GENETICS, PHILOSOPHY

QUESTION OF THE YEAR IN GENETICS

22.07.2007

Nature genetics asked about 30 eminent scientists “What would you do if it became possibe to sequence the human genome for only $1,000?”. Unfortunately, this initiative has been launched 4 weeks too early as I believe some may have responded differentially if they could have a chance to read the ENCODE papers… The majority of scientists seems to follow the idea of

Do everything in everybody and think about later
which doesn´t give me an area to attack. One scientist even blamed herself by saying

I would spend $100 million to sequence a study sample of 100,000 monozygotic twins (only one of the pair, since their genomes are identical, and you get two phenotypes for the price of one genome sequence)

but fortunately Stephen Scherer

… I would first like to sequence the genomes of monozygotic twins discordant for autism

and also Emma Whitelaw correct her

… I would carry out a comprehensive analysis of the methylation state across the entire genome of monozygotic twins

The ultimate relevance
There are also some highlights for example by John Ioannides

… one of my priorities would be a large-scale randomized trial: participants are randomized to have their genome sequenced or not. Then we examine in the long term if this information improved their health outcomes.

The strategic response
Axel Meyer wants a theory of the genomes

… these pieces remain to be assembled into a comprehensive mosaic that might lead to a theory of genomes. So far, the rules, if they even exist, remain elusive. The nascent discipline of genomics is still in its mostly descriptive, natural-history phase and is more driven by technological advances than guided by the testing of theoretical predictions.

This may sound a bit like looking for the $e=m^2$ of genetics but I see a good chance for that.

Ontogenic tree of the human body

Bruce Lahn shares my current interest in ageing of an individual human body (I have a paper under review in Human Mutation and you can also find some ideas here).

All cells in the human body, or the body of any multicellular organism, descend from one single cell: the fertilized egg. Thus, all the cells in an organism are related to each other based on their shared descent … Mutations in DNA sequence that occur during cell divisions can in theory be used to construct an ontogenetic tree connecting of all the living cells present in an organism.

to be continued, yea, yea.