The Ideology of Intelligence

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1. Let me start with a seemingly stupid question: Is there anything called *intelligence*?

   - The question seems stupid because: Don't we talk about intelligence routinely? (And with reference to people, not just "military intelligence" and so on.) Don't we also routinely make value judgement all the time?
   - Yes, but we could be wrong. As we shall see, the question is not that stupid. There are genuine grounds for concern that there is no single discrete cognitive faculty that is the referent of "intelligence."

2. In fact, the theme that we shall explore (without pre-judging its truth) is that the concept of intelligence is part of an ideological construct used to discriminate against groups of people defined by class, race, ethnicity, gender, *etc.*

   - First, we must be clear about what we mean by "ideology." We mean a very general perspective or world-view (about what there is and what is happening in the world) with a normative component (what there should be and what should be happening in the world).
   - "Ideology" does not necessarily have a negative connotation but, typically, is invoked by those who are going to be critical of a world-view (as is true in our case).

3. We must note that a large group of psychologists will not agree with this negative assessment. They have made a living researching intelligence. Of course, we could dismiss them as having a vested interest in maintaining the existence of a general mental faculty of intelligence (and also claiming that it is important). However, that would be unwise. We would be rejecting a large body of research that is acknowledged by a fair number of scientists (and philosophers of science) as science, whether or not it is *good* science.

   - But not all psychologists agree that there is a single general faculty of intelligence—for instance, Ken Richardson is an exception.
   - Increasingly, most psychologists and, especially cognitive scientists, do not have any position about intelligence research. (And are often even more reluctant to have anything they are publicly willing to say about IQ research.)
   - There is also an ironic aspect of the situation: psychologists enamored of intelligence research typically assert in defense of their views that they are taking biology seriously (unlike their opponents within psychology). Biologists, when they even pay attention to these claims, typically think that these psychologists are extraordinarily biologically incompetent. (Of course, there are exceptions but these are often psychologists who have re-branded themselves as biologists without doing any real biology—Robert Plomin is an example.)

4. There are three main reasons for skepticism about whether "intelligence" refers to any well-characterized single cognitive capacity:

   (a) Many languages that are rich in words for cognitive capacities don't have a word for intelligence.
      - For instance, Bengali (an Indo-European language with Sanskritic origins) has a word for "clever" and a word for "wise"; neither corresponds remotely to the English "intelligence."

   (b) Psychologists have recorded widespread disagreements among people about what constitutes intelligence.

- As RIchardson (2000) notes, Mugny and Carugati (1989) reported an experiment in which a large group of (Italian) parents were shown > 40 claims about intelligence including several that downright contradicted each other.
- Several contradictory claims had the same level of support, for instance: "Everyone is intelligent in their own way," "Some people are born with more intelligence, others less," and "The child develops intelligence by his or her own activity."
- The obvious interpretation is that there is widespread serious disagreement about intelligence.
- It would be reasonable to infer that not all respondents are referring to the same capacity when using "intelligence."

(c) There are a large number of theories positing different kinds of intelligence, that is, mental faculties that can reasonable be thought of as intelligence but not reducible to each other.

- For instance, we could take every cognitive module to constitute a capacity that can be considered intelligence.
- Linguistic capacity seems widely independent of spatial reasoning—and there is plenty of intuitive evidence to suggest that both are related to intelligence.
- A word of caution: much of the popularity of such claims come from pop psychology and philosophy. While it would be unwise to disregard these claims entirely because of their origin (this is called the genetic fallacy), they deserve careful scrutiny before being accepted as scientifically live hypotheses.

5. A different type of skepticism is generated by the facts that: (a) most intelligence researchers view it to be a feature of individuals that (b) has arisen because of innate biological factors whereas much of the empirical data of psychology point to the social and cultural origin of many cognitive faculties.

   - Cole (1998) has emphasized the cultural origins of structures of thought, how cultural differences enshrine themselves in cognitive differences.
   - The belief that intelligence is inherited and, more strongly, genetic, is an extreme form of the individual innate view of intelligence.
   - Reminder: not everything biological is inherited; not everything inherited in species with even the most rudimentary culture is biological (unless we believe every structural and behavioral feature of every organism is biological); not everything inherited is genetic; not everything genetic is inherited. And "innate" is vague to the point of being useless.
   - This type of skepticism generates the question as to why we even bother with "intelligence."

6. Of what use is "intelligence"? That is, of what use is the *concept of* intelligence?

   - From what has already been said it would come as no surprise if "intelligence" has no cognitive/scientific value.
   - However, the very fact that a significant number of psychologists swear by its relevance behooves us to be more careful and avoid a facile rejetion.
   - Now, if it is shown that intelligence can be operationalized by some quantitative measure, we would have some reason to keep it as part of our sciences of the mind.
   - "Operationalization" means the development of an experimental procedure that elicits information about a putative scientific concept, ideally, allowing quantification in cases such as intelligence.
   - For most (but by no means all) enthusiasts of a science of intelligence, this operationalization is achieved by IQ ("intelligence quotient") to which we will turn next.
   - Now, if it turns out that the role of IQ is ideological rather than scientific, then intelligence itself would turn out to be an ideological construct.
   - However, note that this argument does not address those who believe that there is a valid scientific single concept of intelligence but that it is not adequately measured by IQ. But this position is not a very prominent one today.

7. Before we turn to IQ, we should note two antecedents of which the later remained important in IQ research and critiques of IQ and its testing.

   - The first is our old friend, Francis Galton, Darwin's cousin, and the first proponent of eugenics (he coined the term). He is also one of the major founders of moder statistics.
     - Galton believed that there was a single biolgoical power for metal ability.
     - This power was supposed to manifest itself in all types of cognitive tasks, including sensorimotor tasks which is what he used to operationalize his power.
     - No one after him held much stock in his theory and his attempts.
     - However, it will be important for us to analyze what was wrong with his attempt because *the same problem afflicts all the work on intelligence measurement that came after him, including IQ.*
       * Galton assumed that there was a general biological power of intelligence. (We can substitute "general biological power of intelligence" with "IQ" or any other single measure of intelligence suggested since.
       * This power is *invisible* in the sense that we cannot directly observe it through our senses. In the language of philosophy of science, this power is a *theoretical entity.* There is nothing inappropriate about positing such entities: mature sciences do it all the time, from forces and fields in physics to genes and operons in biology.
       * What we can measure, though, is something different, in Galton's case, sensorimotor performance. (In the case of !Q, we have the results, that is, the scores from IQ tests administered to victime.)
       * But how do we know what we have measured is the theoretical entity?
       * We can only believe this if the measured and inferred theoretical entities are connected by a theory that has independent evidence supporting it. This is the case for forces, fields, genes, and operons.
       * It is not the case for Galton's invisible power. It is not the case for IQ. It is also not the case for any theory of general intelligence. (These are bold empirical claims and will require further discussion later in the lectures.)
       * Galton was, of course, aware of this problem at least to a rudimentary extent. He took it that the evidence would come from the fact that his operationalized measure for the biological power that is supposed to constitute intelligence would put upper classes on the top and the lowest classes at the bottom, that is, stratify society by economic circumstance.
       * But we do not know that class stratification is due to biology rather than cultural inheritance of money and othe economic assets.
       * In this way, Galton' procedure replaces the scientific method with ideology. Let us call this *Galton's fallacy.*
     - Galton's fallacy has been the bane of intelligence research ever since. No one has produced an independently-confirmed genuine scientific theory of intelligence that lets us move from a postulated theoretical entity to an operationalized empirical measure. This includes !Q as we will note below.
       * The move from class to race is itself explainable from a cultural perspective: a move from Britain to the U.S.
   - The second antecedent from pre-IQ days was Charles Spearman who insisted, staring in 1904, that performance in different cognitive tasks reflected a general underlying factor of general intelligence, which he therefore dubbed "*g.*"
     - Spearman had an argument to avoid Galton's fallacy: the claim that there are strong correlations between individuals' performance in a wide variety of cognitive tests.
     - He pioneered several statistical techniques (including factor analysis) to buttress these claims.
     - Since then, Gould (1981) and others have shown that Spearman's correlations are artefacts of his data analysis.

  - Nevertheless, Spearman continues to be revered by contemporary IQ researchers such as Plomin.

8. We have dealt with the history of IQ in a previous lecture. The main difference from Galton is that, instead of using social class stratification as its ideological justificatory framework, it used race starting with World War I.
   - Here, we will focus on why IQ does not escape Galton's fallacy.
9. The first issue to address are the reasons typically touted by IQ researchers in favor of IQ as a measure of intelligence.
   - There is credible evidence of assortative mating in humans (like mating with like) on the basis of IQ. True, but this says nothing about intelligence: there is even stronger assortative mating on the basis of height and weight.
   - IQ is supposed to be stable over an individual's lifetime. These data are questionable at best. However, even if this is true, why does IQ measure intelligence? What is important, as Richardson (2000) points out that IQ continues to change and has risen over generations with most societies in the late twentieth century testing some 15 points higher than in the early twentieth century. Do we really believe that people got that much more intelligent?
   - IQ is supposed to predict performance in a wide variety of cognitive tasks. As Richardson points out, this is simply a myth.
10. Finally whatever good that IQ does—for instance, assess a child's immediate performance in schools goes back to how the tests have been designed going back to Binet.
    - What matters most is how Binet designed his test.
    - For Binet, intellectual performance involved at least general knowledge, memory, imagination, attention, comprehension of sentences and synonyms, aesthetic judgments, moral judgments, a list far more comprehensive than the ones used by those who have followed him to the present time.
    - To test for these capacities, Binet devised a vast array of questions that he proceeded to administer to children.
    - Next, and this is the critical move, he selected a subset of these questions to be part of his final test using two criteria.
      - The first was whether the average performance in answering a question became better with age; if so, it was supposed to give some indication of a child's intelligence.
      - The second criterion is the one that has characterized IQ tests ever since: Binet asked whether children's performance on a question matched their teachers' judgment of their intelligence.
    - Psychologists take it for granted that teachers are very good at predicting students' academic performance.
    - Given how Binet selected his questions to match teachers' assessments of students, it follows that IQ can also correctly predict academic performance.
    - Newer IQ tests, especially in the United States, followed Binet's methodology and are typically referred to as Stanford-Binet tests.
      - The methodology has been manipulated by test designers in a variety of interesting ways.
      - For instance, in 1937, it was discovered that girls on the average scored a few points lower than boys in the Stanford-Binet tests that were in vogue at the time.
      - Test designers debated whether to allow this difference to persist and ultimately decided against it.
      - The questions generating this difference were duly removed and we had a gender-neutral test *by social construction.*

  - Other manipulations are equally informative. Tests always include a large number of question that most people get right and very few that most get wrong or very few get right. The result: a bell curve for IQ—there is no more to that celebrated shape than an artefact of test construction.
- What the tests have not done is manipulate questions to ensure equivalent performance across races.

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