

Human enhancement or human reduction?¹

Theological and ethical perspectives on human enhancement in the military sector

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Introduction

In the context of biblical texts, the topics of human ingenuity, cooperation and technical ability are addressed in various places. Probably the most well-known passage that illustrates the potential of the combination of technical ability and a cooperative spirit is the Tower of Babel (Gen 11:1-9), which did not remain without consequences for humanity. The scattering of people through the confusion of languages reminds us of a boundary that man should not cross. In this case, human self-exaltation, their hubris, is set as a religious boundary. However, man is by no means bound to limit his ingenuity, inventiveness and ability to cooperate excessively.

Here is another example: In Chapter 17 of the book of Exodus, a warlike encounter between the people of Israel and the Amalekites (Ex 17:8-11) is depicted. Moses stood on a rock above the battlefield and prayed to God with his arms raised. As long as he did this, the Israelites had a military advantage. However, the battle lasted for a long time and Moses became tired. As soon as his arms sank to the ground, the Amalekites strengthened and began to turn the tide of battle. To support Moses, it was decided to ensure his “ability to pray” by technical means, by providing him with a seat, but also by having Aaron and Hur support Moses’ arms. If a technical solution had been sought instead of human help, such as building an armrest out of stones or constructing a supporting structure out of wood, this would hardly fall into the category of self-exaggeration that can be found in the Babel narrative, even though similar or even the same technologies were used.

¹ AI tools for translation (deepl.com) and improvement (deepl.com/write) were used in some sections to produce and refine the English text. Many thanks for the professional revision of the print-ready version in terms of language and style.

Given the human enhancement debate, this very rudimentary and narrative field of tension also opens up. To what extent is the use of certain technologies a legitimate and natural expression of the human creative spirit, and where, if at all, should boundaries be drawn?

This article attempts to find a limit to the use and development of technology in the human condition and to argue that the use of human enhancement technologies that do not place people in their entirety at the centre do not represent improvements but rather subject people to an instrumentalizing reduction.

Definition of human enhancement

One feature of the discourse on human enhancement is the conceptual vagueness of what could, should and may actually be considered an enhancement, i.e. an improvement of the human being. There are many definitions and delimitations, and this article also attempts to argue for the necessity, or at least the favourability, of a conceptual distinction. For this to succeed at all it is necessary to examine at least one formulation of the term human enhancement, which can then be supplemented, criticised and expanded. This approach is coherent with the other contributions to this publication in employing the working definition of human enhancement developed in the respective interdisciplinary and multidisciplinary working groups contributing as a starting point. The comments on the working definition are merely intended to prepare the ground for the discussion of what can be considered human enhancement from an ethical-theological perspective.

Working definition of human enhancement

“Human enhancement refers to the use of technologies, methods or substances to improve people’s (physical or cognitive) abilities beyond what is normal and considered natural.”

The working definition, which was developed during the conference “Human enhancement as a security policy factor” for the purpose of this publication, is based on the criteria of exceeding “natural” boundaries. Although this inherently raises the question of what is natural and what reference value is required to determine the limit of the “natural”, the working definition

allows for an intuitive demarcation that is clear in its poles, but vague at the actual points of distinction. For example, technical aids such as glasses and crutches are excluded from the sphere of enhancement, as are social improvements such as education and cognitive training practices such as specific forms of meditation.² At the same time, optical prostheses, which would allow perception of the infrared or ultraviolet spectrum, for example, are clearly within the realm of enhancement. Even in the area of vaccinations, we find ourselves in the aforementioned vague border area: an active vaccination, which stimulates the body's immune defence system to independently form antibodies on its own and thus results in increased resistance to the specific pathogen, can easily be located within the natural sphere of differentiation. However, passive vaccinations that specifically target a pathogen that the body is not naturally able to fight, such as the rabies pathogen, would already be classified as an enhancement under the working definition.³ In addition, due to the lack of clarity as to what may or can be considered "natural", it remains unclear how to deal with those technologies which, depending on the person to whom they are applied, can either lie within the boundaries of the "natural" or allow them to be exceeded.⁴ At this point it becomes clear that naturalness, despite or precisely because of its inherent normative character, is – at least to a certain extent – subject to social dynamics and is therefore subject to processes of change.⁵

Despite these general limitations, the working definition remains meaningfully applicable and useful for the scope of the military context, as it (i) lends itself to locating human enhancement in the larger conceptual context of human augmentation and human performance optimisation relevant to the

² UK Ministry of Defence/Bundeswehr Office for Defence Planning: Human Augmentation – the Dawn of a New Paradigm: A strategic implications project, 2020. <https://www.bundeswehr.de/resource/blob/5016368/fdc7f1c529ddfb014d4e321e8b666a2d/210111-sip-ha-data.pdf>.

³ Chaddah, Maya Rani/Mak, Tak W./Saunders, Mary: *The Immune Response: Basic and Clinical Principles*, 1st ed., Amsterdam: Elsevier, 2006, pp. 695-749.

⁴ Here, exceeding can be considered plausible at least in the statistical sense of the average capacity of human cognition.

⁵ Birnbacher, Dieter: *Therapie und Enhancement in der Biomedizin – Leiden lindern oder den Menschen verbessern?* In: Manzeschke, Arne/Niederlag, Wolfgang (eds.): *Ethische Perspektiven auf Biomedizinische Technologie*. 1st ed., Health Academy Series 3. Berlin, Boston: Walter de Gruyter GmbH, 2020, pp. 34-35.

military,⁶ and (ii) as it inherently focuses on the human being with its focus on the “natural” and introduces this as a normative variable.

The first point, positioning in the conceptual field and in the military context, should only be briefly touched upon here for the sake of completeness.⁷ The UK Ministry of Defence, in cooperation with the Office for Defence Planning of the German Bundeswehr, published a strategy paper in 2020 that proposes the terms human augmentation, human performance optimisation and human performance enhancement for the military sector. Human augmentation means “the application of science and technologies to temporarily or permanently improve human performance.”⁸ The subcategories of human performance optimisation and human performance enhancement are, in turn, differentiated based on natural limitations, in this case, the biological limitations of humans. Therefore, human performance optimisation is described as “the use of science and technologies that improve human performance up to the limit of biological potential without adding new capabilities.”⁹ Human performance enhancement, in turn, begins precisely at the limits of the biological potential described above. The UK Ministry of Defence and the Office for Defence Planning of the German Bundeswehr therefore restrict the definition of “naturalness” to maximum biological capacity and not to statistical averages. Moreover, the emphasis is placed on “performance”, that is to say, performance in a specific situation. As a result, the human being is seen as a platform that performs on different levels.¹⁰ A distinction is made between physical, psychological and social performance. These differentiations provide the necessary conceptual clarity to be able to articulate strategic considerations with sufficient specificity. However, what

⁶ UK Ministry of Defence; Bundeswehr Office for Defence Planning: Human Augmentation – the Dawn of a New Paradigm: A strategic implications project, 2020. <https://www.bundeswehr.de/resource/blob/5016368/fdc7f1c529ddfb014d4e321e8b666a2d/210111-sip-ha-data.pdf>, p. 18.

⁷ More information can be found in the article Schulyok, Bernhard/Gruber, Markus/Grangl, Lukas: Human enhancement from a military perspective – WHY, WHAT and HOW? In chapter MILITARY in this publication.

⁸ UK Ministry of Defence; Bundeswehr Office for Defence Planning: Human Augmentation – the Dawn of a New Paradigm: A strategic implications project, 2020. <https://www.bundeswehr.de/resource/blob/5016368/fdc7f1c529ddfb014d4e321e8b666a2d/210111-sip-ha-data.pdf>.

⁹ Ibid., p. 18.

¹⁰ Ibid., p. 19.

is immanent here is the human being, both as a being with “natural” biological boundaries and as a platform that unites different levels within itself. The following section is dedicated to this naturalness of being human, i.e. the second point, from a perspective that goes beyond the biological.

Being human as a distinguishing criterion

Any recourse to the “natural” in relation to human performance or even its very existence necessitates a selective reflection on and consideration of the implications of being human. One method of delineating the concept of humanity is through the notion of the *human condition*. The Latin “conditio” is translated as “condition” in the context of the human being (*humana*). *Conditio humana* therefore means “an all-encompassing and exhaustive operational definition of ‘human’ [...], in the sense of specifically human, uniquely human, which is unique to the human being, a meaning that emphasises the special nature of the human being in contrast to other organisms.”¹¹ The following sections attempt to demonstrate the diversity of this *conditio humana*.

Contingency

From a theological perspective, an essential element of what constitutes the human condition is specifically human limitations and contingency. This leads to obvious potential for tension with technologies that are designed to empower individuals beyond their natural limits. It is crucial to emphasise that the use and development of technologies,¹² *eo ipso*, is a core element of being human, which can be understood as the creative and formative empowerment of human beings. The tension between the fact that humans can be understood from their (natural) limitations on the one hand, but speci-

¹¹ Hutterer, Robert: *Das Paradigma Der Humanistischen Psychologie*. Vienna: Springer, 1998. <https://doi.org/10.1007/978-3-7091-7493-7>, 15, as quoted from: Schmölz, Alexander: *Die Conditio Humana Im Digitalen Zeitalter*, *Medien Pädagogik: Zeitschrift für Theorie und Praxis der Medienbildung*, 2020, p. 212, <https://doi.org/10.21240/mpaed/00/2020.11.13.X>.

¹² In recourse to the Aristotelian understanding of τέχνη, technology is understood here as poietic, i.e. productive capacity of human activity, which encompasses both the modern understanding of (mechanical and digital) technology, but also craftsmanship, medicine, artistic activity, meditative-cognitive exercises, science, etc.

cally their empowerment over these limitations on the other at first glance seems to be resolvable only to the detriment of one of the two poles, contingency and technical empowerment. The fact that the increase in technical potential also increases the negative effects or the possibilities of using it for questionable goals is a concern expressed by the Church's magisterium: "Never has humanity had such power over itself, yet nothing ensures that it will be used wisely, particularly when we consider how it is currently being used" (LS 104).¹³ It is important to emphasise that these church positions are not inherently hostile to technology, but rather possess a human-centred scepticism of technology. In close proximity to the aforementioned quote, reference to the work entitled "The End of the Modern World" by the German priest and philosopher Romano Guardini (1885-1968), who criticises "economic and scientific-technical progress [...] justified by purely formal criteria of progress [...]"¹⁴ is made. The fundamental premise of this criticism is the assumption that any augmentation in technical capability is inherently progress, which entails an "increase in security, benefit, welfare, vitality, value saturation [...]"¹⁵ The magisterial position follows on from this and points out that there is a tendency to assume the emergence of truth, reality and the good from technological and economic power itself (LS 105). This is precisely why a warning is issued, as: "'The risk is growing day by day that man will not use his power as he should'; in effect, 'power is never considered in terms of the responsibility of choice which is inherent in freedom' since its 'only norms are taken from alleged necessity, from either utility or security'" (LS 105).¹⁶ Aspects of this freedom in relation to the responsibility of choice will be discussed later. The warning remains clear that man's Promethean

¹³ Pope Francis: *Laudato Si': On Care for our Common Home*, 24 May 2015, https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html. References to doctrinal documents are usually assigned an abbreviation and paragraph number directly in the text.

¹⁴ Guggenberger, Wilhelm: *Zu viele Werkzeuge, zu wenig Ziele: Technikskepsis in der Enzyklika Laudato si'*. In: Datterl, Monika et al. (eds.): *Papst Franziskus: Ein erstes Resümee*. 1st ed., *Theologische Trends* Band 26. Innsbruck: innsbruck university press, 2016, p. 44.

¹⁵ Guardini, Romano: *Die Macht: Versuch Einer Wegweisung*, Würzburg: Werkbund Verlag, 1965, p. 87.

¹⁶ Guardini, Romano: *Das Ende der Neuzeit*, 9th ed., Würzburg 1965, p. 87, as cited in Pope Francis: *Laudato Si': On Care for our Common Home*, 24 May 2015, https://www.vatican.va/content/francesco/en/encyclicals/documents/papa-francesco_20150524_enciclica-laudato-si.html.

endeavour should not allow him to degenerate into a mere instrument and platform for progress. The importance of contingency in this debate becomes apparent in this context: It is precisely owing to the vulnerability of humanity and its environment that the understanding of man is often not that of the literal forward-thinking Prometheus, but rather takes after his brother Epimetheus, who accepts a gift despite warnings, unaware of its consequences. This perspective on contingency, which encompasses the need for protection of the human being born with vulnerability, is the origin of the striving for technical improvement. However, it also provides a normative framework.¹⁷

The inherent vulnerability and the limited nature of human beings gives rise to a moral duty to create conditions that preserve their dignity and integrity. These obligations become particularly clear in situations of existential dependency - for example, in childhood, old age, illness or social hardship. This necessity for protection is also evident in warlike contexts in which people are exposed to particular dangers both as civilians and as soldiers. From a military perspective, this engenders a dual ethical obligation: On the one hand, the protection of the civilian population from the devastating consequences of acts of war, and on the other, the protection of soldiers who, despite their voluntary or compulsory deployment, do not relinquish their basic human dignity. International humanitarian law¹⁸ explicitly addresses these obligations, seeking to ensure the protection of civilians as well as prisoners of war, the wounded and combatants. Soldiers find themselves in a position of duality, caught between their role as actors of military force and their simultaneous need for protection as human beings. The contingency of human life is particularly evident in view of the uncertainty, unpredictability and existential threat that characterise warfare.

¹⁷ Fittingly, in Greek mythology, man's need for protection is specifically a consequence of Epimetheus' recklessness, which is compensated for by fire, but also by social competence, justice and the responsibility for others that goes with it (Plato, *Protagoras* 320d-322a).

¹⁸ See Hohenlohe, Diana zu: Human enhancement in light of classical humanitarian law. In chapter LAW & SOCIAL ETHICS in this publication.

Imago Dei (image of God) and dignity

The prime theological example and fundamental framework of understanding is humankind being created in the image of God. On the one hand, this functions as a defining criterion, while on the other hand it also serves as a framework for understanding humanity from a theological perspective. What is essential here is that a humanistic understanding of dignity can readily be integrated into the Christian view of humanity and that caution should be exercised in this regard, particularly in the context of contemporary tendencies to pit these concepts against one another.¹⁹ The central passage for this is Genesis 1:26:

Then God said, 'Let us make man in our image, after our likeness; and let them have dominion over the fish of the sea, and over the birds of the air, and over the cattle, and over all the earth, and over every creeping thing that creeps upon the earth.'

The mythical concept in Genesis 1 serves as an introduction to the creation of man and indicates that humankind has a central role to play in the divine plan of creation, through which God wants to establish and consolidate his rule in the world. The image metaphor in Genesis 1 adopts the idea of a statue, such as those erected by rulers in the provinces of their empire as a symbol of their rule. In a similar way, humankind becomes the representative of divine rule on earth. The phrase "in our image and likeness" serves to emphasise the significant role of man in the divine plan of creation, without implying the deification of man. The designation of man as the image of God refers not only to his functions or abilities (such as reason, language or morality) but to his entire being. As God's mandatary, man is able to fulfil his task only because he is recognised as an independent counterpart, and his actions are an expression of his nature.²⁰

The image of God contradicts the reduction of human beings to their usefulness as tools for military purposes. Soldiers must not be limited to functions such as combat performance or strategic availability, as this would jeop-

¹⁹ Brandscheidt, Renate: Die Heiligkeit des Lebens im Urteil der Bibel, In: Brandscheidt, Renate et al.(eds.): Herausforderung „Mensch“, Paderborn et al.: Ferdinand Schöningh Paderborn, 2012, p. 66.

²⁰ Ibid., p. 68.

ardise their identity as independent, free and morally responsible subjects. Moreover, a relationship of responsibility is derived from being made in the image of God. In it, man acts as a co-creator of creation, as he shapes and alters the world around him. However, this does not imply unbridled freedom, as the concept of limitations inherent in human nature is also emphasised. Any interventions that undermine human autonomy or reduce individuals to mere instruments of other people's purposes are therefore incompatible with this theological insight. Especially in the military sphere, where the risk of instrumentalising human beings is particularly high. The image of God demands that human beings should not be treated as mere objects of technical optimisation. Consequently, being made in the image of God establishes an ethical standard that marks the limits of human enhancement within the military sector. However, such a limitation should not be interpreted as a categorical prohibition, as human desire for development is also a fundamental element of human existence in creation:

The fact that man is a living being who wants to go beyond himself, who by his spiritual nature is designed to explore the limits of what is possible and, if necessary, redefine these limits through cultural development, science and technology, also corresponds to the purpose of man from a Christian theological point of view.²¹

The notion of dignity – Ontological, moral, social and existential dimensions

As previously indicated, the concept of human dignity serves as a fundamental reference point for theological and ethical reflections on human enhancement. While human dignity is widely acknowledged as a core normative principle, its precise meaning is subject to multiple interpretations. One of these interpretations is laid down in the document *Dignitas Infinita* (DI)²² by the dicastery for the doctrine of the faith, where four dimensions of human dignity – ontological dignity, moral dignity, social dignity and existential dignity

²¹ Brantl, Johannes: Gut erschaffen - manchem aber nicht gut genug: Normethische und tugendethische Überlegungen zur medizinisch assistierten Selbstverbesserung des Menschen, In: Brandscheidt, Renate et al. (eds.): Herausforderung „Mensch“, Paderborn et al.: Ferdinand Schöningh Paderborn, 2012. p. 143. Translated with deepl.com.

²² *Dignitas Infinita: On Human Dignity*. Dicastery for the Doctrine of the Faith, 2024. https://www.vatican.va/roman_curia/congregations/cfaith/documents/rc_ddf_doc_20240402_dignitas-infinita_en.html.

– are described. Each of these dimensions provides a specific perspective on the boundaries between genuine human enhancement and human reduction.

Ontological dignity refers to the intrinsic worth that every human being possesses by virtue of their very existence. This dimension of dignity is addressed in the *Universal Declaration of Human Rights (1948)* and the binding international contracts derived from it (DI 2). From a theological perspective, this dimension of dignity is rooted in the already described principle of Imago Dei (DI 11). Ontological dignity is independent of any actions, abilities or social status; it is inalienable and indestructible (DI 7). Irrespective of factors such as age, health or functional capacity, every person possesses ontological dignity simply because they exist as human beings.

Moral dignity pertains to human beings' capacity for moral agency and autonomy. The theological concept of moral dignity is linked to the concept of conscience – the human capacity to discern right from wrong and to act according to moral principles. When individuals act against their conscience, they act in a manner that contradicts their status as beings loved by God and exhorted to love others, according to the canon beliefs of the church (DI 7). Although conscience calls human beings to act in accordance with the moral good, the exercise of freedom always entails the possibility of choosing otherwise. This dual potentiality is a defining feature of human nature. Individuals may obscure the visibility of their moral dignity by choosing actions that contradict the law of love revealed in the Gospel. Their behaviour can appear to lack humanity and dignity, even if their ontological dignity – their inherent worth as human beings – remains intact.

In the context of human enhancement, the preservation of moral dignity assumes particular significance. Military enhancement technologies that influence soldiers' moral decision-making capacity would lead to impairments of their moral dignity. If soldiers are compelled to act according to external stimuli or programmed directives, their status as moral agents would be compromised. This violates the principle of autonomy, which demands that moral choices arise from a person's own conscience. Furthermore, the use of unjust coercive enhancement programmes in the military could undermine moral dignity. Soldiers may be pressured to accept enhancements solely for a performance boost or to remain competitive. It is therefore vital that soldiers are free to make moral choices, even within such hierarchical and military structures.

Social dignity pertains to the quality of the social conditions in which an individual lives. When people are forced to live in conditions that contradict their ontological dignity – such as extreme poverty or marginalisation – their social dignity is compromised (DI 8). Additionally, the plurality of the social existence of human beings should be considered under this dimension of dignity. A person fulfils and acts in various social contexts and roles, each of which is part of their personhood. Therefore, in military contexts, social dignity is particularly relevant for the purpose of reintegrating soldiers following their service. Irreversible augmentations or enhancement applications, which pin the human being to the role and function of a soldier, infringe their social dignity.

Existential dignity addresses the subjective experience of human beings as they navigate suffering, hope and personal flourishing. It refers to the extent to which people experience their lives as meaningful, joyful and hopeful (DI 8). In military contexts, existential dignity is directly related to the psychological well-being of soldiers. The implications of technological enhancements – such as pharmaceutical desensitisation drugs – that interfere with emotional stability, empathy or emotional processing for existential dignity are profound. Furthermore, existential dignity is threatened when soldiers become psychologically dependent on enhancement technologies. If soldiers can no longer experience “normal” human emotions or cognitive functioning without technological support, they are at risk of facing an existential crisis.

As these dimensions of dignity are inherently connected to what it means to be human, they can guide the differentiation between genuine human enhancement and functional reduction, as infringements in any dimension of dignity indicate reductive tendencies.

Autonomy and freedom of conscience

Another essential aspect of human existence is autonomy and freedom of conscience. Freedom of conscience, repeatedly linked to religious freedom in the context of Catholic teaching,²³ describes another facet of what was

²³ Pope Paul VI: *Dignitas Humanae*: On the Right of the Person and of Communities to Social and Civil Freedom in Matters Religious, 7 December 1965, https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_decl_19651207_dignitatis-humanae_en.html.

presented regarding moral dignity. From a Catholic perspective, freedom of conscience is a persistently relevant aspect that is particularly emphasised in its focus on the morally good.²⁴ According to Thomas Aquinas, conscience is assumed to be oriented towards the truth, i.e. the grasp of reality *par excellence*.²⁵ Although a foundation of conscience in the truth and thus God himself is assumed, there is a relationship with reason, which can also lead to misguided judgements: “Errant reason presents its judgement as truth, and consequently as derived from God, from whom all truth is.”²⁶ The distinctive attribute of this reliance on reason is that even if it leads conscience astray, the fundamental nature of conscience remains anchored in the pursuit of truth. This leads to the view that obligation and responsibility arise from the truth-seeking nature of conscience, even if the factual intellectual judgement is clouded.²⁷ In short: “An erroneous conscience binds.”²⁸ It is evident that this does not legitimise the deliberate misleading of the mind and, consequently, thus of conscience, irrespective of whether this occurs through lies, misinformation or technical manipulation of the brain. This also indicates a further limitation in the domain of technical augmentation: All those technologies that mislead the mind or alter the faculties of conscience itself inherently compromise its dignity of conscience, something that arises from the manipulation and impairment of the subject²⁹ rather than from the factual truth or falsity of judgement: “Hence the more right conscience holds sway, the more persons and groups turn aside from blind choice and strive

²⁴ Vatican News: Pope Francis: Freedom of conscience must be respected always and everywhere, last modified 17 June 2020, <https://www.vaticannews.va/en/pope/news/2020-06/pope-francis-day-of-freedom-of-conscience.html>.

²⁵ Hoye, William J.: *Die verborgene Theologie der Säkularität, Das Bild vom Menschen und die Ordnung der Gesellschaft* (Wiesbaden, Heidelberg: Springer VS, 2018), p.188.

²⁶ Aquinas, Thomas: *Summa theologiae*, I–II, q. 19, a. 5, ad 1. As cited from: Aquinas, Thomas: *Summe der Theologie*: 2. Die sittliche Weltordnung, 3. durchges. u. verb. Aufl., Kröners Taschenausgabe 106. Leipzig: Kröner, 1985. In the latin original: “Ratio errans iudicium suum proponit ut verum, et per consequens ut a Deo derivatum, a quo est omnis veritas.”

²⁷ Hoye, William J.: *Die verborgene Theologie der Säkularität, Das Bild vom Menschen und die Ordnung der Gesellschaft*. Wiesbaden, Heidelberg: Springer VS, 2018, p. 189.

²⁸ Aquin, Thomas von: *De veritate*, q. 17, a. 4, as cited from: Aquin, Thomas von: *Vom Gewissen: Quaestiones disputatae de veritate 16-17*. Freiburg: Herder, 2021, Latin-German.

²⁹ Hoye, William J.: *Die verborgene Theologie der Säkularität, Das Bild vom Menschen und die Ordnung der Gesellschaft*. Wiesbaden, Heidelberg: Springer VS, 2018, p. 190.

to be guided by the objective norms of morality. Conscience frequently errs from invincible ignorance without losing its dignity (GS 16).”³⁰ In that regard, conscience is also essential for the common good and human social relations (GS 16). Conscience-based technical interventions, whether for military utility or for other reasons, do not only infringe on human dignity, but also on the human community as a whole.

The freedom of conscience, as well as the dignity of the human person, is expressed in the autonomy to act which is such an essential part of the human being that it does not permit any unjust restrictions. ‘Unjust’ is explained in terms of the appropriateness of autonomous action as emphasised and formulated in the course of the Second Vatican Council: “Acting in a Christian manner means acting appropriately, without the false directness of ecclesiastical regulation, which would contradict the inherent demands, that are grounded in the things themselves and the difference between the Church and the Kingdom of God [...]”³¹ Interventions in autonomy, including ecclesiastical interventions, are not permitted. However, it is important to note that autonomy does not entail unbridled freedom for the individual. Instead, insofar as the ecclesial concept of autonomy is a just autonomy (*iusta autonomia*), which essentially includes relational aspects, since the objectivity of creation only becomes comprehensible through the constant, reciprocal relationship with the individual.³² However, this obligation to others, which is incumbent upon human beings in the context of autonomy, also includes protection. It is vital to recognise that human beings must not be illegitimately restricted in their highly individual freedom of action. Furthermore,

³⁰ Pope Paul VI.: *Gaudium et Spes: Pastoral Constitution on the Church in the Modern World*, 7 December 1965, https://www.vatican.va/archive/hist_councils/ii_vatican_council/documents/vat-ii_const_19651207_gaudium-et-spes_en.html.

³¹ In the German original: „Christlich handeln heißt sachgerecht handeln, ohne falsche Direktheit kirchlicher Reglementierung, die dem Eigenanspruch der Dinge und der Differenz zwischen Kirche und Reich Gottes widerspräche, aus der die Vorläufigkeit und die Begrenzung seiner innerweltlichen Kompetenz resultiert.“ Complete translated version: „Acting in a Christian manner means acting appropriately, without the false directness of ecclesiastical regulation, which would contradict the inherent claim of things and the difference between the Church and the Kingdom of God, from which the provisional nature and limitation of its inner-worldly competence results.” Ratzinger, Josef: *Die letzte Sitzungsperiode des Konzils*. Köln: Bachem, 1966, p. 48.

³² Losinger, Anton: *Iusta Autonomia: Studien zu einem Schlüsselbegriff des II. Vatikanischen Konzils*, *Abhandlungen zur Sozialethik* 28, Paderborn, Munich, Vienna, Zurich: Schöningh, 1989.

it is crucial to ensure that they are able to exercise their autonomy fairly with regard to their social environment, society and the environment. This fits into the dimension of social dignity, but now a different perspective is shown. The prohibition to restrict the soldier to one role is not only founded by individual reasons, but also out of obligation to others.

Irrespective of whether one shares the theological perspective on the human condition, or whether it is assumed that the human condition has been fundamentally transformed by technology to the extent that physical and cognitive limitations can no longer be assumed for humans, as they redefine their humanity through technological progress, it is indisputable that normative and ethical orientation is highly necessary.³³ This necessity arises from two fundamental sources: Firstly, normativity emerges as a response to protect human beings in the course of their contingency and in the face of their inherent vulnerability. Secondly, it arises from the assumption that contingency can be overcome technologically,³⁴ from the need for dignity-preserving orientation in a space of almost limitless possibility.³⁵

Enhancement vs. Reduction

Based on the perspectives on people presented above, this section briefly summarises the criteria that distinguish “genuine enhancement” from functional reduction when using technologies and methods to improve people.

Genuine enhancement is characterised by its respect for the inherent dignity and complexity of individuals, ensuring that no aspects of their essential characteristics or abilities are diminished. The theological and ethical principles of the image of God and the human condition provide a normative

³³ Grunwald, Armin: Converging technologies: Visions, increased contingencies of the *conditio humana*, and search for orientation,” *Futures* 39, no. 4, 2007, <https://doi.org/10.1016/j.futures.2006.08.001>.

³⁴ At this point, it is necessary to add some clarification: Contingency is to be understood here as the physical and mental limitations of human beings, since a categorical transgression of contingency is conceptually almost inconceivable. This is due to the fact that terms such as “contingency” are categorically relative, whereby they eo ipso define external and internal boundaries.

³⁵ Grunwald, Armin: Converging technologies: visions, increased contingencies of the *conditio humana*, and search for orientation,” *Futures* 39, no. 4, 2007, p. 391. <https://doi.org/10.1016/j.futures.2006.08.001>.

framework within which such genuine enhancements are to be evaluated. Technologies and augmentations that are regarded as genuine enhancement must:

1. **Respect human dignity:** any form of enhancement must not reduce people to a mere means or a mere platform.
2. **Attune to vulnerability:** enhancement measures must neither exploit nor conceal a person's vulnerability.
3. **Protect the freedom of conscience:** freedom of conscience, as an expression of moral autonomy, must be preserved. Technologies that interfere with or manipulate moral decision-making represent a fundamental threat.
4. **Guarantee autonomy:** interventions that impair autonomy contradict the idea of positive enhancement. Technologies should aim to support freedom of choice and self-realisation.

The human being is irreducible in its entirety. This is particularly important to take into consideration when scientific or technical images of humans are formed from the need for modelling and abstraction, which postulate a comprehensive description of the human form on the basis of far-reaching individual sciences.³⁶ However, even if all of the above-mentioned criteria are met, it is important to recognise the need for protection from lasting consequences of the use of technology. It is therefore also important to ensure that enhancements are reversible and do not cause dependencies.

Reversibility is therefore not merely a technical requirement. Instead, it constitutes a fundamental ethical principle. Its purpose is to protect human integrity by ensuring that technologically induced changes can be reversed. This is crucial in order to maintain control over one's own body and mind and to prevent permanent dependency on technology. In the military context in particular, where the application of augmentations must be conceived within a sphere of existential, social and hierarchical pressure, reversibility becomes an indispensable element of human rights protection.

³⁶ Schüßler, Werner: Was ist der Mensch? „Mensch sein“ und „Mensch werden“ aus philosophischer Sicht. In: Brandscheidt, Renate et al.: Herausforderung „Mensch“, Paderborn et al.: Ferdinand Schöningh Paderborn, 2012, p. 19.

Technologies that engender psychological, physical or social dependencies are incompatible with the idea of autonomy and self-determination. Such dependencies may incur long-term negative consequences for both individual and social life. Enhancement technologies could reinforce hierarchies and social inequalities by restricting their accessibility to a select group of individuals. This contradicts the principle of equality and justice, which is fundamental to ethical and theological discourse. Consequently, future technological developments must take into account not only individual autonomy but also social structures to ensure that such technologies do not cause harm but promote the common good.

It is therefore important to note that, as a result of their various anthropological insults,³⁷ humans are attempting to compensate for an inferiority complex through technology. This leads to a refusal to accept “the anthropological characteristics of finiteness, conditionality, inadequacy, lowliness and vulnerability, in short: human contingency as a natural default.”³⁸ Ultimately, the legitimacy of human enhancement in the military hinges on a balance between technological possibilities and ethical imperatives. Ensuring reversibility and independence is vital in upholding the dignity and autonomy of individuals, aligning with the broader ethical framework that distinguishes them from human reduction. This approach necessitates a commitment to continuous ethical reflection and adaptation in recognition of the complex and dynamic nature of human enhancement in military settings.

³⁷ Beginning with Sigmund Freud’s description that man is neither the centre of the universe (cosmological insult) nor the crown of a creation that is directed towards him (evolutionary insult), and not even a complete master of his consciousness (psychological insult), numerous other insults concerning man have been identified and described.

³⁸ Brantl, Johannes: Gut erschaffen - manchem aber nicht gut genug: Normethische und tugendethische Überlegungen zur medizinisch assistierten Selbstverbesserung des Menschen. In: Brandscheidt, Renate et al. (eds.): Herausforderung „Mensch“, Paderborn et al.: Ferdinand Schöningh Paderborn, 2012, p. 142.

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