

# 1. Introduction

In recent years neuroscience has experienced a drastic increase in popularity, driven by leaps of progress made in the field (Giordano, 2011, p. 412). By now, many interdisciplinary fields have emerged from it, two prominent examples being neurolaw and neuroethics (Shen, 2010, p. 352; Levy, 2008, p. 1). Neuroscience is nowadays also discussed in the context of the criminal justice system and may soon be used in the field of trial evidence, detecting biases in juries and judges, to make defendants competent for trial, and many other areas of the criminal law (Neurolaw: A video introduction). A very interesting field is rehabilitation of criminal offenders. The more neuroscience discovers about what is commonly termed the 'criminal mind', the more science attempts to find treatments that could help to correct deviant behaviour and reintegrate offenders into society (Greely, 2008, p. 1104). A number of direct as well as indirect methods of brain intervention are currently discussed in respect to their usefulness for this purpose. However, there are many caveats to such uses of brain intervention. This paper will deal with one of those caveats: the principle of human dignity. In this work, I wish to investigate in how far brain intervention for the purpose of rehabilitation of convicted criminal offenders is compatible with the notion of human dignity.

From the outset, it has to be clear that I will not attempt a precise definition of human dignity. I, however, investigate the concept from a number of different angles in order to find possible clashes with brain intervention for the purpose of convict rehabilitation. I will first look into human dignity as a philosophical concept in historical and contemporary philosophy, and then go on to investigate human dignity as a legal claim in different national jurisprudences as well as in international law.

After that, I will offer a quick introduction to the different methods discussed for rehabilitation. Rehabilitative methods will be grouped into direct and indirect intervention. From this theoretical framework, I will discuss two issues vital to the concept of human dignity and in how far they are threatened by brain interventions, namely those of autonomy and individuality. The latter entails the concept of authenticity. This discussion prompts to look into the issue of consent. In that vein two further aspects of human dignity will be discussed, namely the subject-nature of human beings and equality. A brief conclusion will round off the paper.

## 2. Human Dignity

Throughout history, the importance and understanding of the concept of Human Dignity has varied significantly (Spiegelberg, 2010, p. 42). Nowadays, there is an abundance of academic literature on this topic, the diversity of which does not allow for a uniform claim concerning its content and importance (Ibid., p. 62). This paper will not attempt to create such a claim, but rather investigate different notions and uses of human dignity in order to identify critical aspects where neurological rehabilitative methods may interfere with human dignity.

### 2.1. Human Dignity as a philosophical concept

#### 2.1.1. Human Dignity – an ancient concept

The notion of human dignity relates back to ancient Rome. The original meaning of dignity (*dignitas*) referred to an attained social or political status. It was hence conceived in relation to society.<sup>2</sup> Cicero was the first author to mention the concept in relation to the special position human beings take in relation to the cosmos by virtue of his outstanding nature, meaning his rational capacity (Cicero and Miller, 1913, pt. 1 at 106, 109). However, the true shift from human dignity as a societal concept to an intrinsic feature of humanity can only be traced back to the Renaissance reaction to the pessimistic medieval vision of humanity. The gradual change was introduced by the famous poet and humanist Francesco Petrarca (1304-1374) (Englard, 2000, p. 1910). The notion of human dignity in the time of the Renaissance presented a struggle between religious connotations, which base the human being's position in the world on their divine creation in the image of God, and humanist ideas of writers such as Giannozzo Manetti (1396-1459), who identified a man's dignity as his creative powers (Ibid, p. 1910 – 1913).

The final transformation to dignity in its modern sense was a gradual process that took its final hold during the Enlightenment (Ibid, p. 1917). John Locke's and Samuel von Pufendorf's writings on the subject are illustrative of this shift. Locke (1632-1704) identified rational capacity, memory, consciousness, pursuit of happiness and responsibility before Divinity as the foundations of his individuality (Locke, 1690, chapter 27). Locke's contemporary, Pufendorf (1632-1694) starts his account of dignity as embodying his privileged position

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<sup>2</sup> This is of course a basic summary of the understanding of *dignitas*. For the detailed analysis see Viktor Pöschl; *Der Begriff der Würde im Antiken Rom und Später*. Germany: Universitaetsverlag Winter, 1989.

in a divinely created world (Raaflaub, 1974); but then refines this notion to base itself onto man's common rational nature (Englard, 2000, p. 1917). Both authors ultimately make a case for equality of all men out of their accounts for human dignity (Ibid). This connection has survived throughout the years and was taken up by the perhaps most important thinker on this subject, Immanuel Kant.

In his *Groundwork* Kant suggests the difference between relative worth on the one hand and inner worth, dignity, on the other. Everything that can be replaced by something else, hence on which a price can be put, has a relative worth. Such things serve the gratification of human needs, they exist as means to another end. Something of inherent worth, on the other hand, cannot be replaced. It exists as an end in itself. Kant goes on to saying that all rational creatures have an inner worth. From this wording alone it can be extracted that one critical criterion for a being to have a dignity, according to Kant, is rationality. He further states that rational beings have this dignity by virtue of their autonomy (Kant, 2011, p. 68f).

However, he puts forward a very complicated notion of rationality that is intensely intertwined with his teachings about morality. A good starting point is his differentiation of two realms: a sensible realm and a rational realm. Most creatures only inhabit the former. Within this, they act on their instincts in order to gratify their needs. They eat in order to satisfy their hunger. Human beings however inhabit the sensible as well as the rational realm, the latter being governed not by instincts and needs, but by pure reason, i.e. by our rationality. This is the realm in which we act according to the categorical imperative. This categorical imperative demands us to “[a]ct only according to that maxim whereby [we] can, at the same time, will that it should become a universal law.” It is governed by the rationality common to all human beings and in absence of all personal inclinations, hence categorical. The categorical imperative always treats something as an end in itself, never as a means to an end and is Kant's universal moral law. It is also only in the realm of rationality that we can act autonomously. This is because when we operate in the sensible realm we act on inclinations we have not chosen in the first place. When we distance ourselves from all inclinations, however, we truly act autonomously. Still, at first glance it appears as though our freedom is very restricted within this rational realm, as we are constantly following a law, that being the categorical imperative. However, this is a law we give ourselves. When following a law of which we are the author we in fact act freely. Hence, it is clear that for Kant, the notions of rationality, morality, autonomy and freedom are virtually one and the same (Kant, 2011, p. 74 – 82).

When acting on the Categorical Imperative, we perform an act for the sake of the act itself; the act is an end in itself. According to Kant, this is also how we should treat everything that has a dignity. His second account of the categorical imperative states that a human being should never be used as a means to an end, but always as an end in itself.<sup>3</sup> This claim to be treated as a subject, rather than an object, is central to the principle of equality as described by Kant. Kant's conceptualisations on autonomy and self-legislation lead to a recognition of the same autonomy, freedom and respect-worthiness for all rational beings, the ultimate claim for equality (Kant, 2011, p. 82f).

Very much in line with the general idea that human dignity is not only inherent in every individual person but also in humanity as such, Kant concedes that a person has a duty *vis-à-vis* humanity to treat him or herself with dignity. It is for this reason that he rejects the notion of suicide or consensual casual sex (Kant, 2011, p. 61).

### 2.1.2. Human Dignity in contemporary philosophy

Even after the substantial increase in importance the concept of human dignity experienced after World War II (Ploch, 2012, p. 897), the academic and philosophic debate is at no consensus about what it actually means (Spiegelberg, 2010, p. 53). In fact, many philosophers accept the concept as a societal good without explicit content, which makes it dependant on the cultural background and personal convictions of the beholder (Schachter, 1983, p. 849).

There are very few philosophers who have dared to attempt a qualitative definition of human dignity. It plays a central role in the writings about law and morals of the twentieth century Kantian Leonard Nelson. For him, it consists primarily in the 'capacity as a rational being to raise himself to a level of education where he can overcome practical error.' (Nelson, 1924, p. 115f) At a later point he declares that the dignity of man lies in his self-determination (Ibid, p. 358ff).

Two further noteworthy contemporary philosophers dealing with human dignity are Herbert Spiegelberg and Oscar Schachter. Spiegelberg (2010), after an impressive iteration of the historical accounts of human dignity, elaborates on two synonyms or connotational definitions of human dignity: dignity as worthiness of respect and dignity

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3 It might be noteworthy at this point that Kant rejected the very notion of rehabilitation for exactly that reason, rehabilitation means using a human being for the good of society as a whole.

as intrinsic worth. He ultimately combines the two by first stating that respect implies certain non-interference with the subject worthy of such respect, i.e. the human being, and offering intrinsic worth as the characteristic of the human being which makes him worthy of it. He goes on to saying that '[h]uman dignity is the kind of intrinsic worth which attaches to a human being in his capacity of being a responsible person.'(p. 59f) He ultimately refrains from any further classification of human dignity and ultimately appeals to the philosophical debate to increase their dialogue in order to fill this seemingly empty concept (Ibid., p. 62). Schachter (1983), on the other hand, delivers a much more graspable concept of human dignity. His ultimate claim is that priority has to be given to personal beliefs, way of life, attitudes and conduct of public affairs (p. 849). His account is very interesting when considered in the context of brain interventions. He claims that 'the use of coercion, physical or psychological, to change personal beliefs is as striking an affront to the dignity of the person as physical abuse or mental torture.'(Ibid., p. 850) Schachter's very precise iteration of human dignity can be laid out to imply that respecting the dignity of a person means to respect his individuality, a connection that has already been drawn by John Locke and was later joined by Mahatma Gandhi when he said that 'it is beneath human dignity to lose one's individuality and become a mere cog in the machine.'(Attenborough, 2000, p. 23) Although Schachter fails to supply us with an analytical ground to his case of individuality, the connection between the two concepts, i.e. human dignity and individuality, does not require much technical and philosophical flexure. The Age of Enlightenment has initiated both of these concepts as a response to the depressing medieval notion of man and the human condition (Englard, 2000, p. 1917; Levy, 2007, p. 74). Further, our individuality and with it the struggle for authenticity is closely connected today's notion of individual autonomy, which in itself clearly is a pivotal point in the understanding of human dignity in both the historical as well as contemporary literature on the topic.

To summarize the discussions, it is obvious that the concept of human dignity is still highly debated. Many commentators have criticised it for being imprecise, not workable, and basically without content (Wetz, 2001, p. 311). I believe for this to be too pessimistic. There is clearly a lot of overlap among the thinkers from antiquity until today. The notion of rationality is already to be found in Cicero's writings and has survived throughout the ages, being recited by great thinkers such as Locke, Kant and Nelson. Autonomy and individuality is also mentioned throughout philosophical literature, be it directly, as for example autonomy in Kant or individuality in Schachter, or indirectly, as for example as self-determination with Nelson or non-interference with Spiegelberg. Equality is

mentioned directly by many authors, for example Locke, Pufendorf or Kant, but can also be derived from the basic fact that human dignity is something inherent in everyone merely by virtue of being human. Finally, Kant has added the subject-nature of human beings; a notion that was adopted by the academic society.

Nowadays the notion of human dignity has transcended from the philosophical sphere (Spiegelberg, 2010, p. 39). Especially in the area of criminal justice, of which rehabilitation is a part, it is important to consider its role as a legal claim. The question that has to be raised is thus whether the concept of human dignity as it is discussed in philosophy has been transposed into contemporary jurisprudence. This paper will go on to examining this by reviewing its use within the jurisprudences of the United States of America and Germany and then its use in international use, which in the same vein investigates its relation to human rights.

## 2.2 Human Dignity as a legal claim

### 2.2.1. USA

The United States of America is notable in that it is lacking any sort of concrete mention of dignity in any of its constitutional statutes. There are also very few cases in which dignity is mentioned at all, and the majority opinion on its importance has fluctuated over the centuries. However, the absence of the “intrinsic value of human beings” or human dignity should not be considered a conscious decision on the part of the writers of the American Constitution, considering the time in which it was written (Ploch, 2012, p. 923). Still, human dignity is not a widely-used legal concept in the United States, with very few rulings mentioning the concept at all (Ibid, p. 926). One of the most relevant cases regarding this topic is *Trop v. Dulles*, during which the Court cited that the Eighth Amendment had as its “basic (underlying) concept... nothing less than the dignity of a man”. This was later affirmed in case law building on *Trop v. Dulles* such as *Gregg v. Georgia*.

Besides being of lesser use and impact in American jurisprudence, the legal claim of human dignity is also a lot less clear in regards to its content in American jurisprudence. In American case law we find very little evidence of such content. One case of note is *Laaman v. Helgemoe* (1977-2001), a class action civil rights claim regarding the New Hampshire State Prison’s sub-adequate availability of rehabilitation programmes and sub-par living conditions for inmates. The district court referred to the Eight Amendment in its ruling, citing the importance of maintaining the physical, mental and emotional health and well-being of the inmates, and if prison conditions are inadequate and cause

cumulative damage to the inmates, their imprisonment “...does violence to our societal notions of the intrinsic worth and dignity of human beings...” and therefore violates the Eight Amendment and constitutes a ‘cruel and unusual punishment’. It is interesting that on the one hand, American jurisprudence seems to adopt the Kantian notion of intrinsic worth, but on the other hand associates it with a ‘societal notion’. Recently, also due to the increased concern about bioethics, there have been several efforts in the American legal and political debate to gain more clarity in respect to this concept. There are numerous essays written by several scholars who detail the concept of dignity from its ancient roots up to modern day interpretations and their application to science and justice, but since these have no strict legal value, the concept remains to be rather vague and comparatively underused. For example, Martha Nussbaum listed several criteria her essay “Human Dignity and Political Entitlements” to ensure human dignity is maintained, the most relevant to this essay being: life, bodily health, bodily integrity, and affiliation (Nussbaum, 2008).

### 2.2.2. Germany

In the German jurisprudence, on the other hand, human dignity plays a most noteworthy role. In article 1 of the *Grundgesetz*, the German Basic Law, it is stated that “Human Dignity shall be inviolable.” Many central rights of the German Basic Law build on this strong central claim, a noteworthy example being the claim to equality of all human beings as held in the case *Life Imprisonment* by the *Bundesverfassungsgericht* (The Federal Constitutional court, revered to as ‘BVerfG’ from now on). The respect for human dignity as enshrined in the Basic Law cannot be changed, it is protected by the so called *Ewigkeitsklausel*, enshrined in art. 79 of the Basic Law. The strong position of human dignity in German jurisprudence can be understood as a direct consequence of the atrocities of Nazi Germany (Gürber, 2009, p. 1).

In his influential commentary on art. 1 of the Basic Law in 1958, Günter Dürig highlights the subject nature of the human being to be the basis of human dignity as understood in German jurisprudence. His central claim is that human dignity is violated as soon as a person is objectified (Dürig, 1958, p.11):

*‘Die Menschenwürde ist getroffen, wenn der konkrete Mensch zum Objekt, zu einem blossen Mittel, zur vertretbaren Groesse herabgewuerdigt wird.’*

The German Constitutional Court adopted and extended this in the *Life Imprisonment* case of 1977, where it stated that:

*'It is the state's duty to respect and protect the dignity of man. This entails the notion of the human being as a moral creature with the right to self-determination and the liberty to develop its individuality freely. The individual has to accept the limits to his ability to act which the legislator has to draw in order to foster social coherence (...); still the autonomy of the person must be granted at all times (...). This means that every individual has to be considered an equal member of society with intrinsic worth. It hence contradicts human dignity to make the human being merely an object in the nation state (...). The sentence 'the human being has to be treated as an end in himself' takes unconditional effect in all fields of law; since the inalienable dignity of a human being consist out of his recognition as an autonomous person.'*

The influence of Kant is very obvious in German jurisprudence. It has hard copied several central claims of the philosophical accounts of human dignity: autonomy, individuality, equality and subject nature of the human being and the notion is known as *Objektformel* in German literature. It is interesting to note that German jurisprudence has taken over another important part of Kantian teachings about human dignity: the inalienability of one's own human dignity (Kant, 2011, p. 61). It is already hinted in the Life Imprisonment case, but was finally clarified in the case of a German stripper, who was not allowed to voluntarily strip if she could not engage her audience directly (Klug, 2003, p.143).

### 2.2.3. International Law and Human Rights

Although human dignity currently does not have a standing in the USA that is comparable to the one in Germany, the concept has become of utmost importance in the international legal discourse. The United Nation's use of the term "dignity" led to an adoption of its use by other bodies, catapulting its impact way beyond the boundaries of the human rights discussion (Ploch, 2012, p. 897). Nevertheless, it is exactly in that discussion though that the standing of human dignity in the international community becomes the clearest. It already appears in the Preamble of the Charter of the United Nations, where the UN states that it is 'determined' to reaffirm the faith in 'the dignity and worth of the human person'.<sup>4</sup> Dignity also features in Article 1 of the Universal Declaration of Human Rights,

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4 There is an interesting debate on the exact difference between dignity and worth, see for example Spiegelberg 2010.

stating that '[a]ll human beings are born free and equal in dignity and rights.' Several subsequent instruments relate human dignity directly to concrete rights. A good example among them is the International Covenant on Economic, Social and Cultural Rights, which states in Article 13 that 'education shall be directed to the full development of the human personality and the sense of its dignity. Noteworthy are the Helsinki Accords. In Principle VII they sustain that participating states shall promote human rights and freedoms, 'all of which derive from the inherent dignity of the human person.' This is a very clear statement of international law concerning the relationship between human dignity and human rights. Of course, many problems with the claim of human dignity being the foundation for human rights can be found, first and foremost the fact that human dignity in itself is a concept in need of a foundation (Waldron, 2013). For the purposes of this paper, it suffices to point out the fact that this foundational claim exists and is not rejected by the international community.

The differences between the three discussed legal systems could not be greater. Where in the USA human dignity can hardly be said to play a significant role, the German jurisprudence has not only manifested it to be its perhaps most crucial constitutional value, but has also made it a workable concept. Workable parameters, like the ones found in German jurisprudence, might be exactly what internal law needs. Although it is clear that human dignity is of substantial significance there is no consensus about what exactly is meant when international law instruments speak of 'human dignity' (Waldron, 2013, p. 6). There are substantial confusions in semantics and conceptualisation of dignity (Spiegelberg, 2010, pp. 43 – 45). Generally, some scholars claim that it is merely used as a linguistic slogan (Macklin, 2003). Due to the many overlaps between different philosophers as well as between philosophers and jurisprudences, but as already mentioned, I believe that statement to be overly pessimistic. For the purposes of this paper, I will adopt workable parameters to assess the possible tensions between human dignity and neurological rehabilitative methods. An overview over the latter will be given next.

### 3. Neurological rehabilitative methods

With gasping leaps taken in the emerging field of neuroscience, the link between criminal behaviour and certain neurological particularities appears to become clearer (Greely, 2008, p. 1104). With a deeper understanding of the functioning of the human brain, experts speculate more and more about whether and which advances in the medical field can or should be used to rehabilitate criminal offenders in order to reintegrate them into society (Ibid., p.1103). A clear distinction has to be drawn between direct and indirect interventions. This distinction, however, is not self-evident. We are constantly moved or in fact altered due to the influence of outer circumstances, whether those circumstances are natural or another person makes, in the eyes of many scholars, no qualitative difference; either way they are out of our control (Bublitz & Merkel. 2009, p. 372). Levy identifies three characteristics by which direct interventions differ from indirect ones: direct interventions bypass rational capacities in ways indirect interventions do not, they implant an alien element that undermines authenticity, and they impose themselves over myself (Levy, 2007, p. 75). The concrete implications of these three differentiating aspects of direct and indirect intervention will be explored in part four of this paper.

As for brain interventions considered for the purposes of rehabilitation of criminal offenders I will confine myself to briefly describing three types of direct interventions used or considered for the use on criminal offenders, being neurosurgery, pharmaceuticals and Deep Brain Stimulation (DBS) and one central method classified as an indirect intervention, being Neurofeedback.

#### 3.1. Direct Interventions

##### 3.1.1. Neurosurgery

The most shocking account of invasive rehabilitation techniques poses neurosurgery. In 1949 Egas Moniz was awarded with the Nobel Prize for having invented the procedure known as prefrontal lobotomy (The Nobel Prize in Physiology or Medicine, 1949). This medical procedure aimed at severing the connections between the prefrontal cortex and deeper regions in the brain (Swayze, 1995, p. 507). The procedure was reported to have calmed its patients and made them more manageable; however it was also noted that the negative side effects ranged from putting the patients into a state of apathy to severe cognitive deterioration (Greely, 2008, p. 1111). Prefrontal lobotomy was eventually discredited in scientific as well as popular opinion after more than 30 000 Americans had already undergone this procedure (Greely, 2008, p. 1111). It is possibly for the reason of this

stigma that prefrontal lobotomy attached to neurosurgery as a rehabilitative method that there is very little research done in this field (Ibid p. 1112). Two notable exceptions is the research done on the destruction of the Amygdala in order to treat extreme aggressiveness and the research done in the field of addiction (Fountas & Smith, 2007, p. 710; Hall, 2006, p.1). However, both fields have experienced a drastic decline in research funding and have thus come to a halt (Greely, 2008, p. 1112).

### 3.1.2. Pharmaceuticals

The use of pharmaceuticals in order to rehabilitate criminal offenders is actually nothing new to the criminal justice system. The most common example is chemical castration to treat sexual offenders (Ibid., p.1106). Several American as well as European states among which Denmark, the Netherlands, Norway, Germany and Switzerland allow for this procedure, albeit with differing legal hurdles. Despite its broad use, the technique is highly criticised by experts, mostly for its off-label use of the drug Depo-Provera, which in males results in difficulties having erections and ejaculations as well as a sharp decline in sexual impulses (Greely, 2008, p. 1107). Other research for the rehabilitation of criminal offenders by means of pharmaceuticals includes anti-addiction programs, the use of anti-psychotics and several advances in the field of drug vaccines (Greely, 2008, p. 1108 – 1110 and p. 1115).

### 3.1.3. Deep Brain Stimulation

A very interesting field that is currently on the rise is deep brain stimulation (DBS). Unlike neurosurgery, DBS works by strengthening certain brain regions, rather than having an ultimately destructive effect. One or more thin, insulated wires containing electrodes are surgically inserted into particular regions of the patient's brain. Those wires are connected to an "implanted pulse generator", which is then implanted under the shoulder or in the abdomen. The pulse generator then sends out electrical impulses through the leads at a particular voltage and frequency, which is regulated either by the physician and in some cases can be switched on and off by the patient himself (Ibid. p, 1113). DBS has been FDA approved for several medical conditions such as Parkinson's disease, essential tremor and dystonia (Kringelbach et al., 2007, p. 623). Of particular interest for the field of rehabilitation of criminal offenders is the research done by Angelo Franzini in 2005. He and his team used DBS in the posteromedial hypothalamus of two patients with aggressive and disruptive behaviour. Both patients were mentally retarded and had not responded to any pharmaceutical treatment. The team of researchers reported consistent improvement in respect to the disruptive behaviour in both patients at the follow-up evaluation that took place one year later (Franzini et al., 2005, p. 63). There are several brain regions that

have been linked to criminal behaviour. Most prominently among these are different parts of the prefrontal cortex, an under-activation of which is associated with a lack of impulse control. Other areas that have been associated with criminal behaviour are the amygdala, the hypothalamic-pituitary-adrenal axis, the hippocampus and the corpus callosum (Greely, 2008, p. 1115). DBS is a plausible method to strengthen certain brain regions in which under-activation is associated with criminal behaviour, or also to inhibit other regions where an over-stimulation may lead to such unwanted behaviour. With its latter use it can serve the same function as neurosurgery, with the difference that this kind of treatment would be much more adjustable, intermittent, and most importantly, reversible (Ibid., p. 1114). On the other hand, it should be noted that at least the implantation of the electrodes bears all the risks of neurosurgery, and although DBS is shown to work in many cases, scientists still cannot explain exactly why it does so (Ibid., p. 1113). Of course the use of this method is still highly speculative, but the use of DBS is spreading rapidly. At the annual meeting of the Michigan Association of Neurological Surgeons, Dr Mark Hoeprich presented his proposal of the use of DBS for the rehabilitation of criminal psychopaths (An Analysis of the Proposal of Deep Brain Stimulation for the Rehabilitation of Criminal Psychopaths). It is very likely that the near future will bring more research of DBS use to rehabilitate criminal behaviour) (Greely 2008, p. 1113 – 1115).

## 3.2. Non-Invasive techniques

### 3.2.1. Neurofeedback

The most notable non-invasive technique that has been considered by experts to be useful in the criminal field is Neurofeedback, which is a type of biofeedback derived from electrical brain activity. Biofeedback is a conditioning procedure in which patients aim to gain self-control over physiological functions that usually are not consciously perceived or controlled (Moss & Kirk, 2004, p.1). Such functions are then converted into a visual or acoustic signal which is continuously fed back in real time (Heinrich et al., 2006, p. 4). For Neurofeedback in particular, the training tries to strengthen certain brain waves, whereas it tries to weaken others, as certain brainwave patterns have shown to correlate to very specific conditions such as ADHD or impulse control impairments (Hammond, 2011, p.2). In the course of the treatment, electrodes are connected to the patient's scalp, which measure the brain activity by means of a real-time fMRI or an EEG. The patient can see these measurements on a screen and by himself attempts to acquire the mental state that is meant to be strengthened. This method is particularly attractive for children, as the desired mental state can be portrayed, and positively enforced, in the setting of a computer game (Heinrich et al., 2006, p. 4.).

By now, there are actually several rehabilitation studies out especially on juvenile offenders. Quirk (1995) stated that “a subgroup of dangerous offenders can be identified, understood and successfully treated using this kind of biofeedback conditioning program” (p. 53). In 2005, two further studies were published. Smith and Sams noted an “improvement in cognitive performance as well as recidivism” (Smith & Sams, 2005, p. 88), and Martin and Johnson stated that five out of their seven subjects ‘reflected gains in aspects of flexible problem-solving, improved regulation of emotional reactions and behavior, and inhibition of inappropriate responses.’ (Martin & Johnson, 2005, p. 82) All of the above studies are concerned with incarcerated juvenile offenders suffering from a variety of disorders such as ADHD. The research in this field is certain to be continued.

The great advantage Neurofeedback offers is that the offender ultimately performs the action leading to the altering of the mind himself (Eagleman, *NeuroLaw: A video introduction*). Invasive, direct interventions are often attacked on the basis that there is an “intervener”, which is not the case with Neurofeedback. The patient can at any point in time decide to stop his endeavours to attain the desired brain frequency. The technique hence poses a lot less problems in respect to his dignity.

## 4. Neurological rehabilitation and Human Dignity

This part will aim to examine three aspects under which the relationship between the neurological rehabilitative methods described above and human dignity as a philosophical concept and legal claim can be questioned. What will not be elaborated on is whether they could pose a threat to the rational nature of a human being. However, as this principle is so commonly found in philosophical accounts of human dignity, I would like to take this opportunity to briefly explain why not. Rationality can very basically be understood as a normative notion of reason that stipulates that rational people should come to the same conclusion given the information at their disposal. It is the capacity to conform beliefs<sup>5</sup> with reasons to believe and to find optimal solutions by means of reason. Interfering with this basic capacity is not considered by anyone to be the aim of rehabilitative efforts; such a thing would be a humongous perversion of our criminal justice system. It cannot be denied that such effects have arisen in the past as negative and not anticipated side effects of certain treatments, most notably of pre-frontal lobotomy, but this paper

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5 The term belief is used here in the broad sense of encompassing attitudes, opinions and the like, as opposed to the narrow use of the term that only has a spiritual connotation.

concerns itself with the normative question of the relationship between human dignity and brain intervention for the purpose of rehabilitation of convicted offenders, not its practical limitations.

I will hence elaborate on four other aspects that have proven to be vital to the concept of human dignity. First I will elaborate on the issues arising in respect to the autonomy and individuality of the person. Afterwards it will be examined whether several problems arising in their relationship to neurological rehabilitative methods can be remedied by informed and effective consent, which confronts us with difficulties in respect to equality and the subject-nature of human beings.

#### 4.1. Rehabilitation, brain intervention and autonomy

There is no all-encompassing notion of autonomy, but rather many different theories about this concept that relate to different subject matters. For my purpose, it is enough to confine myself to autonomy as a condition for moral accountability (Bubitz & Merkel, 2009, p. 361).

An interesting account of autonomy is captured by Harry Frankfurt (1971) who is a very influential figure in the field of structural theories of autonomy makes a difference between first-order desires, which are desires to perform actions, and second-order desires, which have first-order desires as their objects. A second order desire consists out of approval or lack thereof in respect to a first order desire (p. 7). On Frankfurt's account, an agent is autonomous if her first and second-order desires are in harmony. Her effective first order desire is thus autonomous if she had a second-order desire to have the first-order desire and she also wanted that second-order desire to cause her to act, the latter being a second order volition (Ibid., p. 15f). In his later paper "Identification and Wholeheartedness" Frankfurt refined and simplified this concept by stating that the crucial point is the identification of the agent with her first-order desire (Frankfurt, 1988). There is no obvious reason why neurological rehabilitative methods, be it direct or indirect techniques, should undermine this account of autonomy. As long as the intervention does not alter only the first-order desire, but secures a harmony between both, the agent would be deemed autonomous according to Frankfurt's approach (Shaw, 2012, p. 6). Frankfurt considers only internal conditions of agency. However, there is an important shortcoming of such structural theories.

Let us consider the situation famously described by Aldous Huxley in this novel *Brave New World*. Inhabitants of that world drug all of their sorrows and ambitions away with a drug called 'soma', which leaves them in a state of constant contentment. They have very few

desires, but they identify with those. According to structural theories of autonomy, such as Frankfurt's, these people are autonomous agents even though their content is derived only from their taking of a drug. Certainly this does not correlate with society's notion of autonomy (Bublitz & Merkel, 2009, p. 363). The same shortcoming of the structural approach is thinkable in manipulative two-person scenarios, which in the context of rehabilitation of criminal offenders could well take place if the offender is either not aware of the intervention or not aware of its full consequences (Ibid., p. 365). What these cases have in common is that the identification is brought about by heteronomous intervention. Historical theories of autonomy consider this aspect by adding that autonomous pro-attitudes have to have come about by an appropriate causal chain (Ibid., p. 363f). Fischer and Ravizza (1998) have identified autonomy as a historical concept, which at its core requires guidance control. This guidance control is defined to be present when the actions of an agent are the result of her own moderate reason-responsive mechanisms (pp. 34 – 51). In the case of brain interventions such as the ones considered for the treatment of criminal offenders, the problem is not that offenders may be stripped off their reason-responsive mechanisms, in fact one could imagine treatments that enhance such reason-responsiveness, but rather that the mechanisms do not appear to be her own mechanisms, but rather the mechanisms inherent in the intervention (Bublitz & Merkel, 2009, p. 364). As mentioned above, many scholars deny a qualitative difference between brain intervention and more traditional ways of altering minds and behaviour such as psychotherapy or simply argumentation (Greely, 2008, p. 1134). Levy (2007) however identifies three grounds for distinction: direct interventions bypass rational capacities in ways indirect interventions do not, they implant an alien element that undermines authenticity, and they impose themselves over myself (p. 75). The two latter points are more closely connected to authenticity, hence will be elaborated on at a later stage. The first element though is an interesting starting point for this discussion.

The question how direct interventions bypass rational capacities to a greater extent than indirect interventions do is difficult to answer when looking at it in the abstract. In the context of neuroenhancement, and the argument work for rehabilitation as well, Bublitz and Merkel (2009) state that '[d]irect interventions have an immediate impact on neuronal functioning, whereas traditional interventions change personality structures slowly and more holistically. Thus neuroenhancements may bypass the 'checks and balances' of an existing personality structure.' (p. 366) Bublitz and Merkel, however, go on to making the point that many actions not considered to be questionable have this effect. One example would be the increase of ephedrine production during physical activity. This clearly circumvents the 'checks and balances' functions of cognitively mediated brain

alterations, but it does not strike us to undermine the autonomy of the person pursuing the physical activity. They make the point that direct interventions do not undermine autonomy only by bypassing the 'checks and balances' rational capacities of the mind, but rather only have this effect in combination with a manipulation, an outer infringement of the right of the patients to self-determination (Ibid., p. 366f). Such infringement could, in the context of rehabilitation, take place either by leaving the offender ignorant of the treatment or leaving him ignorant of the full consequences, as already pointed out in the previous paragraph (Ibid., p. 365). Building on the structural as well as historical approach to autonomy, the researchers conclude that a person can be deemed autonomous if she (1) has the capacity to discerning right from wrong, (2) is reason-responsive, (3) has a minimal level of self-control, (4) has a minimal understanding of the world around her, (5) has not been manipulated in the above sense and (6) identifies with her traits.<sup>6</sup>

What does this mean for the neurological rehabilitative methods for criminal offenders? The easiest case is Neurofeedback. Bublitz and Merkel (2009) concede that self-induced alterations of the mind never infringe the principle of autonomy (p. 367). David Eagleman also stresses the point that the patient does the actual mind training, which is essentially all Neurofeedback is, by himself. He himself has to find the state of mind to achieve the desired brain frequency (Eagleman, *NeuroLaw: A video introduction*). He can refuse to do so at any point in time, making it highly unlikely that the training could cause disharmony between his first- and second-order desires, and even less so do they bypass his rational capacities, as he is consciously performing the training. A more challenging case is presented by direct, invasive interventions. The requirements one to four as well as requirement six, i.e. the requirement that the agent identifies with her new traits, does not appear to be problematic in this context. The interesting part is the requirement of non-manipulation. Bublitz and Merkel (2009) propose, and I agree, that an agent is not manipulated if she has 'arranged for the intervention themselves and foreseen the result.' (p. 370) Such self-initiation at first sight appears paradoxical in the case of a direct brain intervention, but it appears that it could take place in the form of consent to the treatment. Whether such effective and valid consent, on which the compatibility of invasive rehabilitation techniques and the concept of autonomy seems to depend, can in fact take place in this field will be investigated in part 4.3.

It is important to note at this point that an alteration of the patient that does not leave him autonomous results in a shift of responsibility from the manipulatee to the manipulator

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6 The points not discussed in this paper, i.e. points one to four are reflected in the Mc'Naghten Insanity Defence. Ibid p. 361.

(Ibid., p. 371). The acknowledgement and restoration of exactly this responsibility is, however, one of the very vital elements that the concept of human dignity demands of us today. It is the flipside of its requirement to allow everyone to choose their individual way of life (Schachter, 1983, p. 850). In how far the requirement of individuality can be reconciled with neurological rehabilitative methods will be discussed next.

## 4.2. Individuality and authenticity

With the rejection of hierarchical social axiologies after the Middle Ages came an individualised and egalitarian understanding of the person. Suddenly a meaningful life was a life that suited us, a unique life we created, rather than just fulfilling the social role we were born into (Taylor, 1991, p. 25). The Romantic Movement culminated the slow growth of this individualistic conceptualisation of the self (Levy, 2011, p. 310). The possibility of choosing our path ourselves also brought an urge to *be ourselves*, a notion that is nowadays dubbed authenticity (Taylor, 1991, p. 29). In fact it appears that the entire notion of individuality rests on a presumption of authenticity. The very point of individualization is that we choose our own paths by virtue of being who we truly are, the latter being exactly the notion of authenticity. Individuality entails more than simply differing from others. Should individuality, in the sense of differing from others, be brought about by societal coercion it would defeat the very purpose of it being a derogation from a societal axiology towards a way of life that one's own choice. Of course the ethics of individualisation and hence authenticity are a lot more demanding than the social axiology they replaced (Taylor, 1991, p. 26). One suddenly could not find one's path, or even one's life's meaning, in an outward model embedded in society, but rather had to look inside oneself in order to find or create such a life (Ibid.). Nowadays the notion of respecting the individuality of a person and hence their authenticity is one of the central claims made in relation to the human dignity of a person, as elaborated in part two of this paper. Living an individual, authentic life has moved from being a mere possibility, to being an ideal (Levy, 2007, p. 74).

A very elaborate academic debate is currently taking place concerning the threat neuroenhancements pose to authenticity (Levy, 2007; Elliot, 1998; Taylor, 1991; Bubltz & Merkel, 2009). Although they mostly deal with the implications of pharmaceuticals such as anti-depressants, most of the arguments hold true for prisoner rehabilitation as well. Authenticity is basically understood as being true to oneself (Levy, 2007, p. 73). However, there are competing notions as to how this is to be achieved. One camp belongs to the essentialists, who are very much in line with the German Romantics (Taylor, 1992, p. 26). According to Taylor, a strong proponent of the essentialist view, the authentic individual

looks within in order to find her own 'measure' (Ibid., p. 28). An authentic life hence builds on a pre-existing self with set standards. Elliot (1998) builds on this conception to make a strong case against neuroenhancements:

*It would be worrying if Prozac altered my personality, even if it gave me a better personality, simply because it isn't my personality. This kind of personality change seems to defy an ethics of authenticity.*

Bublitz and Merkel (2009) clarify what is meant by 'personality' in this context. Meant is an alteration of personality traits through which we identify ourselves, and through which others identify us. The alteration appears inauthentic if it leads either party, ourselves or others, to call us 'not ourselves anymore.' (p. 360) It is easy to see how not only Prozac, but in fact every brain intervention threatens authenticity on this account. The claim here is that even if the personality of a person is altered in a manner that makes him more agreeable, or even better from a third person perspective, which rehabilitation would certainly aim to do, they would not be beneficial from a first person perspective (which is exactly the perspective from which authenticity has to be looked at) as it brings us further from who we really are. They introduce an alien element into the individual self, hence the alterations brought about are equally alien (Elliot, 1998, p. 182). As Levy (2011) eloquently states, '[i]t might *improve* me, but it would not improve *me*' (original emphasis) (p. 315). Direct interventions stand in strong antagonism to this conception of authenticity. Psychotherapy would in such case be preferable, as it explores our inner depths; hence solutions come from within us (Levy, 2007, p.75). Interesting is the role that Neurofeedback takes in this discussion. It again has to be emphasized that the training is actually a conscious, self-initiated process (Eagleman, *NeuroLaw: A video introduction*). It is therefore hard to make a case in order to prove that it should not be in line with this conception of authenticity.

Let us turn to the other camp of authenticity: the existentialists. This view has gained more and more popularity, also through its convincing accounts made by one of the pioneers in the field of neuroethics, Neil Levy. Levy (2007) states that what is commonly forgotten by essentialists is that there is a whole other aspect to authenticity which is arguably even more closely connected to individuality: authenticity through self-creation (p. 104). Jean-Paul Sartre states that there is no pre-existing self as conceived by essentialists. To Sartre (1955), the authentic self realizes that there is absolutely nothing that binds it to a pre-existing essence of itself (p. 57). We are hence entirely free to be whoever we want to

be. Our future self does not need to correspond to our past self, and even if it does, that rests on an implicit choice we have made not to change (Ibid.). Of course the metaphysical foundation upon which this conceptualisation of authenticity rests is rather extravagant, but the enthusiasm with which Sartre's theory was embraced even beyond the academy proves of a certain resonance to the cultural roots of the self in our society (Levy, 2011, p. 312). Degrazia (2000) states that when considering authenticity as self-creation, brain intervention might be a means to achieving authenticity, rather than defeating it (p.43). Today's society feels deeply attracted to both accounts (Parens, 2005, p. 34 – 41). Levy (2011), however, submits that the essentialist and existentialist approach can be reconciled. Self-discovery, the essentialist path to an individual and authentic life, may require us to change (p. 315). Imagine, as an analogy, the case of a patient with Gender Identity Disorder (GID). Sufferers complain about being born into the wrong body, i.e. into the wrong gender. A GID diagnosis qualifies a patient for a gender transformation, a very invasive surgery that changes a vital aspect of a person's personality (Ibid.). It is hard to imagine a brain intervention executed for the purpose of a prisoner's rehabilitation that could be as intrusive as a sex change. Despite this very intrusive measure that brings about such change, it is easy to believe that the patient would identify with himself better after the surgery. As Levy puts it, 'the possibility of radical alteration is understood as giving us the ability to conform ourselves to what we already, essentially, are.' (Ibid.) There is no reason why this should not be the case for criminal offenders. Many feel just as disconnected from their criminal urges as someone with GID feels from his or her biological gender (Eagleman, NeuroLaw: A video introduction). This conceptualisation gives us the possibility of breaking the stalemate between the essentialist and existentialist accounts of authenticity (Levy, 2011, p. 315).

From the foregoing, brain interventions do not seem to pose a problem to authenticity, and hence individuality at all. They may enable us to become what we truly were in the first place. However, Bublitz and Merkel (2009) point out an important pre-requisite for authentic change: autonomy (p.370). In fact, both the essentialists and the existentialists have adopted this criterion into their theories (Ibid.). To the essentialists, autonomy consists of the conservation and unhindered development of a self by searching within, i.e. only through internal sources. Agents are thus only autonomous if all foregoing alterations can be traced back to preceding autonomous decisions. Personally I believe that this argument doesn't withstand criticism. It leads us to go back further and further in time, eventually ending up at the hour of birth of an agent, which certainly was not his autonomous decision. Existentialists, who believe in individuality and authenticity through self-creation, presume that an agent is autonomous only if he is in control of all transformations (Bublitz & Merkel, 2009, p. 370).

The exact criteria for a brain intervention not to be in contradiction to autonomy have already been set out in the previous section of this paper. However, it is important to point out again that for a change to be autonomous despite it bypassing rational capacities the way invasive methods do, the intervention has to be self-initiated and the complete result has to have been foreseeable (Ibid.). As already stated, whether the result is foreseeable is a matter of not having any manipulating factors in the equation and of the patient being fully informed. The much more interesting question is the self-initiation in the case of invasive rehabilitative methods. Could this take place in the form of consent to the procedure? Let us turn to that question.

### 4.3. Can consent serve as self-initiation?

Before diving too deep into the analysis, it should be noted that the need for consent as such is assumed in this paper. Not acquiring consent to treatment would attach a punitive character to such treatment, which would be in stark contrast to the point of rehabilitation and would in fact be a gross perversion of today's criminal justice system (Bomann-Larsen, 2011, p. 76). So, in theory, rehabilitation requires consent in order to be justified. Bomann-Larsen (2011) identifies two ways through which such consent may be rendered invalid. First, it is possible that consent is not *effective* (original emphasis) under constraining circumstances (p. 66). In the context of this paper, such restraining circumstances would be the threat of incarceration or other forms of punishment except for rehabilitation. Second, there may be constraints on what a person can consent to in the first place. Consent could be *normatively invalid* even if the formal conditions for effective consent are met (Ibid.). Let us consider the former case first.

Consent is effective when it is the expression of a free choice (Ibid. p. 68). Choice restricting influences such as coercions and manipulations are controlling factors that restrict choice and thus undermine consent. Beauchamp and Faden (1986) define coercion as being present when 'one party intentionally and successfully influences another by presenting a credible threat of unwanted and avoidable harm so severe that the person is unable to resist acting to avoid it.' (p. 339) The harm presented in the case of rehabilitation of offenders is of course the prospect of imprisonment or other punitive measures. However, for the purposes of this paper, I will only discuss the situation where rehabilitation leads to a full or partial remittal of an imposed sentence, not where a refusal of rehabilitation leads to prolonging of such. At first glance there does not seem to be a qualitative difference, in both cases consent to rehabilitation leads to freedom and refusal to incarceration, but the difference will become clear in what follows. The critical question that needs to

be asked is whether we are faced with an offer of rehabilitation or whether it actually amounts to a threat of incarceration. Imagine a cancer patient who will have to either undergo a very risky surgery or die a slow death caused by his cancer. We perceive him as effectively consenting to such surgery, even though the alternative he is faced with is arguably worse than incarceration. Intuitively, one might say that the difference consists in cancer being a natural occurrence; no other person has put him into such a situation. However, it has to be maintained that the offender has made himself liable to punitive measures like incarceration by committing a crime (Bomann-Larsen, 2011, p. 68). By stipulation, he deserves his punishment and would have had to execute it either way. This is where the distinction between offering leniency in respect to a sentence that is bestowed upon him rightfully and independently and threatening to increase a sentence is crucial. In the former situation he is in no qualitative different situation than the cancer patient, as the negative alternative would occur with or without the offer of rehabilitation. Rehabilitation is thus an offer, not a threat, and hence effective. The first requirement for consent is fulfilled. Let us now consider the second requirement, whether such consent is normatively valid.

Bomann-Larsen (2011) gives a very impressive outlook on the question of normative validity by focusing on the offer, rather than the acceptance. Some offers are in themselves wrongful, not because of the circumstances they were made in, but rather because they do not recognise the offeree as a moral equal, hence it is inappropriate (p.73). To Bomann-Larsen (2011), the inappropriateness is largely dependent on the relationship between offerer and offeree. Special relations create special permissions (p. 73). However, there are also some offers that are inappropriate *tout court* as no one is in a normative position to make them (Ibid. p. 74). In the case of rehabilitation of criminals, the offerer would be the state. What citizens are answerable for *vis-à-vis* the state would determine the scope of conditions the state can appropriately offer treatment for. Not all wrongs are also public wrongs and can as such be pursued by the criminal law (Ibid.). The appropriateness constraint thus demands of treatment to be as narrowly focused on the problem and should never go beyond what is needed to correct the behaviour for which the offeree was convicted.

More problematic is the second possibility put forward by Bomann-Larsen (2011), the fact that some offers are always inappropriate because no one is in the right position to make them. I would like to apply a notion put forward by Nicole Vincent to this matter.

#### 4.3.1. Re-shaping Virtues

In the context of rehabilitation, Vincent (2009) distinguishes re-shaping an offender's capacities and re-shaping his virtue (p. 116ff). The former aims at improving certain trades that will help the offender execute his agency. Examples such as the treatment of a lack of volition control come to mind such as a neurofeedback study which is currently trying to execute such treatment for nicotine addicts. David Eagleman, who is part of the team of researchers, is planning on extending his research to criminal offenders (Eagleman, *NeuroLaw: A video introduction*). The latter, on the other hand, aims at reshaping the offender's values (Vincent, 2009, p. 116ff). It would be treatment designed to prevent offenders from acting in a certain manner because they would, unlike before the treatment, perceive such behaviour to be the right thing to do (Ibid.). Increasing the offender's capacity for agency is not controversial in academic literature. Such treatment does not as such alter someone's way of thinking, but only allows that person to better control himself and act in accordance with his beliefs. Increasing his virtue responsibility, as Vincent terms the latter option of re-shaping values, is however strongly objected by many academics, notably in this context Elizabeth Shaw. Her strong opinion on this matter stems from the fact that such treatment would put the authorities, and arguably society as such, on a morally higher stance than the offenders (Shaw, 2012, p. 12). This has two important implications in respect to the offender's dignity. First, it would contradict the claim to equality of human beings, for the obvious reason that portraying the offender's virtues as worthy of correction makes him morally inferior. Second, it amounts to an objectification of the offenders. Historically, society has always tried to single out deviant groups and contrast them to the rest of the population. The creation of a 'them' and an 'us' commonly occurs between society and criminal offenders, from which society tries to distance itself (Ibid.). This objectification becomes even more severe when considering that portraying criminals as morally inferior creatures strengthens their exclusion from society. The offenders are put into a light of being 'defect' objects whose convictions have to be straightened up before they can be integrated back into society. Re-shaping virtues conveys the image that something is wrong with the offender in principle, not that he has done a wrong on a particular occasion for which he is being punished (Ibid.).

The subject-nature of the human being is one of the most central elements of the notion of human dignity in its philosophical sense and as a legal claim. The principle that all human beings are equal is derived from this notion and constitutes one of the most central elements in many legal systems. Re-shaping an offender's virtue is exactly the type of treatment for which there cannot be a normatively valid consent, as they inherently amount to a violation of the human dignity of the offender by objectifying him and

portraying him as a lesser being than the rest of society. It is exactly for this reason that consent as self-initiation has to fail as well in the context of re-shaping virtues. So we finally come to the very core of the threat to human dignity posed by brain interventions for the purpose of rehabilitation of convicted criminals: The fact that it undermines the autonomy and individuality of the offender as he is in no position to validly strip himself off his own dignity by consenting to a re-shaping of his virtues and hence allowing himself to be objectified and portrayed as an inferior moral creature.

## 5. Conclusion

Evidently, a full analysis of all threats that the use of neurological rehabilitative methods poses to human dignity in its variety of understandings is very hard to make. In this paper, the implications they have on autonomy and personality have been thoroughly investigated. Subsequently, it was shown in how far and under what circumstances they violate the principle of equality and the subject nature of the person. All of these four are vital ingredients of human dignity in the classic, modern and legal understanding of the term.

Summarising all of the above, at first glance it appears as though indirect neurological interventions such as Neurofeedback do not violate the dignity of offenders. As the offender himself performs a conscious training, self-initiation is granted. The changes come about very holistically and consciously, even a change in virtue of the offender is more similar to changes brought about by psychotherapy than by direct brain intervention. Also, he is constantly aware of what he is doing and there is no alien element in the equation, so manipulation could not take place. This means that as long as the offender is fully informed about the training, has given his effective consent to it, and is in no way coerced to go through with it, the offender retains his autonomy and individuality.

Direct intervention, on the other hand, is quite obviously much more problematic. They bypass the rational capacities of the offender, introduce an alien element into the procedure, and impose themselves over the self of the offender. The only situation where this does not undermine the offender's autonomy and his individuality is when he has full knowledge of the medical consequences and the process is self-initiated. However, as we have seen, self-initiation by means of consent is very limited in the context of rehabilitation. Treatment has to be targeted as narrowly as possible, and there are situations in which the offer of treatment as such would be inappropriate because it is targeted at re-shaping the virtue responsibility of the offender.

Re-shaping citizens' values results in a violation of their dignity in every case. The method used does not play much of a role here, except perhaps on the practical level. As non-invasive methods do not bypass the neurological 'checks and balances' operates they might appear to be acceptable even for the notion of re-shaping the values of convicts. However, this is a bold misconception. It has to be highlighted that it is not only the act, but already the mere offer, the very idea, of re-shaping someone's virtues that results in objectification and moral inequality, and in the case of direct interventions bars the offender from retaining his autonomy and individuality.

With the new and exciting options science creates every day, the temptation of a utopian world, where science offers quick fixes for all kinds of disturbances seems almost in reach. Humanity has undergone a lot in the creation of the vital concepts that safeguard our very essence, perhaps the most important concept being human dignity. Due regard has to be given to it at all times, even when overriding them appears to bring about many benefits. Human dignity is not a matter of degree, it is an absolute.

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