

Molecular biology—what's in a name?

When we are born we are given a name, and most of us can easily live with the one our parents chose for us. Only occasionally do we come across an unfortunate soul, obviously named in a rush of exuberance, who must have a challenge for life—the 'boy named Sue' syndrome. Then there are those names that are fashionable, and we all know examples that move down the charts with time, showing that the individual was born in a certain era—the 'Elvis' syndrome.

The world of science is not very different. Once in a while, our research is renamed in order to reflect new fashions, or if some biologists feel that their work deserves a better or more catchier name. And this is not unique to our times. Nearly 40 years ago, the founders of what became known as the European Molecular Biology Organization had similar discussions when they faced the problem of finding a name that reflected the organisation's scope and mission. Younger readers are probably not aware of the debates that revolved around the name 'molecular biology' at that time. Nowadays, we are also witnessing a surge of trendy names, such as functional genomics, proteomics—indeed, the whole 'omics' family is perhaps only a fashion and, 10 years from now, will be a reminder of the current flurry of redefining or renaming biological research activities. It seems there are new skirmishes afoot, and 'molecular biology' is being redefined again.

But, despite all the descriptive or catchy names, we should not forget that a constant aspect of our work is the fact that we study biology, living matter as opposed to astronomy where, excuse my prejudice, I do not expect us to run into life. If we look back in time, we find that the original biologists were purely descriptive scientists. Animals and plants were picked up, examined, drawn and classified to impose order on the living world. What these species did and how they did it was described, as were their innards and their

general physiology. Later, professors of anatomy, physiology and related specialties joined their colleagues from botany and zoology around the faculty table to discuss the relationships between these organisms and their evolution.

These groups were joined by scientists who showed less respect for the organism and wanted to understand life by breaking it apart into smaller and more manageable units. The biochemists added the ambiguous aspect of chemistry to the description of life. They were fundamentally reductionistic, believing that one could understand the Ferrari of life by examining each screw, piston and cylinder in isolation. They—and I should include myself in this category as I was trained as a biochemist—were aware that they studied life with a precision that earlier biologists were not able to achieve. And they had an influence on the more traditional departments, such as botany that mutated, in name at least, to plant science.

In the 1950s, a new sect of biologists entered the laboratories. In an exaggerated form they worked with the molecules of life, but aimed to integrate them into the biology from whence they came. If the biochemists stressed the inanimate chemistry in the molecules they obtained from living sources, the molecular biologists tried to put the puzzle back together by demonstrating their consequences for life. They saw the need to work across the traditional boundaries in order to obtain a better understanding of living matter. Nonetheless, the founders of the molecular biology movement originated from the departments of biochemistry, microbiology, virology, botany, etc. The overlap with the biochemists is obvious and to some the difference is not worth a new name.

The term molecular biology went through a transition when, in the 1970s, recombinant DNA technologies found their way into the laboratory. Strangely, many people today equate molecular

biology with cloning and related procedures. Historically this makes no sense, and it has a strangling limitation. Molecular remains an adjective defining the scale at which biologists study their objects, and it is not a pseudonym for a collection of related techniques.

Now, just as peoples' names can date, we are running into a situation where 'our' name is less likely to be used for a new department in a new institute. We are also seeing the consequences of growth, which inevitably leads to subdivisions. Today colleagues define themselves as cell biologists, immunologists, neurobiologists, developmental biologists, cellular microbiologists, etc. But they all look at life at the same level and they all use common research tools. So the challenge is to find a name that represents the unifying features behind all this diversity. One wit suggested that EMBO should change its name to the European Modern Biology Organization, and while this is a rather flippant contribution to the debate, such a move might avoid a problem that we may have to face in the future. We are currently engaged in establishing a European Research Council in the area of biology. But whether it should be called the European Life Sciences or the European Biosciences or the European Molecular Biology Research Council remains a trickier question than anticipated. What is 'molecular biology' today, and is it a term that should be tagged on to a new entity born at the start of this new century? Ultimately, as for an individual, the name should not be the basis for any *a priori* judgement. Rather we should judge the aims and aspirations of the enterprise, its track record and then decide if it would be a beneficial addition to the crèche of the life sciences/biosciences/biotechnology/biology community?

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