

Talent is unfair, and genes can't be used to change that

November 4 2013, by Anders Sandberg



DNA can't help you win. Credit: saynine

Talent is unfair. One can quibble about what it actually is. But there is little doubt that it is something that emerges not just from the genes but also from their interaction with the environment. Different people are born with different aptitudes for different things. Some of these aptitudes help a life go well. So through no fault of their own, some

people will have less chance of a good life.

If we were to make a choice behind a veil of ignorance between a world where there was more talent to go around and a world with less talent, it seems that the reasonable choice is to choose the world of talent. We would probably also want to choose a world where talent was more equally distributed than one where it was less equal. But even the less talented people in a talented but unequal world could benefit from the greater prosperity and creativity.

In practice talent needs plenty of help to develop: without support and good teachers innate potential is unlikely to matter. So the ability to help [kids](#) develop their potential (and help them overcome their less able sides) is important for actualising that talent. Without it none of the above worlds would be preferable. But figuring out how to cultivate and stimulate kids is hard. Hence, any information that could help do this better would be welcome.

So [if genetic information could personalise education](#), well, go for it.

But I am [less convinced](#) than the geneticists that we can [actually do it](#), at least in the near future. Genetics is hard. It is surprisingly tricky to establish how [genes](#) translate into actual outcomes since so much is interacting. Even when there are statistical differences between groups it might not tell us much.

For example, my genes reveal, at least according to one study, that I ought to have three fewer non-verbal IQ points than those who don't have this particular variant (GG at SNP rs363050). Given that I am in the philosophy faculty at Oxford I can't be that stupid – no doubt I have compensating genes. Or a really good upbringing. Or maybe the variation only matters in some people. Or with some environments. Knowing about this [genetic information](#) would not have helped my

teachers to teach me better. Giving some extra non-verbal tasks might have made sense on average to people like me, but it is not clear that it would have helped me. The teachers would have been better off looking at who I was and what tasks I did well or badly at. In cases like this looking at the phenotype, which is the actual behaviour and abilities, is much more revealing than any amount of genotype information.

What if our society starts to pre-judge children based on their genotypes? It certainly is a real risk, but it would be judging that is not based on the science. In fact, it would be stupid – hiring people or channelling kids based on a weak marker for ability rather than actual demonstrations of ability will lead to big mistakes. Maybe the science does lend itself too easily to simplistic caricatures, but the fault is not in the science itself or even pointing out that it might be useful, but in us as a society allowing oversimplifications to rule decisions.

Genetic labelling, even if well-meaning and based on real information, can have detrimental effects. Being told you are a low performer will usually not motivate you. Teacher expectations can easily bias student performance, and vice versa. Genetic markers are ready-made labels – but only if we let them be labels. Genetic determinism is a mistake, and we should not teach it – either through the curriculum, or through the structure of the school itself.

There is a second problem with personalised [education](#). Getting something useful out of the genetic information requires not just good genetic data gathering, but also good educational data gathering. It doesn't matter if we find associations between genes and grades if we have no idea how to influence things. This will require vast amounts of fairly detailed data and a close collaboration between the behavioural geneticists and educators – not a simple task, as neuroscience has realised when trying to help education. Just because we know how learning works in the brain doesn't mean we can apply that cognitive

knowledge well to education.

In the long run I am sure we will figure out a few useful things the genome does tell us about learning styles, talent or other things that matter for education that could not be detected by a skilled teacher. But that raises another problem: might the personalisation itself be unfair?

I am not talking about the well-off getting better education (that is an issue regardless of genetics). Some kids will have [genetic markers](#) that enable useful personalisation that help them excel, and some kids will lack them – they will have to do with standard education. This is in a sense exactly the same unfairness as the random distribution of talent represents, but here it is a [random distribution](#) of personalizability. One can still argue that unequal distributions are fine as long as the worse off benefit (educational resources get allocated more efficiently), but it seems that we should strive for something better.

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