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**Making humans better?**

**Exploring young people's  
attitudes to enhancement**







# Making humans better? Exploring young people's attitudes to enhancement

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Nowgen, a Centre for Genetics in Healthcare, is a partnership project between Central Manchester and Manchester Children's University Hospitals NHS Trust, Lancaster University, The University of Liverpool and The University of Manchester, and is part-funded by the European Regional Development Fund and North West Regional Development Agency.



## Introduction

Is a future in which we have the power to change human beings through biotechnology possible? Can we eradicate bodily suffering so we all live longer, healthier and happier lives? Or will there be a dystopian future, where technology benefits a few, controls many, and where humanity is eradicated by technologies beyond our control? Treating human beings may be less controversial than enhancing them, but new technologies like gene and stem cell therapies have the potential to both treat *and* enhance, and both uses are contentious.

This digest reports on the views of young people, aged 10-18, who were encouraged to discuss issues pertinent to human enhancement. 225 young people participated – with slightly more girls than boys – from four non-selective schools in Lancashire. They considered real life and potential scenarios during a normal lesson of 50 to 75 minutes, with topics introduced through film and internet media. This project was undertaken to gain an insight into how young people feel about the possibilities and potential uses of future science. Here, we present verbatim quotations, from across the students' responses to the lesson questionnaire, as these succinctly demonstrate student opinions.



## Concluding remarks

Significantly, students demonstrated many of the aforementioned ethical expert's arguments. A summary of all expressed opinions is given below.

### **Pro-enhancement perspectives**

1. Freedom of choice
2. Tolerance of others' choices
3. If it does not harm others then we shouldn't stop people from doing what they want.


### **Anti-enhancement perspectives**

4. Recognition that choice might harm others
5. Choice might change or destroy the human race
6. Choice might destroy what humans value
7. People are responsible for the choices they make

There was a core group who was anti-enhancement throughout (points 4-7), and a smaller group who was pro-enhancement throughout (points 1-3). The rest had more mixed views, and saw tensions between an individual's right to choose and the cumulative effects of such choices.

## Acknowledgements

This research project was funded by Nowgen, a centre for genetics in healthcare, through its collaboration with the ESRC Centre for Economic and Social Aspects of Genomics (CESAGen) at Lancaster University.



has to face the consequences, and everybody shouldn't pay for it as well."

[On guidelines] "No; to be honest, equality should be permitted, so all enhancements should be open to all who want them but they must volunteer for it. To force someone against their will should be illegal."

Those who argued for guidelines were concerned about resources and about the possible consequences of unrestrained enhancement upon humanity and our values.

"Yes, we need guidelines because the need for resources and technicians for strictly medical treatment is being taken up by the consumerist cosmetic surgery industry."

"...there must be guidelines to prevent too extreme a change, as this could lead to purely artificial people we can no longer call human."

And free will is not the only value:

"We need guidelines to tell us what enhancements are immoral. People should be policed for having outlawed enhancements in the same way we use laws about murder or burglary."

When asked who should be involved in such regulation the popular responses, given by almost equal numbers, were the public, the public including children, and experts.



## Common ethical arguments about human enhancement

Student responses were analysed against the popular arguments of ethical experts which are listed below:

### ***Tread carefully: it is important to get this right***

- It is difficult to draw a line between treatment and enhancement or between ethical and non-ethical uses of technology
- We must consider individual needs in relation to those of others
- Regulation is needed in the public interest, including prevention of increasing social inequalities
- Debating human enhancement is important in representing our vision of humanity's future

### ***Arguments for enhancement: let's make the best babies we can!***

- Those who have the money and want to pay for the product should be free to do so
- It is unethical *not* to seek to improve on nature
- Parents have a moral duty to select the best baby they can
- Parents have always tried to enhance their children - through choosing their 'mate' or providing advantages; parents should be trusted to make these choices
- Inevitably enhancement will become more accessible and more acceptable

### ***Treat, but don't enhance***

- Enhancements are only advantageous if a few people have them. This may lead to a 'genetic underclass' and a pressure to make more diverse enhancements
- Embryo selection and prenatal diagnosis are being applied to a widening number of conditions
- Individual choice can change society, for example, sex selection may create a shortage of women in some cultures
- Without regulation, medicine will be controlled by commercial interests for profit
- Medical technology and skills will be used in enhancement procedures while treatments to cure disease are still unavailable to everyone
- We need to decide on our basic human values and protect them

### **What the young people thought...**

80% of all boys and 70% of all girls were happy to *imagine* having enhancements for themselves.

#### ***If we could 'upgrade' humans, what 'upgrades' would you want, if any?***

"Run faster and be stronger and better memory, fly and have a metal hand with claws, heal better."

"An infinite life: so you can live for ever and never die, (to experience all earth's changes). Metal organs (so you never catch diseases). Perfect looks (so you have all the girls). Be able to morph into anything (so you could sneak into parties, for example, by looking older)."

always been around in our world and is an essential part to our society. How can we judge what a subdued person is like if we cannot compare them to a more aggressive person?"

The few who did choose the genetic option argued that it was the most effective.


[On (a)] "Modifying genetically will have more impact and means people would find it harder to fight it." [On (b)] "Contaminating the water could be a chance for terrorists to put something in the water too." [On (c)] "People can't be forced to take drugs."

Significantly, this was broadly understood as a mental rather than a bodily enhancement, affecting one's ability to express one's free will; undermining human nature. As one student put it: "This is not *enhancement* – this is suppression."

### ***Do we need regulation and who should decide?***

Half of the students thought that guidelines were needed, to clarify which enhancements people could have. A third remained consistently against any restrictions. The remainder gave arguments for both sides, or were ambiguous. For those who rejected regulation, freedom of choice was paramount; coercion either way was unacceptable, and those who enhance themselves must take the consequences.

"...it's their minds and their body; they should have a right for what they want. The person who has done something



“I don’t believe that any are right because they are totalitarian and ignore the rights we have to make our own decisions.”

“I would not choose any of the above as they are all methods that lead to further control by governments and a restriction of our freedom. Surely it is always better to try to reduce aggression by talking, teaching and learning, because in the end this is always going to be more ethically correct.”

Amongst the secondary students this provoked discussion of global vaccination programmes and parental choice.


“I think in some cases people ought to be forced to comply, for example, vaccination. Generally speaking each person ought to be able to choose and each case ought to be judged and treated separately, and the outcome ought to be dependent on necessity.”

A wide variety of perspectives were expressed, including the point that aggression can be positive and necessary.

“None of those methods because we could try to do it our own way, not with changes to our genes. It may affect humans for the worst.”

“I wouldn’t choose any of them because you would be trying to change people’s personalities and the way people react. This would be enhancing them and then we would all be fake.”

“...Not only is being aggressive a bad thing, it can be a good thing; fighting spirit for example. Aggression has



The most popular enhancement among younger children was being able to fly. Enhancement of physical appearance and mental capacities predominated for older students.

“Nose – because it’s a bit big and has a lump in the middle. My voice – it’s boring and monotone. It would be great to have an interesting voice and be able to sing in tune. More upper body muscles – so I can be strong.”

“I think being able to upgrade legs and other kinds of bodily things people want to improve, without going to extremes, would be good, as if someone wanted for example, longer legs, this would be possible. Another thing could be making people more intelligent or good at things that they want to be good at. Also ways in which humans can improve and stop world hazards, poverty, global warming etc.”


### *‘I’m fine as I am’*

18% of all boys and 25% of all girls declined to imagine any form of enhancement because they saw it as unnatural or simply unnecessary.

“I wouldn’t want an upgrade because I wouldn’t want to be different. I like being who I am.”

“...it is immoral to change who you are. You are born and you’re special, if you ‘upgrade’ humans, everyone would want the same thing, it’s stupid.”

“The search for perfection is created by a desire to be ‘better’. This can never be fulfilled in a sense. What is important is to be content with one’s current situation.”



## *Other people would want enhancements and they should be free to choose*

Whether or not students wanted enhancements themselves they expected people generally to want them and thought that they should be allowed to choose. A selection of the 11-12 year old responses show the priorities young people expect others to have; concerns about appearance linked to avoidance of bullying or lack of friends, and concerns about ageing, perhaps expressed by their parents.

“I think that most people would want an upgrade to help them lose weight or change the way they look. ... Don't get bags and wrinkles on your face. ... To be liked and involved, and also to be better looking, because people can feel left out and ugly compared to people around them.”

## *But not all choices should be allowed*

Born with no lower limbs, Oscar Pistorius is a gold medal Paralympian who aims to race in the able-bodied Olympics using his artificial limbs. Disabled and able-bodied athletes alike believe Oscar has an unfair advantage. Extending his running-blades beyond the leg-length he would have had as an able-bodied adult increases his stride and so he goes faster. This raises questions about the distinction between treatment and enhancement, querying our common conceptions of disability. Having discussed if Oscar has been treated for a disability or enhanced, the students considered the case of a single-limbed athlete who wished to have their healthy limb amputated so



## *Does it matter how human enhancement is achieved?*

The students were asked to imagine a global government that had a universal agreement to make the human race less aggressive. The population can choose which of three methods they will take in lessening aggression. The methods are: (a) genetic modification of all humans before birth, (b) a chemical in the world's water supply that would reduce aggressive tendencies by a fixed amount forever as soon as that chemical reaches the brain, or (c) by drugs provided to the world's population that had to be taken twice a day. The purpose of this question was to encourage discussion about alternative ways of changing behaviour; seeing if young people preferred (a) a permanent genetic modification, (b) a permanent non-genetic or (c) a reversible non-genetic method. The largest group were those who refused to choose any method, which is interesting in itself, as this was not an option. Another 12% made a comment to show that they chose reluctantly. Of those who did choose a method, the most popular was the drugs, which would be reversible, closely followed by the chemical in the water supply (both around a quarter of responses). The least popular method was genetic modification.

The most common objection was that any global consensus that led to a blanket policy, and any method chosen, would be an infringement of their freedom of choice and would be impossible to implement.

## *Can a distinction be made between treatment and enhancement?*

The older students were asked this question and all except one thought a distinction could be made, even if it was difficult.

“If someone is being treated they are having things that they need to have done. Whereas if you have an enhancement you are having things made ‘better’ than normal.”

“Yes, we need to make a distinction, otherwise it will get out of control. For example by enhancing human beings at birth, there will be no way to stop, as the line between enhancement and treatment has already been blurred so much, with people saying ‘I need to have a better nose’ as if it is a treatment, not an enhancement.”

Difficulties included the fact that the same procedure could be treatment or enhancement.

“Yes, there is a distinction, for example, someone with breast cancer may have part of their breast removed – treatment. Someone may want smaller breasts – this is enhancement.”

This problem meant, for some, that decisions should be made on a case-by-case basis.

“To do this though we can’t make absolute rules. Each case would have to be analysed on its own individual merits.”

they could have the same ‘advantage’ as Oscar. Student responses divided between those who saw it was the athlete’s choice, his body and his responsibility, even if they thought the choice was selfish, unnatural and unnecessary, and a minority who thought this choice should be disallowed.

Arguments debated whether people should be allowed to ‘disable’ themselves, ‘wasting’ healthy legs; with athletes being affected for their whole lives, and if they “didn’t win, I would totally regret it!”

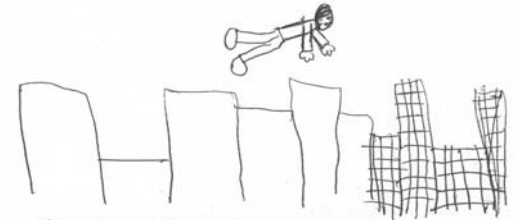
However, when considering the further possibility of a short, able-bodied athlete amputating both legs to improve his times by using prosthetics, just over half said it should not be allowed. Around one in ten said this was his choice.

“The short, able-bodied athlete should stick with what he has; otherwise it would open the floodgates for everyone else to chop their legs off. I think it would outrage people who have no legs as people are wasting their legs.”

[On replacing one leg] “I think it is acceptable for this to occur as his decision is not affecting anybody else. However, it is like a stack of dominoes. One person will follow another. Where will it stop? [On replacing two legs] “No this shouldn’t happen. Being perfectly normal is a blessing therefore why should people alter it?”

Overall two thirds felt that the real issue was whether the rules should allow ‘disabled’ athletes to enter able-bodied competitions, and a similar number thought this was cheating and unfair. The consensus was that Oscar is disabled and for this he had been treated, but extending his prosthetics beyond his expected ‘normal’ stature would be an enhancement.

# Young people considering human enhancement



I think am better the way I am now. But a metal arm would be good and clever



"I don't think we should be changed because you are who you are and we all have different personalities ...that make you different and special in your own way. I don't think we should have upgrades in case they do it wrong."

"...it would take away the normality and character of human beings! Upgrading us would cause us to not be human anymore, we would be something else! I can honestly only think of the silly enhancements that everybody wanted when they were children like wings to fly, ability to breathe underwater, become invisible etc."

"I'm fine as I am. I don't think humans should be enhanced because some things defeat the object of life. Everyone would want longer life, to fly, to save global warming ..."