

# The True Nature of Intelligence

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How do we view intelligence?

Both laymen and experts use widely varying definitions of intelligence. Try and ask your friends and colleagues what they think intelligence is. You will probably get references to solving problems, being able to adapt, quick thinking, quick learning, being creative, being smart, reasoning logically, being sensible, analytic qualities, and so on. Interestingly, although the variation in answers is great, most layman and experts seem to agree on certain aspects of intelligence.

Most people implicitly or explicitly assume that intelligence has the following three characteristics:

1. Intrapersonal: intelligence is a characteristic of individuals. In other words: it is intrapersonal. It is inside you and is indissoluble from you as an individual. Personnel selection psychologists often base their advices to a large degree on individual measurements of intelligence. Laymen too view intelligence mainly as something that is inside the person.
2. One-dimensional: both laymen and experts acknowledge that different dimensions or aspects of intelligence can be distinguished but both groups treat intelligence mainly as if it were a one-dimensional concept. Selection psychologists speak of the so-called G-factor, the general intelligence factor and summarize the findings of intelligence measurements into a single (IQ-)score, while laymen too implicitly talk about intelligence as if it were one thing ("She has a high intelligence.")
3. Unchangeable: intelligence is a characteristic that is mostly unchangeable from the age of about 17. The assumed unchangeability, or stability, of intelligence implies that people keep the same intelligence level both across different situations and at different ages. In short: it is inside you, it is one thing and it is largely unchangeable.

Additional views

Experts on intelligence base their convictions on an impressive amount and quality of thinking and research (for an example see the website of [Linda Gottfredson](#)). What follows is not an attempt to attack the traditional view on intelligence but an attempt to provide a complementary view.

Intelligence can be seen as intrapersonal, one-dimensional and unchangeable but also as:

1. Interpersonal: intelligence does not need to be seen only as something that is inside the head of the individual but can also be seen as something that emerges between people when they co-operate. This view makes opens the possibility that intelligence also happens between people. Every time when two people deliver intellectual performances that they could not have accomplished on their own, we see an example of the interpersonal aspect of intelligence. Hard to imagine? Think about this. The human brain is a network of approximately 100 billion brain cells (neurons) of different kinds that each are connected to very many other neurons. It all adds up to an estimated total of 100 trillion connections. Although the brain is capable of impressive intellectual feats, the neurons of which it is built are not very intelligent. The

intelligence of people is not in the neurons but in the connections between the neurons, so between the neurons, or in the network. The comparison between the brain and co-operating people should not be taken too far, if it were only because brains are unimaginably more complex than even the most complex organization. But the analogy does make it easier for us to imagine organizations as networks of interconnected people in which the value and intelligence of the organization is not solely in the people but also between the people. It makes it easier to think in terms of a collective intelligence.

2. Multidimensional: Intelligence does not have to be viewed only as something that is general and one-dimensional but can also be seen as a complex of a set of dimensions (see Sternberg, 1985). I am not pleading for a rather great stretching of the intelligence concept (like Gardner, 1991 does) by also labeling phenomena as athletic ability as a kind of intelligence. Instead, I would propose to reserve the word intelligence to the cognitive domain. But also within this domain there are different relevant dimensions to be distinguished. One of the most convincing models I find to be the one by David Perkins (1995) who distinguishes as important dimensions: 1) Neural intelligence. This intelligence reflects the general information processing capacity of the person, an aspect of intelligence that may touch on the G-factor, 2) Experiential intelligence. Intelligence that is based on experiences and that are manifested both explicitly and implicitly. You could call this a domain-specific or situational intelligence, 3) Reflective intelligence. This refers to tactics and techniques that you can apply to make use of your neural and experiential intelligence as effectively and efficiently as possible. You might call this meta-intelligence or strategic intelligence.
3. Developable: viewing intelligence as a multidimensional phenomenon opens the possibility to see it as developable. While the G-factor indeed seems to be fixed or hardly developable, the other important dimensions do seem to be developable. Experiential intelligence can be very well be developed (although this process goes very slowly). Reflective intelligence can even be developed quite quickly (Perkins, 1995).

#### Practical implications

Although both laymen and experts (sometimes) acknowledge that intelligence is to a certain degree interpersonal, multidimensional and developable, they don't seem to use these views in practice a lot. If it is true that intelligence is also interpersonal, multidimensional and developable then there are important practical implications. Below are two examples.

#### Personnel selection: more interactive, dynamic and situational

The selection psychologist would not only be interested in measuring and reporting 'the' intelligence of the applicant but also in the following aspects. How well does this applicant complement the collective intelligence of the team? In order to be able to say something about this an individual measurement would not be sufficient. There will have to be some kind of interaction between applicant and organization to assess the 'chemistry'. Beside a measurement of general intellectual abilities an assessment would be made of other aspects of intelligence like relevant domain-specific experiential intelligence and meta-aspects like problem-solving strategies, thinking models, tactics, and so forth. If these views would be taken into account a selection process would be devised more interactively, more dynamically and more situationally.

#### View intelligence as a developable potential

For laymen too, it is important how they view and treat intelligence. Research by Carol Dweck (2002) has demonstrated that what people think about their own intelligence has far-reaching consequences. Dweck shows that people who see intelligence as unchangeable develop a tendency to focus on proving that they have that

characteristic instead of focusing on the process of learning. This disregard of the learning process hinders them in the development of their learning and in their performance. This means that the wrong convictions about intelligence can make smart people dumb! But there is hope: when people view intelligence as a potential that can be developed this leads to the tendency to put effort into learning and performing and into developing strategies that enhance learning and long term accomplishments. An implication is that it pays off to help children and students invest in a view of intelligence as something that can be developed.

That the way we look upon phenomena can have drastic consequences has been known for a long time. It has now been demonstrated that the same goes for intelligence. A too restrictive definition of intelligence leads to practical limitations and problems. A realistic view on intelligence makes it possible to get rid of at least some of these restrictions and problems.

#### Literature

1. Dweck, C. S. (2002). Beliefs that make smart people dumb. In: Sternberg (2002). Why Smart People can be so stupid. Yale University Press, New Haven & London.
2. Gardner, H. (1991). Multiple intelligences. New York: Free Press.
3. Perkins, D.N. (1995). Outsmarting IQ: The emerging science of learnable intelligence. New York: Free Press.
4. Sternberg, R.J. (1985). Beyond IQ: A triarchic theory of human intelligence. New York: Cambridge University Press.