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Katharina Fürholzer

Institute of the History,
Philosophy and Ethics of Medicine
Ulm University
katharina.fuerholzer@uni-ulm.de

**ARTISTIC ENHANCEMENT
LITERATURE AND FILM AS MIRROR
AND MEANS OF HUMAN ENHANCEMENT**

Abstract

Human enhancement affects all members of society and is thus closely linked to issues of social justice: up to now, the promises and perils of enhancement are usually only known to, and thus used, by few members of society. This can lead to individual competitive advantages that create or widen social gaps. Broad public information is, therefore, key to ensure that enhancement does not conflict with the principle of equality of opportunities. As possible means of public information, literature and films are able to counter such possible social injustice, which is why they may be allotted a central role in the ethical debates on human enhancement. Two aspects will be considered in this regard: 1) enhancement in art and 2) through art. 1) The extent to which artistic depictions and public information and perceptions of enhancement may be intertwined will be illustrated by two examples where both texts and their accompanying paratexts had a particular bearing on the public debate on enhancement: the film *Gattaca* of 1997 and the novel *Never let me go* (2005) by Nobel laureate Kazuo Ishiguro. 2) The second part of the paper is dedicated to the question of how far enhancing selected groups of society may contribute to a greater common good and which potentials art can offer in this regard. Three groups of persons will be taken into account: 1) clinical ethics committees, 2) physicians, and 3) patients.

Keywords:

Human enhancement, artistic representations of genetic enhancement, medical ethics, public debate, enhancement through art

1. INTRODUCTION

It is one of the central tasks of the health care system to restore or maintain the physical or mental status quo of a patient. In contrast to curative, preventive or palliative measures, human enhancement aims at improving the status quo. Due

to this purpose, enhancement does not fall into the classic range of services of medicine so far. Nevertheless, measures of enhancement may have a lasting impact on our mental or physical constitution, which is why they require comprehensive information on their specific nature, meaning and consequences. Two forms of information must be distinguished in this regard, which touch two bioethical principles – justice and respect for autonomy¹ – that are of utmost importance in our health care system: 1. public information on enhancement, with the goal of counteracting social injustice and 2. individual patient information, with the goal of taking account of the legal principle of informed consent and thus the patient’s right to self-determination. While the latter is a central part of doctor-patient-interaction and therefore falls under the physician’s responsibility, the former raises the question as to who is responsible for providing the public with the necessary information on the promises and perils of enhancement and thus for preserving social equal opportunities.

As can be seen in this regard, questions of enhancement cannot be separated from questions of justice. For quite some time now, research has been concerned in this respect that enhancement may significantly increase existing equity issues.² As bioethicists Bettina Schöne-Seifert and Barbara Stroop point out, in particular those who are wealthy and their already privileged children are more likely to make use of enhancement and thus “buy” further competitive advantages, for instance with respect to the use of neuro-enhancers in exam situations or professional life. “As the gap between the economically privileged and the disadvantaged would open up as a consequence, a proliferation of enhancement conflicts with the principle of equal opportunity.”³ In addition to the issue of economic status, knowing or not knowing about the chances and risks of enhancement is another core factor that can further exacerbate gaps within society. The well-known proverb “knowledge is power” applies quite literally in this regard.

When it comes to enhancement, giving all members of society equal access to information presents itself as an ethical duty. And that is where art, or, more precisely, literature and film come into play. For thousands of years, artistic forms of expression have served not least as means to inform the public about ethical quandaries, in a twofold sense in that they can both inform society and inform *about* society. Literature and film can convey public knowledge in a way that is understandable to laypersons. In contrast to scientific literature, popular

¹ Tom Beauchamp and James Childress, *Principles of Biomedical Ethics* (Oxford, New York: Oxford University Press, 2013).

² Erik Parens, “Is Better Always Good? The Enhancement Project,” in *Enhancing Human Traits. Ethical and Social Implications*, ed. Erik Parens (Washington: Georgetown University Press, 1998), 15; Bettina Schöne-Seifert and Barbara Stroop, “Enhancement,” in *Working Papers of the Centre for Advanced Studies in Bioethics* 71 (2015), 5.

³ Schöne-Seifert, Stroop, “Enhancement,” 5 [own translation].

cultural media may reach huge audiences, giving them enormous impact: One may just think of the millions of people who are drawn to cinema, television or streaming platforms such as Netflix. In this sense, literary or filmic takes on issues of enhancement may promote equitable access to knowledge, which counteracts possible forms of social injustice.

In addition, literature and film may also be understood as seismographs of society, as German author Siegfried Kracauer put it.⁴ Artistic engagements with enhancement can thus provide insight into how the various forms and accompanying chances and risks of enhancement are perceived within society. But books or films do not only reflect but also affect public attitudes. Artistic representations and reflections on the world are usually accompanied by implicit or explicit judgements, meaning that art itself has an influence on whether a phenomenon like enhancement is socially desired, accepted or rejected. Or, as Russian poet Vladimir Mayakovsky once said: “Art is not” – or, as I would say: not only – “a mirror to reflect the world, but a hammer with which to shape it.”⁵

So, what I want to delve into in the following are these various dimensions of what could be called artistic enhancement, looking at forms of enhancement both in art and through art. This involves on the one hand the – usually rather dystopian – way debates on human enhancement are taken up in the public sphere of art. In order to get a closer grip of the extent to which artistic depictions may reflect and affect public information and perception, I will look at two examples: the film *Gattaca* (1997) and Nobel laureate Kazuo Ishiguro’s novel *Never let me go* (2005). Even though both artworks received or even demanded wide attention in the public debate on human enhancement, this topic is only addressed in *Gattaca*, whereas *Never let me go* touches issues of enhancement only peripherally. As the two examples will show, it is not only the artwork itself but not least its paratexts – meaning interviews, reviews, advertisements or other forms of texts that surround the main piece of art⁶ – that play a vital role in public attitudes towards enhancement.

In light of the impact popular cultural media can have on their audiences, I will use the second part of this paper for a little – admittedly rather utopian – thought experiment: When it comes to issues of ethics, enhancement is usually discussed as something that may give a person competitive advantage over others, thus leading to social injustice. In contrast to this, I will deliberate whether enhancing selected members or rather groups of society may also

⁴ Siegfried Kracauer, *Von Caligari bis Hitler. Ein Beitrag zur Geschichte des deutschen Films* (Hamburg: Rowohlt, 1958).

⁵ Andrew Samuels, *The Political Psyche* (London: Routledge, 1993).

⁶ Gérard Genette, *Paratexts. Thresholds of interpretation* (Cambridge: Cambridge University Press, 1997).

contribute to a greater common good and can therefore be seen as an ethical imperative. In this context, I will also discuss the possible role art can play to reach this goal, showing art itself as a possible means of human enhancement.

2. DYSTOPIA – ENHANCEMENT IN ART

At the first glance, the combination of enhancement and the fine arts may seem like a contradiction. However, particularly when taking a closer look at literary history, it becomes clear that these areas have been linked for quite some time now. What I do not refer to in this context is the notorious affinity of some artists to savour neuro-enhancing substances themselves, as journalist and author Joachim Czichos once noted with a twinkle in his eye:

If a cyclist without doping is just as fast as the other, who is the better athlete? Probably the one who did it without artificial aids. But if a painter creates a great work of art in a drug rush, does someone afterwards ask how it came into being? How many novels, short stories or glosses owe their existence – or at least their quality – to the drug nicotine? How many writers and journalists need a minimum of alcohol or an overdose of caffeine to be better than the others?⁷

So no, what I am not interested in is the artists' alleged joy of participating in cognition enhancing experiments, but the multitude of literary and cinematic works that actually touch on issues of human enhancement. As philosopher Reinhard Heil points out, most of these works emerged already by the end of the 1920s,⁸ so at a time when the term "human enhancement" had not even been coined the way it is known today. One may just think of Aldous Huxley's science fiction classic *Brave New World* (1932), a dystopian view in what can be seen as the future of genetic enhancement, which in the light of current developments does not seem too far away anymore. Today, with the concept of enhancement more present than ever, there is a wealth of popular cultural works that address and problematize the various dimensions of human enhancement in all kinds of approaches.⁹ The gloomy tenor in Huxley's world-class novel

⁷ Joachim Czichos, "Hirndoping erlaubt. Nobelpreise mit Neuro-Enhancement," *Wissenschaft aktuell*, accessed June 27, 2018, https://www.wissenschaft-aktuell.de/extra_rubriken/Hirndoping_erlaubt.html.

⁸ Reinhard Heil, "Human Enhancement – Eine Motivsuche bei J.D. Bernal, J.B.S. Haldane und J.S. Huxley," in *Historische, philosophische und ethische Aspekte der technologischen Verbesserung des Menschen*, ed. Andreas Woyke, et al. (Bielefeld: Transcript Verlag, 2010).

⁹ "Biofiction: Human Enhancement Edition," *Center for Bioethics and Human Dignity*, accessed June 27, 2018, <https://cbhd.org/content/biofiction-human-enhancement-edition>; "Bioethics at the Box Office: Human Enhancement Edition," *Center for Bioethics and Human Dignity*, accessed June 27, 2018, <https://cbhd.org/content/bioethics-box-office-human-enhancement-edition>.

is quite representative of the way in which this topic is still envisioned and presented in contemporary art: as a frightening dystopia, as something that enhances the individual, but in the long run results in a moral impairment – or dis-enhancement if you like – of society.

Gattaca (1997)

A more recent example for the impact such a dystopian depiction may have on the public information and perception of enhancement is the movie *Gattaca*.¹⁰ *Gattaca* presents us with a world in which genetic selection is on the daily agenda. In this world, genetic enhancement has led to a two-class society, where all those born naturally – the so-called “divine children” or, far less euphemistic, the “invalids” – are discriminated against because of their inferior DNA profiles. The pressure exerted on parents to leave nothing to chance when it comes to the way their offspring is conceived, becomes impressively clear when one of the film’s protagonists, a geneticist, advises a couple on family planning:

You want to give your child the best possible start. Believe me, we have enough imperfection built-in already. Your child doesn't need any additional burdens. And keep in mind, this child is still you, simply the *best* of you. You could conceive naturally a thousand times and never get such a result.¹¹

Gattaca was released in 1997, and thus at a time when – compared with today – there was not much public awareness of the possibilities and consequences of genetic enhancement. What I find most interesting in this regard is one of the paratexts accompanying the movie: an old newspaper advertisement with which *Gattaca* was announced at that time.¹² When looking at its design and content the ad appears to promote a genetic counselling office and, while addressing the viewer directly, to emphasize the advantages of modern genetic technology: “There has never been a better way to bring a child into the world. At *Gattaca*, it is now possible to engineer your offspring. Here’s a checklist to help you decide which traits you would like to pass on to your newborn.”¹³ Said checklist then comes up with an impressive variety of options

¹⁰ Andrew Niccol, director, *Gattaca* (USA: Columbia Pictures, 1997).

¹¹ Andrew M. Niccol, “Untitled,” [Gattaca script] *The Internet Movie Script Database (IMSDb)*, accessed June 28, 2018, <http://www.imsdb.com/scripts/Gattaca.html> [original emphasis].

¹² [Gattaca “Children made to order”], accessed June 28, 2018. <https://static1.squarespace.com/static/51b3dc8ee4b051b96ceb10de/t/5735e441c2ea51de4c28f9f5/1463149645926/Gattaca-ad-made-to-order>. Released on September 1997 in a number of major newspapers like *USA Today*, *The New York Times*, *The Washington Post* and the *Los Angeles Times* (David A. Kirby, “The New Eugenics in Cinema: Genetic Determinism and Gene Therapy in ‘GATTACA,’” *Science Fiction Studies* 27 (2000): 210).

¹³ [Gattaca “Children made to order”].

on how to genetically modify the unborn child, for example with respect to general physical preferences like sex selection and eye colour, demands regarding the child's health like visual acuity or general inheritable diseases, or cognitive factors like the child's intellectual capacities, musicality or athletic abilities, to name just a few. At the end of the ad, we find a telephone number that can be called to make an appointment.

By not explicitly revealing its true identity as a film advertisement and instead suggesting to promote what we would today call genetic enhancement, the advertisement is designed for irritation: Is this a serious offer? Could I really do this? Who does not want to protect his or her child from illness? And a few more points on the IQ scale have not harmed anyone yet. How far – as the poster asks us – would I go to give my child the best possible start in life? What would happen if we actually followed the ad's promises, and how could the consequences of genetic enhancement shape our individual and collective understanding of identity – these questions are then answered by the movie in its darkest tones.

Of course, one can argue that while there is a strong correlation between art and society, the relationship between art and science is by contrast rather one-sided. On that note, a movie or book might seem quite irrelevant when it comes to seriously facing the ethical issues of a scientific debate like the one on human enhancement. Literary or filmic works and the genre of science fiction, which is particularly relevant to our context, do not represent scientific *facts*, but – as the name most explicitly states – are understood as scientific *fictions* and thus stand in notable distance to both our everyday life and the current state of scientific research. Next to that, authors and artists do not usually have the scientific expertise that seems necessary to make a serious contribution to such a specific and complex topic. But is this really the case? Is literature and the arts only “fine” but should basically have no say in a serious scientific debate on human enhancement?

In contrast: It is of utmost importance to take the fine arts into account in this regard in order to promote a true dialogue between science and society. Pieces of art like a book or a movie are immediate reflectors of public moods, fears and hopes. As such, they allow us insight in the way new developments in the field of human enhancement are perceived within society. To stay with our example: In a review of *Gattaca*, published in the science journal *Nature Genetics*, the molecular biologist Lee Silver notes: “GATTACA is a film that all geneticists should see if for no other reason than to understand the perception of our trade held by so many of the public-at-large.”¹⁴ What is touched here by Silver is not least an ethical issue, or, to be more precise, a question of justice: After all, society and science are not disconnected but mutually influence each

¹⁴ Lee M. Silver, “Genetics goes to Hollywood,” *Nature Genetics* 17 (1997): 261.

other. On the one hand, research is financed to a notable amount by public funding. Some politicians and scientists even argue that decreasing federal funding of the sciences might also be due to negative portrayals in popular-culture sources.¹⁵ On the other hand, society is the recipient of research endeavors. Moreover, scientific developments like enhancement may substantially change our understanding of the human condition and therefore concern not only the scientific world but all members of society. Due to the mutual relationship of science and society, it seems a matter of equity not only to inform society about phenomena like enhancement but also to allow them a voice in respective debates. Facilitating this kind of attention is key to prevent a hierarchical dominance of scientific perceptions over societal ones, which would give sciences some sort of competitive edge. Popular cultural media like literature and film are possible means to give society such a voice.

At the same time, books and films do not only reflect but also affect the way scientific developments are perceived by the public. One may just imagine the impact a book or movie may assume. Since its first editions, Huxley's *Brave New World* has, for instance, been published in ever new editions and a multitude of translations. Movies may sometimes easily draw several million viewers to the cinema. Next to that, we also have to take the worldwide DVD sales and broadcasts in television programs into account. Paratextual press reactions like interviews or awards bring additional awareness for the artistic take on the topic in question, all of which adds to the societal purview of popular cultural media like books and films. A novel or movie may thus reach a much larger audience than a single scientific article or debate. Accordingly, Craig Cormick stresses that movies are one of the major sources of information for the public to learn about human reproductive cloning: "Traditionally, understanding of new and emerging technologies has come through the mass media but human cloning, being so widely addressed through the popular culture of movies, is more effectively defined by Hollywood than the news media or science media."¹⁶ The influencing power of popular cultural media cannot be underestimated, and can come at a price. After all, scientific laymen may face severe difficulties in distinguishing scientific fiction from scientific reality.¹⁷ This can fuel unfounded fears or hopes, which shows the necessity for a dialogic combination of both social and scientific attitudes towards enhancement. Even though,

¹⁵ Kirby, "The New Eugenics," 208.

¹⁶ Craig Cormick, "Cloning goes to the movies," *História, Ciências, Saúde – Manguinhos* 13 (2006): 181; on the influence of public mass media on public understanding of genetics see also Aneta Jałocha, "Genetics in Cinema. The Dialectics of Past, Present and Future," *Kultura Popularna* 4 (2013).

¹⁷ Sheryl N. Hamilton, "Traces of Future: Biotechnology, Science Fiction and Media," *Science Fiction Studies* 30 (2003): 274.

or maybe precisely because works of art represent potent mirrors and means, it thus shows that when it comes to informing society about science and vice versa, there should be no text without paratext.

Never let me go (2005)

The complex correlations and interpretative processes that can occur between an artwork and its audience can even lead to situations in which artworks that do not even touch the topic of enhancement are nevertheless adduced as an instance in respective debates. Kazuo Ishiguro's dystopian novel *Never let me go* (2005),¹⁸ also made into a movie featuring world-famous actors Keira Knightly, Charlotte Rampling, Sally Hawkins and Carey Mulligan,¹⁹ presents us with a remarkable reception history in this regard.

Never let me go casts a gloomy glance at a possible future in which society produces clones solely for the purpose of providing organs for the so-called original humans. Ever since Ishiguro was awarded the Nobel Prize for Literature in 2017, this writer is on everyone's lips and his novel is used as a popular illustrating example for medical ethical debates on human cloning. It is easily understandable why Ishiguro is referred to in respective debates: Topics of bioethical relevance are explicitly addressed in his books, which also pertains to *Never let me go*. According to Graham Badley, Ishiguro's story presents us with a genetically engineered world dominated by an elite who can be seen as superior trans- or posthumans, who use others for their own purposes. Such a world puts our humanist values and liberal democracies at risk and may pave the way for a society, "[w]here the notions of benevolence, democracy, equality, fraternity, freedom, justice, generosity, goodwill, happiness, reason, solidarity, and tolerance for all are despised and diminished"²⁰.

Issues of bioethical relevance have been repeatedly addressed by Ishiguro, both in his novels and in public appearances. In fact, he even did so before one of the biggest audiences an author may publicly face: at his acceptance speech for his Nobel Prize for Literature. It would be fair to expect that a writer who has just been honoured with one of, if not the highest, literary awards of the world uses this platform to talk about... well... literature. Instead, Ishiguro forged a bridge between the artistic work of a writer and the challenges current developments in science, technology and medicine – like gene-editing techniques

¹⁸ Kazuo Ishiguro, *Never let me go* (New York: Knopf, 2005).

¹⁹ Mark Romanek, director, *Never let me go* (United Kingdom: DNA Films, Channel Four Films, 2010).

²⁰ Graham Francis Badley, "»Manifold Creatures«. A Response to the Posthumanist Challenge," *Qualitative Inquiry* 24 (2018): 427.

such as CRISPR – pose to our world.²¹ According to Ishiguro, literature that touches on these issues is both of aesthetical and ethical value. In light of the addressed correlations between art, science and society, turning to bioethically relevant issues comes with some degree of responsibility. As Ishiguro stated at the end of his speech, he will continue to accept this responsibility. “I’ll have to carry on and do the best I can. Because I still believe that literature is important, and will be particularly so as we cross this difficult terrain.”²² Against this backdrop it seems only logical when Ishiguro and his literary work are referred to in respective argumentations. Due to its dystopian depiction of a society in which human clones are created as a spare parts depots for scarce organs, *Never let me go* is, to say it in the words of Kristine Brown, “not only memorable as an alarming parable, but also as a literary facilitator for questions like genetic engineering and the like.”²³

Interestingly enough now, *Never let me go* has also been used as an example in debates on human enhancement – even though issues concerning this particular area are not touched on in the book or movie. An example for this is the article “Designer babies: an ethical horror waiting to happen?”²⁴ by journalist Philip Ball, which was published in the British newspaper *The Guardian* in 2018. In this article, Ball discusses new genetic developments like CRISPR and the consequences these might have for society. The article is no neutral report but a subjective opinion piece, in which the journalist takes a clear line towards his topic of interest, which becomes more than clear only by looking at the title he chose for his article. To underpin his arguments, Ball draws on a number of examples from literature: Mary Shelley’s *Frankenstein*, Huxley’s *Brave New World*, and eventually Ishiguro’s *Never let me go*, referring to the close relationship of Ishiguro’s story to the on-going debate on designer babies and the wish to edit out genetic imperfections. By using Ishiguro’s fictional approach on cloning as an illustration point for a public debate on enhancement, the journalist juxtaposes two topics that are related – but nevertheless not consistent. Ball’s reaction to Ishiguro illustrates the power the paratext can assume over the actual text. As Ball presents his argument in an explicit opinion piece, the emotional connotations of the two topics become intertwined: Ishiguro’s somber stance on cloning affects the perspective on new genetic developments – the fictional dystopia on cloning turns into a journalistic dystopia on human enhancement.

²¹ Kazuo Ishiguro, “Nobel Lecture (December 7, 2017),” *The Nobelprize*, accessed September 4, 2018, <https://www.nobelprize.org/prizes/literature/2017/ishiguro/25124-kazuo-ishiguro-nobel-lecture-2017/>.

²² Ishiguro, “Nobel Lecture”.

²³ Kristine Brown, “Personhood: Fukuyama’s *Caveats* and Ishiguro’s *Never Let Me Go*,” *Sanglap: Journal of Literary and Cultural Inquiry* 2 (2015): 136.

²⁴ Philip Ball, “Designer babies: an ethical horror waiting to happen?,” *The Guardian*, January 8, 2017, accessed June 28, 2018, <https://www.theguardian.com/science/2017/jan/08/designer-babies-ethical-horror-waiting-to-happen>.

3. UTOPIA? – ENHANCEMENT THROUGH ART

But I do not want to conclude with such a negative view on the connection between art and enhancement. As stated above, discussing enhancement cannot be separated from ethical discussions of justice. In this context, research usually points to the risk that the benefits of enhancement might only serve those who a) know about existing possibilities and b) have the means to afford them, ultimately causing or widening social injustice. However, there are also groups of society where targeted moral enhancement – for example of the ability to change perspectives or empathize with others – might not or not only lead to individual competitive advantage over others, but to the social common good. There are a number of fields where enhancing moral competences seems particularly rewarding, the health care system being one of them.²⁵ Within this field, being capable of changing perspectives and empathize with others is indispensable for leading stable communications and relationships with colleagues, patients or relatives. Above that, said skills are also key for engaging in ethical deliberations,²⁶ which is one of the central tasks of all those who work in medical research and patient care.

Working with literature or films seems promising in this regard, as artistic forms of expression can themselves be seen as a means that can lead to such moral enhancement.²⁷ So why is that? After all, the fine arts are media of changing perspectives. When we read a book or watch a movie, we are invited to put ourselves in another character and see the world through different eyes. We let go of familiar angles and get to know alternative perspectives on actions, attitudes and values. As emphasized by literary theory for quite some time now, this change of perspectives can promote our capacity for empathy.²⁸ There is already a series of theoretical studies and practical endeavors that are concerned with the question how medicine can benefit from these potential effects literature and other art forms may provide in this regard.²⁹ However, as Suzanne Keen pointed already in 2007, empirical studies on the effects of literature on real life are highly needed.³⁰ One step in this direction is an empirical study that was presented by David Kidd and Emanuele Castano in 2013. In a series of

²⁵ Katharina Fürholzer and Sabine Salloch, “Reading literary fiction as moral enhancement,” *American Journal of Bioethics. Neuroscience* 7 (2016).

²⁶ John Harris and David R. Lawrence, “Hot baths and cold minds. Neuroscience, mind reading, and mind misreading,” *Cambridge Quarterly of Healthcare Ethics* 24 (2015).

²⁷ Fürholzer and Salloch, “Reading literary fiction”, 105.

²⁸ Lindsay Grubbs, “The arts and sciences of reading. Humanities in the laboratory,” *American Journal of Bioethics. Neuroscience* 7 (2016).

²⁹ Pascal Fischer, “Literatur als Mittel zur Förderung der Empathie in den Heilberufen,” in *Literatur und Medizin – interdisziplinäre Beiträge zu den Medical Humanities*, ed. Pascal Fischer, Mariacarla Gadebusch Bondio (Heidelberg: Winter, 2016).

³⁰ Suzanne Keen, *Empathy and the Novel* (Oxford: Oxford University Press 2007), 29.

experiments, the two psychologists showed that reading literary fiction temporarily enhances theory of mind, meaning our capacity to understand the mental states of others. In this connection, they also underlined empathy as an affective component of theory of mind.³¹ This ability to abstract from one's own perspective enables us to build social relationships with others.³² Even though named study has its weaknesses³³ and further empirical data are still required, research in both the humanities and the natural sciences offers reason to suggest that due to these inherent features, literature and movies form a possible means that can contribute to moral enhancement.³⁴

I would like to venture on this – perhaps somewhat utopian – thought experiment by three short examples out of the health care system, where moral enhancement might not (only) benefit the enhanced persons themselves but be to a greater common good, showing moral enhancement as an ethical imperative: 1) settings in which people from a broad range of professions have to come to a fast and solid mutual understanding, as is the case in clinical ethics committees; 2) the complex relationship between doctor and patients and the need to enhance moral competences of physicians already at a very early stage of their professional career, and 3) conversely, the role of the patient in this relationship and the question in how far it seems necessary to enhance not only the physicians' but also the patients' moral competences.

Clinical ethics committees

Let me start with the example of clinical ethics committees where the ability to change perspectives is vital.³⁵ Discussing a case in the context of clinical ethics committees usually encompasses a broad range of stakeholders: from physicians and nurses to lawyers and ethicists up to patients and their relatives and representatives, all of them with different backgrounds, goals and argumentation strategies. Especially when time-critical decisions are required, members of clinical ethics consultations often just do not have the time needed to explain one's own individual position comprehensively to other stakeholders. Working with literature in the basic and continuous education of those who regularly participate in clinical ethics consultations could help to train our skill to read other people's minds, familiarize ourselves with their thinking and reasoning and to adapt their own argumentation to the horizon of their counterpart.³⁶

³¹ David Kidd and Emanuele Castano. "Reading literary fiction improves theory of mind," *Science* 342 (2013).

³² Fürholzer and Salloch, "Reading literary fiction".

³³ Grubbs, "The arts and sciences".

³⁴ Fürholzer and Salloch, "Reading literary fiction".

³⁵ Stella Reiter-Theil, "Balancing the perspectives. The patient's role in clinical ethics consultation," *Medicine, Health Care and Philosophy* 6 (2006).

³⁶ Fürholzer and Salloch, "Reading literary fiction", 105.

Physicians

It goes without saying that the ability to read other people's minds and to empathize with their particular situation is imperative in almost any kind of doctor-patient interactions. Thanks to the achievements of modern medical ethics, a purely biomedical approach where patients are reduced to physiological processes, is no longer seen as sufficient. Rather than that, modern health care systems are supposed to be aligned in the spirit of a holistic patient care where biomedical, psychological and social factors are considered as equally important.³⁷ Accordingly, physicians are requested to enquire after the subjective perspective of their patients, and take their values and ideas, hopes and sorrows into account within the process of decision-making. Unfortunately, physicians are regularly criticized for lacking the necessary empathy: As studies have shown, apart from what one might assume, the empathy of prospective physicians does not increase but actually declines during medical school and residency.³⁸ The challenge of promoting empathic skills of physicians must therefore already be tackled at a very early stage of their professional training. Reading literature with medical students could be used to foster their ability to change perspective and the ability to understand the way others think, act and reason, and, subsequently, to promote empathy as a key element for both interprofessional and patient-physician interactions.

Patients

Last but not least, applying literature and film for the targeted enhancement of moral competences should also be discussed for patients themselves. Just as physicians ought to empathize with patients, patients should, in turn, be able to empathize with those they are taken care of. Most patients are only vaguely aware of the growing economization, rationalization or rationing of the health care sector and their impact on patient care, which can tarnish patients' trust in their physicians and impair patient adherence. Sensitizing patients for the pressure that emanates from these overarching targets, might help them to see that a lack of time, attention, and empathy might not – or not only – be blamed on the physician. Today, there is an abundance of books and movies providing us with a broad angle on the expectations, demands and conflicts the various stakeholders of the health care are faced with. When being read, these stories can

³⁷ Karl Jaspers, *Die Idee des Arztes* (Bern: Huber, 1953); Viktor von Weizsäcker, "Der Arzt und der Kranke [1926]," in Viktor von Weizsäcker, *Gesammelte Schriften*, vol. 5, ed. Peter Achilles (Frankfurt am Main: Suhrkamp, 1987); Viktor von Weizsäcker, "Der Gestaltkreis [1940]," in Viktor von Weizsäcker, *Gesammelte Schriften*, vol. 4, ed. Dieter Janz (Frankfurt am Main: Suhrkamp, 1997).

³⁸ Melanie Neumann, et al., "Empathy decline and its reasons: A systematic review of studies with medical students and residents," *Academic Medicine* 86 (2011).

lead to a better public understanding of those responsible for patient care. Which is exactly the point: just like a pill or drug, a book can only have an effect when it is taken, when it is read. To make matters even more difficult, just reading a novel does not guarantee that the reader will be able to make a transfer from fiction to reality. When attempting to use literature as true means of moral enhancement, reading should be accompanied by concomitant paratexts, for instance in form of conversations, discussion or dedicated patient courses. Which prompts the question of who is responsible in this regard: Is this the task of physicians? Of adult education? Of the artist? Philosophers or literary and film scholars? Or the reader him- or herself?

Applying literature to enhance patients' moral competences leaves us with a range of open questions, of which I have only touched a few here. Nevertheless, a proper discussion seems rewarding for health care: I am deeply convinced that the moral enhancement of said groups can indeed lead to a better understanding, communication and relationship between patients, physicians and colleagues, eventually strengthening patient trust and compliance – and that forms of artistic expression are possible means to reach this goal.

4. CONCLUSION

When it comes to the ethical dimensions of human enhancement, Horace's notion of "prodesse et delectare" still remains valid. After all, fine arts are not the least means of public information, able to grant a broad span of society lay-compatible insight into scientific developments like human enhancement. With knowledge as one of the key factors that decide who in society will and can make use of enhancement and give oneself a competitive edge, this feature of art presents itself as a possible means to counteract social injustice. At the same time, fictional forms of expression allow us to playfully explore the advantages and disadvantages, the possibilities and limitations of scientific developments and to discuss their contingent effects on our convictions and values. Literature and film can set the tone in this regard, by connoting the topic picked up in an either neutral, utopian or dystopian manner: When strolling through a bookshop one will find quite a number of books – or DVDs – concerned with new developments within biomedical practice and research. Works like Huxley's *Brave New World*, the movie *Gattaca* or Ishiguro's *Never let me go* and not least their accompanying paratexts may – implicitly or explicitly – reflect and affect the hopes, hesitations or fears imaginable forms and consequences of human enhancement may evoke. As possible mirrors of public attitudes, artistic forms of expression thus lend public a voice. In light of the mutual relationship between science and society and the substantial impact human enhancement may have on our understanding of the human condition, guaranteeing this voice an integral place in ethical debates seems paramount in order to facilitate a true dialog between science and society.

At the same time, the impact the fine arts can have on us may also be used to society's advantage. A book or a movie invites us to change perspectives, can train our ability to read other people's minds and subsequently foster our empathetic skills. With this in mind, literature and film can therefore be understood as a possible means that can contribute to moral enhancement; a means, moreover, that is legal and comes with hardly any side effects, hence presenting itself – at least for some forms of enhancement – as a rewarding alternative to pharmacological or technological approaches. Due to their complex abilities to reflect and affect science and society in general and the various stakeholders within health care in particular, literary or cinematic takes on the possibilities and consequences of human enhancement thus can be seen as a pivotal part of the broad public debate needed for truly honouring the connection between science and society.

BIBLIOGRAPHY

- [Gattaca “Children made to order”]. *Squarespace*, [no date]. Accessed June 28, 2018. <https://static1.squarespace.com/static/51b3dc8ee4b051b96ceb10de/t/5735e441c2ea51de4c28f9f5/1463149645926/gattaca-ad-made-to-order>.
- “Bioethics at the Box Office: Human Enhancement Edition.” *Center for Bioethics and Human Dignity*, August 25, 2016. Accessed June 27, 2018. <https://cbhd.org/content/bioethics-box-office-human-enhancement-edition>.
- “Biofiction: Human Enhancement Edition.” *Center for Bioethics and Human Dignity*, August 23, 2016. Accessed June 27, 2018. <https://cbhd.org/content/biofiction-human-enhancement-edition>.
- Badley, Graham Francis. “‘Manifold Creatures’. A Response to the Posthumanist Challenge.” *Qualitative Inquiry* 24 (2018): 421–432.
- Ball, Philip. “Designer babies: an ethical horror waiting to happen?.” *The Guardian*, January 8, 2017. Accessed June 28, 2018. <https://www.theguardian.com/science/2017/jan/08/designer-babies-ethical-horror-waiting-to-happen>.
- Beauchamp, Tom, and James Childress. *Principles of Biomedical Ethics*. Oxford, New York: Oxford University Press, 2013.
- Brown, Kristine. “Personhood: Fukuyama’s *Caveats* and Ishiguro’s *Never Let Me Go*.” *Sanglap: Journal of Literary and Cultural Inquiry* 2 (2015): 128–139.
- Cormick, Craig. “Cloning goes to the movies.” *História, Ciências, Saúde – Manguinhos* 13 (2006): 181–212.
- Czichos, Joachim. “Hirndoping erlaubt. Nobelpreise mit Neuro-Enhancement.” *Wissenschaft aktuell*, [no date]. Accessed June 28, 2018. https://www.wissenschaft-aktuell.de/extra_rubriken/Hirndoping_erlaubt.html.
- Fischer, Pascal. “Literatur als Mittel zur Förderung der Empathie in den Heilberufen.” In *Literatur und Medizin – interdisziplinäre Beiträge zu den Medical Humanities*, edited by Pascal Fischer and Mariacarla Gadebusch Bondio, 53–77. Heidelberg: Winter, 2016.
- Fürholzer, Katharina, and Sabine Salloch. “Reading literary fiction as moral enhancement.” *American Journal of Bioethics. Neuroscience* 7 (2016): 104–106.
- Genette, Gérard. *Paratexts. Thresholds of interpretation*. Cambridge: Cambridge University Press, 1997.

- Hamilton, Sheryl N. "Traces of Future: Biotechnology, Science Fiction and Media." *Science Fiction Studies* 30 (2003): 267–282.
- Harris, John, and David R. Lawrence. "Hot baths and cold minds. Neuroscience, mind reading, and mind misreading." *Cambridge Quarterly of Healthcare Ethics* 24 (2015): 123–134.
- Heil, Reinhard. "Human Enhancement – Eine Motivsuche bei J. D. Bernal, J. B. S. Haldane und J. S. Huxley." In *Historische, philosophische und ethische Aspekte der technologischen Verbesserung des Menschen*, edited by Andreas Woyke, Reinhard Heil, Stefan Gammel, and Christopher Coenen, 41–62. Bielefeld: Transcript Verlag, 2010.
- Ishiguro, Kazuo. "Nobel Lecture (December 7, 2017)." *The Nobelprize*. Accessed September 4, 2018. <https://www.nobelprize.org/prizes/literature/2017/ishiguro/25124-kazuo-ishiguro-nobel-lecture-2017>.
- . *Never let me go*. New York: Knopf, 2005.
- Jałocha, Aneta. "Genetics in Cinema. The Dialectics of Past, Present and Future." *Kultura Popularna* 4 (2013): 82–93.
- Jaspers, Karl. *Die Idee des Arztes*. Bern: Huber, 1953.
- Kidd, David, and Emanuele Castano. "Reading literary fiction improves theory of mind." *Science* 342 (2013): 377–380.
- Kirby, David A. "The New Eugenics in Cinema: Genetic Determinism and Gene Therapy in 'GATTACA'." *Science Fiction Studies* 27 (2000): 193–215.
- Kracauer, Siegfried. *Von Caligari bis Hitler. Ein Beitrag zur Geschichte des deutschen Films*. Hamburg: Rowohlt, 1958.
- Neumann, Melanie, Friedrich Edelhäuser, Diethard Tauschel, Martin R. Fischer, Markus Wirtz, Christiane Woopen, Aviad Haramati, and Christian Scheffer. "Empathy decline and its reasons: A systematic review of studies with medical students and residents." *Academic Medicine* 86 (2011): 996–1009.
- Niccol, Andrew M. "Untitled [Gattaca script]." *The Internet Movie Script Database (IMSDb)*. Accessed June 28, 2018. <http://www.imsdb.com/scripts/Gattaca.html>.
- . 1997. *Gattaca*. USA: Columbia Pictures.
- Parens, Erik. "Is Better Always Good? The Enhancement Project." In *Enhancing Human Traits. Ethical and Social Implications*, edited by Erik Parens, 1–28. Washington: Georgetown University Press, 1998.
- Reiter-Theil, Stella. "Balancing the perspectives. The patient's role in clinical ethics consultation." *Medicine, Health Care and Philosophy* 6 (2006): 247–254.
- Romanek, Mark, director. 2010. *Never let me go*. United Kingdom: DNA Films, Channel Four Films.
- Samuels, Andrew. *The Political Psyche*. London: Routledge, 1993.
- Schöne-Seifert, Bettina, and Barbara Stroop. "Enhancement." *Working Papers of the Centre for Advanced Studies in Bioethics* 71 (2015): 1–8.
- Silver, Lee M. "Genetics goes to Hollywood." *Nature Genetics* 17 (1997): 260–261.
- Weizsäcker, Viktor von. "Der Arzt und der Kranke [1926]." In Viktor von Weizsäcker, *Gesammelte Schriften*, vol. 5, edited by Peter Achilles, 9–26. Frankfurt am Main: Suhrkamp, 1987.
- . "Der Gestaltkreis [1940]." In Viktor von Weizsäcker, *Gesammelte Schriften*, vol. 4, edited by Dieter Janz, 23–61. Frankfurt am Main: Suhrkamp, 1997.