

Research **Brief**

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Rathenau Instituut

Human enhancement challenges policies

Improved school performance, better looks or mood? It might sound desirable. But we should worry about unwanted side-effects for users and society, according to the report *Good, better, disputed*, by the Rathenau Instituut. It details the views of the Dutch on the use of enhancement technology by healthy people. The government should be aware of this, when developing policy.

Enhancement technologies are medical means used by healthy people to obtain, for instance, a better appearance or improved performance. Well-known examples include beta blockers to combat stage fright or exam stress, cosmetic surgery and doping. However, there are other technologies, already existing or expected, too: concentration enhancers, pre-implantation genetic diagnosis, so that the characteristics of your baby are not left to chance, and electronic brain stimulation to improve your mood.

Discussions with focus groups have revealed that participants are wondering whether the use of such technologies is safe. That is often unknown territory because in most cases, the technology has not been extensively tested on healthy people. Furthermore, participants are apprehensive about the social consequences of human enhancement.

Will there be social pressure or even coercion from employers to improve, for instance, your concentration? Will expensive technology result in a split between the 'enhanced' rich and the 'unenhanced' poor, or in growing healthcare costs? Will opinions change about what we consider to be a 'normal' appearance or a 'satisfactory' performance? Finally, some see human enhancement as a way of playing God and others consider the technology to be an excessively drastic intervention in our human way of life.

The degree of acceptance differs per technology and depends on how familiar people are with a technology and how much they know about the technology. The effects for the individual and for society also have a bearing on the extent of acceptance.

The Rathenau Instituut promotes the formation of political and public opinion on science and technology. To this end, the Instituut studies the organization and development of science systems, publishes about social impact of new technologies, and organizes debates on issues and dilemmas in science and technology.

RECOMMENDATIONS

Human enhancement elicits various responses. It is high time and vital that the government prepares for the arrival of new technologies to ensure that they are safe and to limit social risks. How can the government prepare?

Look for opportunities

To benefit from the advantages of enhancement technologies, it is important to create conditions that take account of the worries prompted by these technologies.

Ensure safety

The risks and negative side-effects of enhancement technologies must be properly investigated in good time. That is possible if, for instance, the European Union incorporates the technologies into European laws and regulations relating to medicines and medical devices.

Combat undesirable consequences

The Dutch are concerned about social risks such as social coercion in the workplace and a split in society between those who do and those who do not use enhancement technology. The government must investigate which policy initiatives can combat undesirable social consequences.

Think before prohibiting

Views about human enhancement are still developing. The government must therefore prohibit enhancement technologies only if there are widely supported fundamental objections.

Provide sound information

People want to know more about – legal and illegal – enhancement technologies. They want to know what works, what the side-effects are and the risks involved. The government can provide that information on, for instance, a reliable website.

Opinions on human enhancement

Human enhancement is the use of medical resources by healthy people to make them faster, more attractive or stronger, etc. Examples include doping using erythropoietin (EPO) or steroids, cosmetic surgery such as breast enlargement, hormone use to stay young and fit or ADHD medicines to improve concentration. Using a focus group study, the Rathenau Instituut investigated what the Dutch think of human enhancement.

Several Rathenau Instituut focus group participants think that human enhancement is a must and make statements such as: *"If you can improve people with for instance a hot item like gene technology (...), and if that involves no real risks, then it's a necessity."*

A minority of participants have objections in principle to human enhancement. Some of these objections are based on religious grounds, but not always: some opponents consider human enhancement to be contrary to human dignity or nature.

In both cases, the participants want a restrictive policy for enhancement technologies in the case of healthy people. A typical statement is: *"The government should draw up rules and guidelines, because you cannot fiddle with the brain and change someone's personality."*

A majority of participants take a more balanced position. They wish to weigh up the advantages and disadvantages per technology. An important issue is whether individuals may make their own decision about using technology. Some participants take a liberal position: *"The possibilities exist and there are enough people who wish to use them, so why prohibit the use of such technologies?"*

Others emphasise that individual choices may result in undesirable effects for society as a whole, such as social pressure: *"(...) some use it, others don't, and those others may feel obliged to use it so as not to get left behind."*

In general, opinions about human enhancement still appear to be in the development stage, just like the acceptance of those technologies. Different enhancement technologies may involve different risks and social consequences. Government policy will therefore have to focus on the specific characteristics of a technology. That will make it possible for Dutch people to benefit from the opportunities offered by such technologies.

SUMMARY

The use of ADHD medicines to improve concentration, cosmetic surgery and doping are existing forms of human enhancement, i.e. the use of medical technology by healthy people. But in the next few years, new and more advanced enhancement technologies will become available, such as pre-implantation genetic diagnosis and deep brain stimulation. What do the Dutch think about that?

In *Goed, beter, betwist*, the Rathenau Instituut reports on its public survey into human enhancement. In a focus group study, it examines what the Dutch think of enhancement technologies. A literature study of such investigations abroad was also carried out; it yielded similar results.

The focus groups showed that the Dutch have different views on human enhancement. Some see opportunities, others mainly risks, possible problems or objections in principle. In cases where the use of enhancement technologies has undesirable social consequences or side-effects, introducing counteracting measures must therefore be considered. This is a condition for ensuring that opportunities – such as better school performance, more alert fire fighters or an improved mood – are supervised properly.

Human enhancement is still primarily a subject of discussion for experts. However, enhancement technology developments will affect everyone. It is therefore high time for other members of the Dutch population to join in. *Goed, beter, betwist* is the Rathenau Instituut's contribution to this debate.

An iPhone game about human enhancement, called *The SuperHuman* can be downloaded in the App store and via www.rathenau.nl.

Colophon

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