshaft is identified the cylinder head, the cylinder has become a piston, while the inlet valve is now the timing belt, and is twisted at right angles so it no longer fits into place. It is a photorealistic absurdity.

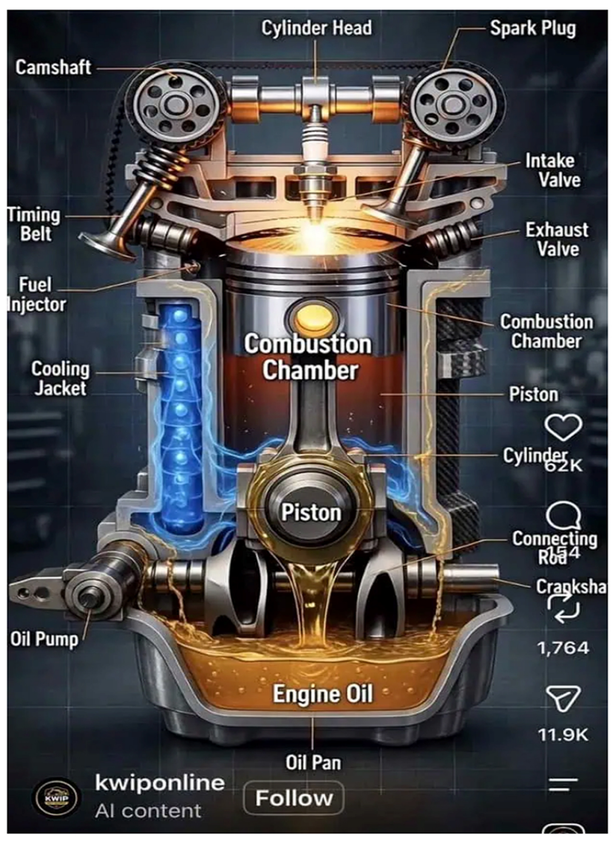


Fig 1: Perfect metallic highlights and glistening engine-oil mark out this vivid image from kwipoline. But the oil pump is a bearing; the inlet valve is twisted outside the engine (and labelled as the timing belt), a pulley has become the spark plug and the camshaft is renamed the cylinder head. Such photorealistic imagery is created by artists who are ignorant of mechanics

An amoeba is something we all remember from school, with its pseudopodia exploring its environment as the cell gently glides across the slide. This micrograph of an amoeba by the Canadian microscopist Robert Berdan records its organic translucence and the subtlety of its pseudopodia with eye-catching clarity.

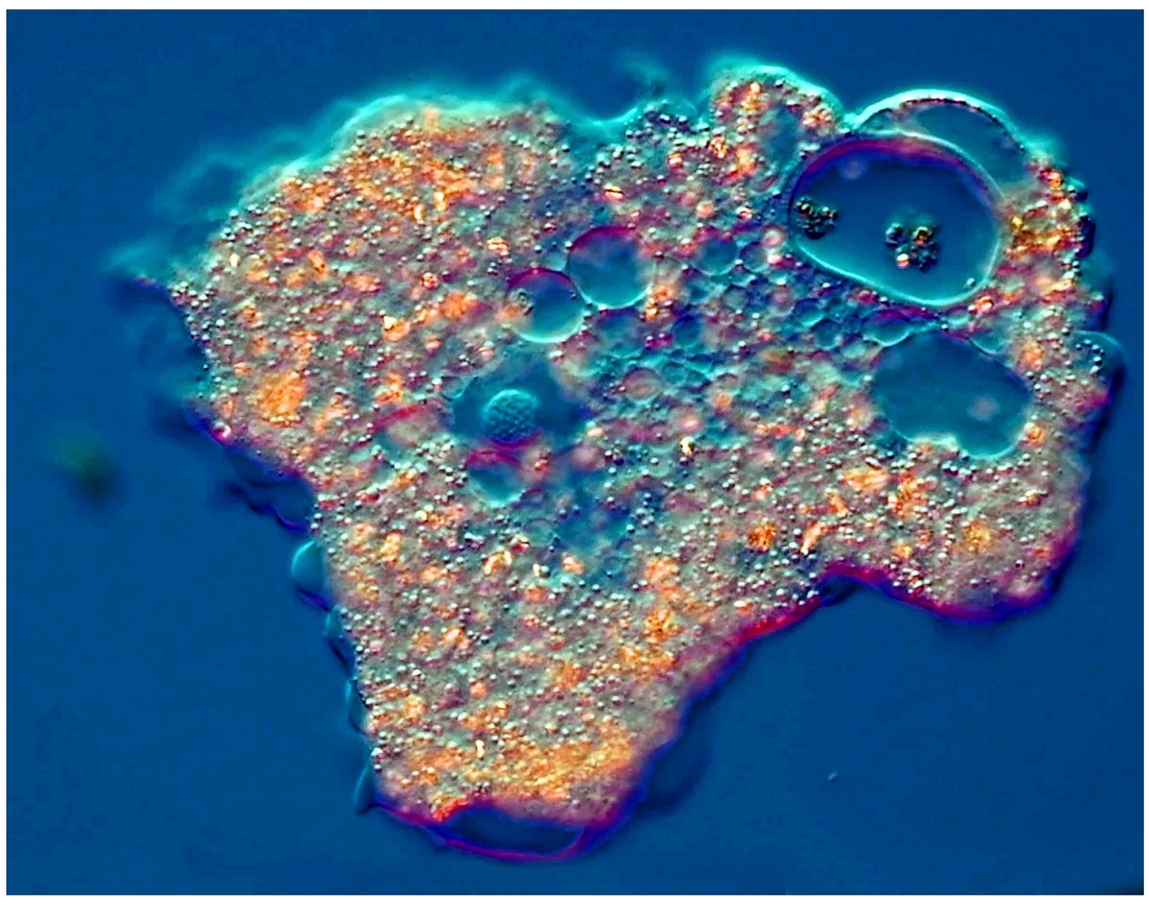


Fig 2a: This micrograph of an amoeba by the Canadian microscopist Robert Berdan records its organic translucence and the subtlety of its pseudopodia with eye-catching clarity.

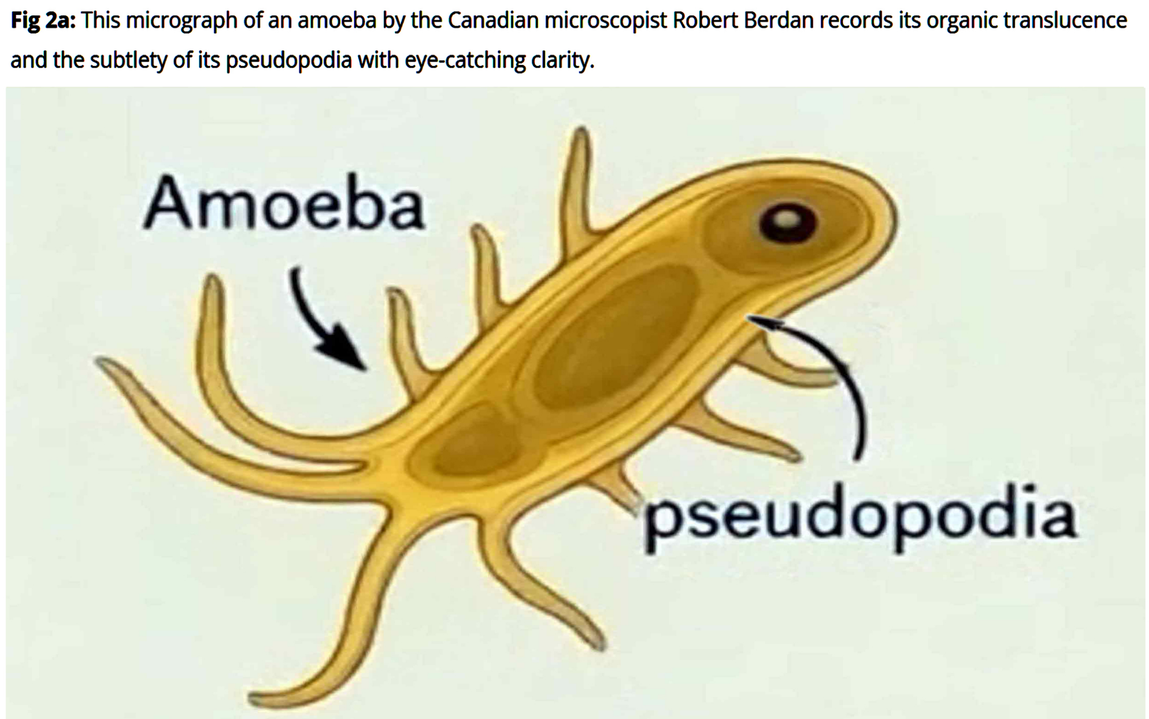


Fig 2b: Amoeba is simple enough to draw, but by the time mtishtech_international get hold of it, this protozoan becomes a swimming fish with fins, and something very like an eye.

Should you want to learn more about it, you might turn for inspiration to the mtishtech site, offering 'Online Math & Science Tutors, Helping Students Learn & Excel.' There are no pseudopodia on their amoeba. Instead, it has fins which jerk like limbs, making it dart about as it swims, like an uncoordinated goldfish.

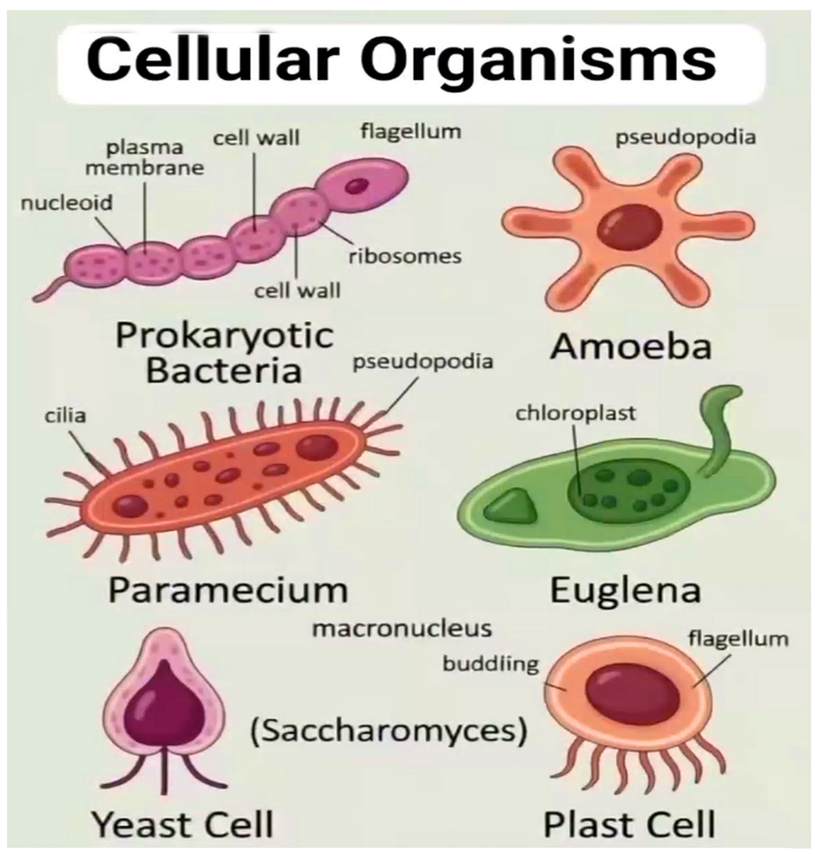


Fig 3: With *Euglena* looking like a cheese platter, yeast adopting three legs and a bulb-shaped body, and a 'plast cell' about to run off like a woodlouse, this plate contains nothing but errors.

This mtishtech view of microbial life is startlingly original, with a 'Plast' Cell (plant? blast? Who can be sure?) like a one-eyed spider, a yeast cell like a daffodil bulb, *Paramecium* looking more like a squished woodlouse, with their strand of prokaryotic bacteria (all bacteria are prokaryotic) looking more like an eager caterpillar.

Microscopic organisms that simply do not exist are suddenly appearing everywhere online. The microscopicworld28 pages are littered with remarkably photorealistic images of faked microbes. Their version of *Daphnia* has no heart, while their *Hydra* has fictitious, tapering arms that wave about like no *Hydra* ever does. A rotifer on their site looks astonishingly vivid, until you notice that it has four posterior bristles and lateral appendages, which are features no rotifer has anywhere in the world. Yet students will learn this as real (the masthead admits they're featuring 'the things you were never meant to see').



Fig 4: A remarkably photorealistic bdelloid rotifer features on the microscopicworld28 site, yet it has non-existent appendages, a fictitious posterior bristles, and it has no mastax at all.

You might smile at the images on medicine_today_net – they have a coliform bacterium skittering about as a mouse on a doormat and covered with bristles, like a hairy caterpillar. Their bizarre picture illustrating a leukocyte intercepting a bacterium looks like a rubber kitchen glove grabbing a spiky ryebread roll.



Fig 5: Medicine Today hosts a video of coliform bacteria scurrying about like beetles, and showing this glove-like leucocyte seizing a germ. They do, though, admit that it's an AI image.

It lacks all the organic translucence of a living cell, while their bacterium looks solid and inflexible, quite unlike the flickering motility of real bacteria. Yet I can almost forgive them. Alongside the image is a disclaimer: 'AI generated image for illustration purposes only'. That might not win a prize for grammatical succinctness, but at least it's honest.

A scientific illustration has traditionally been seen as an interpretation of personal observation. AI-generated images, in contrast, will be a distillation of words, statistical patterns and countless online pictures. AI does not know that a particular organ must connect to a specific vessel. It does not understand that a microorganism has to obey the constraints of cell biology. It does not realise whether an engine will actually run.

We are accustomed to detecting fakery by looking for something obviously wrong, though AI changes the game. An eye-catching computer-generated image can contain no obvious error while being fundamentally impossible. Only the author's integrity can set us right by informing us that AI created the result, and it is high time that all such images were visibly identified as such.

On 2 August 2026, the EU passed a regulation requiring the identification of certain AI systems and AI-generated content under Article 50 of their Artificial Intelligence Act. These rules are now being enforced by the European Commission's AI Office and national authorities are expected to comply. That will work well for their bureaucratic reports and administrative documents, so now I propose that we have something similar to cover scientific imagery.

When AI is involved, we need to know. If a publication insists that they don't want AI in any written submission, then authors should be told whether AI is involved in a manuscript's appraisal. If you cannot resort to using AI in a job application, you should be told whether AI will be used in screening those who apply. And, if we see an astonishing microbe, or a gleaming engine, a vivid anatomical image or some surgical procedure, then we also need to know whether AI created the images.

The problem is real. A recent survey in Boston, Massachusetts [1] reviewed some 1,500 AI images of surgery on the hand. They showed that 99.8% contained fakery or fiction. Only three of the images were accurate. When Henry Gray published the 1860 edition of *Gray's Anatomy* it contained 363 superb woodcuts – not one contained an error.

AI may be a miracle of our age, but it can create as many problems as it solves. Currently it is being used to falsify our scientific future, and that has to stop.

Main pic: Chokniti Khongchum

Notes

[1] 'Limitations of Artificial Intelligence Generated Images for Hand Surgery Patient Education' October 2025
https://pubmed.ncbi.nlm.nih.gov/41141329/