

Conformists

At a recent scientific meeting, a speaker at a small workshop session caused me to stare in surprise. I did so not because of anything he had said, but simply because he was dressed in an impeccable three-piece suit and tie. It later became clear that he was a medic who had rushed to the meeting from work to give his presentation on time. Nevertheless, with his sartorial elegance he was obviously 'out of place'—all the other scientists attending the meeting were wearing a different 'uniform': a limited wardrobe in which jeans, colourful shirts and t-shirts were dominant, with the occasional jacket for those who were giving a talk. This casual style of clothes might suggest that scientists are 'cooler' and more relaxed than other professionals, but this seemingly carefree choice of clothes conforms to group pressure in just the same way as the obligatory suit and tie among medics or bankers—scientists are less free than their tree-free image suggests.

I often find myself altering my 'uniform' depending on which persona I am inhabiting: when I am acting as a manager of science, I reach for the suit and tie; when I am about to attend a scientific or group meeting, I dress casually. The same conformism extends beyond dress codes. I know of only one senior scientist with a Mohican haircut and only a few who have retained their ponytails from the 1970s. Also, despite their growing popularity, there are few tattoos and almost no piercings visible amongst the scientists I meet. It seems that even younger scientists take care to conform to the overall image of the scientific community.

One could note that it is not important how scientists dress but rather what they do. However, the conservatism actually goes deeper than simple dress codes and does affect our work. Most research groups have been using the same tools to study the same organisms to answer the same questions for a long time. They are tied to *Saccharomyces*, *Drosophila*, *Mus* and the other model

organisms for good scientific and historical reasons. But often the single biggest reason to focus on these animals is because everyone else does so and the results are more readily accepted for publication. It inevitably makes you wonder what we are missing out on by ignoring most of the richness and diversity of life; the great insights that came from working on two different yeast species are just one example of how diversification can enrich research. Similarly, much of the groundbreaking work of Elizabeth Blackburn in the late 1980s, and Tom Cech in the early 90s, which led to the identification and characterization of telomerase, was conducted in the ciliates *Tetrahymena*, *Oxytricha* and *Euplotes*.

Yet, ingrained conformism makes it hard to work on any organism other than the 'official' models of life. When it comes to awarding grants and allocating money, reviewers tend to be conservative and funding therefore stays within the confines of safe systems. Even if someone tries to publish exciting results from a different organism, referees and editors might advise the researcher to send their work to a 'more specialist journal'.

Many years ago, my group worked on Atlantic salmon—one of the few organisms that is able to move from freshwater to saltwater and back again. The physiological changes that occur when the fish moves to a distinctly different environment are an interesting and challenging scientific topic, but I found it difficult both to obtain funding for the project and to publish my results in non-specialist journals. At one point, I also became interested in the organization of globin genes in salmon because—unlike in humans and other model species—the α - and β -globin genes are neighbours on the same chromosome. Yet, despite the general challenge to understand how the expression of these genes is coordinated, and that an analysis in salmon might contribute to the overall picture, it was not possible to get funding for this work.

This is surely not the only example; I am sure that many other scientists have found it hard at times to gain support for their work simply because their approach challenged the conformism of their community. Of course, some conservatism is natural, but as long as scientists are unwilling to stray into unknown terrains of knowledge they perpetuate their own conformity and lose the richness that comes from diversity.

Scientists are equally conformist when it comes to reading papers and submitting their work for publication. I suspect that few scientists actually sit down with a printed journal and browse through its pages anymore; in this era of the Internet, most scientists simply download the papers they are interested in after a Google or PubMed search. Nevertheless, when submitting their work for publication, most scientists will go to a well-known journal in the belief that their paper will be more visible—even though the use of search engines means that papers from smaller journals are found and downloaded just as frequently. Moreover, a journal that is only published online has to convince authors of its worth because they worry that the journal—and therefore their 'paper'—does not really exist if it does not come out in print and on paper.

It is rather ironic that most scientists regard themselves as free-minded individuals but often spurn diversity. The dress code is, of course, trivial; but too much conformism means that we are missing important opportunities to gain new knowledge. While it is important to stay critical, scientists, policymakers and funders should endeavour not become too conformist. After all, many 'weird' ideas—from quantum physics to prions—turned out to be true and provided enormously enriching insights.

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