

Questions from Maria Vasilescu

How has PCR affected the medical world?

Far less than it has affected the medical journalistic world. The last time I was seriously hospitalized with coronary artery problems was 2004 and there was plenty of testing of blood and imaging work, but information about my DNA was not considered. This is still in the stage of research. It will become more and more a part of medical practice, since individual tolerance and susceptibility to certain drugs, like heparin for instance, is significant and connected to DNA genotype. Personalized medicine is coming. It is still in the research stage.

Transfusions of blood and organs **are** monitored for histo-compatibility using DNA types, and several genetic disorders as well as infectious diseases are certainly examined at the DNA level.

There is much more to come than has been applied. Practical medicine necessarily moves more slowly than medical research.

How did your life change after winning the Nobel Prize?

My favorite pastime is learning according to the directions I discover for myself. Having a Nobel Prize allows one to indulge this kind of habit without starving, and I have taken advantage of it. Some people are not so obsessed with their own freedom, and utilize the awarding of a Nobel as a gateway to power and responsibility, and the accompanying financial rewards. I don't accept responsibility easily and I am happy without those things. I like to read widely and at my own direction. Having a Nobel Prize has allowed me the opportunity to become well enough educated that I feel now that I really deserve one.

Tell us about this new discipline paleobiology?

It's not a new discipline, just newly invigorated. I had the good fortune to work down the hall from the great paleobiologist Allan Wilson when I was a graduate student at Berkeley and Allan was struggling with established conceptions about human origins and evolution in general. He needed better ways to measure real evolutionary distance than immunology provided, and I was thrilled to provide him with PCR, and he was thrilled to begin using it in his lab, which was one of the first to put it to any real use. He thought I should have called it "in vitro cloning." I liked "Polymerase Chain Reaction." The discipline of paleobiology would certainly not care to part with it now, under any name.

**In your opinion what is the point where science meets with business?
How can business affect the world of science?**

I have never encountered a business person with any true interest in science. Why should he be interested? He had the choice, and he chose business. It is only through good fortune that money ends up in the hands of scientists, who know how to use it for anything other than making more money, and it is a sorry situation indeed, since much scientific research is not cheap.

Sometimes very fortunate scientists get rich, like Craig Venter, and then they can let their imagination direct their research, but this is the rare exception. Most scientists are constrained to do the bidding of businessmen, and it can be immensely frustrating for the scientist and unproductive for society in general. Most biological research ventures fail because the boss is highly subject to scientific illusions and has no idea how to separate truly good ideas from the highly simplified and often distorted things that filter up to him. He is usually under the influence of even less informed investors, and subject to misinformation from inferior scientists eager to have his favor. It is an unsavory world which I have never enjoyed.

As has been known for millennia “philosopher kings” are hard to come by.

Government grants, although offering, in theory, a preferable alternative, have the similar problem of being often administered by scientific incompetents who are after power and personal security, instead of widely useful knowledge. Good scientists don't like administrative jobs, which leaves us exactly where we are. Science is generally directed by non-scientists.

We stumble on.

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