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Marion Albers
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# Human Rights and Human Nature

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# Human Rights and Human Nature

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# Chapter 16
# Enhancement, Human Nature, and Human Rights

**Marion Albers**

## 16.1 Introduction

Modern biotechnologies have a decisive influence on the ideas of human nature and human rights. They can affect the notion and the boundaries of the human as well as the concept of individual rights. Among the characteristics and consequences of advanced biotechnologies are radical transformations: The biological foundations of humankind are more and more accessible, can be modified in a targeted way and thus become the subject of decisions. Naturalistic self-descriptions are questioned and replaced by forms of description which are explicitly culturally constructed. This dimension of profundity corresponds to the basic nature of the controversies. Human nature, human dignity and human rights play as crucial a role in the disputes as does the question of universalizability of basic values and rights. While initially stem cell and embryo research, genetic diagnostics, cloning or patents on life were central issues, the debate on human enhancement is now the focus of attention. Enhancement links up with various biotechnologies and aims at increasing or improving human capacities, traits or moods. This ranges from cosmetic surgery, genetic intervention, smart pills, neuroprostheses, cyborgs or artificial life all the way to visions of "transhumanism" or "posthumanity." How enhancement can be described and defined is already a component of the debate and a problem prompting discussion of fundamental questions. Normative judgments are often based on recognized values and rights such as human dignity, autonomy or equality. A closer examination shows that the various lines of reasoning that are applied originate in entirely different as well as also often insufficiently elucidated approaches and preconditions. The debate on enhancement can benefit from being part of a wider discourse on human nature and human rights while also enriching this discourse.

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This chapter treats the enhancement problem as a fundamental challenge and as a catalyst for reconsideration of the notion of human nature and human rights. Section 16.2 aims at analyzing and clarifying the concept of enhancement. In presenting fields and visions I will illustrate the range covered by this concept and elaborate on primary aspects. Conceptual dualities such as "therapy/enhancement," "normal/supranormal" and "natural/artificial" will provide further explanation. In the end, enhancement requires contextualization. Section 16.3 explores the controversy surrounding enhancement insofar as this controversy refers to human nature or central human rights. It is striking that the same normative standards are the basis of conflicting results. For the debate to lead somewhere, context, concepts and the status of discussions must be worked out more clearly in the future. Section 16.4 shows in how varied and complex a manner the relationship between human nature and human rights can be described and results in considerations on the role of human nature in the present-day human rights discourse. Against this background the fifth section deals with the interplay between enhancement, human nature and human rights and centers on some decisive aspects of the enhancement problem.

## 16.2 Enhancement: Concept and Contextualization

The concept of human enhancement and the practices and techniques involved are not immediately obvious, but are themselves the subject of a debate over describing and delimiting them. Defined in broad terms, "human enhancement" includes any activity which improves human bodies, minds, capacities, abilities, sociability, life span or general well-being (Harris 2007, 19 ff.; Bostrom and Sandberg 2009, see also Allhoff et al. 2011, 201 ff.; Menuz et al. 2013, 162). Physical exercise, a cup of coffee, school education, glasses or vaccinations are given as examples. Regardless of whether such an approach is perceived as involving an effort to achieve an impartial understanding or whether a strategy of de-problematization and legitimization is suspected (Wehling and Viehöver 2011, 14 f.), the matter cannot be left with this approach alone. To give the concept any explanatory and differentiating power at all it needs to be understood in the historical-social context in which it was formed. An appropriate concept must, in the first place, encompass the current discussion of human enhancement and also the potentially novel situation. Secondly, it must be as transparent as possible regarding its parameters, its underlying assumptions and its descriptive or normative elements.

An initial approach involves describing the fields which are discussed within this framework (Sect. 16.2.1). A further description is offered by conceptual dualities such as "therapy/enhancement," "normality/supranormality" and "natural-ness/artificiality" (Sect. 16.2.2). This leads to a contextualization. Already from the outset, enhancement has to be understood as a concept which describes complex relationships that need to be fleshed out in a context-related manner, and which is inherently reflexive (Sect. 16.2.3).

### *16.2.1 Fields and Visions*

The fields that are discussed with regard to human enhancement range from cosmetic surgery, genetic selection and intervention, smart drugs and neuroprostheses to the creation of chimeras, cyborgs and artificial life. Development in the various fields is characterized by heterogeneity and asynchronicity. In addition, the enhancement debate is carried on in society in general, in the political system as well as in various scientific disciplines and also in the form of futuristic visions or science fiction narratives (cf. Bostrom 2005; however, for a discussion of the dearth of appropriate academic futurology see Cornips and van Asselt 2013). Scientific contributions are being made in the natural sciences, the social sciences and the humanities or literary studies. With the specific perspectives of each discipline, they all have something to offer, but have their limits, too. Natural sciences reveal biotechnological possibilities, while the social sciences emphasize the social constitution of the development or realization of biotechniques. Futuristic visions or science fiction narratives communicate what is imaginable in the fantasies of a society, and can also promote technical ideas; however, they cannot be regarded as scenarios which are sure to become reality in the future.[1] Hence, appropriate analyses must keep the source and context of a particular line of thought in mind. Enhancement is about practices that are already being applied as well as about scenarios and visions of the future, and it is a matter of varying approaches. In the following, we can highlight some typical aspects considering central questions: What is meant by enhancement? How is enhancement delineated? What are the standards according to which something is regarded as an enhancement? How are enhancement practices carried out and what are the conditions of their establishment and dissemination?

Cosmetic surgery can serve as a "natural starting point" (Devereaux 2008, 160) to illustrate the enhancement issue. We can draw upon concrete established practices such as face lifts, Botox injections, rhinoplasty, chin implants or breast augmentation and liposuction. There are also some cases of people who strive to reinvent their appearance or, more accurately, themselves by resorting to cosmetic surgery to an extreme extent (see Toledano 2011). On the one hand, enhancement practices stand apart from what are merely cosmetic measures, such as hair coloring or removal. The most important differentiation criteria are the nature of the intervention in a person's bodily integrity using techniques which come from medicine – mostly from reconstructive surgery which repairs bodies torn by war, accident or disease –, the customary impossibility of reversibility, and the risks involved. However, as the examples of skin lightening or tattooing demonstrate, clear-cut differentiations are difficult. On the other hand, enhancement practices are distinguished from medically required measures. The central distinguishing

[1]Of course, we always deal with a future which is a specific part of each present – a present future – and constructed on the basis of, i.e., available knowledge, imaginations, value judgments or interests, see Grunwald 2013, 211 ff.

criterion here is differentiation between health and disease. Since this distinction is socially constructed, is based on a number of assumptions and is context-dependent (see Sect. 16.2.2.), it does not provide a clear-cut differentiation either. Even so, it can be used for identifying measures which enhance neither health nor function (see also Devereaux 2008, 169).[2] The standards to which enhancement practices are oriented and according to which something is judged to be an "improvement" are beauty ideals. These ideals are shaped by interplay among numerous individual and social factors. Images in the media and in advertising, role models and the cosmetic surgery industry have considerable influence on this (see, with different approaches, Davis 2003; Frazer 2003; Langer and Wimmer-Puchinger 2011; Stroop 2011; Gimlin 2012, 55 ff.). The standard for being "beautiful" is thus dependent on the culture and era, partly standardized, partly pluralistic and correspondingly varied and dynamic. The application of enhancement-practices in the area of cosmetic surgery shows national specificities (cf., comparing the US and the UK, Gimlin 2012, 26 ff.). In view of the relatively limited resources required in terms of technology and expertise, they are carried out mostly in a rather incremental and decentralized manner. This also results from the fact that the practices are less directly and instead indirectly regulated via general medical standards, via requirements for pharmaceuticals or via their exclusion from financing by medical insurance (see, for example, Damm 2011).

Genetic enhancement is based on developments in the decoding of the human genome and gene diagnosis which are dynamically advancing although still in their early stages. It presupposes close connections between personal characteristics or abilities and gene functions – an assumption that is, apart from explored monocausal relationships, highly problematic. We can distinguish between enhancement options in assisted reproduction, those involving living human beings and those involving the creation of artificial life. In the case of in vitro fertilization, germ cells or embryos can be analyzed and selected depending on their genetic constitution. In the future, genetic interventions are imaginable. In the case of living human beings, genetic interventions via somatic gene therapy, gene transfer techniques or germ line alterations are conceivable; though, technically, they are only in the beginning stages and not yet realizable. However, future scenarios foresee them, not least in view of relevant animal experiments (see, for example, Stock 2002). Transhumanist visions or science fiction narratives envisage the reshaping of humankind into a genetically modified post-human species as well as the creation and engineering of artificial life. Genetic enhancement can be distinguished from measures such as selection of partners by its technical character, the intentionality and directness involved and the particular objective desired by the procedures. And once again, the

[2]Expansion strategies take pains to justify cosmetic surgery by emphasizing that it is basically health-related in view of its effects on psychological well-being; promoting this well-being through measures which have no medical basis in themselves is, however, not the task of medicine (Devereaux 2008, 162 ff., 165 f.). Especially in the area of cosmetic surgery, we can observe vigorous discussion of professional ethics (see, for example Little 1998; Juengst 1998, 29 ff.; Ach 2006; Lanzerath 2011).

distinction between health and disease serves to distinguish enhancement practices from medically necessary measures. The standards according to which something is regarded as being an enhancement or improvement is, however, remarkably unclear when the model of healing illness can no longer be applied. What is "better"? A consensus on this is often assumed without any basis. In fact, the standards – improved vision or hearing, having greater intellectual faculties, looking beautiful, living longer – are characterized, as well as in cosmetic surgery, by an interplay among numerous individual and social factors. They depend on culture and era, are partly uniform, partly pluralistic, correspondingly varied and, above all, dynamic (simplifying Stock 2002, 116 ff.). The realization of genetic enhancement through biotechnological means has until now been limited by the fact that techniques are not yet adequately developed, a greater or lesser degree of medical professionalism is necessary and – differing from country to country – legal regulation restricts preliminary research on embryos or on living human beings or methods such as preimplantation genetic diagnostics.

Psychopharmacologic enhancement makes use of pharmaceuticals to improve cognitive abilities or emotional, motivational and/or conative states such as concentration, attention, alertness, memory and mood. Best known is the use of Ritalin® which was originally prescribed to treat ADHD (attention deficit hyperactivity disorder) but in the meantime serves as a "neuro-enhancer" aimed at an increase in concentration or attention. Other examples are Modafinil as a substance which has been approved for the treatment of sleep disorders and is being used to increase alertness or learning ability. Donepezil is a substance which has been developed for the treatment of dementia and is now being used as a cognitive enhancer to improve memory capacities. Fluctim® or Prozac®, originally developed as an antidepressant, has become a lifestyle drug for mood enhancement. Differentiation of psychopharmacologic enhancement from education, mental training and stimulant drugs such as caffeine, nicotine or alcohol mostly points to the development and application of the pharmaceuticals in a medical context or to their chemical effects, side effects and addictive potentials. Appropriate ways of differentiating, however, are disputed (cf. Bostrom and Sandberg 2009). The treatment of diseases on the one hand and enhancement on the other are distinguished as well. A distinction can be difficult, particularly in the case of mental states, as the examples of the diagnosis and treatment of ADHD or depression show (see also Sect. 16.2.2). The standard for assessing whether something is an enhancement derives from interplay among numerous individual and societal factors. Mostly, there is a focus on a particular function in a specified context, e.g., improving memory or alertness in exam or job situations. Again, the standard is subject to criticism: Alterations of this kind are not improvements but driven by the criteria of a performance-oriented competitive society and merely technocratic (see for instance Müller 2008a, 194 f.; Boldt and Maio 2009, 387 ff.). Carrying out psychopharmacologic enhancement is made easier by the fact that smart drugs can be prescribed "off label" and easily bought online, even if they are prohibited in a given country. As a consequence, enhancement practices have gradually increased and now seem to be quite widespread.

Last but not least, enhancement is discussed with regard to human-machine interfaces. Examples are high-tech artificial limbs, cochlear and retinal implants, neurosurgical intervention or neuroprostheses in various forms, and memory chips implanted in the brain (for an overview see Merkel et al. 2007, 117 ff.; Müller et al. 2009). Technical implants could improve sensory or cognitive functions. Deep brain stimulation, which is less or more invasive in the form of electronic stimulation or implantation of electrodes, is contemplated for enhancing associative memory or selectively inducing emotions with positive valence (cf. Synofzik and Schlaepfer 2008). Future scenarios envisage an increased use of bioelectronic and neural engineering systems in order to improve motor, sensory and cognitive traits and ultimately even create a symbiotic connection between the human biological system and various technical devices. The key word, although it is understood and used in a variety of different ways, is "cyborg" (cybernetic organism; see Kurzweil 2003; Clark 2003; Jones and Whitaker 2012, 259 ff.). The distinction between enhancement practices and other means such as glasses, mental training methods or computer networks is made with a view to the interconnections between human organisms and technical devices and to corresponding criteria of internality and externality. However, such differentiations rest upon a set of presuppositions –especially how a "human being" can be described; and they are thus subject to attacks (cf. Clark 2003; Bostrom and Sandberg 2009). Differentiation from medically necessary procedures can be made via the health/disease distinction (see, for instance, Merkel et al. 2007, 295 ff.; Bostrom and Sandberg 2009, 312). By way of illustration, retina implants are classified as enhancement if they outperform "normal" natural vision, for example, enable people to see like a honeybee or like a bat (Benford and Malartre 2007, 53 ff.; Jones and Whitaker 2012, 261 f.). Obviously, making a distinction involves numerous assumptions, although it is not impossible. The criteria for classifying an alteration as an enhancement are often left vague: to see better or to hear better – which means: to see a broader area or range of colors better and to hear more noises better –, to be able to remember more –or better still: to remember exactly what is needed at a given moment –, to be smarter, to feel good. Only a single isolated function is usually focused on when doing this. Upon closer examination, the relationship between the original state, the measure adopted, the final state and the assessment as enhancement involves many assumptions. We simply do not know exactly what it means to be able to see like a bat, or what consequences this will have for other functions. At present, carrying out enhancement applications in this area comes up against the obstacle that the procedures are at the beginning of their development and that in order to use them, a high level of expertise and technical resources are required. We largely have to do with prognoses, future scenarios and a great deal of science fiction.

This closer analysis of the fields in the context of which the problem of enhancement is discussed already shows the variety of forms of description that converge, the substantial role normative criteria play, and how complex the issue is. In the following sections, enhancement is more clearly defined with the help of several conceptual dualities.

### *16.2.2 Definitions and Conceptual Dualities*

In addition to the approach based on the fields involved and examples, enhancement can be described by means of relevant dichotomies. Within their framework, the respective opposite concepts will facilitate understanding. Among the central dualities are "therapy – enhancement", "normality – supranormality", and "naturalness – artificiality". These dualities are not mutually exclusive, but complement each other, and are used in different contexts.

The distinction between therapy and enhancement is a basic and frequently used differentiation. This results from the fact that the enhancement debate derives from the question whether certain technologies that have been developed and established for therapeutic purposes should be used "beyond therapy" (President's Council on Bioethics 2003).[3] "Therapy" is understood as medical, surgical or psychological treatment aimed at restoring individuals with diseases or impairments to the original or to a so-defined normal physical and mental state of health or aimed at preventing diseases or disabilities. "Enhancement", by contrast, is used to describe efforts to increase or improve the condition, capacities and performance of healthy persons (cf. Merkel et al. 2007, 296 f.; Daniels 2000, 309). However, the usefulness of these classifications depends on clarification of the concept of "health" and "disease". Both concepts are historically and culturally variable, continuously evolving and context-dependent social constructions.[4] The way they are understood depends upon the area of application: "Health" as a political program which is reflected in the World Health Organization's definition of health as "a state of complete physical, mental and social well-being" (World Health Organization 1948) is understood differently from "health" as a criterion describing the medical necessity for treatment against the background of public or private insurance (see, for instance, Daniels 2000, 309 ff.). Scientific approaches have always been diverse and complex (Hofman 2001). Some approaches refer back to descriptions of functions and normality in the sense of an ideal type: "*Health* in a member of the reference class is *normal functional ability*, the readiness of each internal part to perform all its normal functions on typical occasions with at least typical efficiency" (Boorse 1977, 562; emphasis in the original; see also Schramme 2007). Normality is defined within historical and social processes correlating with the level of knowledge of the particular epoch (Lenk 2011, 68 f.). In objectivist approaches, this is in part

[3]This is a historical chronological description. From an analytic point of view, this distinction is not necessary; human-machine interfaces, for example, can arise independently in an information technology context.

[4]Originally, the understanding of "disease" as a social construction was motivated by an interest in preventing discrimination. Having said that, it would be expected that the problem of perfection should cease to exist and that there would be no necessity for any human enhancement. Surprisingly, in modern society an awareness of disease as a social construction and the quest for enhancement emerged simultaneously. An explanation might be that both approaches have in common the fact that they draw attention to the constructed and contingent nature of how humans are conceptualized.

left up to the biomedical sciences (Daniels 2000, 314 f.). Some considerations highlight values which are developed with a view to the natural functioning of the human organism and on which people would most probably agree, e.g., to be free from unbearable pain (Schramme 2011, 71 ff.). Other approaches accentuate more subjective self-evaluations and subjective feelings of well-being. The extent to which descriptions based on a differentiation between healthy and sick are capable of achieving consensus can also differ according to whether it is a matter of physical states or of psychosocial problems which are difficult to specify. In addition, physical or mental states have to be understood as a continuum, so that the distinction between health and disease necessarily involves gray areas. However, the fact that "health" and "disease" involve socially constructed, context-specific, multifactorial descriptions which are in need of concretization in no way means that a distinction between them is unnecessary. On the contrary, this distinction must be operationalized and applied within numerous contexts. This is also true for enhancement. To bring the area of interest and related problems into focus, "enhancement" should be grasped as a concept standing in opposition to treatment, even though grey zones have to be taken into account (see the critical considerations of Coenen et al. 2009, 17 ff.). The enhancement debate is thus to some extent affected by the debate about health and disease. This includes, among others, the debate on medicalization or "disease mongering". All in all, the distinction between "health" and "disease" is necessary for understanding enhancement; however, doing so is not sufficient. Further conceptual distinctions are needed, which are both to some degree connected with the distinction between health and disease and also independent dichotomies.

Among these further distinctions is the difference between "normality" and "supranormality". In its basic approach, normality is a relational concept based on specification of the reference points in terms of which something is "normal", the comparison group and the criteria according to which normality is measured. In our context, ideas of normality are often closely linked to descriptions of function in the same way as the functionality-oriented concept of health is based on these. Enhancement would involve activities which raise human capabilities beyond the species-typical level or the statistically normal range of functioning (cf. Allhoff et al. 2011, 203). The reference point is not an average value but a spectrum of typical functionalities characteristic of the species; the comparison group is the species; the criterion is what is typical. This approach implicitly assumes that the means by which an improvement is achieved are to be regarded as artificial – constellations in which people achieve outstanding performance through their own efforts, for instance in sports, would not transcend the species-typical level of functioning. Via artificiality of the means, constellations can also be considered in which people, without being sick, raise themselves to a level, for instance with smart drugs, which corresponds to the normal level.[5] However, the whole approach requires

[5]In order to make the constellations clearer, Grunwald describes this as "doping" to distinguish it from enhancement in the narrower sense, see Grunwald 2013, 204 f.

a description of the starting conditions, i.e., the state or the conditions that were assumed to exist when delineating normality. Notions of normality are based on a state achieved by a society, for instance, in terms of healthy living conditions which increase the maximum life span attainable. However, these notions do not include every imaginable method of improvement in performance. They thus merge with the idea of naturalness and of "natural limits." As a result, the concept of enhancement does not go without notions of normality (cf. also Lenk 2011, 82). These in their turn are full of presuppositions as well as rife with implications. Hence, the distinction between "normality" and "supranormality" cannot provide an exclusive framework for understanding enhancement.

The distinction between "naturalness" and "artificiality" is a central distinction as well. The meaning of nature and naturalness, however, is highly ambiguous. Their meaning depends on the corresponding opposite concepts and criteria (Bayertz 2003, 134; Birnbacher 2006, 6; Roughley 2011, 11 ff.; Witthøfft Nielsen 2011, 22).[6] An initial central and already traditional relevant distinction between approaches involves whether the human being is conceived of as part of nature while nature is distinguished from, for example, the supranatural, or whether "nature" is contrasted with human beings.[7] In the first case, nature is understood in a comprehensive sense. In the second case, human beings are distinguished from the rest of the world surrounding them, above all with the argument that for them it is less the laws of nature and more the principle of freedom which is decisive. The different approaches lead to profound questions, such as how human beings are conceptualized or whether and how body and mind should be differentiated. Closely linked to this is the understanding of nature as an essence. Originally, this understanding is based on the model of laws of nature and on the idea of something perpetually unchanging. In relation to a human being, this is reflected in the idea of a "true self." In contrast to this view, however, the "essence" of a living being can easily be regarded as being dynamic. If striving for improvement is regarded as the very core or essence of human existence, change even of fundamental characteristics

[6]See also the early remarks of David Hume: "'Nature' means something different when the concept is used as the opposite of 'miracle', 'what is unusual' or 'what is artificial'" (Hume 1739/1740, 475).

[7]In his famous and influential essay on "Nature" John Stuart Mill differentiated between two principal meanings of the word nature. In one sense, "Nature means the sum of all phenomena, together with the causes that produce them; including not only all that happens, but all that is capable of happening" (Mill 1874, 5). The other notion of nature refers to "not everything which happens, but only what takes place without the agency, or without the voluntary and intentional agency, of man." (Mill 1874, 8). The core of this essay is a sharp criticism of the employment of the word Nature as a term in ethics (Mill 1874, 9 ff.) or the "doctrines which make Nature a test of right and wrong, good and evil, or which in any mode or degree attach merit or approval to following, imitating, or obeying Nature" (Mill 1874, 13). However, this critique is based on the implicit assumption that human beings, in principle, are embedded in nature and that "man has no power to do anything else than follow nature" (Mill 1874, 64).

or abilities can be identified as part of human nature.[8] The idea of an essence is ambiguous on its own. In another traditional distinction, nature is understood as that which is not influenced by human beings and is contrasted with the results of human interventions. Somewhat differently and more narrowly described, this corresponds to the distinction between nature and technology. Anything which arises from itself and according to its own laws is natural. Because this is scarcely comprehensible and there is scarcely any such thing as completely untouched nature (Birnbacher 2006, 4 ff.; Oyama 2002), "naturalness" and "artificiality" are comparative concepts: Things are more or less natural (Birnbacher 2006, 4 ff.; Roughley 2011, 23). Furthermore, the concept of natural can refer to the way something came into existence, its genesis, or to its quality and appearance. Both might diverge: an artificial genesis can lead to a result that is judged to be natural on the basis of its appearance (Birnbacher 2006, 7 ff.). As with the understanding of normality, naturalness arguments thus require specification of the framework or the circumstances from which one is arguing. All of this shows that the concept of nature and the distinction between naturalness and artificiality are based on many assumptions and rich in implications (cf. also Bayertz 2003; Birnbacher 2006). References to images of humanity, technology assessments or descriptions of society quickly enter the picture. The large number of implications associated with the concept of human nature is reflected in the enhancement debate.

As a result, the differentiations between "therapy – enhancement," "normality – supranormality" and "naturalness – artificiality" are important for understanding enhancement. They are not sufficient in and of themselves, but rather assist understanding in combination. However, because they are rife with preliminary assumptions and implications, they do not lead to a clear definition of enhancement. We need a contextualization.

### *16.2.3 Contextualization*

From the outset, enhancement is a complex concept because it describes relations and includes both descriptive and normative elements. A particular aspect (human traits, capacities, moods, life span) is changed in specific respects by specific means or instruments from a certain starting point to an end-state. Exact identification of the aspects and the respects in which these aspects are changed is important, because the chosen means regularly have several effects. The end point is only relatively defined and not fixed: "Optimization is a teleological approach while enhancement opens up an infinite step-by-step process during which criteria and direction of enhancement might change" (Grunwald 2013, 203). Changes specified

[8]See Birnbacher 2008, 101: "Modifying or transforming his own nature more directly and deliberately by means of technology does not constitute a radical change in human nature taken in its comprehensive sense but affirms this nature."

in this way are evaluated as improvements according to specific criteria or standards at a particular time in the assessment of individuals or institutions making a decision. This basal description already contains a multitude of elements.

So that the idea of enhancement does not incorporate everything encompassed by the basal description but becomes more powerful for describing problems and making differentiations, it must be contextualized. Contextualization means that assumptions, contextual conditions, reference points and constituent elements of a concept are worked out more clearly. Further statements are relativized in the sense that they only apply and hold true within the underlying framework. Contextualization leads neither to the consequence that nothing can be said at all nor to results being completely arbitrary, because assumptions and contextual conditions must, for their own part, be convincing. According to the respective object of knowledge and interest in knowledge, the necessary contextualization involves differing accentuation. Against this background, the concept of enhancement can appropriately be described as an umbrella term (cf., however, with different considerations Chadwick 2008, 26, 30; Coenen et al. 2009, 6).

The current enhancement debate which is being discussed here is closely related to new biotechniques as a means of enhancement (see also Hildt 2013, 3 f.). As technologies are converging (see, as a broad approach, the contributions in Roco and Bainbridge 2003), these new biotechniques comprise genetic engineering or pharmacological means as well as neurotechnologies or, if applied in a particular manner, nanotechnologies or information and communication technologies. If we take this as a basis, practices such as drinking coffee or wearing a pair of glasses do not fall within the definition of the topic.[9] The link to new biotechniques results from several characteristics which, however, need not all be simultaneously present in a particular measure: novelty, closeness to the human body, the notions of constructability and controllability of the human body, the in-principle potential for alteration which these technologies bring with them, the degree of technologization, the level of invasiveness, and the lack of reversibility. At this point we can see to what extent the concept of enhancement is a matter of risk perception and technology assessment, while at the same time raising fundamental questions about how the human can be understood. Noteworthy in this context is also the concept of human engineering (cf. Ramsay 1970: "Fabricated Man"), which grasps some aspects but is too closely linked to the concept of steering. Steering implies knowability of cause and effect relations or the existence of a central instance that steers human enhancement. Such notions are, as we can conclude from the description of the fields (Sect. 16.2.1), misleading.

The starting point from which it makes sense to speak of enhancement regularly is a state which can be referred to as "not sick". Although grey zones must be kept in view, the concept of enhancement builds on a negative distinction from "treatment" and thereby on the distinction between health and disease. Additionally,

[9]They may be part of a comparative, evaluative assessment of biotechnological enhancement compared with other common and accepted practices, but nevertheless, they are not very productive.

ideas of "normality" and the distinction between "normality" and "supranormality" play a central role in understanding enhancement as an issue of controversies. Notions of "normality" can in turn be linked with notions of "naturalness". "Nature" and the distinction between "naturalness" and "artificiality" provide an important framework as well. The desired end state of enhancement measures is an alteration of the earlier state which can vary from still falling within the "normal" spectrum all the way to change resulting in a supranormal state. At this point, the debate on enhancement sometimes distinguishes between moderate and radical enhancement (Agar 2010; Ach and Lüttenberg 2011, 240 f.) or between "doping" and "enhancement" (Grunwald 2013, 204 f.).[10] With regard to the end state or to the relationship between the point of departure and the end state, it is necessary to specify who actually evaluates the change as positive.[11] Is this decided by the person in question him- or herself (see, i.e., Menuz et al. 2013, 171 ff.)?[12] Or by which persons or institutions according to what criteria and in what way is this to be assessed? Breaking down the issues already shows that the concept of enhancement entails many assumptions and is extremely dynamic.

Furthermore, the profusion of implications of central concepts such as "health," "normality" and "nature" is reflected in the understanding of enhancement. Human enhancement is closely linked to understanding of the human being, with the construction of his or her boundaries or with questions of corporeality (for a distinction between body and corporeality see Böhme 2002) and the differentiation between body and mind. Technology-related assessments round this out: due to the range of possibilities and the intensity of interventions new biotechniques are identified as novel (cf. Lüthi 2013); in part means and methods, in part results are perceived as "artificial". Cultural perceptions of technology, though, change with technological developments (as well as, in turn, technologies are culturally embedded, see Grunwald 2002, with broader considerations on the concept of technology). Hence, descriptions of human boundaries based on the body as well as assumptions of the exceptional status of biotechnical enhancement measures, i.e., incorporating tools as part of the body in comparison to using them externally, are contested (Clark 2003; Harris 2007; Bostrom and Roache 2008). Human

[10]Differing moral evaluations or at least differing conclusions are based on these distinctions.

[11]See Merkel et al. 2007, 295: "the improvement implied by an enhancement is relative in at least two senses. First, what counts as an enhancement, i.e. improvement, depends on the standpoint from which the desired enhanced state is defined as advantageous, relative to certain values. [. . . ] An enhancement in that particular, value-relative context may, therefore, not appear to be an enhancement for anybody else, or could even amount to a worsening or a disadvantage from the point of view of other people." Cf. also Holm and McNamee 2011, 291 ff.

[12]An approach which bases on the proposal that each individual determines for him- or herself whether the outcome of an intervention can be described as human enhancement or not allows an individualistic definition of enhancement which is independent from definitions of "disease" or "species-typical normal functioning" and tightly linked to (socially influenced) personal considerations. As a consequence, removing a limb is an enhancement if the person undergoing the intervention considers the removal to be an improvement. See Menuz et al. 2013, 171 ff.

enhancement is part of a development within which naturalistic self-descriptions are questioned and replaced by culturally and socially defined forms of description (cf. also Böhme 2002, 5 ff.; Bayertz 2003, 132; Heilinger 2010, 18).

But is it a problem that the concept of enhancement proves to be rife with presuppositions and implications and that it requires a contextualization? It would only be problematic and a lack of a sufficient definition if the aim were to link strict consequences with any form of biotechnical enhancement – in the sense of: Human enhancement is morally reprehensible or human enhancement must either be forbidden or allowed. In the initial debate, enhancement was in fact from the outset constructed as a concept which was labeled as either unethical or desirable. If such hasty decisions are avoided, there is no problem with constantly having to reassure oneself about the issue being addressed and that the issue is itself the subject of problematization. Precisely this necessity of permanent reflection has been made plain by the considerations up to now. Hence, the idea of "enhancement" is inherently reflexive. It stimulates debate, and it is sharpened as well as shifting within this dynamic field of debate.

## 16.3 Beyond the Human? Controversies on Enhancement

In the US heated controversies over the topic of enhancement have begun at an early stage. With its paper "Beyond Therapy" the President's Council on Bioethics triggered a wide-ranging social and scientific debate (President's Council on Bioethics 2003). In Europe, by contrast, the topic was initially only addressed occasionally. General discussions in Germany were triggered by the problems of stem cell and embryo research and focused primarily on determining the moral and legal status of the human embryo (cf. also Rothhaar 2014). People argued in a controversial and highly emotional way. In the meantime, however, human enhancement has also become an issue which is now being discussed throughout Europe (cf. Nationaler Ethikrat 2005; Coenen et al. 2009; or the contributions in Missa and Perbal 2009). How the debate originated provides an explanation for the way it has been conducted for a long time. We can notice typical characteristics of politicized debates where arguments have to be commensurable and stated in a form which allows decisions by balancing conflicting goods. Hence, both sides appear to be referring to the same values and rights. Arguments and counter-arguments seem to show a striking symmetry (cf. Heilinger and Crone 2013). But closer examination reveals numerous needs for differentiation and contextualization.

### *16.3.1 References to Human Nature*

"Human nature" is one of the concepts to which arguments refer or which is implicitly reflected in some arguments. However, both the understanding of human

nature and the question of whether and to what extent nature, as it is understood, can provide a normative standard is a matter of dispute. In the latter respect, the problem is less one of naturalness being regarded as a self-evident value or a fallacy that could be criticized, but rather that there is a scarcely resolvable interweaving of descriptive and normative elements in discussions of "human nature".

The rejection of enhancement measures refers to "human nature" rather frequently. To some extent, a naturalness bonus (Birnbacher 2006, 21 ff.; Ida 2009, 63 ff.; see also Bittner and Inthorn 2011) rooted in the lifeworld (German *Lebenswelt*) underlies the skeptical judgments. More closely worked out considerations also employ "human nature" as a topos which shall give reasons for objections to enhancement (cf., for instance the President's Council on Bioethics 2003). However, the concept of human nature usually remains a vague, ambiguous and compact concept. Sometimes human nature is described as what is not made but emerges of its own accord; a concept which is conceived as the opposite concept to the logic of domination (President's Council on Bioethics 2003, 287 ff.; Habermas 2003, 44 ff.; Sandel 2007, 85 ff.). In part, human nature is understood as a combination of essential characteristics that are typical of the human species, i.e., human consciousness, reason, emotions, sentience and sociability (in terms of a "Factor X," see Fukuyama 2003). In part, it is employed indirectly by describing preconditions for the respect for others as human beings which is indispensable in a rational society; keeping essential elements which arise organically as part of nature distinct from what has been manufactured is part of these preconditions (Habermas 2003). Sometimes it is deliberately used as a complex concept which cannot be described exactly, and directly contrasted with enhancement technologies in light of their characteristics and consequences (Fukuyama 2003, 172):

> What is it that we want to protect from any future advances in biotechnology? The answer is, we want to protect the full range of our complex, evolved natures against attempts at self-modification. We do not want to disrupt either the unity or the continuity of human nature, and thereby the human rights that are based on it.

That human nature is worthy of protection is justified by differing arguments. Respect for "the given" in the sense that certain processes should be barred from human intervention, has partly religious motivations. The concept of "playing God" is a popular watchword (cf. President's Council on Bioethics 2003, 285; for a discussion of the complexity of this watchword see Coady 2009). In secular terms, an "ethic of giftedness" (Sandel 2009, 79) is proposed. As people cannot be held responsible for natural traits and abilities, the acceptance of the given relieves them from an all-embracing responsibility which would be destructive under both psychological and social aspects (Sandel 2007, 85 ff.). Enhancement and genetic engineering represent (Sandel 2009, 78, 86)

> [ . . . ] a Promethean aspiration to remake nature, including human nature, to serve our purposes and satisfy our desires. [ . . . ] If bioengineering made the myth of the 'self-made man' come true, it would be difficult to view our talents as gifts for which we are indepted, rather than as achievements for which we are responsible. This would transform three key features of our moral landscape: humility, responsibility, and solidarity.

Furthermore, the danger of alienation (Müller 2010; Agar 2010, 179 ff.) and impairments of the development of the self or authenticity (cf., e.g., Gordjin 2008, 232 f.; Kipke 2011) are presented as consequences:

> With biotechnical interventions [...] we will be at a loss to attest whether the resulting conditions and activities of our bodies and our minds are, in the fullest sense, our own as human. (President's Council on Bioethics 2003, 285).

Naturalness – in the sense of a distinction between born and made – is conceived as a precondition of personal identity (Habermas 2003). Others emphasize that the valuation of human accomplishments is based on results achieved through natural potential and abilities, not by artificial means, because not so much the results as the acquisition processes are relevant (Tobey 2004, 123 ff., see also Kipke 2011). Enhancement

> [...] shifts our natural mode of valuing one another in the personal, familial sphere away from process-orientation and towards product-orientation (Tobey 2004, 126).

Last but not least, genetic manipulations could affect the preconditions of social interactions and the foundations of societal integration. This is not about "moralizing human nature" in the sense of a resacralization but a matter of (Habermas 2003, 25):

> [...] the assertion of an ethical self-understanding of the species which is crucial for our capacity to see ourselves as the authors of our own life histories, and to recognize one another as autonomous persons.

New biotechnologies are regarded as being exceptional in comparison with other technologies because they enable a new type of intervention (Habermas 2003, 12) and scenarios can be constructed that would change basic background assumptions about social life. Just as elementary is the depth of misgivings about predictability and controllability of the effects of interventions in complex functioning human systems which have until now developed through evolution (cf. Merkel et al. 2007, 347). Occasionally, the inherent limitations of science are emphasized: Science uses models and creates its own necessarily reductionist abstractions resulting in conceptual boundaries and specific blindness (cf. Kass 2002, 277 ff.). Therefore, "the nature and meaning of living, and of life altogether, will forever lie out of reach" (Kass 2002, 293). Precisely because human nature in its complexity cannot be exhaustively comprehended, it should be protected against potentially far-reaching biotechnical interference.

In case enhancement measures meet with approval in a more or less broad and more or less differentiated way, some lines of argument draw explicitly or implicitly upon the topos "human nature" as well. The central difference from skeptical judgments on enhancement lies primarily in the view that alterations are judged to be a part, if not the core of human nature. "Nature" or the "natural" is not understood as a complex whole and a dense web of harmonious interdependencies which would be endangered by any intervention. On the contrary, it is argued that the human organism is not characterized by extreme connectedness and a correspondent fragility but rather by limitations on connectedness due to features of organisms

such as modularity, redundancy and canalization (Buchanan 2011b, 134 ff., 143 ff., 181 ff.). Furthermore, attention is drawn to the indivisible interweaving of primor-dial nature and culture. Hence, creating an antagonism between them is refused; nature is considered as always having been shaped by culture. Detached from ideas of immediacy and bodiliness, developing mental capabilities by employing artificial means and coupling them with "natural" brain functions is seen as a regular phenomenon in human thinking (see Merkel et al. 2007, 343). Stated radically, artificial extensions constitute the human mind. Thus, enhancement by means of technical devices or human-machine interfaces are characterized as an integral part of human nature (Clark 2003, 174):

> Human-machine symbiosis, I believe, is simply what comes naturally. It lies on a direct continuum with clothes, cooking ('external artificial digestion'), bricklaying, and writing. The capacity to creatively distribute labor between biology and designed environment is the very signature of our species.

Therefore, human nature

> [ . . . ] is dynamic, partially human-made, and improvable. (Bostrom 2011, 65).

That seeking enhancement merits protection is justified with underlying reasoning which is partly similar to anti-enhancement arguments but arrives at contrary results. Theological considerations describe human creativity as an ability given by God; human beings could be seen in some sense as being co-creators with God (see for the different theological positions the contributions in Cole-Turner 2011; Sagoff 2005, 82 ff.). Because nature and nature's gifts are not always precious, there is no reason to accept "the given" or species-specific natures (Bostrom 2011, 57). The factors determining the formation of personal identity or the conditions for social recognition would not be undermined without further ado. In cases of genetic enhancements this would hold all the more to the extent that genetic determinism is misleading (Buchanan 2011b). The use of drugs as a means of enhancement could even help people toward authentic conduct (Juth 2011); at least it would not have to interfere with people's ability to live authentic lives (Dees 2007, 386 ff.). Compared with other techniques, biotechnical measures of enhancement are merely a part of continuous development and nothing exceptional (see, among others, Buchanan 2011b, 39 ff.). Their outcomes are not regarded as generally too risky. Trusting in the results of evolution also includes risks, and these results are not necessarily preferable (Buchanan 2011a, 26 ff., 173):

> Nature or evolution is not like a master engineer. The natural – the biological status quo – is rarely optimal, and sometimes it's not even acceptable. To make a rational evaluation of the possibilities of biomedical enhancement, we have to rid ourselves of pre-Darwinian, romanticized, rosy assumptions about nature and our own biology. Human nature is a mixed bag, with plenty of room for improvement.

To sum up to this point, various arguments referring to human nature are closely intertwined, as are descriptive and normative elements, and contrary conclusions are drawn. Hence, appeals to human nature are sometimes judged to lead nowhere (see,

for example, Buchanan 2009, 2011b, 136, 138 f.). At least, just as the enhancement concept itself is often inadequately defined and thus unclear, recourse to human nature in the broad debate leads to lack of precision.

### *16.3.2 Dignity, Autonomy, Equality*

In addition to human nature, certain fundamental values and human rights have always played an important role in the enhancement debate. Human rights seem to reinforce specific concerns in a particular way. They provide them with legal weight and establish links to the human rights discourse which is well organized and widely recognized (cf. Fenton 2008, 2). This discourse is occasionally described as already being the accepted language of international ethics (Baker 2001, 249). Human dignity, autonomy and equality emerge as key concepts which, along with the idea of human nature, seem to offer a common language and also partially refer back to this idea.

The concept of human dignity and its inviolability has made a new career in view of biotechnology. An example is its impact on the worldwide ban on reproductive cloning. Human dignity implies through reference to the dignity of the *human being* and to the concept of *dignity* to notions of human. Furthermore, its inviolability is laid down as a legal consequence. It thus suggests itself as a central legal foundation of arguments regarding respect of human nature in the sense of "the given" or of a combination of essential characteristics which have to be protected, specifically against enhancement measures (cf., i.e., President's Council 2003; Annas 2005, 37 ff.). Such views are based on the fundamental assumption that human dignity has to be understood as a person's intrinsic value as a human being, which must never be violated. The definition of this intrinsic value is related to religious concepts of being human, to concepts of nature or to Kantian ideas that a human being should always be treated as an end and never as a mere means, and should neither be made an object nor instrumentalized. With respect to equality, another objection to the use of enhancement technologies is that they might give those who use them an unfair advantage and might provoke problems of distributive justice.

Opposing positions highlight the view that human dignity can be understood as the capabilities required for performing central human functions or as representing the conditions needed for a flourishing human life, which are not necessarily endangered but, rather, might be improved by enhancement technologies (cf. Fenton 2008, 5). As a moral status or as the quality of being worthy, dignity could be increased by some forms of enhancement and the concept of dignity could include enhanced humans or future post-humans (Bostrom 2009, 173 ff.; Bostrom 2011, 61 ff.). From the point of view of autonomy, it is stated that enhancement can extend the spectrum of a person's behavioral possibilities, e.g., cognitive abilities which are improved by attention- or memory-increasing drugs, and could lead to more rational

and 'freer' decisions (cf. Heilinger and Crone 2013). Independently of empirical questions of effects, autonomy – defined as self-determination and the right of the individual to decide for him or herself – is enhanced by an increase in options of choice. Against the background that private freedom encompasses the use of new technologies for personal advancement, restrictions are regarded to be only justified if they involve interference with outweighing opposing public interests or the rights of other individuals. Beyond that, enhancement is even described as a moral duty on the basis of the assumption that there is no significant moral difference between acts and omissions (Harris 2007, 79 ff.). As to the fairness question, biotechnical enhancement measures might be a possibility to compensate for the "unfairness" of natural inequalities in strength or abilities and to advance distributive justice (cf. Buchanan 2011b).

Similar to the human nature argument, it can be observed that contrary conclusions are based on particular values or rights (see also Heilinger and Crone 2013 with regard to "freedom"). Closer examination of the ideas "dignity", "autonomy" and "equality", however, reveals implicit basic concepts, conditions and presuppositions that underlie each particular line of argument and involve quite different approaches. Any analysis has to take these diverse backgrounds into account.

### *16.3.3 Contextualization*

For a long time, the enhancement debate was characterized by arguments divided into anti-enhancement and pro-enhancement views or anti-enhancement and anti-anti-enhancement positions (Buchanan 2011b, 13 ff.; see also Parens 2006 proposing the framing gratitude vs. creativity). But as we have seen, the issue of enhancement is very demanding. It cannot be described appropriately without a contextualization. Different contexts raise differing ethical questions (cf. also Juengst 1998, 43 ff.). Often, the initial scenarios being discussed are not the same. Evaluations depend on criteria and forms of description.

Consequently, the initial scenarios, the background and underlying assumptions of chosen approaches and the status of particular arguments must be described with sufficient clarity (see also Heilinger and Crone 2013). Contextualization does not weaken reasonings but makes them more transparent and comprehensible. Enhance-ment is a problem which reveals how varied and in need of contextualization concepts of "nature", "freedom", "dignity", "autonomy" or "equality" are. At the same time it provokes discussions of these concepts, their underlying assumptions and basic ideas. In the present context this leads to a linkage with the debate on human nature and human rights.

## 16.4 Interrelationships Between Human Rights and Human Nature

A popular description of human rights understands them as the rights of individuals who belong to the human species. They are rights which have to be respected and which all human beings enjoy equally, simply because they are human. On this basis, rights with specific contents are developed, whose holder is the individual human being. But how can the normativity of human rights be substantiated? What guarantees their universal and egalitarian validity? Are they exclusively rights of the individual human being or could other entities be entitled to them? What concrete contents do human rights have? Why should people regard themselves as under an obligation to respect or enforce the human rights of others (see the differentiation of Beitz 2009, 59 ff., between the demand and the supply side)?

Recourse to "human nature" has traditionally played a central role in the foundation and justification of human rights. At the same time, these conceptions, their background, their preconditions and their outcomes have always been as heterogeneous as the notion of "human nature" itself (see Sect. 16.2.2). Classical approaches developed comprehensive, theologically influenced and teleologically constructed ideas of "nature" and "natural order" as well as "natural rights" that are embedded in these all-embracing views. Modern natural right theories have abandoned teleological metaphysics and derived natural rights in terms of an assumed "state of nature" preceding civil society. They have arrived, however, at results which could not be more divergent (cf. Reinhardt 2014, 141 f.). More recent approaches diverge further, especially in terms of their conceptual starting positions. The functions of the recourse to human nature have also always been heterogeneous. This recourse may be ontological, i.e., center on describing the nature of human rights. It might seek to provide a foundation of human rights designed to be relatively independent of codifications or – to a considerable extent – of social or political conditions. It might aim only at explaining why particular interests or needs should be protected, at describing the range of values or goods to be protected, or at refining what follows from designating a value as a human right (see Beitz 2009, 48). The functions can be combined in a unitary justification context. However, after the collapse of the traditionally all-encompassing closed system of justification treating them separately and paying attention to a particular function is also widespread. The quite different approaches, the possibility of critical reconstruction and recombination of diverging strands and the diversity of the role of human nature in human rights thinking explain the continuing prominence of this paradigm. At the same time, every closer analysis must specify in what context and with what function which conceptualization of human nature is being employed.

If interrelationships between human nature and human rights are re-conceptualized nowadays, human nature is brought into play at different levels and in different respects. With regard to existing codification of human rights, recourses to human nature serve as, for example, a foundation, categorization or framework for interpretation or critical examination of codified rights. Particularly human rights are often conceived as being distinct from embodied positive rights and as rather emerging from moral standards or values that can be invoked as a basis for criticism of actually existing laws and social practices (Donnelly 1982, 400; cf. also Beitz 2009, 49; Reinhardt 2014, 149 ff.). Beside fundamental considerations, there have been several attempts to link the goods deserving protection or the contents of rights to human nature. This might refer to properties or natural interests which are attributed to human beings. Beyond that, the concept of human nature is taken in a broader sense, including not only human properties but also human potentialities (see Tepe 2014, 66 ff., with a view to the capabilities approach and the ontological anthropological approach; see also Donnelly 1982, 398 ff.). Other attempts aim at explaining the reasons why people respect the human rights of oth-ers – not only because they protect an interest that anyone might be expected to have but also because empathy can be regarded as a natural human faculty (see von Har-bou 2014). These considerations strive to understand and refine the idea of "human nature" in the context of human rights in a sensible way; even in this concrete form, though, they quickly lead to different terminology because any concretization must necessarily go beyond mere recourse to human nature and be more precisely stated.

Abandoning both classical approaches based on comprehensive conceptions of a natural order and conceptions of a state of nature means, that the legal system itself provides the background and starting point for the foundations of human rights. The legal system is a social subsystem within contemporary, functionally differentiated society. It is characterized by its own, relatively independent communication and actors, structures, procedures and operations. As a social system, it is not the same as codifications of rights or international treaties which establish consolidated texts to which actors and communications can refer. The relative independence of the legal system by no means implies that relationships with its environment are irrelevant, but they are mediatized within the legal system. Against such a background it stands to reason that human rights cannot be based on a unitary foundation but are supported by various sources and concepts (cf. also Beitz 2009, on the basis of a "practical conception"). This means that the goal of establishing an essential foundation for human rights on the basis of human nature must be abandoned (cf. also Pollmann 2014) as well as the exclusivity of arguments referring to nature to develop or interpret concrete human rights (see also von Harbou 2014, 104 ff.). Nevertheless, human nature does not lose all significance.

All approaches which make use of human nature in arguments in connection with human rights, however, are processed and mediatized in the legal system. In the following, the differentiation between observations internal to the legal system and those external to it becomes relevant. Within the legal system there are differing recourses to the idea of human nature as a part of an argument for justifying and concretizing particular rights. To some extent, they contradict and

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compete with each other, such as approaches referring merely to properties or existing abilities and approaches which include human potentialities. Considering their self-understanding and their convincibility, these approaches must aim at internal consistency. From the perspective of each particular approach, diverging approaches are mutually irreconcilable. Switching to an external point of view, it is, however, possible for communications or actors in the legal system to sometimes be based on one approach, sometimes on another. Courts, for example, avoid making binding and final decisions favoring any particular theoretical approach. As long as consistency of judgments is not fundamentally laid open to question, in making their decisions they can work with the theory of innate human rights in one case, follow a non-naturalistic line of argument in the next, and then choose the capability approach. What may be contradictory from the internal perspective of the point of view of a particular approach can be completely compatible with a functioning legal system from an external perspective. Flexibility is even necessary for the required degree of complexity, the relative openness and the adaptability of the legal system.

Against this background the concept of human nature might be assigned a special role in human rights discourse. Within the legal system, the idea of human nature is proposed by several approaches. To be convincing, any of these approaches depends on not simply stopping at reference to human nature but on contextualizing it and making it more precise with the help of other terminology. From an internal point of view, the approaches prove to be different or even divergent. In observing the legal system from an external perspective, however, precisely the vagueness and ambiguity of the concept of human nature offers advantages. The concept seems to provide a uniform point of reference. In fact, because of its ambiguity and rich implications, constantly new and different concretizations can be carried out again and again. In addition, the concept has the potential to set processes of reflection in motion. All this supports the legal system as a sub-system in capturing the plurality of perspectives in modern society, in grasping problems in a multifaceted way and in deciding issues and at the same time remaining relatively open. Such a background – and not a one-dimensional notion of human nature or a preassigned interrelationship between human nature and human rights – provides an appropriate framework to handle the enhancement issue as a new challenge.

## 16.5 Enhancement as a Catalyst for Reflexivity

### *16.5.1 Enhancement, Human Nature and Human Rights: Interplay and Challenges*

Human enhancement is an issue that enriches the discourse on human nature and human rights and, in turn, benefits from being part of such a discourse. We have worked out that the idea of "enhancement" must be contextualized and is inherently reflexive (Sect. 16.2). In addition, it sets off new debates with regard to other key concepts.

These involve on the one hand the concept of human nature. The meaning of nature and naturalness with its longstanding and richly diverse tradition has always been ambiguous. As a result of closer analyses (see Sect. 16.2.2) its function can be seen in offering a basis for self-formation processes or for ongoing specification and reflection of self-concepts or of descriptions how the human life-form can be understood (see, with different approaches, Müller 2008b, 31 ff.; Bittner and Inthorn 2011, 182 ff.). This function is intensified by the biotechnical possibilities for altering human beings. Natural limits to human and social change are vanishing to a greater and greater degree. Nature, which until now has been something observed and described as being in principle the way it is, is now being made the subject of responsibility and accountability (Sagoff 2005, 90). At a fundamental level, completely novel scenarios are imaginable: Conversion of human reproduction to cloning techniques, genetically altered human beings, human-machine beings, chimeras, artificial life. Human enhancement leads us to rethink the very questions of what it means to be human, how we are to construct human boundaries or the difference between human beings and their environment, or how we are to understand the differentiation between body and mind. Naturalistic self-descriptions have to be replaced by culturally and socially defined forms of description. Technical developments make this possible. They do not, however, provide an exclusive explanation. The emergence and application of techniques are always embedded in social developments; therefore, transformations must be more broadly understood as part of societal or cultural codes of communication. Enhancement, as we have described it, is part of and a result of modern society and of a combination of its characteristics (Elliot 2004; Müller 2008a, 194 f.; Coenen et al. 2009, 38 ff.; Grunwald 2013, 206 ff.): the performance-oriented or performance-enhancing society, the competitive society, the functionally differentiated society, the globalized society composed of countries with different cultures and divergent rules, the pluralistic society or the individualized society.

On the other hand, completely new discussions and reflections on the functions and contents of human rights are emerging. The background for the foundation of human rights is the legal system itself, but this does not mean that the acknowledgment of human rights would be an arbitrary formal construction. In describing interests deserving protection or protected goods the law must be open for implications provided by the environment and sufficiently receptive. As it is nevertheless relatively independent, it refers to and employs varying approaches. Human enhancement raises numerous novel questions at the fundamental level and in connection with concrete issues. What characterizes the “human being” upon which human rights are based? What is the relationship between human being and species? Can human rights be transferred to other entities, for example to chimeras, artificially constructed living beings or even androids (cf. Koops 2013a, 179 f.)? Do existing legal contents, e.g., human dignity or autonomy, have to be re-conceptualized? Will we have to solve problems of unequal distribution keeping enhancement resources in mind, and should we be concerned about an emerging gap between enhanced and non-enhanced human beings? Or is the problem more the opposite: that enhancement techniques are increasingly leading to a uniform

'ideal type' of human being which will preclude any form of abnormality (cf. Koops 2013b, 186)? And must we develop completely new kinds of liberties, rights and duties, for example, cognitive liberty (Bublitz 2013, 241 ff.), fundamental rights to mental integrity, to emotions or to forget or an obligation on governments to stimu-late the pluralism of humankind (Koops 2013a, 174 ff.)? The concrete questions are also diverse. At the core is that the development of human beings will be the subject of decisions, and that who actually decides and how will become a problem.[13]Who makes the choices regarding human enhancement? What decisions are ultimately to be left up to individuals to decide for themselves? The traditional approach of assuming that all decisions having an impact only on oneself and not on others are to be considered "private" and left up to the individual falls short of providing a con-vincing solution. Assessing consequences is always dependent on the form of obser-vation and the answer to the question of whether only the individual is affected or other parties as well varies accordingly. Can we still operate with the construction of balancing individual rights on the one hand and conflicting rights or public interests on the other? And if we have to deal with an elementary uncertainty and unknown issues, what about fundamental principles such as the acceptance of individual decisions as long as no damage can be proved? To what extent is protection against oneself acceptable? Is it permissible for individuals to make autonomous decisions which undermine the prerequisites for their own autonomy? How does the require-ment of informed consent function if the person changes due to personality altering medical treatment or mind-altering drugs? How shall we judge surrogate decisions or decisions from parents which have an effect on children? Decisions such as these might be legitimate only when they are undoubtedly in the interest of these indivi-duals, so that subsequent consent to them can be assumed to be a matter of course (cf. Bayertz 2003, 141). As to human enhancement, we have to take into account the vague and variegated criteria for classifying an alteration as an improvement.

The necessity for reflection which is contained in each of these key conceptua-lizations – enhancement, nature, human rights – inherently and with particular clarity in their interplay, shows that we have moved beyond a time when enhance-ment could be described in a general way and either sweepingly rejected or welcomed. The fields must be differentiated and scenarios more clearly described. The enhancement problem can be divided into different domains and discussed in a differentiated way. From certain points of view, however, enhancement is also a unified topic which revolves around common basic questions. It can be referred to as a catalyst for reflexivity because it sets off novel lines of thought.

In the following, I concentrate on two points. The controversies on enhancement reveal conflicts both over knowledge and also over values; however, the formerly clear-cut distinction between these types of conflicts becomes blurred. The second point centers on questions of human rights as those rights held by human beings as individuals and the role of the species.

[13]Early Glover 1984, 44, 45 ff.: "The set of problems which raises deeper issues centres round the question: if we adopt positive genetic engineering, who is in a position to decide what future people should be like?"

### *16.5.2 Knowledge Conflicts and Value Conflicts*

Discussions of enhancement follow various lines of reasoning. Some considerations are based on empirical assumptions and prognoses, mainly with regard to the use or the consequences of enhancement techniques. Other arguments reflect values or normative standards. Although approaches and arguments are often insufficiently elucidated and lack necessary contextualization, the controversies surrounding them reveal knowledge conflicts as well as value conflicts. Conflicts over knowledge are disputes over claims concerning the empirical evidence of particular statements of facts or the validity of prognoses. These may arise because of differing knowledge or uncertainty about the existence of phenomena or the occurrence of consequences. The enhancement debate involves numerous contested predictions, for example, that social relationships would change if human beings were cloned or embryos genetically altered by intent, that parents would come to regard their children as manufactured objects, that cloned or genetically altered persons would no longer be able to see themselves as autonomous persons or as the authors of their own biographical histories, or that the self-understanding of the species would be undermined in a way which destroys the basis of a deliberative society. Conflicts over values are caused by divergent judgments regarding values or goods. They are also fairly obvious in the enhancement debate, especially as personal values and attitudes depend on factors such as whether people are committed to religious beliefs, the position they take on the idea of human nature or the extent to which they appreciate individual freedom of decision.

For a long time both types of conflict have been addressed separately. As to knowledge conflicts, knowledge was regarded as principally achievable. Uncertainty and a lack of knowledge were temporalized to merely "not yet knowing" which can be overcome by attempts to gain knowledge along methodological parameters. Conflicts over knowledge were to be resolved by assumptions of the primacy of scientific findings and guidance by the state-of-the-art of science and technology, by forms of proceduralization of risk assessment and decision-making and by institutionalizing participation procedures. In addition, duties to observe the effects of decisions and to rethink them, if necessary, as well as efforts to ensure their reversibility were established. Value conflicts have been dealt with by differentiating "private" and "public" issues which are subsequently subject to either individual or collective decisions, by an assumed consensus on fundamental values, by the establishment of procedures for reaching reasonable compromises or by majority rules.

Meanwhile, the preconditions of these patterns of resolving conflicts have changed. The conception of a definable body of acquired or at least achievable knowledge which people agree upon or accept as state-of-the-art of science and technology is vanishing more and more. A common basis of shared knowledge that has been taken for granted for a long time is no longer present. Knowledge has been diversifying to a greater and greater extent. Basal differentiations are made, for instance, between knowledge specific to social (sub-)systems and lifeworld

knowledge (knowledge derived from the lifeworld – German *lebensweltliches Wissen*). It is becoming apparent that every form of knowledge, even scientific knowledge, is a specific construction that uses its own forms of observation and interpretation. Kinds of knowledge to be differentiated are explicit knowledge that can be articulated and tacit knowledge that is difficult to express. In addition, knowledge production may lead to more knowledge in some respects, in other respects, however, it leads to greater uncertainty and newly emerging unknown issues. The unknown is thus the constantly generated reverse of knowledge and an unavoidable result of acquiring knowledge. One can be aware of some areas of the unknown whereas other areas of the unknown are inaccessible and can only be identified retrospectively. The construction of knowledge, uncertainty and the unknown differs according not only to context but also to perspectives, for example, of decision-makers and those affected by decisions or of laypersons and experts. Among the effects of the diversification of knowledge, the experiences with uncertainty as well as the unknown and the pluralization of knowledge perspectives is, that knowledge conflicts are no longer addressed only cognitively, but also to an increasing extent by referring to normative standards which seem to offer orientation. But the conditions under which conflicts over values are dealt with are changing as well: the differentiation between issues which are regarded either as private or as public is no longer convincing; fundamental values are no longer shared; the majority rule is no longer widely accepted because decisions often prove to be irreversible. As a result, the distinction between knowledge conflicts on the one hand and value conflicts on the other is becoming blurred, and the traditional patterns for mediating knowledge or value conflicts fall short of resolving them.

The controversies on enhancement illustrate these developments quite clearly. The profundity of the topic and the broad discussions involve lifeworld knowledge as well as knowledge specific to social (sub-)systems, lay knowledge as well as expert knowledge and explicit knowledge as well as tacit knowledge. There are only limited ways to separate knowledge from the practices of generating knowledge and to find a common basis of shared knowledge. In addition, the continuing and inescapable existence of uncertainty and unknown issues is obvious: Often the risks of enhancement techniques are not investigated because their application was originally developed in a medical context for therapeutic purposes, and they have been studied only in this context. An illustrative example are unintended negative consequences or adverse effects of the "off-label" use of smart drugs which can not be foreseen but identified only after a period of prolonged use of this drug. Moreover, several safety issues cannot be sufficiently explored because of restrictions imposed on research conducted on living human beings. Just as well, the social and psychological consequences of some enhancement techniques are difficult, if not impossible to predict. This is true not least because the new biotechnical possibilities are unprecedented. But even if impacts and risks are assessed, science uses models and reductionist abstractions; therefore it has conceptual boundaries and inherent limitations. To a substantial extent, enhancement, its effects and its risks refer to an unknown future. The present construction of this future is necessarily characterized by normative assumptions. For all these reasons, knowledge conflicts

in the enhancement debate are multifaceted and cannot be resolved by merely pointing to empirical research. Beyond that, the concept of enhancement itself is a complex concept which includes both descriptive and normative elements (see Sect. 16.2). Already the judgment whether an alteration can be described as an enhancement depends on the standards according to which something is regarded as being an improvement, and these standards derive from interplay among numerous individual and societal factors and are often remarkably unclear and contested (see Sect. 16.2.1). All in all, knowledge conflicts and value conflicts are quite interwoven. Additionally, differentiated to the fields of enhancement having in mind how manifold they are, the emerging conflicts might be hard to mediate and new forms of dealing with those conflicts will be needed.

### *16.5.3 Individual Rights and the Role of Species*

Human rights are understood as being those fundamental rights held by human beings as individuals. To move the individual into the center of attention and to assign rights to him or her has been the revolutionary development set in motion by the idea of human rights as innate rights or as natural rights. The assignment of rights to the individual means that not only the interests of the individual but also his or her self-understanding of the protected freedom and his or her decisions how to make use of it are normatively relevant. However, human rights necessarily go beyond the individual and transcend individual rights. First, they are rights that have to be acknowledged and therefore inherently possess supra-individual values and at least relative consensus on their being worthy of protection. Secondly, legal measures limiting the scope of protection of human rights are allowed under certain circumstances. Limiting measures, though, are referred back to the individual rights: the interests protected must nevertheless be taken into account by respecting underlying prerequisites such as the principle of proportionality. Hence, the construction of human rights is already quite complex and enables interpreters to take varying perspectives into consideration. The tension found in the relationship between the interests and perspectives of the individual and those of society or other persons is kept in the construction of the norm and dissolved procedurally. This comes constantly into view, not only in case of disagreements about the normative preconditions of a limitation but also with regard to the understanding of the scope of protection of human rights. Already among the classical questions is if “freedom” or “autonomy” have to be understood as concepts which can be defined as the right of the individual to act by his or her own volition or as concepts which point to rationality as an underlying principle.

The tension increases with the advent of biotechniques, their potential for intervention and human enhancement in the sense we have described it (Sect. 16.2). Given the historical context of the emergence of human rights, the very question arises whether it is a part of the implied background of the conception and structuring of human rights that natural limits of human beings and humanity and

the respective self-understanding of human species are relatively stable and not in themselves the subject of discussions and decisions. It is precisely this point that is reflected, from an ethical point of view, by species-ethical reasoning. The concept of species-ethics shall express the interest in preserving universal modern morality and guaranteeing equal respect for all humans by all humans (cf. Lohmann 2014, 167 ff., with view to the considerations of Habermas 2003). In legal contexts, there are meanwhile controversial discussions on the role of the "species" as well (see the contributions in Dabrock et al. 2010). Irrespective of difficulties to define the human "species" and to find appropriate criteria, controversy over the notion and fundamental premises of the concept of human rights is taking place again. Is there a concept of human species which provides underlying presuppositions for human rights without which human rights cannot be understood? Could species-related arguments be used for objecting against and limiting the rights of the individual or do they even affect the contents of human rights? At first sight, a decisive role of species-related arguments might sound quite plausible. However, human rights are to a certain extent transferred to organizations in case that the application of the particular human right makes sense. Additionally, they cannot be based on a unitary foundation, especially not be understood merely on the basis of human nature, but are supported by various sources and concepts (see Sect. 16.4). This at least relativizes the role that concepts of human species might play within the understanding of human rights. And the complexity of human rights (see Sect. 16.4) is also the basis for an appropriate discussion of human enhancement.

Nevertheless, these considerations point to the interplay between the problem of human enhancement on the one hand and human rights on the other. Human rights with their protection of "freedom", "dignity", "autonomy" or "equality" do not provide normative standards which readily offer answers to questions of the legitimacy of enhancement measures. On the contrary, the enhancement issue opens up new discussions of the concept, the underlying assumptions and basic ideas of human rights.

## 16.6 Conclusion

Human enhancement has proved to be a complex concept with many assumptions and both descriptive and normative elements. We have focused on the application and consequences of new biotechniques which have partly been realized already and are partly envisaged in future scenarios. Enhancement technologies range from plastic surgery, smart pills, genetic diagnostics and intervention, clones and chimeras to the production of cyborgs or the creation of artificial life. The standards according to which something is regarded as being an enhancement have to be concretized as well as the persons or institutions who decide on enhancement measures. Furthermore, the profuse array of implications of central concepts such as "health", "normality" and "nature" is embedded in the approaches. The idea of "enhancement" is not only inherently reflexive. It also sets off new debates with

regard to other key concepts. This is true for the already multifaceted notion of "human nature". And among other discussions, new reflections on the functions and contents of human rights or on their role and meaning as those fundamental rights held by human beings as individuals are necessary. All in all, enhancement is an issue that enriches the discourse on human nature and human rights and, in turn, benefits from being part of such a discourse.

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