

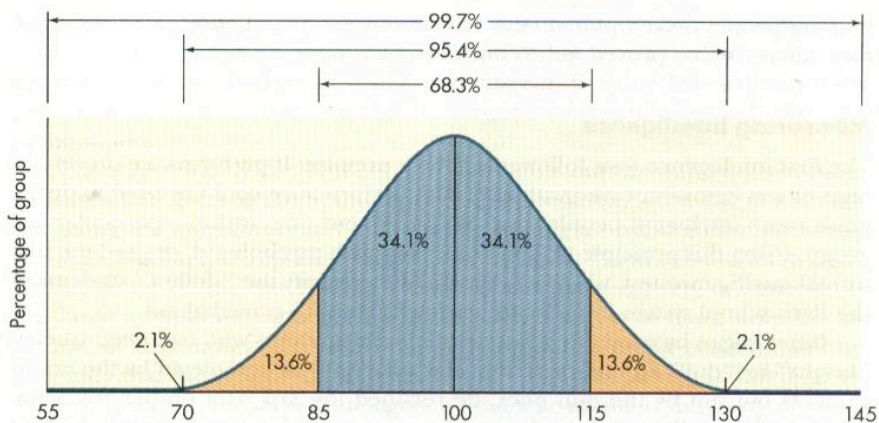
ENHANCING INTELLIGENCE

One of the more controversial areas of potential genetic enhancement is that of intelligence. One of the main reasons people are worried is because intelligence is taken to be a quite *potent* good, especially when compared to, e.g., strength of the immune system. That is, raising intelligence will (it might be argued) have *broader* and more *significance* implications for the individual (and, consequently, for the society) than boosting immune systems.

But what *is* intelligence? For present purposes, let's assume that it's whatever that is measured by IQ tests. This does not need to be completely arbitrary. What is interesting is that largely regardless of what method of measurement is used, similar results arise, which is a fairly good indication that there is *something*—some robust phenomenon—that is being measured.

WHAT WE KNOW ABOUT INTELLIGENCE

What do we know about the role of genes in intelligence? That it only *partly* determines someone's intelligence. The other part is played by *environmental factors*. However, what we don't know is how *great* a role each factor plays in the determination of an individual's intelligence. What we do know is that intelligence tends to be distributed as follows in a population:



This graph tells us a couple of things. **First**, most people are of average intelligence (i.e., towards the middle of the bell curve) and very few people are of extremely high or low intelligence (i.e., towards the tail ends of the curve). **Second**, to the extent that genes are responsible for intelligence, it is likely to not be a matter of *one* gene, but rather of several genes, the different combinations of which give rise to the distribution above.

SHOULD GENETIC RESEARCH ON INTELLIGENCE BE DONE?

One of the main worries regarding genetic research on intelligence is the following:

General worry: The genetic information obtained through research will be used to divide, disadvantage and disempower people through the development of genetic tests.

This worry can be broken down in to several more specific worries:

Individual harm: Genetic information about intelligence will cause psychological injury, for example by being taken as an indication of capabilities (or lack thereof) resulting in negative reinforcement and discouragement.

Reply: Genetic tests, if it were possible to apply them, would be *less efficient* at predicting intelligence than current IQ tests. The only difference between the two is that genetic tests can be used predictively, although the best way to predict IQ is (still) to average the IQ of the parents.

Familial harm: Genetic information about intelligence will harm a supportive family environment by detrimentally influencing parental expectations of their children and allow for ‘genetic blame’ in parenting.

Societal harm: Individuals may suffer discrimination within society, e.g., in educational and workplace arenas, where those with the set of genes associated with low intelligence may be denied opportunities.

Group harm: Genetic information generated from testing different racial and socioeconomic groups could be used in assessments of those individuals’ and groups’ potential, at the expense of considerations of other important social factors.

Replies: Newsom and Williamson give a series of replies to these lines of thought:

- (a) As in all cases—this one included—it is the role of the state to protect the rights of individuals and groups from discrimination, hopefully by way other tools than the banning of research.
- (b) Genetics will identify genes that contribute to differences within a particular group. These genes may not affect the differences *between* groups, and the same gene may have an altered significance in a different population. Consequently, the applicability of results outside the group from which they were obtained will be difficult.
- (c) A similar point can be made about the individual. A gene that functions to determine the range of intelligence for a group may have no significance for an individual within that group.
- (d) Several of the objections assume that intelligence will be genetically *determined* or immutable. However, that intelligence has a genetic component does not imply genetic determinism (i.e., that genes determine as opposed to merely contribute to our features).

Problem: (a) seems on point. However, (b)-(d) seems less so. After all, isn’t the problem highlighted by the above worries that people might *treat* genetic research as being applicable across groups and individuals, and that they might *think of* genetic contributions in terms of determination, even if they’re wrong? That is, isn’t the problem that the research in question will be implemented in an *imperfect* society, where people make mistakes and sometimes base their policies on misconceptions?

AGAINST ENHANCEMENTS

Say that we are able to pin down the genetic mechanisms behind intelligence. Would it be morally hazardous to utilize that genetic knowledge for the purpose of enhancing people’s intelligence?

Social worry: Genetic enhancements create unfairness in society, since it will give some people or groups of people an unfair advantage over others because some (traditionally disadvantaged) groups may wish to use the technology but be unable to afford it.

Reply: We have been achieving the goal of optimizing intelligence by a variety of means for centuries. Those who object to enhancement would also have to object to private education.

Problem: Doesn’t a lot of people object to private education, in so far as it has exactly the feature that they fear enhancements of intelligence will have, namely an exacerbation of inequalities with respect to access to that which makes for a flourishing life (e.g., a good education)?