

Human enhancement – An ethical perspective

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1. Introduction

The pursuit of improvement is an essential constant in the development of mankind. People are not only concerned with improving society, but also with improving themselves. “Enhancement” does not refer to improvement in the sense of *enlightenment* and humanism, but to the endeavour to improve people’s capabilities through various measures. Human enhancement¹ is about improving the human body. While healing is about restoring or maintaining existing abilities, human enhancement strives to improve or perfect physical, psychological, cognitive or emotional performance beyond therapeutic or biotechnical intervention. It is about the human being as a rational and moral being and as a social and political being (*zōon politikón*). Improvement aims to change human nature in the respective realisation of their being and the human condition (*conditio humana*). It is about efficiency and effectiveness of humans for their own self or for a purpose. It is about maximising utility and optimisation.

It is about the human being and therefore about the concept of the human being. This means that the ethical and moral conditions of enhancement are also relevant. What does it mean for people to make use of the possibilities of enhancement? What influence does enhancement have on the human being? The following section deals with the fundamentals of the ethical and moral justification of human enhancement. Conclusions and recommendations are developed that are relevant to discourse (*philosophical discourse*) on the possibilities and limits of enhancement.

¹ The following working definition is used: “Human enhancement refers to the use of technologies, methods or substances to improve a person’s physical or cognitive abilities beyond what is considered normal and natural.”

Translations by the authors are indicated by (a. t.).

These enhancements can cover a wide range of possibilities such as behavioural enhancement, neuroenhancement, technical enhancement, genetic enhancement and transhumanism.²

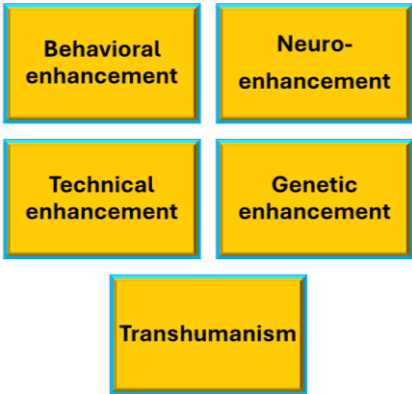


Figure 1: Methods of human enhancement. Author’s illustration.

Improving and optimising behaviour can lead to an increase in performance and an improvement in living conditions. This can include cognitive, mental or physical training, for example.

Neuroenhancement is about improving cognitive performance. This can be achieved by enhancing the emotional state or increasing potential.

Technical enhancement is used to restore the ability to live and perform through the non-invasive or invasive use of prostheses in the broadest sense. This includes prostheses for restoring mobility, hearing and vision, for example. Passive and active exoskeletons can also be used. The dynamic development of computers, chips and other electronic parts as well as artificial intelligence make it possible to use these on or within the body to improve or optimise abilities. These can be controlled by using a brain-computer interface (BCI).

² Jotterand, Fabrice/Ienca, Marcello (Ed.): The Routledge Handbook of the Ethics of Human Enhancement. New York: Routledge (Routledge Handbooks). 2023. Intr. and Part I; UK Ministry of Defence: Human Augmentation - The Dawn of a New Paradigm. A strategic implications project. Development, Concepts and Doctrine Centre (DCDC). Shrivenham 2020.

Genetic enhancement involves introducing gene elements to tissue or cells. These can be introduced, for example, to support healthy cells, replace diseased cells or deactivate pathogenic cells. A germline modification (clustered regularly interspaced short palindromic repeats (CRISPR)) can be used for this purpose. The cells can be introduced therapeutically or preventively.

Further possibilities of enhancement can be achieved through transhumanist procedures. The aim is to remove biological limitations and fully develop human capabilities. It is about the transition from human to posthuman. In these beings of the future, improvements should be possible within them, their brain and body, as well as in all their other aspects. This will create a new concept of mankind, in which it can develop according to their own ideas. This is the path from human to cyborg.

Pharmacological and technical developments and innovations are essential prerequisites for improvement. This is where feasibility reaches its limits. Proponents, liberals and critics of this development can be identified. Proponents and critics of human enhancement refer to different ideas about people and the human body. In their arguments, proponents follow a naturally determined type of human being, while critics describe the body as inherently deficient and limited in its options.³ The respective attitudes are shaped by the respective view of man, the world and society as well as by the assessment of medical and technical potentiality for development. However, they are also influenced by ethics and morals.

2. General conditions

The ethical and moral assessment of human enhancement is influenced by various framework conditions. These include the conditions of society, the structure of the law, the possibilities of using artificial intelligence, attitudes towards the dangers of the cyber domain and the relationship between the individual and society.

³ Borrmann, Vera/Coenen, Christopher/Gerstgrasser, Luisa/Albers, Eva/Müller, Oliver/Kellmeyer, Philipp: Resurrecting the 'body': Phenomenological perspectives on embodiment. In: Jotterand, Fabrice and Ienca, Marcello (Ed.): *The Routledge Handbook of the Ethics of Human Enhancement*. New York: Routledge (Routledge Handbooks). 2023, p. 98.

A society and its political constitution are characterised by conditions that are common to all or most citizens. This is expressed, among other things, in its value structure. The *structure of values* of a society is essentially determined by philosophical, religious and legal views/conditions as well as traditions. It describes the totality of *moral judgements*, norms, ideals, virtues and institutions. It establishes the rules that are universally recognized as binding and must be adhered to within a society. Every form of morality is therefore a historically developed and changing *canon of rules*. It is always a group morality (*moral status of groups*) and applies exclusively to the members of the group. It therefore encompasses all systems of order and meaning (rule systems) that have emerged partly naturally, partly through convention, partly through tradition and partly through mutual recognition processes.

In view of the plurality of ideological standpoints, private opinions and religious convictions, as well as rapidly advancing socio-cultural development and the associated ongoing change in economic, political and social objectives, a consensus on matters of morality in modern societies and in the future can no longer be taken for granted.

The *concept of values* and the ethical and moral orientation of people in society are subject to dynamic processes that are based on religious, philosophical, historical, legal and political developments. In this context, questions of equality, justice and equal opportunities in social, professional, economic and moral terms as well as their ethical evaluation arise.

There is a risk that inequalities will increase and lead to conflicts. Attitudes towards the methods and scope of human enhancement are also influenced or determined by the economic interests of business, the political interests of political parties and the interests of state power.

Economic regulations are also important in the ethical evaluation of human enhancement. This raises questions such as: will the costs of enhancement be covered by the state or health insurance companies? Can everyone afford enhancement or only the rich? Does the state force people to undergo human enhancement or is it only done on a voluntary basis?

With regard to ethical and moral evaluation, this also involves the question of justice in society. Different ways of realising justice can be found in societies. For example, there are forms of compensatory justice (*iustitia communitiva*), exchange justice (*iustitia distributiva*) or contractual forms of justice that

result from fair debate as described by John Rawls in his work “A Theory of Justice”. Attitudes towards justice have an influence on the values of a society.

Artificial intelligence (AI) will play an important role in the development of enhancement in the future. AI is dependent on the data and information it collects. Regarding possible enhancement, the ethical and moral question is the extent to which people are still in control of this data or whether they are at the mercy of it through the automation of processes, and whether their moral behaviour is thus determined by others.

In April 2019, a “High-Level Expert Group on Artificial Intelligence” published “Ethical Guidelines for Trustworthy AI” on behalf of the EU Commission. These guidelines formulate seven requirements:

1. Human agency and oversight [...]
2. Technical robustness and safety [...]
3. Privacy and data governance [...]
4. Transparency [...]
5. Diversity, non-discrimination and fairness [...]
6. Societal and environmental wellbeing [...]
7. Accountability [...]⁴

The EU AI Act states the unacceptable risks of artificial intelligence:

Unacceptable risk AI systems are systems considered a threat to people and will be banned. They include:

- Cognitive behavioural manipulation of people or specific vulnerable groups: for example, voice-activated toys that encourage dangerous behaviour in children
- Social scoring: classifying people based on behaviour, socio-economic status or personal characteristics
- Biometric identification and categorisation of people
- Real-time and remote biometric identification systems, such as facial recognition.⁵

⁴ High-Level Expert Group on Artificial Intelligence: Ethics guidelines for trustworthy AI. 2019, p. 14. <https://digital-strategy.ec.europa.eu/en/library/ethics-guidelines-trustworthy-ai>.

⁵ EU Parliament: EU AI Act: first regulation on artificial intelligence. 2023. <https://www.europarl.europa.eu/topics/en/article/20230601STO93804/eu-ai-act-first-regulation-on-artificial-intelligence>.

An essential element of the ethical evaluation of artificial intelligence is the testing of algorithms and training data. This has a significant influence on the acceptance of an AI with regard to its application and moral evaluation. This applies, for example, when humans are equipped with a brain-computer interface (BCI). They are thus participating in an Internet of Things (IoT). This may result in a two-way exchange of data. If this data exchange can determine people's thoughts and actions, they lose their dignity, freedom, equality, autonomy and self-determination.

By connecting to the internet, it is possible to influence or control the technical means of enhancement. This is the case, in particular, if the enhancement must necessarily be connected to the internet. This applies if the technical systems are used non-invasively (*outside the body*) or invasively (*inside the body*), reversibly or non-reversibly. It also concerns the protection of brain-computer interfaces (BCI) and all IT systems connected to a cyborg.

When applying artificial intelligence, robotics and computer science, one must take into account that people must be treated not as things but as persons, as *ends* and not as *means* (Kant).

3. Ethical principles

Ethics not only concerns the descriptive and explicative study of moral questions, but also the generation, examination and justification of *normative* statements. They do not primarily concern what *is*, but *action*. Ethics seek answers to the question: **what should we do?** Morality seeks answers to the question: **how should we live? How should we act?** Norms or principles of what is morally right make a *universal* and *categorical* claim to validity. These norms also include human dignity and autonomy as well as human rights. They are inherent to human beings. This leads to the demand that human enhancement should not harm people. Individual enhancement also has an influence on people as a community and on the relationship between people. The basis of human enhancement should not be to harm people. This means not causing harm, but also alleviating or avoiding harm.

In the ethical evaluation of human enhancement, it is first necessary to clarify what characterises a "human being" and which concept of humanity is deci-

sive. If human enhancement also includes human-machine integration, the question of what is meant by “machine” in this context must also be clarified.

Man is an individual, a person and a social and political being (*zōon politikón*). These characteristics are in a reciprocal, often conflicting relationship. Individuals and people are characterised by their dignity, autonomy, freedom and equality. As members of a community, people are defined by their social position, interdependent relationship with others, legal status and the pursuit of justice within society.

So, when it comes to the question of human enhancement, these criteria must be included in an ethical assessment. The following terms and spheres are essentially relevant in the evaluation of enhancement: ethics, morality, values, autonomy, freedom, human dignity, human rights, equality and justice.

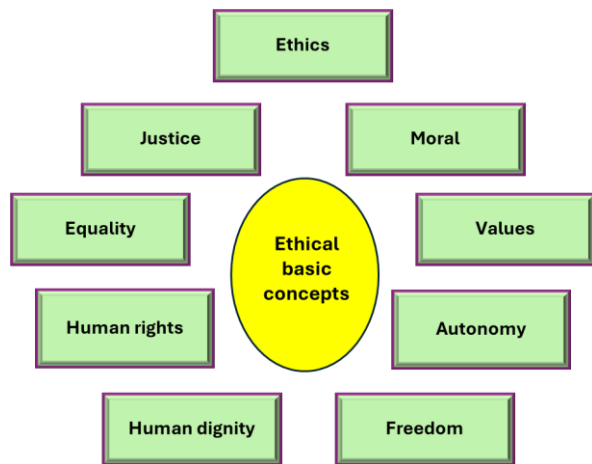


Figure 2: Basic ethical concepts. Author’s illustration.

The human being is the central theme in ethics. It is considered in its naturalness and its intellectual possibilities and limitations. The main focus lies on reason and rationality. The major theories of ethics are applicable to the question of an ethical and moral evaluation of human enhancement. In the following, the human being is understood as a rational individual and social being.

4. Philosophical theories

Philosophical theories deal with people's views of existence and reality. They seek an understanding of ethical and moral issues and individual decisions. In the following, deontology, virtue ethics and utilitarianism are examined as the foundations of ethical and moral decisions.

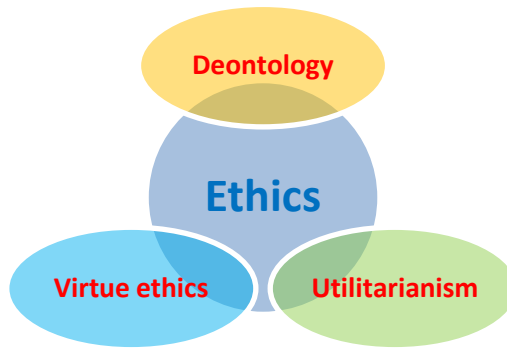


Figure 3: Philosophical theories. Author's illustration.

4.1 Deontological ethics

Deontological ethics (ethics of *duty*, ethics of *ought*) require or prohibit an action according to certain criteria. They are based on the autonomy, freedom, self-determination and personal responsibility of human beings. They describe a class of ethical theories that attribute goodness or badness to actions regardless of their consequences due to intrinsic incentives in the matter or the individual. The moral value of an action results solely from its motives. Only if the person acting has decided to act out of moral obligation is this action good. The aim of ethics is to follow what is ethically right, regardless of the consequences.

Kant describes an action whose sole motive is the *moral law* and in which one's own inclination (interest) plays no role as an act out of duty. Merely acting dutifully, however, is to act according to the moral law but with selfish motives. The *obligatory provisions* of deontological ethics are simple and straightforward ethical rules that are easy to apply and manage. In deonto-

logical ethics, only the intended outcome is decisive for the moral value of an action. The ethical intention is independent of the factual intention. *The ethical ought* can be directly derived from rational subjectivity.

The *universalizability principle* (Kant) is important in this context. This becomes clear in the principle of pure practical reason, the categorical imperative: “Act in such a way that the maxim of your will can at all times be regarded as the principle of general legislation.”⁶ The “Golden Rule” is derived from this: “Do not do to others what you would not like done to yourself.” This establishes an *ought reference* between individuals that is valid in a general approach. In his *formula of the end in itself*, Kant says: “Act in such a way that you need humanity both in your person and in the person of everyone else at all times as an end, never merely as a means.”⁷

The application of deontology to human enhancement opens up the possibility of examining the rightness or wrongness of decisions or actions on the basis of principles. According to Kant, it demands a duty of “respect for the law” and thus respect and consideration of the dignity of one’s own person as well as that of all other persons. However, it does not allow a decision or action to be taken in the case of conflicting norms and duties, i.e. in the case of a conflict of duties. It is also difficult to apply in different cultures and societies.

4.2 Virtue ethics

Virtue ethics have a long tradition. Throughout history and cultures, “virtue” has often been interpreted in different ways. Virtue (*arete*) generally means individual suitability or efficiency with regard to individual decisions or behaviour. It explores the requirements under which people strive for the good that their reason dictates. It is a general practical philosophy that opposes an imperative or duty-based view of morality. The good unfolds through the pursuit and realisation of virtues such as mindfulness, justice and selflessness. If an ethically and morally better state can be achieved for people in the context of an enhancement, such as maintaining or restoring health, we can

⁶ Kant, Immanuel: Kritik der Praktischen Vernunft. Stuttgart: Reclam. 2012. I, 1, §7. a.t.

⁷ Kant, Immanuel (ed.): Grundlegung zur Metaphysik der Sitten. Meiner (Philosophische Bibliothek, 519). Hamburg 1999. 429, 10-12. a.t.

speak of the good. The aim of virtue ethics is to acquire an ethically good, virtuous character. The acquisition of such a character is both the result of and the condition for a good life. This good life is not to be seen individually, but in its social dimension.

Virtue ethics are characterised by the constant orientation of the will towards the morally and ethically good. The basic orientation towards the good applies in two respects: to the individual life and to the commitment to society and the state. It is not a question of individual self-realisation, but of people in their personal conduct of life and as social and political beings as described by Aristotle's concept of *ζῶον πολιτικόν*. What is right is teleology, the aiming for and working towards values. These are formed through justice, law and social norms.

The application of virtue ethics to human enhancement seeks an internalised, moral attitude, but does not develop a solution for current problems or specific individual cases. It can be a guideline for behaviour based on a catalogue of virtues.

4.3 Utilitarianism

Utilitarian ethics constitute a normative ethical theory that aims to increase the benefit of all, the general welfare, through individual or collective action. It views human action from the perspective of the goal and expediency in the sense of a means-end relationship.

Utilitarianism as a form of consequentialism comprises the main theories of act utilitarianism, negative utilitarianism and rule utilitarianism. Act utilitarianism evaluates the respective consequences of an individual action in terms of the greatest possible benefit. In negative utilitarianism, the criterion of evaluation is not the maximisation of benefit, but the reduction of suffering, such as injury or death of non-combatants or innocents. In rule utilitarianism, it is the reference to a rule, such as the protection of human rights or international law. The action is evaluated in terms of its morality by following the rule that is meant to maximise the benefit of all. Rules therefore play a central role in moral action.

The actual consequences of the action resulting from the pursuit are evaluated from the point of view of what is morally right and not which norm is morally good. However, what is morally right depends on the determination of an extramoral highest value. This is usually determined by the fact that people or society generally evaluate these values positively. When acting, the options that have the best consequences should be chosen. The benefit for the general public that an action brings is made the yardstick for its moral evaluation. Utilitarianism also evaluates the risk-benefit ratio. In its implementation, the principle of risk shifting often arises, i.e. the achievement of one's own benefit and the reduction of one's own risk is achieved by shifting it to others.

4.4 Application of philosophical ethics

The application of deontological ethics to human enhancement determines morally correct action based on norms or principles. It enables a thought connection between freedom, autonomy, norms, maxims, will and duty. They establish a connection between action and the person acting and thus make it possible to find criteria for moral action. The categorical imperative establishes a universal, duty-theoretical requirement based on two principles: generalisation and duty. According to Kant, the latter is an absolute, unconditional supreme moral principle that applies to all rational beings. However, it is not an instruction for action. Individuals must use their reason to recognise the correct principles of their actions and act accordingly. This also applies to enhancement.

The application of virtue ethics to human enhancement is based on an internalised moral attitude. Through their virtues, regardless of the content of the canon of virtues, people can recognise what is right and act accordingly. Virtues contain a disposition to ought. The ought results from the values of the respective society. The application of virtue ethics requires an individual decision or behaviour that corresponds to socially relevant norms, customs and demands. Virtuous behaviour also requires knowledge of the good. However, virtue ethics do not develop a solution for current problems or specific individual cases. They can be a guideline for behaviour based on a catalogue of virtues.

The application of utilitarianism to human enhancement considers the usefulness of consequences. The consequences for the person and society are evaluated. The basis for the evaluation is the consequence that results from decisions and actions. It should be noted that a large number of factors must be considered due to the complexity of the conditions and possibilities involved in deciding on an enhancement or its implementation. In addition, the assessment of benefits differs between cultures, regions and groups.

5. Faith-based ethics

Ethical and moral assessments of decisions and actions, such as enhancement, are also based on religiously established values in individuals and societies. In the course of the cultural development of the respective society, these have shaped the assessments with varying degrees of intensity. In many areas today, values that were previously considered correct are changing.

Christianity, Judaism, Islam, Hinduism, Buddhism and Atheism are covered below.

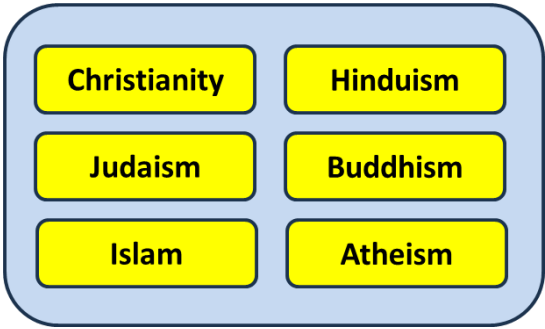


Figure 4: Faith-based ethics. Author’s illustration.

5.1 Christianity

The Christian view of humanity is essentially shaped by the Bible and the revealed faith. It is of particular importance that man was created in the image of God. This is stated in Genesis 1:27: “So God created man in his own image, in the image of God he created him. He created them male and fe-

male.”⁸ As the image of God, man is a natural unity of immortal soul, spirit and body and possesses reason as well as freedom of will and action. He bears responsibility for shaping the world and thus for life and creation (Genesis 2:15). It says in the Bible (Genesis 1, 3:4-5): “[...] you will become like God and know good and evil”.⁹ As a result of the fall into sin, man is therefore able to distinguish between good and evil. This gives him the freedom to make decisions. However, he is also responsible for his actions. Man’s likeness to God, which he lost through the fall of man, was restored through Jesus Christ. Through his grace and love, man once again became “partaker [...] of the divine nature” (2 Peter 1:4). However, the Christian view of man has changed over the centuries. The image of God remains a central concept of Christianity.

Since human beings are given freedom of will and action, they can develop in the spirit of likeness. The joint declaration of the Council of the Protestant Church in Germany and the German Bishops’ Conference states, for example, that “The fact that human life is the gift of God does not exclude the possibility that man himself, acting, takes responsibility for life and shapes it. However, this can only be done with respect for the inviolable dignity that is assigned to human beings as an inalienable value, from their beginning to their end.”¹⁰

The likeness of God and traditional Christian values and norms thus set the framework for possible enhancement. If this corresponds to the Christian conditions, the unity of mind and body based on nature, it is ethically acceptable. At the same time, the right to self-determination and human dignity must be respected.

⁸ Die Bibel. Altes und Neues Testament. Einheitsübersetzung. Unter Mitarbeit von Bischöfe Deutschlands, Österreichs, der Schweiz, des Bischofs von Luxemburg, des Bischofs von Lüttich, des Bischofs von Bozen-Brixen (Auftrag). Stuttgart: Katholische Bibelanstalt 1980.

⁹ Ibid.

¹⁰ Gemeinsame Erklärung des Rates der Evangelischen Kirche in Deutschland und der Deutschen Bischofskonferenz (.): Gott ist ein Freund des Lebens, Herausforderungen und Aufgaben beim Schutz des Lebens. https://www.dbk.de/fileadmin/redaktion/veroeffentlichungen/arbeitshilfen/AH_076.pdf, accessed 10.05.2024, a.t.

In transhumanism, however, the natural unity of soul, mind and body is abolished. The human being and therefore the human mind and body are treated as a thing, in Kant's terms as a means and not as an end. This leads to the dualism of mind and body. Mind and body are seen as the result of human-directed evolution.

5.2 Judaism

In Judaism, man is understood in his unity as the image of God. Thus, it says in the Book of Bereshit of the Torah: "And God created man in his own image, in the image of God created he him; male and female created he them." This is confirmed again: "[...] for in the image of God he made man" and also in the following passage: "On the day that God created man - in the likeness of God he made him - he created them male and female, and blessed them and called their name Man, on the day that they were created."¹¹ This means that man is a person and must not be made a thing. With his creation, God also obliged man to obey the divine laws. Man is endowed with free will and can choose between good and evil. Since man is an image of God, he must not be placed on the same level as a thing. He remains a person with inalienable dignity and inalienable rights. Navon explains this:

"Human dignity (kavod habriyot) is an ethical/legal category taken very seriously in Jewish thought, allowing for great leniencies to ensure that it is preserved. It entails honouring people as a'lhau, relating to them as a subject and appreciating their inherent worth simply as human beings."¹²

The way in which technology and AI are developed and used is significant and important in observing the Torah. Not everything that is possible is therefore morally and ethically permissible. This makes it clear that there are ethical and moral limits to the manner and scope of human enhancement.

¹¹ See Die Torah – eine deutsche Übersetzung. <https://www.talmud.de/tlmd/die-torah-eine-deutsche-uebersetzung/>, a.t.

¹² Navon, Mois: Autonomous Weapons Systems and Battlefield Dignity. In: Klinge, Hendrik/Kunkel, Nicole/Puzio, Anna (eds.): Alexa, wie hast du's mit der Religion? Theologische Zugänge zu Technik und Künstlicher Intelligenz. Darmstadt: Wissenschaftliche Buchgesellschaft (wbG) (Theologie und Künstliche Intelligenz, 1). 2023. p. 221.

Humans have limited freedom, not machines and cyborgs. The way in which technology and AI are developed and used is significant and important in observing the Torah. Not everything that is possible is therefore morally and ethically permissible. This makes it clear that there are ethical and moral limits to the manner and scope of human enhancement.

5.3 Islam

The foundations of Islam are the Qur'an, the Sunnah and the hadiths. The Qur'an is the most important foundation of Islam. As a revelation, it represents the unadulterated word of Allah. The Sunnah is based on the habits of the Prophet, which are attested to by word and deed. The hadiths refer to sayings of the Prophet that can be traced back to Muhammad via a chain of information. Regarding man, it says: "And surely We created man from clay, from black mud, moulded into a form" (15:26) and "And when I have finished him and breathed into him of My Spirit, fall down and bow down before him" (15:29). Man is a creature of God. As a creature of God, he is obliged to thank and obey his Creator. This obliges him to follow God's intentions. Man is described as God's representative.

Man was created strong on the one hand, "Surely We have created man in the best form" (Sura 95:4), and weak on the other, "Allah desires to lighten your burdens and man has been created weak" (Sura 4:28). Thus, he was also given the free will to distinguish between good and evil, whereby he stands between the possibility of free will and the regulations of Allah. This places limits on the type of enhancement he can choose. A person's decision of will in favour of enhancement must not violate the commandments of Allah. This would not only violate the commandments of Allah but would also be morally wrong. Man has the opportunity and an obligation to develop further. He is equipped with many abilities for this purpose. This gives man the opportunity to improve his condition and strive for perfection. Man should cultivate his self and maintain moderation, as the Qur'an says: "[...] certainly He does not love the intemperate" (Sura 7:31).

The importance of human life is emphasised in Sura 5:32: "[...] whoever kills a human being, except (that it is in retaliation) for murder or corruption on earth, it is as if he had killed all human beings." In this context, the question

arises as to whether, in the context of transhumanism, the development of a cyborg should be regarded as killing a human being. However, it also states:

“Every event in the world is therefore a creative act of God. Man’s awareness that he can act freely and is responsible for his actions does not speak against this, because this is also a moment in God’s world plan: God has already taken everything into account in his providential management of the world.”¹³

This would also open up the possibility of comprehensive human enhancement, as God has also provided for this in his world plan. The extent to which the various religious scholars and denominations of the Sunnis, Shiites or Wahhabis agree with this has not yet been determined.

5.4 Hinduism

Hinduism is a religious social system with rites, religious customs, holy books, rules and social conditions. It sees people as members of a caste. It has no creator god for man or founder of a religion such as Christianity, Judaism, Islam or Buddhism. There are a large number of gods. The main gods are Brahma, who created the world, Vishnu, who sustains the world, and Shiva, who destroys the world before it is recreated.

“Hindu theology recognises the principle unity of God, but understands him under very different aspects that allow us to see the differences in the unity: God is transcendent (*para*), embodied (*vibhava*), incarnate (*avatāra*), indwelling as an individual soul (*an-taryāmin*), present in the divine image (*arcā*) or creating the world out of himself (*sṛṣṭi*).”¹⁴

There is no punishing God in Hinduism. After the rebirth of the soul, a person’s deeds in the present determine their later fate and their position in society.

¹³ Glasnapp, Helmuth: Die fünf Weltreligionen. Hinduismus, Buddhismus, chinesischer Universalismus, Christentum, Islam. Sonderausg. Kreuzlingen. Hugendubel (Diederichs, 170). Munich 2001. pp. 408-409.

¹⁴ Hierzenberger, Gottfried: Der Hinduismus. 1st ed. Wiesbaden: Marix Verlag (marixwissen). 2011. <https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=6266169>. p. 82, a.t.

Dharma is an essential element of Hinduism. Dharma refers to the eternal law of the world. “It manifests itself as *natural* order, *moral* order and *magical-ritual* order”.¹⁵ An essential element is the observance of the duties of the castes. People are required not to accumulate bad dharma and to achieve good reincarnation through good deeds.

Dharma is essential for people. Their life is determined by it and they can shape their own destiny. Thus, it can be stated:

“The eternal law (*dharmā*) is effective in all things and beings. It manifests itself as *natural* order, *moral* order and *magical-ritual* order. For many Hindu systems of thought and religion (classical *Samkhya*, *Mimamsa*, *Jainism*, *Buddhism*, etc.), *dharmā* is the eternal law of the world, upon which the gods are also dependent.”¹⁶

“*Dharma* means duty, justice, virtue. Like Western ‘morality’, it refers to both religious and social duties of conduct.”¹⁷ People must be careful not to build up bad karma by giving in to the desires of the ego without restraint. This also applies to possible enhancement.

Hinduism’s view of man is characterised by a mystical devotion to the *One* and an integration into the social structure. It is related to individuals in their endeavours for their individual self (*atman*) and thus the awareness of their self around the real objects of their being.

As Hinduism is not a uniform religion with a central authority, such as the Catholic Church, the development potentialities of individuals are largely determined by the caste environment or social stratification. Despite being integrated into a caste that regulates many areas of life, the individual is nevertheless able to lead a self-determined moral life. This results in different development potentialities, which are also reflected in the context of human enhancement.

¹⁵ Ibid., pp. 105-106, a.t.

¹⁶ Ibid., a.t.

¹⁷ Hawkins, Bradley K./Wilson, Brian/Shattuck, Cybelle/Elias, Jama, J./Cohn-Sherbok, Dan: Die fünf Weltreligionen. Geschichte, Lehren, Perspektive. HOHE GmbH. Freiburg 2008, p. 270, a.t.

For Hierzenberger, the development of the human being is a constant task, which is first and foremost a spiritual development, but also affects the body. Hierzenberger quotes from the Purna Juga by Sri Aurobingo Gosh (1872-1950), a philosopher, Hindu mystic, yogi and guru:

“The history of evolution is not yet over. Reason is not the last word and the rational animal is not the highest form of nature. Just as man emerges from the animal, so the super-human [Übermensch] emerges from man [...] the supernatural man is the luminous transcendent goal of our human race.”¹⁸

The emergence of the “Übermensch” from the human is a connection to Nietzsche’s statements on the super-human. This provides a possible path for enhancement.

Hinduism does not make any statements on human enhancement or trans-humanism. It can be assumed that the corresponding answers differ in the various forms of religion. It can be assumed that Hinduism takes a more positive attitude towards human enhancement in the broadest sense than Christianity, for example.

5.5 Buddhism

Buddhism’s view on man differs fundamentally from the Western Christian view on man. In contrast to the Western Christian view of man, it considers man to be fundamentally good. The decisive factor is that Buddha does not have the position of a god or a messenger of God.

The core of Buddhist teaching, as in Hinduism, is the dharma, the teaching of the factors of existence. These factors also enable people to develop further in the sense of human enhancement. This further development primarily relates to their mental and spiritual sphere but does not exclude their physicality.

In Buddhism, a person is defined by several elements.

¹⁸ Hierzenberger, Gottfried: Der Hinduismus. 1st ed. Wiesbaden: Marix Verlag (marixwissen). 2011. <https://ebookcentral.proquest.com/lib/kxp/detail.action?docID=6266169>. p. 144, a.t.

“For the Buddhist a person is a conglomeration or ‘aggregate’ of five elements that give rise to the ‘notion’ of a person: (1) matter, or body (*rūpa*), the manifest form of the four elements - earth, air, fire and water; (2) sensations, or feelings (*vedanā*); (3) perceptions of sense objects (Sanskrit: *saṃjñā*/Pāli: *saññā*) (4) mental formations (*samskāras/saṅkhāras*); and (5) awareness, or consciousness, of the other three mental aggregates (*viññāṇavinnāṇa*).”¹⁹

The elements of matter or body, sensations or feelings and perceptions of sensory objects are important in the context of human enhancement. This also enables people to develop further in these areas.

With the possibility of personal development without being bound to the likeness of a god, Buddhists have more options for human enhancement than members of monotheistic religions.

5.6 Atheism

Atheism refers to the absence, denial or rejection of the existence of a personal God, gods or the divine and the imprint of a religion on humanity. It is the negation of God. The human being is not seen in the natural unity of body and spirit. Body and mind are understood as objects of development and for further development. This also eliminates the natural law justification of human rights. The mind is not seen as God’s creation, but as the result of permanent evolution and improvement. This leads to a process of selection.

According to Feuerbach, God did not create man; God is a creation of man.

“For God did not create man in his own image, but man created [...] God in his own image. [...] Every God is a being of the imagination, an image, and indeed an image of man, but an image that man sets outside himself and imagines as an independent being.”²⁰

¹⁹ Soni, Jayandra: Some Aspects of Being Human in Indian Thought. In: Oberprantacher, Andreas/Siegetsleitner, Anne (eds.): Beiträge zum 10. Internationalen Kongress der Österreichischen Gesellschaft für Philosophie in Innsbruck 2017, pp. 121-122. <https://library.oapen.org/bitstream/id/1a3c8579-cf59-43d1-9af8-79be3b6ca6d4/10.152033122-79-6.pdf>.

²⁰ Feuerbach, Ludwig: Sämtliche Werke, Vorlesungen über das Wesen der Religion, nebst Zusätzen und Anmerkungen, Vol. 8. 1851. XX, 241, a.t.

God is therefore a projection of man. The image of God thus reflects humanity's ideas about their perception of mind and body. They are therefore not dependent on the specifications of a god but can shape themselves. They can also determine the nature and extent of their self-design. Thus, according to Feuerbach, they can develop towards perfection. "The pure, perfect, flawless divine being is the *self-consciousness of the intellect, the consciousness of the intellect of its own perfection*."²¹

Nietzsche writes in *Die fröhlichen Wissenschaften*: "Where is God? he cried, I will tell you! We have killed him - you and I!"²² Elsewhere he writes: "When Zarathustra was alone, he said to his heart: Should it be possible! This old saint has heard nothing in his forest that God is dead!"²³ Under these conditions, man should strive for higher things and develop into a "super-human" who shows courage, toughness and uncompromising action by destroying weaknesses and being a servant. Further development is therefore a *conditio sine qua non* for man's striving for perfection.

Atheism rejects all beliefs and religions. It also rejects the ethical and moral conditions and dogmas of religions. Instead, in Western culture, morality is based on human nature and education in the terms of the Enlightenment. Theological approaches are thus pushed back. With the rise of materialism and proletarian atheism in the form of dialectical and historical materialism, economic and social atheism emerged alongside philosophical atheism. Practical atheism sees nature and science as a possibility for the benefit of mankind. It is about solving the problems of man and society. It serves as a condition for the possibilities of human self-development. As atheists do not have a monolithic structure or centralised organisation, it is not possible to classify the type and scope of views on human enhancement. However, it can be assumed that, as with religions, there are different views on the sub-

²¹ Ibid., Part One, Chapter Three, a.t.

²² Nietzsche, Friedrich: *Die fröhliche Wissenschaft*. In: Colli, Giorgio/Montinari,azzino (eds.): *Sämtliche Werke: kritische Studienausgabe in 15 Einzelbänden*. 3rd ed., third book. Dt. Taschenbuch-Verl.; De Gruyter. Munich, Berlin 2009, p. 125, a.t.

²³ Nietzsche, Friedrich: *Also sprach Zarathustra*. In: Colli, Giorgio/Montinari,azzino (eds.): *Sämtliche Werke: kritische Studienausgabe in 15 Einzelbänden*. 3rd ed., fourth book. Dt. Taschenbuch-Verl.; De Gruyter. Munich, Berlin 2009, p. 14, a.t.

ject. These can and will be incorporated into the social discourse with regard to a possible view of society as a whole.

5.7 Application of faith-based ethics

The different religions and their schools of thought influence not only the concept of man and the associated objectives, but also the respective social discourse and thus the socio-ethical view in a society. The scriptures of religions such as the Bible, the Koran, the Torah or the Hindu and Buddhist scriptures do not make any statements on human enhancement. These would have to be derived from the scriptures and the historically developed interpretations.

An essential characteristic of the Abrahamic religions is their reference to God. They tend to view the nature of man, however it is seen, and his likeness to God, the derivation and content of which is understood differently, as the basis of their philosophy of life. This means that the production of man's natural abilities and the improvement of his abilities within his naturalness can be accepted. The Abrahamic religions are theocentric and less open to the possibilities of enhancement than, for example, Hinduism and Buddhism due to their relationship with God and their likeness to God.

Hinduism does not make any statements on human enhancement or trans-humanism. It can be assumed that the corresponding answers differ in the various forms of religion. It can be assumed that Hinduism has a more positive attitude towards human enhancement in the broadest sense than Christianity, for example.

With the possibility of personal development without being bound to the likeness of a god, Buddhists have more options for human enhancement than members of monotheistic religions.

Atheism fundamentally enables human enhancement within the framework of society's value and legal structures. Its ethical and moral principles therefore offer the broadest possibilities for human enhancement.

However, some problems arise with ethical and moral judgements based on religion, such as the is-ought problem. An is-ought problem ("Hume's Law")

occurs when it is deduced from the real existence, e.g. a person at a certain time in his/her existence, that he/she also should exist in this form. This means that no norms can follow from facts, or no statements of ought can follow from statements of existing, i.e. the conclusion of ought follows directly from the premise of existing. This results in the relativity of the validity of ethical and moral norms that are based on a religion. Under these aspects, the premises and statements on ethical and moral norms can only be based on values shared within the respective culture and society.

6. Impact on the armed forces

The further development of artificial intelligence will have an impact on many areas of the military. These include, for example, situation assessment processes, military command processes, the development and deployment of weapon systems, use in cyber and hybrid warfare. It can be assumed that wars of all kinds will be waged in the near future. This also means that weapon systems will be further developed according to technical possibilities. At the same time, soldiers will have to adapt to the new challenges. The following can be stated: "Future wars will be won, not by those with the most advanced technology, but by those who can most effectively integrate the unique capabilities of both people and machines."²⁴ It therefore depends on the improvement of weapon systems, the improvement of people and cooperation in the combination of man and machine. The extent to which adaptation can or should take place depends on a variety of factors. These include ethical and moral factors, the content and scope of which are determined by the respective societies. It must be borne in mind that the improvements affect the individual and therefore also the individual soldier, as well as society and the military.

Technological progress in the context of enhancement offers the armed forces the opportunity to increase human performance and give soldiers better capabilities in combat. These technologies have considerable potential for

²⁴ UK Ministry of Defence: Human Augmentation - The Dawn of a New Paradigm. A strategic implications project. Development, Concepts and Doctrine Centre (DCDC). Shrivenham, 2020, p. 11. <https://modgovuk.sharepoint.com/sites/defnet/JFC/Pages/dcdc.aspx>.

combat. However, their realisation has an impact on the individual soldier as well as on the unit.

In the hierarchical system of the military, the soldiers are subject to orders and commands. This partially restricts their autonomy and freedom in the realisation of their existence. Even if autonomy and freedom are restricted, soldiers still have free will. A distinction must also be made as to whether the soldier enlists voluntarily or has decided to serve as a professional soldier, regular soldier, volunteer or militia soldier, or has been drafted into the military as part of a conflict or war.

6.1 Human enhancement for soldiers

The pursuit of improvement can also affect soldiers. The basic framework conditions are similar to those in society as a whole. One major difference, however, is that the soldier must obey orders. The hierarchical system of the military, authority relationships and group cohesion have an influence. The acceptance of enhancement technologies can therefore have the effect of accepting improvements that would be rejected for personal reasons. This results in restrictions on the individual's ability to freely consent. This is an encroachment on personal autonomy.

By joining the military, the soldier commits to following the regulations. This also means that, to a certain extent, they must accept enhancement as part of their duties. The extent to which an order for human enhancement is morally justified in the case of compulsory military service in peacetime and conscription in the event of tension or war needs to be examined.

The extent to which the soldier must obey orders or has the option to legally disobey orders varies from state to state. There are states that require absolute obedience to orders and those that allow exceptions. An exception could be if the order violates human dignity or if obeying it would constitute a criminal offence.

Enhancement in soldiers has different effects on their person and their abilities. Latheef and Henske have established this:

“Technological advancements have provided militaries with the possibility to enhance human performance and to provide soldiers with better warfighting capabilities. Though these technologies hold significant potential, their use is not without cost to the individual.”²⁵

This also means that the military has to deal with technical developments and incorporate them into its planning and developments. For example, a future analysis of the Bundeswehr states:

“In terms of technology, future developments could lead to different HE approaches or combinations of HE and other - currently rather competing - technologies being combined and coordinated with each other. [...] Non-invasive HE technologies that serve the protection and survival of our soldiers should certainly be considered for their own benefit - taking into account ethically and legally justifiable aspects.”²⁶

The costs or effects for the soldiers depend on the type of enhancement. The framework conditions are decisive. These include whether certain enhancements may be ordered or whether the soldier’s consent is required for the enhancements. In this context, the values and norms of the respective society are decisive.

Armed forces that do not make use of enhancement have potential disadvantages compared to those that do. This can lead to greater or lesser advantages in strategic, operational or tactical areas. Existing pressure to adapt forces other armed forces to carry out enhancement. This creates reciprocity.

The central ethical question of surgical management is whether people with a brain-computer interface (BCI) and possibly a cyborg should be allowed to make decisions about the life and death of real people. If these decisions are delegated to algorithms and machines, this contradicts the dignity of those affected. The extent to which the use of these technical possibilities can still be acceptable needs to be examined.

²⁵ Latheef, Sahar/Henschke, Adam: Can a Soldier Say No to an Enhancing Intervention? *Philosophies*, 2020, p.5, 13. <https://doi.org/10.3390/philosophies5030013>.

²⁶ Planungsamt der Bundeswehr (ed.): *Streitkräfte, Fähigkeiten und Technologien im 21. Jahrhundert. Human Enhancement. Eine neue Herausforderung für Streitkräfte?* Berlin 2013, p. 10, a.t.

6.2 Soldiers and ethics

The military environment and integration into ethical and moral frameworks are crucial for soldiers. They reside within their cultural and societal spheres.

“For the military of Western democratic provenance, the good is accordingly the functioning constitutional state, its organisations and institutions that protect the lives of citizens and steer them onto predictable, just paths in the broadest sense.”²⁷

Ertl states this for Austria:

“In Austria, the military is functionally interwoven with society due to the militia system and is therefore a democratically controlled political instrument embedded in society. The ÖBH is therefore a subsystem of Austrian society. It is embedded in it and at the same time derives its legitimacy from its potential vulnerability to action in a state of emergency.”²⁸

The soldiers also live and fight in their unit. This creates an *esprit de corps*, a camaraderie, and leads to a sense of community. Thus, it can be said:

“Unit cohesion is founded on social relationships, shared experience and training - it is a critical part of the willingness to fight. Human augmentation has the potential to change the foundations of unit cohesion and could, if not handled carefully, undermine it. For example, differing levels of augmentation within units could introduce stigma, suspicion or resentment of enhanced personnel.”²⁹

A key consideration is the extent to which soldiers can maintain autonomy and freedom within the military structure.

The acceptance of an enhancement also depends on how the person is accepted in the military and on the necessity of carrying out a mission. There is a dynamic relationship between person, enhancement and mission, which

²⁷ Ertl, Paul: Die Krise, die Ethik und das Österreichische Bundesheer: Eine militärphilosophische Legitimation des Militärischen im Ausnahmezustand. In: Ertl, Paul (ed.): Ethik in der Krise. Vienna: National Defence Academy (13/2020), p. 7.

²⁸ Ibid., p. 11.

²⁹ UK Ministry of Defence: Human Augmentation - The Dawn of a New Paradigm. A strategic implications project. Development, Concepts and Doctrine Centre (DCDC). Shrivenham 2020, p. 66.

can be conflictual. In this context, the possibility of being able to reject an enhancement plays an important ethical role.

Any enhancements a soldier undergoes must first be evaluated based on their functional necessity and personal implications within the military context. Upon conclusion of service, these enhancements should be assessed against societal norms and criteria. These may differ significantly from those of the military:

“In addition to preparing personnel for operations they will need to be prepared for life after the military. For example, the use of invasive human augmentation may require surgery to remove or downgrade implants that may not be permitted in civilian life. Reintegration in society could be complicated from a technical perspective but learning to live without military-grade augmentations could present even bigger mental health challenges.”³⁰

When introducing enhancement to soldiers, this already requires a determination of the framework conditions for the possible restoration of the original capabilities and framework conditions.

Ethical decision-making and moral action within the military sphere are based on extensive factors and prerequisites. One of these factors are the military ethics of the respective state.

Military ethics are not about ethics that are detached from the political and social ethos. In a free and democratic society, it is not about the independence of military ethics, but about ethics that meet the special challenges of the military profession.

“Military ethics, in general, establish a normative standard specifically for armed forces personnel who are authorised to use force on behalf of the state. [It is] an ethic that relates to the nature, content, value and impact of morality in a military context. In this sense, military ethics encompass both the conceptual formation of a scientific theory and applied ethics, including casuistry.”³¹

³⁰ UK Ministry of Defence: Human Augmentation - The Dawn of a New Paradigm. A strategic implications project. Development, Concepts and Doctrine Centre (DCDC). Shrivenham 2020, p. 66.

³¹ Peperkamp, Lonneke et. al.: Kernthemen europäischer Militäretik. Edited by Zebis Centre for Ethical Education in the Armed Forces. (Ethik und Militär, 02/2023). Hamburg 2023, p. 4. <https://www.ethikundmilitaer.de/kernthemen-europaeischer-militaerethik>.

The legal system is of paramount importance for the actions of the armed forces and their members. The constitution of the democratic, liberal constitutional state forms the framework and conditions and is an essential basis for military ethics within the armed forces. Fundamental rights and freedoms are the cornerstones of mission fulfilment.

Political, social and technological values are changing. This has an impact on soldiers. It is important for the army leadership and superiors to react to these changes early and actively and to take the necessary measures for the army. This also applies to the questions posed on using human enhancement.

Soldiers, especially the leaders, are duty bearers in the field of ethics due to their responsibility within the state executive. It is about the fundamental ethical questions to which military ethics should make a significant contribution.

A soldierly profession and soldierly ethos are determined - differently in the armies - by values. For soldier, several values are important in their self-image. With regard to enhancement, these are essentially the following: ability to fit in and cooperate within the unit, obedience, integrity, esprit de corps, human dignity, moral judgement, courage, performance of duty, observance of the law, bravery, moral courage and a sense of responsibility, as well as virtues defined in a possible virtue catalogue. This means that a wide range of factors must be taken into account when deciding upon enhancement. The individual remains responsible. Navon explains:

“In order to make a moral judgement to take a life, while respecting human dignity, it is minimally required that a moral agent can (1) recognise a human being as a human, not just distinct from other types of objects and things but as a being with rights that deserve respect; (2) understand the value of life and the significance of its loss; and (3) reflect upon the reasons for taking life and reach a rational conclusion that killing is justified in a particular situation.”³²

³² Navon, Mois: Autonomous Weapons Systems and Battlefield Dignity. In: Klinge, Hendrik/Kunkel, Nicole/Puzio, Anna (eds.): *Alexa, wie hast du's mit der Religion? Theologische Zugänge zu Technik und Künstlicher Intelligenz*. Darmstadt: Wissenschaftliche Buchgesellschaft (wbg) (Theologie und Künstliche Intelligenz, 1). 2023, p. 210.

Regarding an ethical assessment of enhancement measures, it is crucial whether there is an acceptable risk-benefit ratio and autonomous consent of the person concerned.

The question of the development and use of human enhancement in the military can be based on philosophical, religious and social values and norms. Morality can be tested with the help of questions regarding the introduction and application. The following test questions can be used for this purpose:

- Are autonomy, freedom, human dignity and human rights respected?
- Is the exercise of military virtues and values impaired?
- Are the military profession and ethos respected?
- What rules apply and determine the decision?
- Are these rules consistent or do they contradict each other?
- Do these rules apply to the present situation?
- What are the consequences of the intended decision?
- Is the proportionality of enhancement and resources observed?
- Are non-combatants and innocents spared?
- Do the decisions and actions achieve the intended protection of people?

These test questions can be used to ethically evaluate decisions and actions regarding human enhancement. Uncertainties in the assessment may arise from the real internal and external conditions of the potential decision and action, which are unavoidable. Absolute certainty in the evaluation of moral action may be possible in theory but cannot be achieved in practice.

7. Summary

Human identity is shaped by the interaction of mind, will and nature. The purpose (telos) of an individual guides the principles of their design and their potentialities.

It is about the human being and thus about the concept of man.

In the religions of Christianity, Judaism, Islam, Hinduism, Buddhism and atheism, which is counted as a religion here, the concept of humanity is different.

Societies have different perceptions of norms, values and the position of people and the individual within them. Individual-oriented societies are opposed to community-oriented societies and authoritarian societies are opposed to liberal societies. This shapes the awareness of the people living in the respective society and thus also their possible assessment of enhancement.

The increasing possibilities of using algorithms, the internet and the Internet of Things (IoT) enable the development of non-invasive and invasive technologies and their application on or in humans. As a result, data and their generation are becoming increasingly important. If they become the basis of a brain-computer interface (BCI) or a man-machine system (MMS) in trans- and post-humanism, such as in a cyborg, they will influence human behaviour. In this way, they influence or determine ethical and moral concepts of enhancement.

7.1 Evaluation of enhancement

For an ethical and moral evaluation of enhancement, the human being, the person, the concept of the naturalness of the human being, the idea of a machine in connection with a machine-human being and the nature of medical and technical systems are relevant. For the ethical and moral evaluation of enhancements, concepts of essence, i.e. that which is peculiar to human beings, such as autonomy, dignity and freedom, as well as risk-benefit assessment, appear to be appropriate. Norms in their manifold definitions influence an evaluation.

When assessing enhancement from a philosophical perspective, deontology, virtue ethics and utilitarianism can be essential foundations:

Deontology with Kant's Categorical Imperative, the concept of man and person, the understanding of law and the concept of duties form the framework and guideline. Virtue ethics provide a framework directing the will towards the good, internalising basic attitudes within individuals and societies, includ-

ing the military. Utilitarianism offers a rational approach, particularly in forms such as trade and regulatory utilitarianism. However, this requires a society, state or cultural group to establish a broad consensus on rules. Rule utilitarianism can be globally compatible given the will and opportunity for discourse, yet it is crucial to acknowledge that power dynamics influence such discourse and ethical principles. Commercial and legal forms of utilitarianism are suited to practical moral evaluations, incorporating elements from deontology and virtue ethics. It is important to consider that societal norms and values shape attitudes towards enhancement.

In this context, it should also be noted that not only rational justifications, but also emotional dispositions influence people's judgement.

The ethical and moral framework conditions, as defined by political, social, religious and philosophical ideas, can be applied to the methods of human enhancement. Not everything that is medically possible is ethically justifiable. If we consider the possibilities of behavioural enhancement, neuroenhancement, technical enhancement, genetic enhancement and transhumanism from these perspectives, we find guidelines that can be applied when making a decision on enhancement. If the philosophical, religious and social dimensions are analysed based on previous explanations, three categories of enhancement measures can be defined: ethically and morally unacceptable, acceptable and indifferent. This classification can be a sufficiently precise way of evaluating human enhancement.

Accordingly, the following enhancement measures are ethically and morally unacceptable:

- restrict autonomy, dignity and fundamental human rights
- take away the freedom to decide on enhancement
- involve brain-computer interface (BCI) methods, a man-machine system (MMS) or a cyborg which is used to determine human decisions
- are invasive and permanent
- force people to agree to enhancement through political, socio-political and group political measures
- violate the principles of equality and justice.

Ethically and morally acceptable measures are those that are freely decided by the person concerned. They:

- prevent or alleviate suffering
- restore lost skills
- let people cope with difficult tasks
- are essentially available to all within a society
- are non-invasive and reversible
- comply with autonomy, dignity and basic human rights.

Ethically and morally indifferent are measures that:

- do not change anything about being human and a person
- enable the use of systems in an improved form
- offer protection from threats and death.

Based on the norms and values of a society, a jointly shared list of criteria and test questions could provide practical guidelines for the development, decision and implementation of human enhancement measures.

The introduction and use of human enhancement should be based on clear, ethically justifiable objectives. Society should identify its values in a discourse and apply them in the context of human enhancement. Particular interests, such as economic interests aimed at maximising profits, must not determine this discourse. It must be based on ethical and moral categories. Moral action presupposes deliberate action, the freedom to choose between different alternative courses of action, the ability to assess one's own consequences and the perception of a personal identity (in relation to oneself and others). Only when these conditions are met can one assume moral action.

7.2 Conclusions and recommendations

Conclusions and recommendations for the social and military sector arise from the examination of human enhancement. In the context of the approach discussed here, these include ethical and moral issues.

The following conclusions can be drawn – there is a need for:

- the identification of attitudes, perspectives, reactions, acceptance and readiness of politics, society and the military towards ethically controversial issues with social and regulatory implications
- a discussion in the individual areas of society on human enhancement, and
- the development of a multi-generational shared understanding of norms and values.

After considering the conclusions, the following recommendations are proposed for the military sector:

- adaptation of Austrian Armed Forces' (ÖBH) military ethics to the new challenges
- development of a curriculum and teaching materials related to human enhancement
- integration of ethical principles regarding human enhancement in the training of leaders
- adaptation of the principles of use to the enhancement systems.

People's desire to improve their environment, their living conditions and themselves requires future-oriented ideas and objectives. The demands for human enhancement from different areas of life call for an ethical examination of the fundamental questions of human existence.

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