

## Bioethics and Biolaw through Literature

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Daniela Carpi · Klaus Stierstorfer

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*Daniela Carpi*

## Introduction

In recent years the well established field of human anthropology has been put under scrutiny by the new data offered by science and technology. Scientific intervention into human life through organ transplants, euthanasia, genetic engineering, experiments connected to the genetic codes and the genome, and varied other biotechnologies have placed ethical beliefs into question and created ethical dilemmas.

Science arises out of desire, the desire to overcome natural limits. Ethics is about social life; it is the regulation of human behaviour within a social context. Since ancient times, science has always been intertwined with ethics. Ethics gives meaning and purpose to scientific enterprise.<sup>1</sup> The term bioethics involves a double function: it analyses the particular conditions connected to life and life experiments and it formulates specific norms regulating scientific behaviour. These scientific interventions have influenced our views on birth and death, on the construction of the body and its technical reproducibility, and have problematized the concept of the human persona. An exemplary topic is cloning, which has come to epitomize the impossibility of keeping the well-established meaning of persona, as the uniqueness of the concept is annihilated by the idea of serialization. The purpose of bioethics, the science of life, is to find new values and norms which will be valid for a multicultural society. Law arises out of the need for the regulation and rationalization of human coexistence; biolaw implies the ways in which the law must react when facing new unprecedented situations caused by scientific experimentations.

Such transformations stem from a new postmodern period, where society has passed from monolithic values to a plurality and ambiguity of values: the old world order collapses and a new problematic one arises that requires new laws to be absorbed into the polity. Facing the broadening of the known limits to human actions, man has recourse to law: law may make acceptable what seems unacceptable, may create new norms for what seems abnormal. We have recourse to law to reorganise a troubled order.

The debate is between law and conscience, law and ethics, legal law and moral law. The juridical norm is set therefore between moral law and political

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<sup>1</sup> M. Bianca, *Scienza, etica, bioetica* (Firenze: Angelo Pontecorboli, 1999).

law. Law comes to be considered a defence not only against private or collective violence, but also against institutional violence.

The main conceptual transformations concern the body itself: the fact that banks have been instituted where one can deposit products of one's own body, such as gametes, blood, cells, tissues, DNA, transforms the uniqueness of human, which cannot only be reproduced and multiplied, but is also scattered across space and time. This deals with one's right to self-determination. The history of medicine and surgery is the history of interventions on the body incessantly intertwined with the development of cultural models. The interventions into the body become part of the self-determination of the individual; the protection of that persona entails both its physical and psychic integrity. This cultural evolution forces us to remap the limits and borders of physicality and of the licit and illicit uses of the human body. Therefore we must face new frontiers that concern not only the juridical status of the human body but also its own material structure.

Such innovations must go together with new juridical norms that widen the concept of human rights in this new phase toward the post-human or trans-human. The new concept of persona entails taking into consideration an evolution of the body, the expanse of its potentialities. We have to face a transformation of cultural models, which implies a transformation of the juridical and social status of persona.

The term bioethics was introduced by V. R. Potter<sup>2</sup> with the meaning of medical ethics or ethics of scientific research. Potter insists on the defensive nature of bioethics, a defense of persona against the excesses of science, against the violation of human dignity. Goethe's view of the Faust myth triggered fear for the dangers of medical progress, later best theorised by Hans Jonas.<sup>3</sup> In his *Principle of Responsibility* Jonas denounces science as a Prometheus set free and warns man against a dangerous use of science.

Bioethics and biolaw are two philosophical approaches that address social tensions and conflicts caused by emerging bioscientific and biomedical research and their application. Bioethics can be defined as "the research and practice, generally interdisciplinary in nature, which aims to clarify or resolve ethical questions raised by the advances and application of biomedical and biological sciences."<sup>4</sup> Biolaw, on the other hand, is a philosophical concept in

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<sup>2</sup> V. R. Potter, *Bioethics. Bridge to the Future* (Englewood Cliffs N.J.: Prentice-Hall, 1971).

<sup>3</sup> H. Jonas, *Il Principio di responsabilità. Un'etica per la civiltà tecnologica* [1979] (Torino: Einaudi, 2002).

<sup>4</sup> J. Miller, "Is Legislation in Bioethics Desirable? An Explanation of Aspects of the Intersection of Bioethics and Biolaw" in *Bioethics and Biolaw*, vol. I, *Judgement of Life*,



law that can be defined as “the taking of agreed upon principles and practices of bioethics into law with the sanctions that law engenders.”<sup>5</sup>

“What is a person?” is a question that involves ethical connotations. The new biojuridical person that emerges from these questions has an ontological density.<sup>6</sup> The term “persona” during the last thirty years has triggered epistemological (what can I know?), moral (what is it right for me to do?) and religious (what can I hope?) speculations. Bioethics is by now a well-respected topic of research that has brought together philosophers and experts to discuss the limits of science and medicine. At the present time bioethics is changing into biolaw, a neologism that stresses the fact that the defense of life must go hand in hand with the defense and promotion of law, and that law must confront the actual results of science. All this is attuned to the general characteristics of postmodernity, which challenges the very possibility of reaching universal truths; it is rooted in the contingent, with a general loss of objective knowledge. Postmodernity is rooted in theoretical non-cognition. As a consequence, even the concepts that have always been taken for granted are put into question. In fact, what is now at stake in bioethics/biolaw is the concept of persona.

The concept of persona is linked to a problematic attitude towards human life derived from theology. Linguistically, the concept of persona comes from *prosopon*, mask, the one used by actors to hide their faces: the very semantic meaning of the term suggests ambiguity, because if the mask is the space of revelation, it is also the place of concealment. On the one hand, persona suggests something that appears outwardly through gesture and behaviour; on the other hand it suggests a secret noumenic reality of the I, hardly perceivable from the outside. If, according to Boetius, persona is “*rationalis naturae individua substantia*”, it suggests something that as substance it is individual and as rationality it is relational. Therefore persona is characterised by two contrasting modes: it tends to be individual, but it also needs to be put in relation with the “other”. The fact that persona as *prosopon* is something that clarifies and conveys a meaning explains why for the Romans theatrical action and judicial action could be conflated. Also during trials persons “act”: the defendant, the prosecutor, the lawyer who, in turn, can

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eds. P. Kemp, J. Rendtorff and N. Mattsson Johanssen (Copenhagen: Rhodos International Science and Arts Publishers, and Centre for Ethics and Law, 2000) 313.

<sup>5</sup> Kemp, Rendtorff, Johanssen, 246. Cfr. Susan Cartier Poland, *Bioethics, Biolaw and Western Legal Heritage*, Scope Note 45, National reference Center for Bioethics Literature, in *Kennedy Institute of Ethics Journal*, Sept. Part I and Dec. Part II, 2002.

<sup>6</sup> S. Bauzon, *La personne biojuridique* (Paris: PUF, 2006).

embody different *personae*, that is, different roles. The various conflicts represented by the different *personae* must in the end find their resolution in the final judgment.

What each one of us is and can become revolves around four main elements that are essential for the definition of persona: 1) what is shared by all men through the use of reason; 2) the subjective way in which the universal category of rationality is applied; 3) the external elements (fate, chance, circumstances, etc.) that influence the course of our lives; 4) what is rooted in freedom and in the personal responsibility for our choices. These four elements derive from Cicero's positive conception of the term "persona". According to Cicero and to the Roman view, man is formed by a plurality of *personae*. It is only with Christianity that "persona" starts to acquire the characteristic of uniqueness.

In addition, across centuries we may discern two main attitudes towards the value of human life: the "separationist" position, which purports to see a separation between "persona" and human being, and the "personalist" position, where person and human being coincide.<sup>7</sup> The theories that separate persona from human being consider life not to be a value in itself, but only in the presence of certain qualities. These theories involving a separation between body and persona date far back in time: to Plato's conception of the body as the prison-house of the soul; to Descartes' distinction between *res cogitans* and *res extensa*. The body is thus depersonalised. The persona is reduced to its mechanistic functions. Once these functions occur (coma, pre-natal situation, etc.) we cannot speak of a persona.

As for the "personalist" theories, they claim that the very scientific description of the body makes us realize the insufficiency of a mechanistic explanation of persona and the necessity to formulate metabiological hypotheses. Being a persona is a radical ontological status. In the context of a personalist view human life must be protected at all cost, which entails therapeutic interventions and maintains the intrinsic dignity of human life.

Greek philosophers often speak of the idea of persona, especially after Socrates, but they do not consider the problem of subjectivity, which is part of the modern concept of persona. The intersubjective or relational aspect becomes the most radical characteristic of persona in modern times. Accord-

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<sup>7</sup> L. Palazzani, *Introduzione alla biogiuridica* (Torino: Giappichelli, 2002), Ch. 1.4 "Il valore della vita"; "Bioetica e persona" monographic issue of the journal *Per la filosofia. Filosofia e insegnamento* IX.25 (1992); V. Melchiorre ed., *L'idea di persona, Metafisica e storia della metafisica, Vita e pensiero* 16 (Milano: Pubblicazioni dell'Università Cattolica, 1996); S. Maffettone, *Valori comuni* (Milano: Arnoldo Mondadori, Il Saggiatore, 1989).

ing to Saint Thomas Aquinas, persona is “*rationalis naturae individua substantia*”,<sup>8</sup> that is to say that persona as a definition entails the concepts of individuality, substance, and rationality. Individuality means an inner coherence and unity of being. Therefore self-sufficiency, self-construction, autonomy, and totality are essential for the existence of the persona. In his *Summa Contra Gentiles* Saint Thomas Aquinas asserts that God Himself deals with Man *magna cum reverentia* and in order to define persona Saint Thomas has recourse to the elements of freedom, immortality, and ability to respond to the world in its totality.

Among the many theoreticians who deal with the concept of persona, Peter Singer<sup>9</sup> focuses on a biological definition: a persona is one who may experience suffering or joy, one who is self-sufficient and self-conscious. This erases the distinction between man and animal and does not consider the ontological density of the biojuridical person. In contrast, Francesco D’Agostino’s perspective is centred on the relational aspects of persona, on its ontological dimension.<sup>10</sup>

Biolaw is a very recent term that combines the field of bioethics with that of law, with the intention of giving juridical answers to bioethical dilemmas. It arises in cases of so-called juridical void, that is to say when the law is called to give practical ruling to a changed social situation. Biolaw pertains to the field of human rights and must guarantee man the possibility to realize fully his own humanity. The biojurist must question the validity of the current legal system and must strive to adapt positive law to natural law. Human rights must be reformulated according to the new techno-scientific discoveries. Bioethics and biolaw are intrinsically connected, even if they are epistemologically different. As has been asserted, “Biolaw without bioethics is blind; bioethics without biolaw is a void.”<sup>11</sup>

The biojuridical debate also takes into consideration new forms of subjectivity, such as animal rights. Discussing the rights and dignity of animals means discussing the possibility or impossibility of considering animals not only as objects of the law, but also as juridical subjects. Up to what point can

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<sup>8</sup> *Summa Theologiae*, I, q.29, a.4.

<sup>9</sup> P. Singer, *Practical Ethics* (Cambridge: CUP, 1993); P. Singer, *Rethinking Life and Death* (Melbourne: Text Publishing Company, 1994).

<sup>10</sup> See Palazzani, *Introduzione alla Biogiuridica*; L. Palazzani, *Il concetto di persona fra bioetica e diritto* (Torino: Giappichelli, 1996). See also F. D’Agostino, *Filosofia del diritto* (Torino: Giappichelli, 2000); F. D’Agostino, *Bioetica nella prospettiva della filosofia del diritto* (Torino: Giappichelli, 1983).

<sup>11</sup> D. Gracia, *Fondamenti di Bioetica. Sviluppo storico e metodo* (Milano: San Paolo, 1993), 683. My translation.

animals be considered mere objects of manipulation? Do they have rights? How can we balance the sacrificing of animals for scientific reasons with the necessity of protecting them as legal subjects?<sup>12</sup> The contemporary movement called “rightism” is the moral outspokesperson for animal rights. The movement speaks of animals not as mere machines devoid of conscience, but as new juridical subjects. In fact discussing animals means discussing man and man’s role in nature.

The connection between these various fields of inquiry and research can be found in literature. Literature brings together the discussion about science, with its intrinsic dangers; law, with its attempt at systematizing the problems inherent in scientific-technological experiments; and ethics, dealing with the moral response to such innovations. The cultural result is the creation of new semantic fields, latest of all the field of biolaw and biojuridical person. Literature is helpful in creating mental experiments that alert us to problems in the real world.

In fact, literature has often anticipated such existential problems and questioned the ethical and legal limits we should set for science. Let us consider, for instance, Mary Shelley’s *Frankenstein*, where there is an experiment on the creation of life through the collection of organs and body parts; in H. G. Wells’s science-fiction novel *The Island of Doctor Moreau*, the mad physician, Doctor Moreau, wants to transform animals into human beings through long and painful explants and transplants; there are also similar genetic experiments in *Brave New World* by T. Huxley. As early as the Renaissance, Thomas More’s *Utopia* highlighted the relationship between nature, social organization, and penal control. In *New Atlantis*, Francis Bacon revealed the link between science, nature, and control, thus adding to the socio-juridical control the perspective of the socio-scientific one, opening up new and fertile opportunities for reflection.

The strong opposition of literature to scientific experiments considered as dangerous can be ascribed to the two cultures debate that engaged T. H. Huxley, F. R. Leavis, and C. P. Snow. The discussion was centred on which of the two cultures should prevail, the scientific or the humanistic one, with the scales in turn leaning from one to the other. The debate originated in a famous lecture by C. P. Snow in Cambridge in 1959; it transmitted the idea of the two cultures struggling for predominance, with no possibility of reaching a consensus.

Later on Aldous Huxley took active part in the debate. He asserted:

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<sup>12</sup> R. Rodd, *Biology, Ethics and Animals* (Oxford: Clarendon Press, 1990).

I feel strongly that the man of letters should be intensely aware of the problems which surround him, of which technological and scientific problems are most urgent. It is his business to communicate his awareness and concern.<sup>13</sup>

He invited scholars of both fields to advance together:

Let's advance together, men of letters and men of science, further and further into the ever expanding regions of the unknown.<sup>14</sup>

Aldous Huxley's position within the two cultures debate makes him compare science to civilization, with science really meaning technology: for him technology is science without morality. Science and technology are positive elements if they do not become instruments of civilization, if they do not deprive man of his freedom.

Technological advance is rapid. But without progress in charity, technological advance is useless. Technological progress has merely provided us with more efficient means for going backward.<sup>15</sup>

Aldous Huxley's position is that of fostering the use of science and technology so as to improve man's life, while being aware of the possible dangers of applied science.<sup>16</sup>

He [Huxley] wants scientists to be more actively responsible for the technological improvements they help to bring into existence; in other words, he wants them to be morally responsible for their actions, or, as has been the case in the past, for their lack of active protests against producing more destructive weapons of mass annihilation.<sup>17</sup>

Of late, the debate over the two cultures has become much more heated, feeding off reciprocal accusations different from those expressed by Arnold and Huxley or by Snow and Leavis. They no longer accuse each other of not building a cultural heritage, but instead of being useless or even dangerous within the historical process. But nowadays the resistance to science from the humanistic field has been transformed into resistance to technology. Issues linked to technology are the latest aspect of the science/literature controversy. Technology is the main new force against which human exist-

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<sup>13</sup> J. Huxley ed., *Aldous Huxley: 1984–1963 Memorial Volume* (New York: Harper and Row, 1965), 100.

<sup>14</sup> Huxley, *Memorial Volume*, 99.

<sup>15</sup> A. Huxley, "Goals, Road and the Contemporary Starting Point" in *Ends and Means* (London: Chatto and Windus, 1937), 8.

<sup>16</sup> For a thorough analysis of this topic see: C. Battisti, *Civiltà come manipolazione, cultura come redenzione* (Ravenna: Longo, 2004).

<sup>17</sup> M. Birnbaum, *Aldous Huxley's Quest for Values* (Knoxville: University of Tennessee Press, 1971), 149.

ence must measure itself. Long considered subordinate to science, today technology is considered on par with it.<sup>18</sup>

Much philosophy of the Twentieth Century has interpreted technology in a distorted manner, demonizing it and considering it the cause of all humanity's ills (think of Benjamin, Leavis, and Spengler); however, philosophers such as Dewey have stressed how art makes use of technology, art at times successfully reaching a perfect balance between instrumental moments and moments of consumption during enjoyment of an artwork. For Dewey, continuity exists between science and nature, between man and technology.<sup>19</sup>

In her book *How We Became Posthuman* Katherine Hayles deals specifically with the relationship between man and technology, and with the renegotiation of the boundaries between man and machine.<sup>20</sup> This posthumanistic phase favours information structures that render biological incarnation a mere accidental fact. The body tends to be considered a prosthesis which we all learn to manipulate, removing the distinction between bodily existence and computer simulation. The humanistic-liberal subject comes to an end, leaving room for an amalgam, a grouping of heterogeneous components, a material-informational entity whose boundaries are continually subject to construction and reconstruction. Man leaves room for the cyborg.

While having its antecedents in the literature of past centuries, contemporary literature has started to deal extensively with the various human and ethical facets of liminal situations, where the possibility that robots, cyborgs and clones might have a soul is suggested. Let us consider, *in primis*, Philip Dick's famous short story "Do Androids Dream of Electric Sheep?" (1968), later transformed into the equally famous movie by Ridley Scott, *Blade Runner*, which focuses on the suffering of the replicant for not being considered human. Also the computer mind in *2001: A Space Odyssey* is worth mentioning, where the computer protects its own existence, crying out its agony.

Kazuo Ishiguro's *Never Let Me Go* explicitly deals with human beings created as clones ready for explantation whenever it is necessary to create superior human beings, raising questions on the possible rights of a clone. We must also mention some women writers, such as the Canadian writer Margaret Atwood, who has dealt with bioethical issues in *The Handmaid's Tale* (1985), and, more recently in *Oryx and Crake* (2003), and with environmental

<sup>18</sup> G. Vattimo, *Tecnica ed esistenza* (Torino: Paravia, 1997); M. Nacci, *Pensare la tecnica. Un secolo di incomprensioni* (Bari: Laterza, 2000).

<sup>19</sup> See D. Carpi, "Literature and Science: the State of the Art in Contemporary Criticism", *Anglistik* 1 (2004): 51–61.

<sup>20</sup> K. Hayles, *How We Became Posthuman. Virtual Bodies in Cybernetics, Literature and Informatics* (Chicago and London: University of Chicago Press, 1999).

bioethics in *The Year of the Flood* (2009). The American novelist Jodi Picoult has frequently dealt with controversial issues such as euthanasia (*Mercy*, 1996), sterilization laws (*Second Glance*, 2003), and genetic planning (*My Sister's Keeper*, 2004). In *Correspondence* (1993), the first novel by British writer Sue Thomas, the protagonist gradually replaces her body parts with cybernetic prostheses, raising relevant questions about the status of the cyborg, a liminal being between man (or woman, as in this case) and machine. But many more examples could be added.

The aim of this book is to merge the two fields of bioethics and law (or biolaw) through the literary text, by taking into consideration the transformations of the concept of persona at which we have nowadays arrived. The new meaning of the term “persona” represents in fact the final point of a long-standing quest for man’s sense of his own being and human dignity, and of his capacity to live in social interrelations. Is it legitimate to distinguish between man and *homo sapiens*? We may start with the assertion that not every person is a human being, and not every human being is a person. In fact human embryos, mentally handicapped people, people in a coma are not considered *personae*, because they are not characterised by self-consciousness and self-sufficiency. The debates concerning artificial intelligence assert that in the future robots may be endowed with self-consciousness and in this case they will become legal persons and will have civil rights.

One of the definitions to start from is that “persona” is a being aware of his/her own existence, developing across time, and endowed with desires and projects for the future, also characterized by rationality and freedom.<sup>21</sup> “Persona” is self-conscious, rational, capable of moral activities, self-sufficient, endowed with a body, developing through time, interacting with his/her surroundings and human beings.<sup>22</sup>

When we come to a more Christian definition, the concept of “persona” is strictly connected to the idea of God; God is persona *par excellence*. Here the moral question is central to the definition of persona: man is a persona because he can distinguish between good and evil. The ambiguities that arise from the term persona (it can denote also a non-human being) can be avoided by using persona to mean human being alone.

In April 1997 the Council of Europe signed a convention for the protection of human rights and the dignity of the human being with regard to the application of biology and medicine: “Convention on Human Rights and Biomedicine”. One of the objectives is the “need to respect the human being

<sup>21</sup> S. Maffettone, *Valori Comuni* (Milano: Mondadori, 1989), 218.

<sup>22</sup> A. Pessina, *Bioetica. L'uomo sperimentale* (Milano: Bruno Mondadori, 1999), 86.



both as an individual and as a member of the human species and recognizing the importance of ensuring the dignity of the human being.”<sup>23</sup> Even in this Convention what emerged is the ambiguity between the so-called “human being” and the individual and it is only the individual that represents a juridical person.<sup>24</sup>

The human being, according to the Convention could be described as follows: a being that is human possesses, to the extent that it is human, an essential dignity and identity, because it is “human”, i.e. of the human species [...] an individual human being, which in turn ensures its inherent integrity, demanding respect and, thus, establishing subsequent fundamental rights and freedoms of the individual.<sup>25</sup>

“Persona” is also strictly connected with morality and politics. According to Paul Ricoeur, ethics has to do with a good life, while morality has to do with duty. The connection between morality and politics is in itself constitutive of a persona. The desire for a good life can be realised only if one is part of a political community. The necessity for the political stems from the fact that persona is constituted by his/her capacities and fields of power, attitudes that can develop only in a political context. The capable man can be recognised by his actions, is responsible for his actions, and bears their consequences on the level of penal law through punishment.<sup>26</sup> It is here that persona becomes a legal entity, responsible for his/her actions: it is here that justice steps in to regulate the relationship of persona with other persons, in connection with the idea of a good life (ethics), in a harmony of soul and politics. John Rawls asserts that justice is the first virtue of social institutions; it marks the connection between the social bond and the political bond within moral judgement.<sup>27</sup> Persona therefore becomes a political entity coinciding with the notion of citizen.

This volume presents a wide range of perspectives: from more methodological approaches which try to define what bioethics and biolaw are, to applied methodological approaches which illustrate the theoretical assumptions; from more legal aspects, analysing real cases that problematize the appli-

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<sup>23</sup> Council of Europe, 1997, 3.

<sup>24</sup> L. Reuter, “Human is What is Born of a Human: Personhood, Rationality, and an European Convention”, *Journal of Medicine and Philosophy* 25.2 (2000): 181–194, 185.

<sup>25</sup> Reuter, “Human is What is Born of a Human”, 186.

<sup>26</sup> P. Ricoeur, “La persona: sviluppo morale e politico” in V. Melchiorre, *L’idea di persona* (Milano: Pubblicazioni dell’Università Cattolica, Collana Vita e Pensiero, Milano, 1996), 163–173.

<sup>27</sup> J. Rawls, *A Theory of Justice* (Cambridge, Mass: Harvard University Press, 1971).



cation of the law, to more literary aspects, demonstrating the careful attention to these problems in literature. The volume ends with a very subtle interpretation of biolaw from the perspective of cartography.

JEANNE GAAKEER in “The Genetics of Law and Literature: What is Man?” discusses the use of forensic technology which in some way foretells the judicial invasion of the body. Law and forensics often collaborate nowadays in order to assess the identification of the defendant, but in these cases we are split between the bodily evidence the defendant gives and his own narrative of facts. We are caught between the clash of two opposing situations: the right to silence and the evidence given by scientific testing such as DNA which goes against the person’s right to silence. So who are we? Are we material objects embedded in persons? “If we are enhanced by technological possibilities what does this mean for the question of our identity?” Gaakeer wonders. Therefore the questions move on to how law itself is influenced by technology. Gaakeer tries to answer the questions she poses by analysing Michel Houellebecq’s novel *Atomised* where the central issue is whether the legal subject absorbs the human person. In fact new technologies seem to have resulted in their arbitrary incorporation into law. The philosophical core of Gaakeer’s essay is the analysis of Heidegger’s definition of technology which combines the meaning of “a means to an end” and “a human activity”. *Technē* means bringing forth, *poiēsis*, but it is also linked to *epistēmē*, knowing, revealing. But this also entails Aristotle’s distinction between theoretical and practical knowledge; thus modern sciences represent practical wisdom – the law is never general knowledge, but knowledge put into practice. From Heidegger’s definition we derive the idea that technology is connected to knowing, to bringing forth, not to manufacturing. So the question becomes: how far can we challenge forensic technology? And this is where we must have recourse to the humanities, because through literature we can reflect on man as a moral being. Gaakeer also quotes Martha Nussbaum who asserts that literary texts are indispensable to a philosophical inquiry in the ethical sphere; they serve as a moral engagement in forensic technological issues. Through art we can develop cognitive competencies. The same is true for bioethics: the importance of literature in this field was already highlighted by Stephen Toulmin as far back as 1982. Literature “can also help us understand how distortions can occur in our perception of forensic technology. We are very much inside the project of the invention of the human.”

IAN WARD in “Ghostly Presences: the Case of Bertha Mason” examines the accounts of sane people confined to lunatic asylums by revisiting the case of Bertha Mason in Charlotte Brontë’s novel *Jane Eyre*. Bertha Mason epitomizes the tensions concerning the problem of madness in the Mid-Nine-

teenth Century and of the jurisprudence it involved. On the one hand madness was considered a moral failing, thus taking on hues of cultural condemnation; on the other hand it was viewed in terms of physiology and psychology; but most of all it entailed a patriarchal perspective on woman and its repressive consequences. Since Charlotte Brontë herself suffered from bouts of depression and *anorexia nervosa*; as an author she behaved as a literary surgeon responsible for diagnosing and treating social ills. In fact, *Jane Eyre* is saturated with surgical and psychopathic metaphors. Another fundamental issue in the text is the issue of confinement and of the control of property by the father or husband. The presentation of Bertha Mason is very much in character with the stereotypes of the period when considering the phenomenon of “the madwoman in the attic”: sexually obsessed, violent, neurotic etc. The case of Bertha Mason chronicles the Victorian debates regarding insanity and the most appropriate strategies for its containment, while at the same time exemplifying the legal and medical discourses on insanity.

GARY WATT in “The Case of Conjoined Twins: Medical Dilemma in Law and Literature” speaks of the bio-ethical and legal problems of separating two conjoined twins, at the risk of killing one of the two. In the case of Mary and Jodie that Watt analyses, Mary was alive as a distinct personality but was not viable as a separate human being. That is to say that identity and personhood were at variance. To better explain the conundrum physicians and jurists had to face in this case of “conjoined twins”, Watt has recourse to some literary and philosophical examples. In Plato’s *Symposium* the character of Aristophanes employs the image of a conjoined Androgyny to explain the constant human quest for the ideal other; in *Twelfth Night or What You Will* Shakespeare presents the case of a reunion of twin brother and sister, with a direct allusion to Plato’s myth of the Androgyny. Watt also quotes the political metaphor of the union of the body politic and body poetic, very significant in the Renaissance, intended as a union of nations that are unlike. The metaphor is made even more evident in shields divided into quarters, as in the Royal Coat of Arms of England and Scotland United, quoted in *A Midsummer Night’s Dream*. Ruskin uses the metaphor of “reciprocal interference” to stress the political aspect of twin colours in some coats of arms: the metaphor of the importance of the strict link between “giving and receiving” comments upon the court’s choice to separate the conjoined twins by depicting Jodie as the life-support machine for Mary. Such a motivation is questioned and the essay closes with the query: can two be bound into one noble whole?

MICHELE SESTA in “*Vida interminable*. Patients and Family Members between the Right to Live and the Obligation not to Die” has recourse to Al-

lende's story *Vida interminable* in order to debate the problem of the ethical and juridical issues embedded in decisions to terminate life. That text narrates the story of two spouses and of their decision to die together. It is emblematic of the relationship between ethical evaluations and juridical regulations. Do physicians have to respect the patient's will to accelerate his/her death? The conflict between opposing juridical solutions mirrors the current bioethical debate.

JANE BRYAN in "Reading Beyond the Ratio: Searching for the Subtext in the 'Enforced Caesarean' Cases" takes into consideration some cases which came before the English courts in the 1990's concerning "enforced caesarean" cases. Such cases have to be treated beyond the *ratio*, that is, we must unearth the subtext of the judgment and try to read between the lines, as we would in the case of a literary text. Adopting Foucault's theory of the relationship between knowledge and power, Bryan explores some caesarean cases as power relations between the patient (the pregnant woman that refuses treatment) and the medical profession. The literary text she uses to enforce her legal views is Shakespeare's *A Midsummer Night's Dream*, where Theseus would like to force his daughter Hermia into a marriage she does not want. It is a clash between two different perspectives of what a legal persona is. According to Theseus Hermia belongs to him and he can order her against her will. According to Hermia herself, her freedom as a legal persona allows her to disobey her father. A similar situation is the one where a woman refuses caesarean treatment notwithstanding the danger facing her foetus. She does not respect the foetus' right to life. In the same way if the physician forces the woman into caesarean treatment not respecting her will he is not treating her as a legal persona.

ERIC RABKIN in "Science Fiction and Bioethical Knowledge" observes that bioethics concerns the questions of right and wrong in biotechnological matters and stresses the fact that the issue hinges on problems of knowing. He also arrives at some definitions that help us discern between ethics and bioethics: ethics, he claims, is mainly conservative: it speaks of the way we should behave according to some well-assessed rules and accepted behaviour. Therefore ethics is stabilizing, while biotechnology is inherently destabilizing because it promotes change. By taking into consideration a number of science fiction novels, such as *Victor Frankenstein*, for example, he ascertains that biotechnology deracinates the individual from his community: the loneliness of Mary Shelley's monster, the family-lessness of Dr. Moreau which brings him to conceive a very personal, anti-social sense of ethics, etc. Then Rabkin contrasts the figure of the scientist to that of the physician: if the scientist has a single-minded devotion to science, the physician must

function socially. At this point the problem of law sets in: in the face of the rapid transformations brought about by modern technology is informed consent possible? Can the law be large enough to include the technological future?

JOHN DRAKAKIS in “Shaping Personhood: Problems of Subjectivity and the Self in Shakespeare’s *The Taming of The Shrew* and *Much Ado About Nothing*” centres his discourse on Foucault’s principles concerning how the body should be disciplined, thus voicing the scientific processes that began to emerge with the Enlightenment. Drakakis stresses the fact that Foucault links bio-power with racism and with the sovereign capacity to kill. Bio-power and bio-ethics are entangled in various forms of the regulation of subjectivity that starts in the early modern period. Drakakis exemplifies his assumptions by taking into consideration the anonymous text of *The Taming of the Shrew* and comparing it to Shakespeare’s: both texts epitomize the indignity of having one’s body “read” and “interpreted” so as to “translate” it into a more acceptable form for society. The same happens in *Much Ado About Nothing*, where the containment of sexual energy presents the problematization of subjectivity and selfhood.

PATRIZIA NEROZZI BELLMAN in “On the Sciences of Man in Eighteenth Century English Literature and Art: Anatomizing the Self” affirms that the idea of the Self, which marks the transition to modernity, takes shape in the Eighteenth Century, where a host of disciplines such as literature, law, art and medicine, collaborated in creating the “science of man”. Moreover the construction of the first automata triggered the debate on what it is to be human that has become so central to the contemporary scene. The automaton becomes the great symbolic product setting itself at the intersection of many disciplines and anticipates the contemporary bioethical dilemmas. Nerozzi Bellman draws a brief diachronical description of the evolution of the concept of Self, focusing her attention on Locke’s *Essay Concerning Human Understanding* (1694). The budding spectacularity of science causes new questions regarding the constitution of personhood. Swift shows how fascinated the century is by measures and models and how it is the very uniqueness and consistency of the body that starts to fall apart. The frequent mechanical similes that we find in Swift’s work suggest the impact of mechanical improvements on culture.

DANIELA CARPI in “The Beyond: Science and Law in *The Island of Doctor Moreau* by H. G. Wells” asserts that Wells’ novel anticipates many of the legal problems that the latest scientific discoveries are posing in our century. There is a close fit between Wells’ specific criticisms of chimeras and the concerns that trouble medical ethicists today. What is mainly at stake is an

ever-changing concept of “persona” that is extended by the new cloning experiments and by the recourse to organ transplants. Wells’s novel actually speaks of vivisection, but the connection with genetic experiments is very strong. Such experiments, being extreme, undermine human beings’ uniqueness by suggesting the possibility of the serialization of beings. A new law is necessary to keep these new beings within society, or a new concept of society is required so as to include them.

YVONNE BEZRUCKA in “Bio-ethics *avant la lettre*: Nineteenth-Century Instances in Post-Darwinian Literature” highlights how the publication of Darwin’s *The Origin of Species* (1859) fostered an attention to people as ontological beings. The new scientific hypotheses which developed at the end of the Nineteenth Century and the related embodiment of man’s fears about the period’s pre-eminence of science disjointed from ethics in science fiction works led to a reconceptualization of human beings and identity. The debate between monogenesis and polygenesis in the origin of men, pseudo-sciences such as anthropometry, phrenology, and physiognomy, all focus on taxonomical human subdivisions and point to biological differences between peoples as innate differences. In such a hierarchical classification, somatic features become racial ones and support a specific body politics supporting the supremacy of a specific group of people. Eugenics, in particular, with its emphasis on selective breeding for the creation of an eu-genic (that is, good, pure) race is seen as an example of bioethics *avant la lettre*, an example of scientific manipulation on human life. As a reaction to such an attitude, the end of the century saw also a proliferation of works linking ethics to evolution, works aiming at safeguarding the principle of life as well as human bio-essence.

SILVIA MONTI in “Rhetoric, Lexicography and Bioethics in Shelley Jackson’s Hypertext *Patchwork Girl*” observes that some literary works such as *Frankenstein* seem to represent the testing ground for contemporary bioethical experiments. She notices that we cannot discern any absolute demarcations between bodily existence and computer simulation, between the human and non-human of the cyborg. Shelley Jackson’s novel *Patchwork Girl*, that appeared only in hypertextual form, clearly epitomizes the problems lying behind artificial creation and the potential of science to manipulate life forms. *Patchwork Girl* becomes the emblem of man’s estrangement from nature, hence the inherent sense of loss and frustration. In the text we often find a comparison between a literary composition and the human body: as the text is formed by different lexias, so the body is composed of different parts or organs. Monti analyses the bioethical implications of the novel from a linguistic perspective, noticing how rhetorical figures such as metaphors,

similes, and synecdoches express the hybridity of *Patchwork Girl*. For instance the generative metaphor represents a parallel between the character's body and the hypertext. The different body parts correspond to the letters of the alphabet that give form to the text. However, Monti concludes, as the biological body cannot be reduced to a mechanical organism made of dismountable parts, so we must be careful not to indulge in the excesses of artificial manipulation of man.

PAOLA CARBONE in "One Monstrous Ogre and One Patchwork Girl: Two Nameless Beings" states that a proper name affects the representation of the self, because it gives identity to a human being. A name not only identifies a child but it also gives him/her a status inside a summa of beliefs, symbols, rules so as to suggest his/her uniqueness. Therefore a name is a cognitive necessity. What happens in the case of hybrids such as Frankenstein or its later epitome Patchwork Girl? It is important to probe the extent to which we can consider a person a human being. All hybrids are crossbreeds of nature and are resistant to specific identification. Carbone compares the different sense of self that we discern in *Frankenstein* and in *Patchwork Girl*. In both cases we are in front of simulacra of human beings and of aesthetic constructions. The aesthetics of the monster demonstrates a transition towards a new awareness of the human standard. In the case of Frankenstein, Victor's manipulation of the monster's body condemns it to solitude, while in Patchwork Girl her multiple nature describes her as a harmonious compound of different pieces: she cannot feel lonely because she is the summa of many different persons that all coexist. The two characters are consequently "cultural outsiders" while remaining "juridical insiders". They represent a concept of person as a bio-cultural-legal complex. Frankenstein's monster interprets personhood as sameness, Patchwork Girl intends it as interacting patches.

PAUL CHEUNG in "A Serious Reading of Biotechnology in Japanese Graphic Novels: Weak Thoughts Regarding Ethics, Literature and Medicine" argues that in post-war Japanese manga, in particular in Tezuka's, the problem of the liminal situation between man and cyborg is analysed. Astro Boy and Mitchy, two characters, occasionally wonder about their human or non-human identity, developing a flair for the cautious assessment of science and technology. In particular biotechnology is taken into consideration. In *Astro Boy* and *Black Jack*, for instance, we find the practising of surgery without consent, and the disconcerting possibilities of the human, come to the forefront long before bioethics, becomes a distinct discourse. Cheung bases his critical analysis on Vattimo's concept of "weak thought", observing how the relationship between philosophy, literature, ethics and medicine has been a concern in medical education.

LAURA APOSTOLI in “Fulfilling Personhood at the Margins of Life: Anna Quindlen’s *One True Thing*” starts with some definitions of what a person is. In particular she centres her attention on the legal recognition of who counts as a person. She is aware of the fact that we have moved into a post-human stage of history (to use an assertion by Francis Fukuyama). The attainment of a biolegal guardianship able to deal with new forms of liminal beings is felt as an urgent need. Literature shares the idea that human beings are full entities formed by the harmonious sum of body and mind in a worthy life. Grand narratives support a rethinking of what constitutes a person both in moral and legal terms. Anna Quindlen’s novel is focused on the problem of euthanasia and on the question whether any person can act as a truly autonomous agent within contemporary society. Critical illness takes man to the margins of human experience, undermining the relationship between the body, the self, and the outer world. Quindlen’s passionate exploration of alienation and disability, of free will and self-determination, suggests that it is no longer possible to consider the mere value of life in itself, but that its quality and dignity should also be at the core of medical science and legal jurisprudence. The call for human dignity should represent the threshold between life and the desire for death.

VALENTINA ADAMI in “So What Is a Human Being?: an Exploration of Personhood through Jeanette Winterson’s *The Stone Gods*” stresses the fact that one of the central characters of the novel, Spike, is a female robot *sapiens*: should she be entitled to personhood and moral status? The central question in the novel is in fact the definition of humanness in the context of modern technology. Should we extend the concept of person beyond the realm of the human? Some of the properties that various philosophers have considered as necessary for the definition of person are: moral status, cognitive psychological properties (such as memory and thinking), sentience, and network of relations (either social or biological). Spike presents most of the listed characteristics thus offering a model for thinking about the liminal stages of human life.

SIDIA FIORATO “The Problem of Liminal Beings in Alasdair Gray’s *Poor Things*” focuses on the novel *Poor Things* by Alasdair Gray, a re-writing of Mary Shelley’s *Frankenstein* which analyzes the social and legal consequences of the creation of a human being. The protagonist, the skilled surgeon Godwin Baxter, manages to execute a whole body transplant/brain transplant and transfers into the head of a suicide pregnant woman the brain of her unborn child. The possibility for such an act of manipulation of human life is taken for granted, while the social and legal justification of the woman represents a more problematic issue. Medical science is frequently shown to



outpace the development of the laws regulating the legal persona, laws which do not apply in the case of liminal beings. Baxter himself, autonomously from the law, creates a legal persona for the woman as Bella Baxter, but then bends the law to his needs for the recognition of such a created identity. In this (deceitful) way, however, he renders his creature able to realize her own identity and engage in social relations. At the end of the novel a debate takes place about Bella's identity: is she to be considered the same person as the drowned woman and therefore be restituted to the previous life of that person in virtue of the principle of the continuation of the body, or is she a new person in virtue of the principle of psychological continuity as the criterion to determine a person's identity? In her autonomy as a social and legal being, Bella will decide for herself.

MARA LOGALDO in "Murderous Creators: How Far Can Authors Go?" observes a significant coincidence between the birth of bioethics and that of postmodernism. In fact the two positions present common assumptions. Logaldo in her critical analysis starts from Ortega y Gasset's humanistic beliefs concerning art, feeling, and the dehumanization of art. Both positions in fact review positivist epistemologies and a faith in progress; both question the central position of man in the universe; in both cases we may speak of a post-human attitude that questions man's physical and psychological integrity. Bioethics and postmodernism share a certain emphasis on self-awareness and on personhood as a narrative construction. The ambiguous relationship that links the two perspectives is centred on the loss of boundless faith both on the power of science (bioethics) and on the power of literature (postmodernism). However at the same time they are symmetrically opposed: if bioethics wishes to prevent any kind of unethical manipulation of man, literature uses characters as pawns on a chessboard and completely manipulates them.

CHIARA BATTISTI in "Fay Weldon's *The Lives and Loves of a She Devil*: Cosmetic Surgery as a Social Mask of Personhood" analyses Fay Weldon's novel as a source of inspiration for an alternative point of view. The text invites us to turn our considerations to cosmetic surgery from an extremely subjective level of judgement to a consideration on the relationship between cosmetic enhancement and identity; it allows us to expand the implications of the concept of persona. According to Battisti there is an aspect of Weldon's novel which offers a wholly innovative critical perspective by suggesting an interaction between cosmetic surgery, biolaw, and the concept of personhood. The recourse to cosmetic surgery represents a woman's voluntary act to control her identity. It is precisely the significant change in Ruth's (the main character) tone of voice that induces us to reflect upon the idea of the body as an



effective mask that protects and enables us to function better as a public person by endowing us with a voice and visibility. What Battisti therefore wishes to suggest is that the body itself may become a mask, which is moulded like a voluntary act or perceived as the obligation to ostentatiously represent one's self. Clothes, cosmetics, perfume, and cosmetic surgery further shape such a mask.

LEIF DAHLBERG in "Mapping the Law – Reading Old Maps of Strasbourg as Representing and Constituting Legal Spaces and Places" intends the term "bioethics" in a very particular way: for him the connection between law and cartography fosters a new understanding of the social and legal development of constitutional nation states. Maps represent the "bios", the life of a nation: the natural evolution of states is registered in maps that mark the development of legal space. Not only do maps depict legal facts (property, for instance), administrative and political borders, but they also shape and categorize public and private spaces. Maps therefore stand for the technological innovations that force the law to transform its concepts of legal persona: if technological innovations transform the classical idea of personhood, so maps form a (technological) discourse that marks an evolution of social power structure. Dahlberg's discourse is linked to Foucault's idea of biopolitics and biopower. The discussion of the relation between maps and law therefore also includes the concept of biopower-biopolitics, biolaw, and bioethics, and in particular the affinity and analogies that can be traced between how law constitutes legal space and legal conceptions of persons and the human body. Particular attention is devoted to the intimate association between the Roman household as a private space and the inviolability of the individual body. The private sphere (a territory within a territory) is constituted by a folding of the political body onto itself, creating a pocket simultaneously inside and outside. In this way the private sphere appears as a projection of the individual body onto the social space of the city.



*From a Legal Perspective*



## The Genetics of Law and Literature: What is Man?

From language to life is just four letters.<sup>1</sup>

### “Let Me Hear Your Body Talk”

“Everyone charged with a criminal offence shall be presumed innocent until proved guilty according to law”, says Article 6 of the European Convention for the Protection of Human Rights and Fundamental Freedoms, thus conferring the right to fair trial.<sup>2</sup> The article guarantees the right to silence, the

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<sup>1</sup> R. Powers, *The Gold Bug Variations* [1991], (London: Abacus, 1993), 8, from the opening “Aria” of the novel, entitled “The Perpetual Calendar”.

<sup>2</sup> For article 6 of the Convention in an easily accessible digital form, see <http://conventions.coe.int/Treaty/en/Treaties/Html/005.htm>: “Article 6 – Right to a fair trial: In the determination of his civil rights and obligations or of any criminal charge against him, everyone is entitled to a fair and public hearing within a reasonable time by an independent and impartial tribunal established by law. Judgment shall be pronounced publicly but the press and public may be excluded from all or part of the trial in the interests of morals, public order or national security in a democratic society, where the interests of juveniles or the protection of the private life of the parties so require, or to the extent strictly necessary in the opinion of the court in special circumstances where publicity would prejudice the interests of justice.

1. Everyone charged with a criminal offence shall be presumed innocent until proved guilty according to law.
2. Everyone charged with a criminal offence has the following minimum rights:
  - a. to be informed promptly, in a language which he understands and in detail, of the nature and cause of the accusation against him;
  - b. to have adequate time and facilities for the preparation of his defence;
  - c. to defend himself in person or through legal assistance of his own choosing or, if he has not sufficient means to pay for legal assistance, to be given it free when the interests of justice so require;
  - d. to examine or have examined witnesses against him and to obtain the attendance and examination of witnesses on his behalf under the same conditions as witnesses against him;
  - e. to have the free assistance of an interpreter if he cannot understand or speak the language used in court”.

right not to incriminate oneself that is also found in the Miranda rule in American law (*Miranda v. Arizona*, 384 U.S. 435, 1966) as the requirement that a person receive certain warnings with respect to his right to remain silent, one that is also standard fare in popular TV series when a suspect is being arrested. It rests on the following related classical principles found in Roman law: *nemo tenetur prodere se ipsum* (no one is obliged to incriminate himself), *nemo tenetur edere contra se* (no one is obliged to speak against himself) and *nemo tenetur se accusare* (no one is obliged to accuse himself). As a legal right it is indissolubly connected to the rule of law in a democratic society in the protection that it guarantees against unlawful intrusions in people's lives, and the respect for the presumption of innocence it voices.<sup>3</sup> As a prohibition against putting pressure upon a person suspected of having committed a crime, it refers to the deference in law for the defendant as a party in criminal proceedings, when it comes to respecting human dignity in the sense of both the free will and physical and mental integrity.

This heritage of Enlightenment thought on the subject of criminal law since Cesare Beccaria urged us to abolish physical torture (on the rack) as a method to obtain convictions<sup>4</sup> now seems to be under pressure given the development of modern technology when that is put to forensic use. For ages,

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<sup>3</sup> Since *Funke v. France*, EHRC, 25 February 1993, Series A 256-A, the standard that is set is, "[...] the right to silence and the right not to incriminate oneself are generally recognised international standards which lie at the heart of the notion of a fair procedure under Article 6". It is also found in the procedure of International Criminal Tribunal for the former Yugoslavia (art. 42 sub A sub iii ICTY), in that of the International Criminal Tribunal for Rwanda (art. 20 lid 4 sub g ICTR), and of the International Criminal Court in The Hague (art. 55 lid 1 sub a and b, and art. 55 lid 2 sub c ICCS). The case of *Saunders v. U.K.*, EHRC, 17 October 1996, Reports 1996-VI, is the most explicit example of the link with the presumption of innocence. See also for the recent developments with respect to fair trial, EHRC 27 November 2008 36391/02, *Salduz v. Turkey* and EHCR 11 December 2008, 4268/04, *Panovits v. Cyprus*, with, in both cases, a defendant who was a minor questioned by the police without legal counsel. For the right to fair trial for those detained at Guantanamo Bay, see *Hamdi v. Rumsfeld*, 542 US (2004), *Rumsfeld v. Padilla*, 542 US (2004), *Rasul v. Bush*, 542 US (2004), and *Hamdan v. Rumsfeld et alia*, US Supreme Court, nr.05-184 (29 June 2006).

<sup>4</sup> Cesare Bonesana, marchese Beccaria [Milan, 1738–1794], *Dei Delitti e delle Pene* [1764], *Of Crimes and Punishments* first English trans. E. D. Ingraham (Philadelphia: R. Bell, 1778). It should at once be noted, though, that Beccaria was still inclined to mete out heavier penalties to those who refused to talk at all. In contemporary Dutch law, the right to remain silent cannot be used against a defendant, but his refusal to give any reasonable explanation at all in the sense of a rebuttal of the charges against him, can be taken into consideration if there is enough other, causal evidence.

in Greek and Roman antiquity, the entrails of animals were thought to speak the truth about what had happened or would happen in the near future,<sup>5</sup> and for those of Christian denomination, the evidence of things not seen could be based on faith.<sup>6</sup> Ironically, given our Enlightenment values in criminal law, we now find ourselves in the situation that it does not matter any more if a defendant does not want to talk, because as lawyers we have the technological and legal means to say, as in Olivia Newton-John's 1981 number one hit song "Physical",<sup>7</sup> "Let's get physical, let me hear your body talk", and that literally, while at the same time, again as lawyers, we just have to believe what forensic sciences offer us because we lack the training and experience to fathom fully what is held before us as possible evidence.

If we ignore the actual findings or contributions from earlier body-oriented sciences such as craniology, physiognomy (starting with Aristotle and founded as a discipline by Lavater, 1741–1801), and its descendants phrenology (developed by Gall, 1758–1828) – remember the scene in *Jane Eyre* where Rochester holds up his forehead to Jane for her to "read"? – and criminal anthropology developed by Cesare Lombroso (1835–1909) which in a variety of manifestations all claimed that a person's character and disposition as well as inborn criminality can be judged from the features of his face and the outward appearance of his bodily characteristics,<sup>8</sup> the first "embodied" forensic standard for criminal investigation is the introduction, in the late nineteenth century, of fingerprint techniques.

In modern literature, the case in point exemplifying how fingerprints can be put to forensic use is Mark Twain's novel *The Tragedy of Pudd'nhead Wilson*. In it, fingerprints lead to the discovery of the murderer of the judge. The plot is fairly simple, at least in retrospect, given the contemporary state of the art in this technique. A changing of the clothes of the slave girl Roxy's son Chambers and the master's son Tom Driscoll when the two boys were still in the cradle has been the cause of their truly being exchanged. However, their fingerprints had been taken twice, before and after the exchange, and when

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<sup>5</sup> Not to mention the Roman "augur" and "auspex" who predicted the future from the flight of birds, hence the English verb "to augur", and the adverb "auspicious".

<sup>6</sup> *New Testament*, the "Epistle of Paul the Apostle to the Hebrews", 11:1: "Now Faith is the substance of things hoped for, the evidence of things not seen".

<sup>7</sup> "Physical" (1981), written by Steve Kipner and Terry Shaddick and performed by Olivia Newton-John.

<sup>8</sup> For an extended discussion of this topic, see my, "The art to find the mind's construction in the face": Lombroso's criminal anthropology and literature: the example of Zola, Dostoevsky, and Tolstoy", *Cardozo Law Review* 26 (2005): 2345–2377.

years later it comes to finding the murderer by means of the “bloodstained fingerprint upon the handle of the Indian knife”, the fingerprints of the accused become proof of his innocence. Not only is the real murderer found (Chambers who was raised as Tom) but the true identities of the boys are also revealed by means of the “strange discrepancies”<sup>9</sup> in their physiological autographs when matched against the fingerprints taken when they were babies. This usage of fingerprint techniques as a forensic method in Twain’s novel forecasts the juridical invasion of the body witnessed today with the proliferation of technological inventions facilitating forensic applications. When law and forensics cooperate to achieve the ultimate goal of identification or assessment of the defendant’s individual authenticity, how are we to negotiate the tension between the defendant’s narrative and the bodily evidence he “gives”?<sup>10</sup> There remains a dichotomy, a binary opposition that I think is all too lightly passed over in legal theory and legal practice when at the same time that the right to silence is established and guaranteed by statutes and treaties, technological developments such as the possibility of DNA testing help law to have the body talk and use genetic information in forensic settings in an effort to solve crimes.

## The Double Helix of DNA

Since Watson and Crick, inspired by Erwin Schrödinger’s 1944 *What is Life?*, discovered the double helix of deoxyribonucleic acid, or DNA for short,<sup>11</sup> technological developments have drastically augmented the possibilities of, and the perspectives on law. At the same time the meaning of genomic information has taken different shapes to such an extent that the witches’ lamentation in Shakespeare’s *Macbeth* also comes to mind: “Double, double, toil and trouble” (Act 4, sc.1, l.10).

<sup>9</sup> M. Twain, *The Tragedy of Pudd’nhead Wilson* (Cutchogue, New York: Buccaneer Books, 1976), 155, 163.

<sup>10</sup> It is interesting to note, as an aside, the comparison that can be made between the relation of the outcome of DNA research and a defendant’s narrative on the one hand, and the “history and physical” format of diagnosing illness in vogue for the doctor-patient consultation since the nineteenth century, and in use today in modern medicine, with a shift in the latter from reliance on the patient’s narrative to more reliance on the examination of the body (not to mention the nineteenth-century novelty of dissection after death also as a means to gain positive knowledge).

<sup>11</sup> See also J. D. Watson, *The Double Helix, a Personal Account of the Discovery of the Structure of DNA*, ed. G. Stent (London: Weidenfeld and Nicolson, 1981).



To start with the technical side of the matter: every DNA molecule consists of two chains of building blocks connected in a double helix. In the nucleus of each cell of any human being, DNA is distributed over the 46 chromosomes found in pairs. In each pair, one chromosome or DNA molecule comes from the father, the other from the mother. There are 22 pairs of autosomes, i.e. homologous chromosomes, and one pair of sex chromosomes, number 23, XY for the male, XX for the female. The autosomes or the chromosomes 1 to 22, consist of repetitive pieces of DNA usually four building blocks in length and always a combination of four chemicals called bases, represented by the four letters of the genetic code: A (adenine), T (thymine), C (cytosine) and G (guanine). This, in short, is the way in which genomic information is inscribed in the molecule called DNA. In each and every cell of an individual human being, the information in the form of DNA is identical.

The order of the A, T, C and G – combinations that form the human genome is determined by the Human Genome Project which held its first conference in 1986. The order of genetic letters can be compared to the order of letters in words: any change in the genetic lettering has an impact on the functioning of the human body much in the same way that a different combination of letters can lead to different words and as a consequence different meanings: bard is not the same as drab. Or, as Richard Powers would have it in a line of poetry that I offer as an epigraph to this article, “From language to life is just four letters”.

It should at once be noted that the human genes lie in only 2 % of DNA (and scattered over the chromosomes at that) that thus contains our genetic information and functions as our bodily code. As a method of identification, and, especially, of elimination of people as suspects, DNA fingerprinting (note the term!) was developed by Alec Jeffreys in 1985. The Pitchfork case (2 related murder cases in the U.K. in 1983 and 1985) was the first example in which DNA findings helped exonerate a suspect who had, falsely it turned out, confessed to one of the murders. Today, the FBI keeps a computerized databank of DNA samples (the Combined DNA Index System, or CODIS for short) that in 2003 already contained 1.7 million DNA profiles, to be used to convict or exonerate.<sup>12</sup>

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<sup>12</sup> For a fine example of the latter, see the (1992) Innocence Project initiated by Peter J. Neufeldt and Barry C. Scheck at Benjamin Cardozo School of Law (New York), with 173 prisoners helped between 1992 and 2006, <http://criminal.findlaw.com/crimes/more-criminal-topics/evidence-witnesses/dna-as-exoneration-tool.html>, accessed 1 March 2009. See also the specific reference to DNA evidence in the Brief for the Innocence Project, Inc., as *Amicus Curiae* supporting petitioner, in

In order to help solve a crime, the goal of the DNA scientist's research is to obtain a specific, individualized DNA profile from bodily matter found at the crime scene. The problem with that usually is that the amount of bodily matter found is very small and the DNA more often than not contaminated or degraded. What then is a DNA profile? There is no such thing as *the* DNA profile. What we call the DNA profile is an autosomal profile with 15 different DNA characteristics, internationally standardized, with an internationally standardized name per characteristic, and the way of denoting the variants for the same characteristic also internationally standardized. These places are called *loci*.<sup>13</sup> For forensic purposes, the problem most often to be solved is that of the mixture of profiles found in the body materials at the crime scene. Put differently, what if there is a mixture of *loci* at the *locus delicti*? How then can one be sure that there is not a mix-up in the suspects? Ironically, the only source of identification that remains unique is the human fingerprint, this much should be granted to Puddn'head Wilson, and think of the possibilities the fact that identical twins have the same DNA brings for planning the perfect crime (as long as you don't leave any fingerprints!).

What, then, are the other interesting shapes that DNA research has taken for law? For purposes of this article, I cannot exhaust the whole range of topics but will only mention a few examples in order to prepare the ground for a discussion of the problematics of (bio)technology in/for law. Think, firstly, of the impact of DNA research in the field of medicine. Today, variations in DNA that underlie specific diseases can be identified and the same goes for the effects of medicines. Gene therapy experiments are being done for diseases such as various forms of cancer, HIV, AIDS, Parkinson's disease, and cystic fibrosis. The good thing is of course that the hereditary component of diseases can now be the target so that treatment can become more

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*Paul Gregory House (petitioner) v. Ricky Bell (respondent)*, U.S. Supreme Court, 12 June 2006, no. 4–8990, and in Justice Alito's delivering of the opinion of the Court on the writ of certiorari in *Bobby Lee Holmes (petitioner) v. South Carolina*, 547 U.S. (2006).

- <sup>13</sup> Only the 2% of our DNA mentioned above is responsible for our hereditary traits such as the colour of our eyes. The other 98% does not encode, or should we say "codify", any hereditary traits. As a consequence, such specific areas of this DNA vary greatly from one person to another. These so-called hyper variable areas consist of repetitive strings of DNA and since the number of repetitions per person also differs from person to person, it is admirably suitable for linking a biological "trace" to an individual person. The place of such a hyper variable part on DNA is the *locus* and each *locus* is given a number (or rather, two numbers since chromosomes come in pairs) indicating the number of repetitions. *Loci* are therefore admirably suited as well to distinguish between people.

precise, with the ultimate goal of prevention before our eyes. Here too, the metaphor of the letters of a language is important to note. The order of the letters A, T, C, and G can undergo change at a single location in a genetic profile. This phenomenon is called single nucleotide polymorphism (SNP) and while this is usually biologically not important, comparable as it is to the way in which the difference between the American and British spelling of a word does not *per se* affect meaning, it can sometimes change the gene's functioning.<sup>14</sup> The bad thing is that such research can also be held against a person. What if you know that you are genetically predisposed to diabetes, and you eat and drink until you weigh too much? The legal and ethical component enters the fray, when it comes to laying the blame on someone, as happens these days for example in the context of health and life insurance – and remember that the concepts underlying insurance used to be collectivity and solidarity – even though in the United States a law, the Genetic Information Nondiscrimination Act of 2008, was enacted to prevent discrimination from health insurers and employers so that a person's DNA information will be protected, and even though both the European Union and UNESCO have implemented declarations on the human genome containing similar nondiscrimination rules, prohibiting any form of discrimination against a person on grounds of his genetic heritage. The US law, for example, does not cover life insurance and disability insurance, and neither does it offer protection on the level of the relation between (unhealthy) life style and genetic predisposition. Another issue with a strong ethical component is that of intellectual property when DNA findings are being made fit for the market economy.

Secondly, another legal issue involved is the racial aspect. DNA can help ascertain to which section of the population a suspect belongs in terms of race. But doesn't this going ethnic contain the risk of racial bias?<sup>15</sup> And that at a time when given our focus on equality we thought we had become post-racial in law? This is a question important not only for criminal law, but also for private law, as the 1993 Supreme Court of California case of *Johnson v. Calvert* (5 Cal. 4th 84, 851 P.2d 776) showed when a black surrogate mother tried

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<sup>14</sup> My view is informed here by the data provided at GWAS Overview (NHGRI), accessed 1 March 2009. Beyond the scope of this article, but too important nevertheless not to mention it, is the context of (threats of) terrorism in which biotechnology can become an instrument of destruction.

<sup>15</sup> An interesting discussion is provided by K. F. C. Holloway, "Private Bodies/Public Texts: Literature, Science, and States of Surveillance", *Literature and Medicine*, 26.1 (2007): 269–276, also accessible at [http://muse.jhu.edu/journals/literature\\_and\\_medicine/v026/26.1ho](http://muse.jhu.edu/journals/literature_and_medicine/v026/26.1ho).

to keep the white-looking child she had gestated for a white man and his Filipina wife. Fertility clinics may be sued for damages when *in vitro* fertilization results in “offspring of an unanticipated race”.<sup>16</sup>

Related to this, thirdly, is the issue of DNA results in paternity suits where the scientific research is done for the purpose of determining the identity of the actual father in custody.<sup>17</sup>

In migration law, too, there is the acute question of forensic technology. DNA tests are used when it comes to reuniting a migrant’s family, bone scans are done in order to find out a migrant’s age when it comes to preventing illegal immigration as do carbon dioxide detectors in another way when they are used to scan trucks or sea containers for the presence of people. Here too, the risk of racial discrimination looms large: biometrical data, such as iris scans and fingerprints are used to distinguish between migrants on the basis of race, skin colour and ethnic background. The innocent use of the iris scan at international airports may be beneficial for the ordinary traveler who can get through customs much faster but this technological advanced method has its drawback when it comes to the legal issue of privacy.

Yet another example of the influence of technology in and on law can be found on the interdisciplinary plane of law and the behavioral sciences. The findings in neuronal Darwinism in vogue in the behavioral sciences offer sound evidence that damage to the prefrontal cortex in first few years of our lives leads to a disturbance in social and moral behavior in adulthood. That is to say that our capabilities are always already restricted by the way our brain is being organized as we grow up. This would seem to imply that our thought on and specifically our usage of the concept of the free will, the very foundation of law in so many ways, should only deal with those of “healthy” brain.<sup>18</sup> Put differently, we should acknowledge that the concept of the free

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<sup>16</sup> See A. E. Weinbaum, “Racial Aura: Walter Benjamin and the Work of Art in a Biotechnological Age”, *Literature and Medicine* 26.1 (2007): 207–239, 212.

<sup>17</sup> Important here is DNA research of the mitochondrion. Apart from DNA in the nucleus of the cell, there is also DNA in the mitochondrion, the energy factory so to speak of the cell. Since both sons and daughters get their mitochondrial DNA from their mother, family members who are lineal descendants from the same mother have identical mitochondrial DNA. So Roman family lawyers were right when they claimed: *mater semper certa est*.

<sup>18</sup> J. Saramago, *All the Names*, trans. from the Portuguese by Margaret Jull Costa (New York and London: Harcourt Inc., 1999), 28: “Moreover, if we persist in stating that we are the ones who make our decisions, then we would have to begin to explain, to discern, to distinguish, who it is in us who made the decision and who subsequently carried it out, impossible operations by anyone’s standards. Strictly speaking, we do not make decisions, decisions make us”.

will is and has always been a rational construct from the start rather than the absolute we took it to be, and that there is now empirical medical evidence to the contrary, that we have nothing whatsoever resembling the free will as we have long conceived it to be. The results of recent investigations in the relationship of the amygdala and the prefrontal cortex when it comes to determining irrational behavior offer proof in this direction (the fact that the amygdala is full of testosterone receptors and larger in men than in women, is part of the explanation why men generally demonstrate more aggressive behaviour than women). When it comes to determining responsibility in criminal cases in which the defendant is thought to suffer from a mental illness, we then not only have to deal with the fact that the diagnosis by forensic psychiatrists is based on a list of what may be called a mental illness according to the DSM IV (the Diagnostic and Statistical Manual of Mental Disorders, and that list is the result of a policy of those working in the field), but also with the fact that volitional impairment is no longer what we thought it was, and as a consequence diminished responsibility in law, or accountability generally, may need rethinking.<sup>19</sup> The same would go for our definition of criminal behavior that has been a social definition for the past few decades, wary as we have long been in the wake of fascist eugenics of the idea that some criminal behavior may be inborn. Today, the possibility of in-born criminal behavior is accepted as a serious possibility, i.e. some forms of deviant behavior have more genetic and neurobiological than social roots. For example, persons with strong psychopathic tendency have little emotion or empathy towards others, have trouble adapting to changing circumstances, have an instrumental way of dealing with people in which their own motives are dominant and all this is strongly connected to their brain which functions differently from that of other people. So for some people the root of criminal behavior is to be looked for in their neurobiological set-up. This would also lead to a related issue: Can the brain sciences change “man” if neurobiology offers proof that the structure of the brain can indeed contain a “criminal” part? Today, experiments with electromagnetic stimuli of the brain, the so-called transcranial magnetic stimulation or TMS, are already being done in order to influence the activity of the brain.

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<sup>19</sup> Immanuel Kant in discussing guilt and punishment in the *Metaphysik der Sitten* (*Metaphysics of Morals*, 1797) already described forms of insanity in the context of what is now called diminished responsibility. See A. Mooij, “Kant on Criminal Law and Psychiatry”, *International Journal of Law and Psychiatry*, 21 (1998): 335–341.

## “Who Are You?”

So the question whether we have the same kind of body inevitably leads to the question whether we also have the same mind. If we return to the topic of DNA technology, these questions return with a vengeance on the subject of cloning. Elsewhere, in a discussion of Ishiguro's *Never Let Me Go*,<sup>20</sup> I have argued that the issue of cloning again brings to the fore the classical question of (the fiction of) legal personhood, the *persona juris* as an entity upon which the law confers rights and duties, i.e. “one who can act in law”.<sup>21</sup>

That question, in the legal and philosophical sense as far as I am concerned, should of course also be raised in the context of the other examples of technological influences on law mentioned above. While we admit that who or what is to count in law as an independent unit with rights and responsibilities is a legal construct, based on legal rulings that define the legal entity of subjecthood and status, the quest after our identity and with it, the quest after self-knowledge does not evaporate. Are we persons, minds, or human animals? Minds with bodies, or bodies with minds? Are we material objects in which persons are embedded or are we as persons, as sociology would often have it, not inherently bodily materials, but rather collective representations embedded in bodily materials? And when it comes to organ donation or organ harvesting as in Ishiguro's novel, are we tenants or freeholders of our own bodies?<sup>22</sup> Is consciousness the key to personhood?<sup>23</sup>

<sup>20</sup> See my “Ishiguro's Legal Chimera: *Never Let Me Go* and the Legal Fiction of Personhood”, *Polemos, Rivista semestrale di diritto, politica e cultura* 2 (2007): 119–132.

<sup>21</sup> For the concept of the persona as mask, see also J. T. Noonan jr., *Persons and Masks of the Law* [1976, 1<sup>st</sup> ed.] (Berkeley: University of California Press, 2002).

<sup>22</sup> For an early literary view on cloning, see Fay Weldon, *The Cloning of Joanna May* (Glasgow: Fontana/Collins, 1989), with a description of the cloning itself that is as hilarious as it is naïve: “While she was opened up we took away a nice ripe egg; whisked it down to the lab: shook it up and irritated it in amniotic fluid till the nucleus split, and split again, and then there were four” [45], and with the ethical-legal aspect described in doctor Holly's response to Joanna as, “I think ‘my babies’ is an unfortunate misnomer, Mrs May. I don't think ownership comes into it. Does a woman's egg, once fertilized, belong to her, or to the next generation?” [255–256], and, “These personal and ethical ramifications do keep emerging – one hardly thought about them at the time” [257]. The four clones, by the way, are all daughters, and Weldon has them all share their mother's love for cats (Joanna had “a little grey cat” [39], so have clone Jane [110], clone Julie [113], clone Gina [118], and clone Alice Morthampton [121]). Also of interest on the subject is P. Halewood, “On Commodification and Self-Ownership”, *Yale Journal of Law & Humanities* 20 (2008): 131–162.

<sup>23</sup> See Evelyn Fox Keller's discussion of the subject with a reference to *Star Trek* in