

Bioethics: Utilitarianism

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Based in part on the previous version of this eLS article 'Bioethics: Utilitarianism' (2006) by Julian Savulescu.

Utilitarianism is a moral theory that defines the right action as the action that maximises the total well-being. It is one of the dominant moral theories, and it has a significant influence in bioethical debates. According to utilitarianism, what matters most is the promotion of well-being, not merely the treatment or prevention of disease. In many cases, utilitarianism departs from traditional moral views on bioethical problems. Applied to genetics, utilitarianism broadly supports genetic testing, genetic selection of offspring with the opportunity to enjoy the best lives, gene therapy and genetic enhancement. This article considers some of the central issues related to utilitarianism and these bioethical questions.

Introduction

Utilitarianism is still one of the dominant moral theories, sharing much with modern economics and decision theory. It was important in eighteenth and nineteenth centuries as a movement to oppose systems that accorded benefits and privileges according to social status. It is a simple theory. According to utilitarians, all that matters is well-being. The more well-being there is, the better. It is egalitarian: no one's well-being counts more than anyone else's. The pauper's pain counts the same as the king's. As the father of utilitarianism, Jeremy Bentham, put it: 'Everybody to count for one, nobody for more than one.'

Utilitarianism is one member of a family of moral theories called consequentialism. The central tenet of consequentialism is that an action is right if, and only if, it promotes the best consequences (maximisation). According to utilitarians, it is only the consequences for well-being that matter (welfarism). There are several versions of utilitarianism corresponding to how well-being is defined. There are three theories of well-being: hedonistic

eLS subject area: Bioethics & Philosophy

How to cite:

Savulescu, Julian; and Birks, David (December 2012) Bioethics: Utilitarianism. In: eLS. John Wiley & Sons, Ltd: Chichester.
DOI: 10.1002/9780470015902.a0005891.pub2

Advanced article

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Online posting date: 17th December 2012

theories, desire-fulfilment theories and objective list theories (Parfit, 1984).

Features of Utilitarianism

Versions of utilitarianism

Hedonistic utilitarianism

The classical utilitarians Jeremy Bentham and John Stuart Mill were hedonistic utilitarians. The doctrine of hedonism as expounded by Bentham describes only one valuable mental state – happiness or pleasure – and one negative mental state – unhappiness or pain (Parfit, 1984).

Preference utilitarianism

Modern utilitarians such as R. M. Hare and Peter Singer define human well-being as 'the obtaining to a high or at least reasonable degree of a quality of life which on the whole a person wants, or prefers to have' (Hare, 2012).

Ideal utilitarianism

According to ideal utilitarians like G. E. Moore, what matters is not mere happiness or getting what we want, but doing worthwhile things.

Certain things are good or bad for people, whether or not these people want to have the good things or avoid the bad things. The good things might include moral goodness, rational activity, the development of one's abilities, having children and being a good parent, knowledge and the awareness of true beauty. The bad things might include being betrayed, manipulated, slandered, deceived, being deprived of liberty and dignity, and enjoying either sadistic pleasure, or aesthetic pleasure in what is in fact ugly (Parfit, 1984, p. 499).

Each of these theories has its strengths and weaknesses as an account of what is good for people. Some have argued that what is good is a combination of all three of these elements.

We might then claim that what is best for people is a composite... We might claim, for example, that what is good or bad for someone is to have knowledge, to be engaged in rational activity, to experience mutual love, and to be aware of beauty, while strongly wanting these things.

On this view, each side in the disagreement saw only half of the truth. Each put forward as sufficient something that was only necessary. Pleasure with many other kinds of object has no value. And, if they are entirely devoid of pleasure, there is no value in knowledge, rational activity, love or awareness of beauty. What is of value, or is good for someone, is to have both; to be engaged in these activities, and to be strongly wanting to be so engaged (Parfit, 1984, p. 499).

Often, medicine conceives of benefit to people in terms of prolongation of life, or treatment or prevention of disease. According to any of these three versions of utilitarianism, what matters most is the promotion of well-being in broader terms, not merely the treatment or prevention of disease.

Other features of utilitarianism

Utilitarianism has a number of other relevant features important to making moral decisions about the use of genetic technology.

It is far-reaching

All consequences count, not merely the consequences for the individual directly affected by an action. The consequences of an action on other family members and society at large are also relevant. Moreover, consequences of action in the distant future are as relevant as the consequences now (temporal neutrality) (Hare, 1981).

It is sensitive to evidence

Evidence relating to the likely consequences of actions is important to utilitarians. For example, whether genetic modification of human beings is right or wrong turns crucially on the effects on those people's happiness and their capacity to satisfy their own desires and engage in worthwhile activities. It depends on questions that can only be answered by empirical scientific research. Utilitarianism sits comfortably beside 'evidence-based medicine'.

It takes account of uncertainty

Utilitarians consider how likely an outcome is to occur, not merely how good or bad it is. In deciding which action is right, utilitarians first list all the alternative actions. They estimate the possible outcomes of each action. They then evaluate the utility of each outcome, that is, how good or bad each outcome is. However, they also estimate how likely each outcome is to occur. The expected utility of an outcome is the utility of that outcome multiplied by its probability. The expected utility of an action is the sum of all the expected utilities of its possible consequences. The right action is the action with the greatest expected utility. Thus, the disutility of a bad outcome, such as genetic modification of food resulting in ecological disaster, must be discounted if it is very unlikely to occur. The reverse is also true: the mere chance a new gene therapy might cure a person is not sufficient reason to try it. One has to also

consider the potential for harm and estimate the probabilities (Savulescu, 2001a).

It includes 'sins of omission'

For utilitarians, doing nothing is an action. Its consequences have to be compared to the consequences of acting in other ways. One cannot absolve oneself from moral responsibility by deciding to do nothing. Deciding not to engage in stem cell research is to be responsible for the harm that occurs to the people now and the future who would have benefited from its advances. For utilitarians, allowing a person to die or suffer when that could have been avoided is just as bad as directly inflicting suffering or killing. Utilitarianism is thus a demanding moral theory.

Some weaknesses of utilitarianism

Concept of well-being

Well-being is a complex concept. It is not adequately captured or described by standard hedonistic, preference or objective accounts.

The end does not justify the means

Some hold that certain actions are wrong regardless of the consequences. See the example of 'The Survival Lottery' in the section 'Moral status and killing'.

Aggregation and injustice

One of the features of utilitarianism is that it aggregates well-being across individuals. This means that many small benefits may justify a great single harm. For example, imagine that genetic enhancement of intelligence becomes possible and affordable. Assume that large numbers of normal people can modestly increase their intelligence and that this provides them with a greater opportunity to compete in a technology-rich society. A few cannot afford this and they become unemployable. Even if the harm to those who become unemployable is significant and the benefit to those who employ enhancement is small, utilitarianism would support enhancement if the numbers of the former are significantly smaller than the numbers of the latter.

Moral status and killing

A notorious problem for utilitarians is giving a satisfactory account of the wrongness of killing. An infamous example is John Harris's 'The Survival Lottery'.

Everyone is given a sort of lottery number. Whenever doctors have two or more dying patients who could be saved by transplants, and no suitable organs... they ask a central computer to supply a suitable donor. The computer will then pick the number of a suitable donor at random and he will be killed so that the lives of the two or more others may be saved... even taking into account the loss of the lives of donors, the numbers of untimely deaths each year might be dramatically reduced, so much so that

everyone's chance of living to a ripe old age might be increased (Harris, 2001).

For utilitarians, there is nothing wrong with killing an innocent person (indeed, it may be morally required) if it promotes well-being overall. This seems highly counterintuitive.

Utilitarians can respond in at least two ways. The first is that we have deeply wired psychobiological programming to have a natural revulsion to killing each other. That explains our intuitions. For utilitarians, the fact that we have intuitions about rightness does not justify an action. Actions can only be justified by appeal to well-being. (And in some circumstances we would consider it acceptable to kill an innocent person. For example, if a terrorist was about to unleash a vial of biological agent that would kill millions of people, we would think it right to kill a group of surrounding bystanders in order to prevent him killing many people. Few people accept an absolute prohibition on killing no matter what the consequences.)

Second, utilitarians argue that it would only be in very rare circumstances such as this that killing an innocent would be justified. Generally, the harms of killing (to the person killed, his or her family and society) far outweigh any benefits. Utilitarians thus claim it is especially wrong to kill certain kinds of beings – those with the moral status of a person. Some prominent utilitarians such as Peter Singer, who is a preference utilitarian, argue that it is only beings who have self-consciousness or the capacity to see themselves as existing over time, and the capacity to form preferences for how their life should go over time who have the status of persons and a right to life (Singer, 2011). For these utilitarians, there is nothing intrinsically wrong with killing embryos or fetuses because these are not the kind of entities that are self-conscious. This is the most permissive utilitarian view.

Other utilitarians can accord some value to the life of an embryo or fetus, but the wrongness of killing these will never be so great as on most nonutilitarian accounts as the killing of an embryo can be balanced by the value of bringing a new embryo or fetus into existence (Hare, 1975, 1989). Utilitarianism takes a permissive view of killing embryos and fetuses.

Utilitarianism Applied to Genetics

Genetic testing

One of the major contributions of the Human Genome Project has been to identify genes associated with genetic diseases. This allows families with a history of genetic disease to choose to test themselves or their offspring for the presence of these genes.

Presymptomatic or predictive genetic testing

Examples where this might apply include Huntington disease or breast/bowel cancer genes. Whether presymptomatic

or predictive genetic tests should be offered, according to utilitarians, turns crucially on whether people's lives go better as a result of receiving this information.

Importantly, utilitarians count the benefits and harms not only just to the individual test but also to others. And serious harms to one person can be outweighed by benefits to many people. There are several different considerations:

1. Whether a person's life goes better as a result of receiving a negative result.
2. Whether a person's life goes better if she receives a positive result.
3. Whether other people's lives go better as a consequence of testing being conducted.

Consider the first group who test negative. It may seem obvious that a person's life goes better if she is told she does not carry some abnormal gene, such as the gene for Huntington disease. However, some geneticists refer to survivor guilt in those who escape the genetic fate that grips the rest of their family. This must be balanced against the great relief and security many people would feel as a result of discovering they do not carry a gene that will make it more likely they will die young or suffer.

Consider the second group who test positive. Again, it might seem obvious that a person who discovers that she carries an abnormal gene is worse off. She may become depressed or anxious or decide not to have children. Her life is likely to go worse in some ways. However, utilitarians place great weight on information, especially about the consequences of one's actions. The fact is that genetic testing does not make someone get a genetic disorder, it merely reveals whether she already has one. And so it allows more realistic planning for that person's own life. In some cases, a person may be able to take steps to reduce the likelihood of suffering from the effects of a genetic disorder, for example, by regular colonoscopy or prophylactic removal of the colon in familial adenomatous polyposis (FAP) to reduce the risk of cancer.

But even in conditions like Huntington disease and inherited dementias, the information may help to make better decisions about financial planning, career choice, reproduction, lifestyle and end-of-life planning. For example, a person who finds she carries the gene for Huntington disease may decide to have children earlier, to spend more time with them before she gets sick and to have prenatal diagnosis so that her children do not carry the same gene.

Thus, for utilitarians, whether genetic testing should be offered turns on its effects on people's lives in the broadest sense. **Table 1** summarises some of the possible benefits and harms. At present, there are insufficient proper scientific studies to make a decision about whether the benefits of receiving genetic information outweigh the harms, although it seems plausible on theoretical grounds that it does. Indeed, whether genetic information benefits or

Table 1 Harms and benefits of predictive genetic testing*Potential harms*

Development of a perception that the person is 'ill' with negative attitudes towards that person
 Low self-esteem
 Serious psychological maladjustment, even perhaps depression and suicide
 Guilt
 Impaired marital prospect
 Disturbance of family relationships
 Social discrimination, including future employment and insurance discrimination

Potential benefits

Prophylactic medical interventions
 Minimized possibility of serious psychological maladjustment later in life induced by late discovery of status
 Decreased anxiety
 Decreased uncertainty about the future
 Elimination of risk
 More realistic life choices, including more accurate reproductive, career, financial and health planning
 More openness about genetic conditions within the family and society in general

harms a person depends in part on how it is delivered, used and the social context it occurs in, and all these are rapidly evolving.

What of the third group, those who are indirectly affected by a person having genetic testing? These might include the spouse, who must make a decision whether or not to have prenatal testing. It might also include the future children who are not yet born (see Genetic selection). It also includes other members of the family, who may not know that they are at risk, such as adult children. It also includes others in society whose well-being is affected by a decision to have genetic testing and all decisions that are consequent to that. This would include those who must support the care of a person with a genetic disorder (see Utilitarianism and disability). This includes any burden, economic or otherwise, which is imposed by a decision to have or not have genetic testing. Because the effects on these are generally likely to be far less than the effect on the individual tested, they are often ignored. The exception might be immediate family whose well-being is often dependent on the well-being and decisions of the person tested.

Genetic selection

Genetic tests can be used to detect whether a fetus (prenatal diagnosis or PND) or embryo (preimplantation genetic diagnosis or PGD) has a genetic disorder and used to select unaffected offspring. There are several different kinds of conditions:

- catastrophic genetic disorders;
- genetic disorders in which there are no effective treatments; and

- genetic disorders in which there are effective treatments.

Also relevant is when the disorder might commence:

- fetal life;
- infancy;
- childhood; and
- adulthood (late onset).

In general, genetic selection is least controversial when it involves testing for catastrophic genetic disorders commencing in early life. It is most controversial when employed for testing for preventable late-onset conditions, for example, FAP.

For utilitarians, there are good reasons to employ genetic testing for any condition, no matter how mild or late onset. Because utilitarians typically accord little or no value to fetal and embryonic life, it is desirable to select the offspring from the possible offspring a couple could have, the one with the lowest chance of disease and the best prospects for the best life (Savulescu, 2001b; Savulescu and Kahane, 2009).

Imagine a couple in the future is having *in vitro* fertilisation (IVF) treatment in an attempt to have a child. The number of genetic tests that can be performed on a single embryonic cell has increased significantly. The couple produces two embryos. A battery of tests for common diseases is performed. Embryo A has no abnormalities on the tests performed. Embryo B has no abnormalities on the tests performed except its genetic profile reveals it has a predisposition to developing eczema. Which embryo should be implanted?

Embryo B has nothing to be said in its favour over A and something against it. Embryo A should be implanted.

Why should not we select the embryo with a predisposition to eczema? What is relevant about eczema is that it reduces well-being. That is why we treat it. It can be unattractive and cause symptoms that require steroids to treat it. Eczema can last lifelong. The morally relevant property of 'eczema' is that it is a state that reduces the well-being that a person experiences. So, utilitarians would urge testing and PGD for it and any condition, no matter how mild, if it reduces well-being (Savulescu, 2001b).

What of prenatal testing? Genetic selection using prenatal testing requires termination of pregnancy. Whether this is justified for utilitarians is determined by whether subsequent children are more likely to have a better life than this fetus. For something like eczema, which is common and mild, it may be that any subsequent pregnancy is likely to be affected by something equally mild. For more severe conditions, such as cystic fibrosis, it may be more likely that termination of an affected pregnancy is associated with a sufficiently high chance of the next pregnancy being better.

Utilitarianism and disability

One of the most controversial implications of utilitarianism is that it may be wrong to have a child with a serious disability (Savulescu, 2002; Savulescu and Kahane, 2009).

If we assume that disability, such as deafness or paraplegia, reduces the likelihood that a person will have a very good life, then couples have a moral obligation to have children without disability rather than one with disability. For example, deaf or short-statured people who try to employ genetic technology to deliberately have deaf or short-statured offspring are acting wrongly according to utilitarianism. Utilitarianism is in this way eugenic. Moreover, if a disabled person imposes economic (or other) burdens on society that reduce the well-being of others, this is a reason against having a disabled child. Of course, if disability did not reduce opportunities and the likelihood of having a very good life, there would be no utilitarian objections against selecting for it (see, Kahane and Savulescu, 2009).

Although there is a *prima facie* case in favour of having prenatal testing and selective termination of pregnancy when one considers only the offspring, it is also important to consider the effects of such terminations on the pregnant woman and society in general. If the pregnant woman would find termination significantly and irretrievably disturbing, this would be a reason not to have a termination. Likewise, if encouraging termination of pregnancy for disability had undesirable social consequences, such as fostering intolerance and bigotry, these are reasons not to encourage termination.

Most importantly, according to utilitarianism we should consider all alternative courses of action. If a disabled child would have a life worth living, and other couples are

willing to bring that child up, adoption is preferable to termination of pregnancy. Similarly, if other infertile couples would use spare embryos, it is preferable that these embryos go to other couples rather than be destroyed, even if the embryo has no right to life. The well-being of the infertile couple and the future child are enough to justify donation.

Behavioural genetics

Behavioural genetics seeks to elucidate the genetic contribution to a range of nondisease states (see Table 2). At

Table 2 Conditions that have been the subject of behavioural genetic research^a

Aggression and criminal behaviour
Alcoholism
Anxiety and anxiety disorders
Attention deficit hyperactivity disorder (ADHD)
Antisocial personality disorder
Bipolar disorder
Homosexuality
Maternal behaviour
Memory and intelligence
Neuroticism
Novelty seeking
Schizophrenia
Substance addiction

^aSource: Savulescu (2001b).

Table 3 Utilitarian responses to the American Society of Reproductive Medicine's arguments against sex selection^a

1. *Gender should not be a reason to value one person over another*

Utilitarians value people according to how well their lives go. For utilitarians, there is a reason to bring into existence people who will have better lives. In those countries where one sex enjoys a better quality of life, there is a reason to have a child of that sex. Moreover, utilitarians do not see selection as devaluing lives without that characteristic – rather they see selection as a means of maximising how well people's lives go. If banning sex selection would make people's lives go better, utilitarians would support a ban. Worldwide, sex selection has been said to be responsible for, more than 100 million women being missing. Their well-being alone might be thought to justify a ban on sex selection; however, for utilitarians this must be balanced against the well-being of any subsequent children who would not have otherwise existed.

2. *Sex selection may 'contribute to a society's gender stereotyping and gender discrimination'*

Utilitarians are concerned about the social consequences of selection decisions. If others are harmed as a result of selection choices, this is a good reason not to allow selection. If selection harms women in society, or creates a gender imbalance resulting in harm (Singer and Wells, 1984) it should not be offered. (Of course, the evidence suggests that sex selection in the West would not have this effect and so utilitarians would then have no objection to it.)

3. *It is 'unreasonable for individuals who do not otherwise need IVF to undertake its burdens and expense solely to select the gender of their offspring'*

According to utilitarians, insofar as sex selection has consequences for the well-being of the offspring produced and the couple who make the choice, these welfare considerations must be balanced against the medical risks and financial expense. Some utilitarians (e.g. Mill) have argued that the weighing of risks and benefits is best done by the individuals who are affected by the decision.

4. *It represents a 'misallocation of limited medical resources'*

Utilitarians are very concerned that limited resources are used to bring about the most good. If sex selection were publicly funded, then utilitarians would be concerned to ensure it was a cost-effective use of resources. If it were privately funded, utilitarians would be concerned that the social consequences did not result in harm to others.

^aSource: Ethics Committee of the American Society of Reproductive Medicine (1999).

present, there are no genetic tests available for any non-disease state except sex. The issues that arise in sex selection are similar for all kinds of selection for genes for nondisease states. The arguments employed by the American Society of Reproductive Medicine against sex selection by PGD diagnosis are given in **Table 3**, with utilitarian responses.

Genetic modification

Gene therapy

For utilitarians, means do not matter. Or, the end justifies the means. If gene therapy became successful and was capable of treating disease, utilitarians would see it as no different from any other medical intervention. The sole issue in gene therapy for utilitarians is whether the expected benefits outweigh the risks (Savulescu, 2001a). The risks include not only the risks to the recipient of the therapy but also to others. So, if there were a risk of a vector mutating and representing a novel infectious risk to humans, this would be a very important consideration for humans. In the case of germ-line gene therapy, utilitarians are concerned to ensure that the well-being of future generations is maximised. However, if germ-line gene therapy is successful, promoting the well-being of future generations

may require employing germ-line gene therapy. For example, imagine that the mutant gene for cystic fibrosis could be corrected in the fertilised egg, and a healthy copy passed on to all cells including germ cells. The welfare of future generations would be promoted by such therapy.

Genetic enhancement

Because utilitarians have a broad understanding of what makes a life go well, which goes beyond prevention or treatment of disease, they have no objections to genetic enhancement. They see genetic enhancement as just another means to promote human well-being. If being intelligent or tall gives a person a higher chance of having a better life, then utilitarians encourage enhancement. However, utilitarians are very concerned about the collective effects of individual decisions. If enhancement causes other people to be significantly worse off, this may be a reason not to allow enhancement.

The critical question for utilitarians is not 'Is this natural or is this appropriate for humans?' but rather 'Will this make people's lives go better?' If, for example, having the night vision of an owl reduced injuries at night and had no adverse effects on day vision, utilitarians would encourage the introduction of genes from owls into humans.

Table 4 Utilitarian responses to four ethical dilemmas

- A 30-year-old woman with a family history of early onset Alzheimer disease requests IVF and PGD to have a child without a predisposition to Alzheimer disease*

For utilitarians, it is better if a child is born without a predisposition to Alzheimer disease than with such a predisposition, other things being equal. A life without Alzheimer disease is better than one with Alzheimer disease.
- A couple has a daughter who has leukaemia. There is no compatible stem cell donor. The couple wishes to use IVF and PGD to ensure they select an embryo which will be a compatible tissue donor. Doctors would extract umbilical cord blood cells from the baby*

The answer to this dilemma is straightforward. Everyone benefits. The child with leukaemia has the opportunity to live. The parents will see their child have the chance to be cured and get a new child. The child conceived to be a stem cell donor is given the gift of life. Sometimes it is objected that the child conceived is used as a means to an end. For utilitarians, the overall consequences to the child's life are important. If the child will be loved and have a tolerably normal existence, the fact that another person benefits is good from a utilitarian perspective.
- A doctor misses an important sign of Down syndrome in a prenatal ultrasound scan. A couple give birth to a child who has Down syndrome. They seek damages on behalf of the child claiming it had a right not to be born*

Utilitarians view Down syndrome as a condition that reduces life's value – that is why screening tests are offered. However, utilitarians need not view Down syndrome as a condition that is so bad that it makes life not worth living. If the Down syndrome had been detected this child would have been aborted. Hence, if the child's life is worth living, it is good that the Down syndrome was not detected, from the child's perspective. So it is not then entitled to damages. However, utilitarians would support damages being awarded to the parents insofar as their lives go worse because they have had a child with Down syndrome. The social consequences of these kinds of error are also important: will they reduce confidence in the screening system and so reduce uptake, with the consequence that more children will be born with disabilities?
- A deaf couple request IVF and PGD to select a deaf embryo so that they can have a deaf child such as themselves*

If deafness reduces opportunities, couples should not have a child who is deaf rather than hearing. Some deny that deafness is a disability, but these arguments appeal to deafness being a unique culture, entry into which is conditional on being deaf. This seems to ignore the fact that hearing children can learn to sign and still be a part of their parents' community, if they choose. Utilitarians would support this couple's choice if they would only have a child if it were deaf, provided the deaf child would have a life worth living. The reason for this is that although utilitarians believe it is better that a hearing child exists rather than a deaf child, they would also generally believe it is better if a happy deaf child exists rather than no child at all.

Conclusion

Utilitarianism is important. It stresses the importance of good empirical research into the effects of interventions – effects that are biological, psychological and social. If the utilitarian solution is not adopted, someone will suffer. There should be very good reasons for not adopting the utilitarian solution of maximising well-being.

Objectors to utilitarianism often refer scathingly to the ‘utilitarian calculus’. However, utilitarians are in one sense humane: they care ultimately about people’s well-being and not about feelings, or intuitions or attachment to symbols. Utilitarianism is a theory that shows concern for people through concern for their well-being (Table 4). **See also:** [Bioethics – Overview](#); [Bioethics of Gene Therapy](#); [Bioethics of Genetic Testing](#); [Bioethics: Practice](#); [Human Genetics: Ethical Issues and Social Impact](#)

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