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EUROPEAN LEGAL INTEGRATION: THE NEW ITALIAN SCHOLARSHIP

Jean Monnet Working Paper 19/08

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**Legal Protection and Ethical Management of Genetic Databases:
Challenges of the European Process of Harmonization**

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European Legal Integration: The New Italian Scholarship (ELINIS)

This Working Paper is part of the ELINIS project: *European Legal Integration: The New Italian Scholarship* – Second Series. The project was launched in 2006 on the following premise. Even the most cursory examination of the major scientific literature in the field of European Integration, whether in English, French, German and even Spanish points to a dearth of references to Italian scholarship. In part the barrier is linguistic. If Italian scholars do not publish in English or French or German, they simply will not be read. In part, it is because of a certain image of Italian scholarship which ascribes to it a rigidity in the articulation of research questions, methodology employed and the presentation of research, a perception of rigidity which acts as an additional barrier even to those for whom Italian as such is not an obstacle. The ELINIS project, like its predecessor – the New German Scholarship (JMWP 3/2003) – is not simply about recent Italian research, though it is that too. It is also new in the substantive sense and helps explode some of the old stereotypes and demonstrates the freshness, creativity and indispensability of Italian legal scholarship in the field of European integration, an indispensability already familiar to those working in, say, Public International law.

The ELINIS project challenged some of the traditional conventions of academic organization. There was a “Call for Papers” and a selection committee which put together the program based on the intrinsic interest of each proposed paper as well as the desire to achieve intellectual synergies across papers and a rich diversity of the overall set of contributions. Likewise, formal hierarchies were overlooked: You will find papers from scholars at very different stages of their academic career. Likewise, the contributions to ELINIS were not limited to scholars in the field of “European Law.” Such a restriction would impose a debilitating limitation. In Italy as elsewhere, the expanding reach of European legal integration has forced scholars from other legal disciplines such as labor law, or administrative law etc. to meet the normative challenge and “reprocess” both precepts of their discipline as well as European law itself. Put differently, the field of “European Law” can no longer be limited to scholars whose primary interest is in the Institutions and legal order of the European Union.

The Second Series followed the same procedures with noticeable success of which this Paper is an illustration.

ELINIS was the result of a particularly felicitous cooperation between the Faculty of Law at the University of Trento – already distinguished for its non-parochial approach to legal scholarship and education and the Jean Monnet Center at NYU. Many contributed to the successful completion of ELINIS. The geniality and patience of Professor Roberto Toniatti and Dr Marco Dani were, however, the leaven which made this intellectual dough rise.

The Jean Monnet Center at NYU is hoping to co-sponsor similar Symposia and would welcome suggestions from institutions or centers in other Member States.

J.H.H. Weiler

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Legal Protection and Ethical Management of Genetic Databases: Challenges of the European Process of Harmonization

By Lucia Scaffardi*

Abstract

The issue of DNA database legislation is one of the most delicate challenges of legislative harmonization at the European level. The balance between the right to privacy, and the right to security and to fair trial is hard to be achieved and it depends a lot from the cultural, historical, philosophical and even religious background each country is characterised by. At present solutions widely differ in Europe.

The paper seeks to analyse the most important national legislations concerning the use of genetic profiling, underlining on the one hand the effective norms which characterise the most important and innovative national laws and regulations, and, on the other, the implications of those laws and regulations undermining the protection and enforcement of fundamental rights.

We will then discuss the European milestones and the process that led to the adoption of the Treaty of Prüm, from both a political and a legal perspective.

Finally, the paper will try to assess the process of harmonization, its challenges, the necessary mediations, and above all its relevant ethical, social, economic as well as legal implications.

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1. Introduction

Recent emergency legislation in several EU countries, and generally all over the world, as well as continuous developments in the scientific techniques and an improved use of genetic databases in both crime and terrorism prevention and trial proceedings¹, have made the issue of DNA database legislation one of the most sensitive challenges for harmonization of legislation at the European level.

At present, solutions differ widely in Europe: on the one hand there are countries, like Italy, where there is no official policy, while others, such as the United Kingdom, have developed detailed policies. In the countries having adopted specific legislation on the creation, use and management of genetic databases, the approaches are different, and depend on the cultural, historical, philosophical and juridical background characterising each country.

According to a cross-country Interpol survey worldwide in 2002, out of 179 countries, 77 use DNA analysis in policing, crime prevention and prosecution operations, 41 have an operational DNA database; and 33% of the surveyed states are planning to set up genetic

¹ The literature on these matters is extensive. Essential sources include C. MCCARTNEY, *Forensic Identification and Criminal Justice*, Willan Publishing, 2006; D. LAZER (ed.), *DNA and the criminal justice system: the technology of justice*, The MIT Press, 2004 ; J. E. McEWEN, *Storing Genes to Solve Crimes: Legal, Ethical, and Public Policy Considerations, in Stored tissue samples: ethical, legal, and public policy implications*, (B.F. Weir ed.), 1998, 311; L. KOBILINSKY, T. F. LIOTTI, J. OESER-SWEAT, *DNA Forensic and Legal Applications*, Wiley-Interscience, 2005

databases in the next few years². It is clear that the phenomenon is sizeable in quantitative terms. The reason for this is simple. Since 1985, when Dr. Alec Jeffreys of Leicester University discovered forensic DNA analysis³, the methodology has been extensively used and has given positive results in both identifying persons involved in serious offences⁴ and in overturning the convictions of people wrongfully convicted⁵.

At present, it is (often) possible for experts to gather samples of biological material from the scene of a crime and to use them to obtain genetic profiles. Genetic profiles can, then, be very useful to identify suspects by comparing these stains against the profiles stored in a database⁶. This process is called genetic fingerprinting, because of the analogy with the traditional use of normal fingerprints⁷.

Needless to say, genetic fingerprinting presents numerous advantages, since the DNA profile cannot be altered and can be obtained from every type of human tissue. The most efficient way of comparing biological samples from a crime scene is to use a genetic database of human samples. By doing so, crimes can be solved and criminal behavior can be prevented.⁸ Investigators can map the genetic make-up of suspects and swiftly identify the offender.

Clearly, the establishment and use of forensic databases may have several beneficial effects, including greater investigative efficiency in terms of savings of time, human and financial resources⁹.

Furthermore, forensic genetic databases permit, *inter alia*:

² INTERPOL DNA UNIT (2002), *Global DNA database inquiry, Results and Analysis*, www.interpol.int

³ A. J. JEFFREYS V. WILSON S.L. THEIN, *Individual-Specific 'Fingerprints' of Human DNA*, *Nature* 316, 1985, 76-79

⁴ The first person indicted and convicted in Great Britain using forensic DNA evidence was Mr. Pitchfork in 1987. For the story of this scientific innovation and its investigative application see R. WILLIAMS JOHNSON, *Genetic Policing The use of DNA in criminal investigations*, Willan publishing, 2008, 37 ss

⁵ James Griffith and Susan Leclair described an historical moment as follows: "In 2004 at the 50th anniversary of the discovery of the structure of DNA, one of the speakers at a "black-tie" gala at the Waldorf Astoria in New York City was Marvin Anderson. After having served 15 years of a 210-year sentence for a crime that he did not commit, he became one of only 99 people to have been proven innocent through the use of DNA technology. As he walked off the stage, he embraced Dr. Alec Jeffreys, the man who discovered forensic DNA analysis". J. T. GRIFFITH S. L. LECLAIR, *Dna In The Courtroom: The 21st Century Begins, in Trends And Issues In Scientific Evidence*, Southern New England Roundtable Symposium Law Journal, 2006, 62 See also about this, The Innocence Project, at www.innocenceproject.com/know (last visited August 28, 2008)

⁶ V. KAYE D.H., *Behavioral genetics research and criminal DNA database*, in *Law and contemporary problems*, Vol. 69/2006, 285

⁷ For a scientific and precise reconstruction of the subject see J. T. GRIFFITH S. L. LECLAIR, *supra* note 5

⁸ See A. ROBERTS N. TAYLOR, (2005), *Privacy and the DNA database*, in *E.H.R.L.R Issue* 4, 374

⁹ Regarding cost, some authors even claim that the "social cost of crime" could be further reduced by a DNA database of the whole population. See M.A. ROTHSTEIN, M.K. TALBOTT, *The Expanding Use of DNA in Law Enforcement: What Role for Privacy?*, in *Journal of law, medicine & ethics*, 2006, 154, but about this controversial issue see *infra* note 127

- The identification of persons through comparative analysis of DNA profiles obtained from biological material from the scene of crime, in order to identify the offender and/or to link the crime to others committed by the same person, as well as to link different scenes of crime;
- The solution of unsolved crimes, even if crime has long remained unsolved;
- The identification of disappeared or unidentified persons. This is an important opportunity in the case of war, environmental or other disasters¹⁰;
- The exchange of data between Police and/or security forces in different countries, useful in those cases where crime is committed by a person of a different nationality.

However, there are many other implications of genetic databases that pose ethical and regulatory issues. Sometimes they are used to identify suspects through the profiles of close relatives who are included in the database (this procedure is named familial searching)¹¹; sometimes other sectors involved in databank expansion can be medical research, diagnosis and disease prevention, workers' safety and protection, personal insurance, etc. Another relevant question is how the government might use genetic information in the future¹². In other words, in every field where genetic data can prove to be useful, there is also a risk that confidential information may be used for purposes different from that it was acquired for. This misuse can even entail serious discrimination.¹³

This is just to explain briefly why the whole issue of genetic databases and its implications cannot be simply solved in terms of right and guarantee of privacy. It involves much broader ethical and legal perspectives. Some specific aspects, such as the intrusion that DNA

¹⁰ The reference is to the World Trade Center disaster, but also more generally to airline crashes, tsunamis, or genocide. DNA databases also play a very important role in identifying people involved in national and global conflicts like the Argentinean "Dirty War", Yugoslavian "Ethnic Cleansing" or the Rwandan Civil War

¹¹ See *infra* part 3

¹² Barry Steinhardt, Director of the Technology and Liberty Program at the American Civil Liberties Union (ACLU), significantly said about DNA database programs: "While a DNA data bank for criminal identification purposes may have legitimate uses, I am skeptical that we can hold the line and ward off the temptation to expand its use to non-forensic purposes". And in the same speech he gave an interesting example of the unreasonable use of census records in the past. In fact, during World War II, despite their original, benign, and simply statistical purposes, these records were used to confine Japanese Americans in internment camps. Testimony of Barry Steinhardt, Associate Director, American Civil Liberties Union, Washington, D.C., in *Speeding DNA Evidence Processing: Hearing on H.R. 2810, H.R. 3087, and H.R. 3375 Before the Subcommittee on Crime of the H. Comm. on the Judiciary, 106th Cong., 2000 WL 342540 (2000)* available also at http://commdocs.house.gov/committees/judiciary/hju65302.000/hju65302_0.htm

¹³ S. RODOTÀ, *La vita e le regole. Tra diritto e non diritto*, Milano, 2006, 198

databases will pose at the family and community group level¹⁴ are now starting to be studied and analysed in depth¹⁵. There is an urgent need for comprehensive reflection on whether new legislation is necessary, and what type. Any new law or regulation will need to take in consideration on the one hand the important scientific and technical developments, and, on the other, the values and ethic principles that lie at the basis of the juridical systems.

Despite several international declarations¹⁶ and important documents at regional level like the Convention on Human Rights and Biomedicine adopted in Oviedo by the Council of Europe in 1997 and the Additional Protocol to the Convention on Human Rights and Biomedicine concerning Biomedical Research¹⁷, as well as relevant resolutions of the EU Parliament¹⁸, the complex interrelation between the creation and use of DNA databases within states and exchange between them remains highly problematic.

In Europe, most EU member states have both national genetic databases and national laws governing their institution, maintenance and use. But only recently have EU member states started to question the diversification implied by national laws, and to consider possible joint solutions. The Treaty of Prüm, signed in 2005 by seven member states - Germany, Spain, France, Austria, Belgium, the Netherlands and Luxembourg -, opened the way for an EU harmonized system of collection, access and exchange for extremely personal data such as DNA and fingerprints.

Given this background, this working paper seeks first to analyse the most important national EU member states legislation concerning the use of genetic profiling as an instrument of crime prevention and protection of public safety. We intend to underline on the one hand the effective norms which characterise the most important and innovative national laws and regulations, and, on the other hand, the implications of those laws and regulations that undermine the protection and enforcement of fundamental rights.

Second, we will discuss the European milestones on this matter, and the process that led to the adoption of the Treaty of Prüm, from both a political and a legal perspective. We examine

¹⁴ E.g. Nachama Wilker emphasizes “to identify genes associated with criminal behavior (...) could be used as a new biological justification to bolster racist and ethnic prejudice”, N. L. WILKER et al., *DNA Data Banking and the Public Interest*, in *DNA on trial: genetic information and criminal justice*, Paul R. Billings ed., 1992, 141

¹⁵ See e. g. K. ROTHENBERG A. WANG, *The impact of behavioral genetics on the criminal law: the scarlet gene: behavioral genetics, criminal law, and racial and ethnic stigma*, Law and Contemporary Problems, 2006, 343, 365

¹⁶ See infra Section 4

¹⁷ Council of Europe, Strasbourg 2004

¹⁸ See infra Section 4

the dark sides as well as the innovations. Finally, the paper will question if any EU harmonization is possible, given the particularly sensitive nature of the subject.

2. Creation and developments of laws regarding genetic databases for legal purposes: England and Scotland, a particular asymmetry concerning the protection of rights

The legal framework, which is to be described, aims at identifying different normative choices made by legal orders regarding the creation of genetic databases. As we will show, in some European countries, specific laws on genetic databases for legal purposes simply do not exist (for example, Italy, Malta, Greece and Portugal). This despite the fact that the Resolution of the European Council that encourages the institution of national databases for possible circulation of collected data goes back to 1997.

Among the countries that have specific legislation on DNA databases, Great Britain is the most interesting case to be analyzed. The first specific law approved in England is the *Police and Criminal Evidence Act* (PCEA). Since 1984, it has provided for a first code of conduct and proceedings to be followed by the police in case of arrest during an investigation of a suspected person. Regarding biological samples, the law specified that there was a difference between: “intimate sample” and “non-intimate sample”¹⁹. *Non-intimate* samples could be taken without the consent of the arrested person if it was authorized by a policeman with a rank non-inferior to commissioner, who reasonably suspected this person involvement “in a serious stoppable offence”. On the contrary, “intimate samples” required the consent of the arrested person. Concerning the storage and possible destruction of the data once the investigation was over, it was significantly established that neither fingerprints nor different types of samples could be kept if the suspect was found to have no connection to the crime, non-punishable, or if he/she was acquitted. This meant that the only data which could be kept was that from persons convicted and sentenced.

¹⁹ Section 65 of the *Police and Criminal Evidence Act* 1984 established a first but essential distinction: “Intimate sample means: a sample of blood, semen or any other tissue fluid, urine, saliva or pubic hair or a swab taken from a person’s body orifice.(...) Non-intimate sample means: a sample of hair other than a pubic hair, a sample taken from nail or from under a nail, a swab taken from any part of a person’s body other than a body orifice and a footprint or a similar impression of any part of a person’s body other than a part of his hand”

However, since 1984 in Great Britain, as in many other countries, there have been important developments in the use of DNA as a forensic investigation instrument²⁰. It was Great Britain, as always the pioneer in this field²¹, which considered the possible use of new technologies to fight crime and, in particular, sexual assaults or homicides. It was a *Royal Commission* that dealt with the issue. The Commission final report²² in 1993, strongly recommended the setting up of a “DNA database” in order to provide information to help the police in criminal investigations, but also to avoid legal mistakes towards innocent persons, wrongfully convicted. Although these recommendations were not binding, in 1994 the *Criminal Justice and Public Order Act*, which followed many of the hints offered by the *Commission*, was issued. The Act extended the field of samples, modifying the initial definition between *intimate* and *non intimate samples*.

In particular, saliva (an essential element to determine some DNA profiles) was inserted in the category of non intimate samples²³. Moreover, *section 63* gave the possibility of obtaining the samples’ analysis not only for more severe crimes (*serious offences*), but also in case of *recordable offences*. Therefore, the British DNA database expanded a lot²⁴. Being understood that samples taken from guilty people were always kept, it was also established that samples taken from suspects during an investigation could be kept. This certainly opened the way towards a universal model of a genetic database²⁵. However, the Act did not modify the assumption that the very same data could not be used against the same person for further investigations. Moreover it guaranteed the right to ask for their destruction.

Briefly, then, the 1994 law allowed the collection, even without consent, of biological non intimate samples (to which saliva and mouth mucous membrane were added), even in the case of minor crimes. In 1995, with the circular of *Home Office* n° 16/95²⁶ the creation of a *National DNA Database* (NDNAD) by the *Forensics Science Service* (FSS)²⁷ was announced.

²⁰ See L. GAROFANO, *Le nuove tecniche d'indagine e la prova scientifica*, in AA.VV., *Il nucleo familiare alle radici del crimine*, (M. Barillaro ed.), Milano, 2005, 51 ss

²¹ See supra note 3 and 4

²² *Recommendations of the Royal Commission on Criminal Justice*, 1993

²³ *Section 65 Criminal Justice and Public Order Act 1994*

²⁴ See J.A. ANDREWS M. HIRST, *On Criminal Evidence*, 3^a ed., London, 1997, 353

²⁵ Concerning the difference amongst DNA databases’ models, see: L. PICOTTI, *Trattamento dei dati genetici, violazioni della privacy e tutela dei diritti fondamentali nel diritto penale*, in *Riv. Inf. e informatica*, 4/5, 2003, 67

²⁶ See *The National DNA Database Annual Report 2004-2005*, 6

²⁷ For an interesting comparison between Great Britain and USA genetic databases, see: D. CARLING, *Less Privacy Please, We're British: Investigating Crime with DNA in the U.K. and the U.S.*, 31 *Hastings Int'l & Com L. Rev.*,

This legislative evolution gives rise to a consistent limitation of British citizens' rights based on a general policy of public safety safeguards²⁸. In just a few years, the fight against terrorism was to increase the importance of security legislation to the detriments of citizens' rights.²⁹ The *Criminal Justice and Police Act* of 2001 marked an important step forward as it stated that non intimate samples could be taken without the person's consent. Moreover, the Act provided for a significant enlargement of the category of persons that could authorize this procedure, establishing that, when necessary, even a police inspector could do so. The law established the possibility of retaining samples in the database for future investigations too, and thus revised the 1994 law³⁰. In fact, the Act affirmed that: "even if declared not guilty they could be used for future aims of prevention and individuation of crimes, for investigations of crimes or for the beginning of an action" (National DNA Database, *The National DNA Database Annual Report 2004-2005*, 6). Interestingly enough, the effectiveness of the 2001 Act was not limited *pro futuro*, but had important retroactive effects, as it authorized the maintenance of all DNA samples and profiles taken and not destroyed before 2001³¹.

Another relevant normative document is the *Criminal Justice Act* 2003 which governs the fight against drugs among young people. In this document, anti-drug tests are authorized on persons below 18 years (age between 14 and 17 years) when they are involved in crime of drug sale and consumption³². Until this *nulla quaestio* but, according to the new law, the samples

2008, 487. In particular, Carling underlines two notable differences between the United States and United Kingdom programs: first the collection of DNA from people who have been arrested but not convicted, and second the technique of looking for offender's relatives in the database. "Clearly a large factor in these differing practices is the Fourth Amendment to the U.S. Constitution. The British are legislating DNA collection programs without a comparable constitutional constraint. But the Fourth Amendment does not fully explain the difference. There has never been a U.S. court case on familial searching, let alone a case that held that it violates the Fourth Amendment. Arrestee sampling is just starting to be discussed in the courts, but several states are already doing it successfully. Nonetheless, most states are not using either of these practices. While this may be attributable in part to disparities of state resources, it may also reflect the fundamentally different understanding of privacy in the United States and the United Kingdom. Before looking at our understandings of privacy, it is worth considering what about DNA databases makes privacy a controversial issue" (500)

²⁸ D. FELDAMAN, *Civil Liberties and Human Rights in England and Wales*, Oxford University Press, 2002, 360

²⁹ For the anti-terrorism legislation in UK, see: LEYLAND, *Lotta al terrorismo e tutela dei diritti individuali nel Regno Unito*, in *Democrazia e terrorismo*, T. GROPPI (ed.), Napoli, 2006, 241 ss

³⁰ See MURPHY, *Criminal practice*, Oxford, 2004, 2376

³¹ In fact paragraph 6 of Section 82 establishes that : *The fingerprints, samples and information the retention and use of which, in accordance with the amended provisions of section 64 of the 1984 Act, is authorised by this section include (a) fingerprints and samples the destruction of which should have taken place before the commencement of this section, but did not; and (b) information deriving from any such samples or from samples the destruction of which did take place (...) before the commencement of this section*

³² See also other cases established in the previous *Measures of Drugs Act* 1971

taken from minors no longer require the consent of an adult, as it had been laid down by the PCEA of 1984.

In addition to evidence from convicted criminals and suspects, the British DNA database was also open to volunteers. Although characterized by the consensual nature of sampling, volunteer data nonetheless presents problems vis-à-vis the protection of individual rights. In fact, data taken from volunteers is not governed by any specific law on retention or use, and even more critically, the consent given by volunteers is at present irrevocable³³.

For this reason it is easy to see why Great Britain is at the moment the country that has the biggest *DNA database* in the world. According to data given by the *Parliamentary Office of Science and Technology* in December 2005 the total number of persons represented in the NDNAD was about 3.450.000³⁴ of whom: 139.463 DNA samples of people never charged with any crime³⁵ and 685.748 DNA samples belonging to children/minors of age between 10 and 17 years, 24.000 of which have never committed any crime³⁶. As of 31 October 2007, the data includes a total of 4.188.033 profiles³⁷ showing a significant increase in the last two years.

In the British context, Scotland deserves a more in depth analysis because it presents significant and characteristic elements and it becomes a paradigmatic example of normative gaps that the EU harmonization could fill.

The differences between Scottish, and English and Welsh legislation are due to the recommendations of two different Commissions, the *Royal Commission on Criminal Justice in England and Wales* of 1993³⁸ and the *Scottish Law Commission* which published its own final report some years before, in 1989³⁹. Both Commissions in their reports underlined the fundamental role of the use of new technologies to solve crimes for innocent persons who have been investigated. But the Commissions recommended a correct balance between the safeguarding of rights and the fight against crime, for which genetic databases are an essential

³³ On this controversial point, see: R. WILLIAMS JOHNSON, *supra* note 4

³⁴ Parliamentary Office of Science and Technology, *Postnote, The national DNA database*, number 258, February 2006, 1

³⁵ 15.116 belong to the “category” of those persons who have given an explicit consent for the collection of their own data

³⁶ Home Office, *DNA Expansion Programme 2000-2005: Reporting achievement*, Forensics Science and Pathology Unit at <http://police.homeoffice.gov.uk/news-and-publications/publication/operational-policing/DNAExpansion.pdf>

³⁷ *House of Commons Hansard Written Answers*, 2007: Column 761W

³⁸ ROYAL COMMISSION ON CRIMINAL JUSTICE, Cm 2263, London, 1993, HMSO

³⁹ SCOTTISH LAW COMMISSION, *Report on Evidence: Blood Group Tests, DNA Tests and Related Matters*, Edinburgh, 1989, HMSO

instrument. In real terms, it was necessary to reflect on the extension of police powers regarding biological sampling and the guarantees given to the individual citizen subject to the procedure practise. In 1995, following the recommendations of the *Scottish Law Commission*, Scotland approved a law⁴⁰, which established how the collection of biological samples during the investigations was possible (with the consequent creation of a database). The maintenance of this data in a DNA database (PFSLD) was limited and samples “*shall be destroyed as soon as possible following a decision not to institute criminal proceedings against the person or on the conclusion of such proceedings*”⁴¹. Significantly, in May 2006 the Scottish Parliament did not approve a bill which would have authorized the police to permanently retain all biological samples and the relative profiles taken from arrested persons, even if subsequently declared innocent or absolved.

So a singular legislative asymmetry was created between DNA databases⁴². Although it was true that legal links between the two databases exist and they oblige Scotland to “export” monthly the data from its own DNA database to the national NDNAD, according to the Scottish legislation, these samples, as well as the corresponding biological data, must be destroyed by both databases when people are declared innocent or they are not prosecuted⁴³.

Clearly Great Britain has different levels of safeguarding fundamental rights merely on the basis of residence. In fact, British citizens are subject to different types of treatment of their own genetic samples depending on whether they are arrested in England or in Scotland, so that there is a sort of *regional lottery*, which sees diversified treatment of personal data within the same country.

In addition, the present use of data in England and Wales could create a division between people involved in criminal investigation. A division no longer based on the presumption of innocence as currently is the case in many European Countries, but rather based on “innocent people”, “guilty people” and a third and confused category of “*criminal suspects*”⁴⁴, or people

⁴⁰ *Criminal Procedure (Scotland) Act 1995*

⁴¹ Section 18.3, *Criminal Procedure (Scotland) Act 1995*

⁴² For this particular and diversified report see: JOHNSON R. WILLIAMS, *DNA and Crime Investigation: Scotland and the 'UK National DNA Database'*, in *Scottish Journal of Criminal Justice*, 10/2004, 71 ss

⁴³ On this aspect, it is interesting to mention the findings of GeneWatch UK, a *no-profit* organisation with the mission of overseeing the application of genetic engineering techniques in the respect of fundamental Rights. Gene Watch UK Briefing, *The DNA Expansion Programme: reporting real achievement?*, February 2006 and *National DNA Database, The National DNA Database Annual Report 2003-2004*

⁴⁴ The definition is borrowed from JOHNSON AND R. WILLIAMS, *Forensic DNA databasing: a European perspective Interim report*, University of Durham, 2005, 92

who, although they haven't committed any crime, are however present in databases for legal purposes and whose data will be "sounded" in any future investigation. What the U.K. is aiming at is the creation of a so-called universal database in which the purpose of genetic registration is not only identifying a suspect during a penal investigation, but also inserting all possible data, so that "virtual" suspects in a crime⁴⁵ can also be identified.

3. Laws regarding DNA databases in other European Countries. Italy as an emblematic case of a lack of specific laws

At present, current technology allows several indicators of biological family relations, genetic defects, predisposition to diseases and even the propensity to engage in certain behaviours⁴⁶ to be derived from biological samples. Nonetheless, the use of DNA for investigative purposes is limited to specific numeric DNA sequences through the so-called "alleles"⁴⁷, that do not supply any biological information on the person, but only his/her identification. In addition to the so-called "dumb sequences", several databases may store even the biological samples, which hold any possible information concerning the individual. Here we find a different kind of problem concerning the storage of biological samples, which are entrusted to public institutions, specifically identified by the law⁴⁸. The fact that several countries have decided to keep the biological samples for years has to be studied and discussed with a

⁴⁵ For a critical review of existing European DNA databases, see: C. FANUELE, *Un archivio centrale per i profili del Dna nella prospettiva di un "diritto comune" europeo*, in *Dir. Pen. e Processo*, n.3/2007, 385

⁴⁶ W. WAYT GIBBS, *The Unseen Genome: Gems Among the Junk*, *Scientific American*, Nov. 2003, at 29

⁴⁷ "In the 1990s, scientists made significant advancements in their understanding of the human genome. Now we are aware of specific regions in the genome which can be accurately used as personal identifiers, analogous in some ways to a fingerprint. These locations in the genome, called loci, function as markers where genetic samples can be compared against each other. At these markers we have DNA sequences called alleles. Because people inherit genetic variations, the length or sequence of a person's alleles at these markers will vary. The specific length or sequence of an allele is represented by a number, and these numbers are stored in databases for comparisons. When investigators compare DNA samples from a crime scene against a database, they are comparing numbers that represent the alleles present at these markers. The significance of a match depends in part on how many markers are being compared. The FBI compares alleles at thirteen markers, while the British police make comparisons at ten". Duncan Carling *supra* note 27 at 487

⁴⁸ The issue of the institution which has the responsibility for the storage of the profile and/or the biological sample is hotly debated. This aspect exceeds the scope of the paper, but a clear distinction between the institution keeping of the alphanumeric identifying code and institution retaining the biological sample seems to be highly desirable. See *contra* New Zealand which is the only country in the world in which the custodian of the database is a private entity: The Institute of Environmental Science and Research

specific approach⁴⁹. We are now discussing future, hypothetical scenarios, but we cannot exclude that there will be major problems caused by the discriminatory or even economic use of data.

For this reason, the essential points in the legislation concerning the creation of genetic databases for investigative purposes are: *in primis* the criteria of taking samples, then the procedures and the time frame for their retention and/or removal from the database.

Following this, we can analyse European DNA Database legislation through the three most critical aspects of creation and maintenance: data entry criteria; removal criteria; and sample retention. Concerning the first aspect, biological samples can be taken and held from convicted offenders and suspects for certain crimes. Some countries permit the insertion of profiles from all convicted offenders (Austria), but more frequently the type of offence (usually serious offences, such as Belgium, France and Germany) or length of sentence (Holland) are considered⁵⁰. So the position of England and Wales (*amplius* Great Britain) appears to be isolated in Europe⁵¹, where other countries have legislation, as in France, which does not allow the police to take samples without the consent of the interested person. In other countries it is possible to take samples only on a judge's authorization (for example, Holland, Luxembourg and Malta). In other areas of jurisdiction, where a reserved jurisdiction is not laid down and the police can take samples, the different legislations specify the crimes, usually serious ones, for which this procedure is allowed.

The second issue is the criteria for profiles removal from the database. Generally, profiles of convicted offenders are stored for a long period, up to 40 years after the conviction (Denmark, France, Germany) or 10 years after the death of the convicted person (Belgium and Finland). Profiles of suspects are expunged if the suspect is acquitted or not prosecuted (Austria).

⁴⁹ "The uses to which samples can be put subsequent to a usable database profile being developed is rarely so specifically regulated. Except for the small minority of countries that require the relatively expeditious destruction of samples once profiling has been performed and checked, countries generally fail to identify what uses may or may not be made of biological material. Given the potential uses, both appropriate or not, legal and illegal, it is surprising how little attention has been paid globally, to the issue of the non-forensic uses of forensic samples". C.H. Asplen, *The Non-Forensic Use of Biological Samples Taken for Forensic Purposes: An International Perspective*, American Society of Law Medicine & Ethics Report, 2006

⁵⁰ As we maintained above, it is interesting to see, in the most recent legislations (for example, the Danish legislation of 2000), the role given to the collection of these profiles also in order to identify missing persons. See *supra* note 10

⁵¹ For a broader perspective, see the studies of the European Network of Forensic Science Institutes, DNA Working Group, *Report on ENFSI Member Countries' DNA Database Legislation Survey*, prepared by C.H. Asplen, Smith Alling Lane, PC, 2006

Thirdly, concerning the duration of sample retention: in some countries samples are destroyed once the convicted offender profile (alleles) has been extracted (Belgium), but they are often stored under the same regulations governing genetic profiles. Austria has made an interesting legislative choice: although since 1997 organic samples of condemned people have been kept for an indefinite time, the archives are strictly protected by anonymity. In fact, the names of persons whose profiles are stored are filed in a different register, which is physically separate from the place where biological evidence is recorded⁵².

A similar choice has been adopted for the USA federal DNA database. Like the UK, the US have been pioneers in the use of DNA as instrument of criminal investigation⁵³. In 1994 a federal law created a Combined DNA Index System (CODIS)⁵⁴. DNA profiles stored in CODIS⁵⁵ belong to convicted adults.⁵⁶ Indeed, the federal law does not allow retention of DNA from suspects or arrested people (the convicted offender index)⁵⁷. Nonetheless, as in the UK,

⁵² Concerning this kind of choice, for more details: M. SCHNEIDER D. MARTIN, *Criminal DNA databases: the European situation*, in *Forensic Science International*, 119, 2001, 232-238

⁵³ The first to start using these methods was Virginia in 1989. At present in all US States it is compulsory to collect and store the DNA profiles of persons convicted for sexual crimes, whereas about 40 States keep the DNA of persons convicted for serious offences. It is interesting to notice that in most recent legislation in different States there is a tendency to expand the databases (see e.g. California “*Proposition 69*” 2004). For a more detailed analysis, see also S. AXELRAD, *Survey of State DNA Database Statutes*, American Society of Law, Medicine, and Ethics, at http://www.aslme.org/dna_04/grid/guide.pdf (last visited 28 August 2008)

⁵⁴ With the *DNA identification Act 1994* the Congress has foreseen the creation of a DNA database with the Federal Bureau of Investigation (F.B.I.). At present in CODIS there are the profiles of over 5 million offenders. Fed. Bureau of Investigation, CODIS-NATIONAL DNA INDEX SYSTEM (October 2007), <http://www.fbi.gov/hq/lab/codis/national.htm>

⁵⁵ “CODIS is implemented as a distributed database with three hierarchical levels (...)

Local. Typically, the Local DNA Index System (LDIS) installed at crime laboratories is operated by police departments or sheriffs’ offices. DNA profiles originated at the local level can be transmitted to the State and national levels.

State. Each State has a designated laboratory that operates the State DNA Index System (SDIS). SDIS allows local laboratories within that State to compare DNA profiles. SDIS also is the communication path between the local and national tiers. SDIS is typically operated by the agency responsible for implementing and monitoring compliance with the State’s convicted offender statute.

National. The National DNA Index System (NDIS) is the highest level of the CODIS hierarchy and enables qualified State laboratories that are actively participating in CODIS to compare DNA profiles. NDIS is maintained by the FBI under the authority of the DNA Identification Act of 1994”. PRESIDENT’S DNA INITIATIVE at www.dna.gov/uses/solving-crimes/cold_cases/howdatabasesaid/ldisndisdis/

⁵⁶ In this database the samples taken from unsolved crimes (the forensic index), as well as those of unidentified human corps and those belonging to relatives of disappeared persons are kept.

⁵⁷ Indeed, the IV amendment guarantees every person from the inference of the States, and that is the reason why the federal law does not allow for the storage of suspects. And the main difference between UK and USA legislation lies exactly on the IV amendment. See Carling at supra note 27

there is an ongoing debate⁵⁸ on the idea of creating a universal database through a new interpretation of the IV amendment⁵⁹.

Other countries, like Italy Portugal and Greece, do not have specific laws yet. Even though Italy has ratified and implemented the so-called Convention of Oviedo, whose importance is highlighted in the following pages, through Law n.45 of 28 March 2001 “the ratification (...) has not been registered yet officially with the Council of Europe in Strasbourg”⁶⁰. Moreover, what is still missing for the internal enforcement of the Convention are the necessary legislative decrees to adapt the Italian legal order to the principles and rules of Convention, decrees that have not been adopted yet.⁶¹ On the contrary, the assent to the Treaty of Prüm, which will be discussed in the next section, should be seen as a “very important improvement”. But without a specific Italian law regarding DNA profiling this improvement is unattainable. It should also be noted that the Treaty requires cooperation across borders in order to fight against terrorism, international crime and undocumented immigration. More specifically, cooperation is made through information exchange, in particular information from non-coding DNA samples.

There have been a variety of bills put forward on this subject in Italy. Some of them aim to modify the criminal procedure and more precisely the gathering of evidence and the technical-

⁵⁸ There are, however, several critical voices claiming for a stronger guarantee of the right to privacy and the respect of the private sphere of the individual : “DNA databases and their forensic applications must be assigned their proper place in law enforcement. New expansions of DNA technology should not be considered until scientifically rigorous, independent studies demonstrate that the new application would have significant utility to law enforcement. Even then, the expanded use of DNA should be adopted only if it would be consistent with fundamental privacy and civil liberties interests”. A. ROTHSTEIN, M.K. TALBOTT, *The Expanding Use of DNA in Law Enforcement: What Role for Privacy?*, in *Journal of law, medicine & ethics*, 2006, at 162

⁵⁹ “The problem, then, is not with the substantive reasonableness of DNA collection for an ideal database, but with rafting a doctrine that distinguishes between reasonable and unreasonable searches. The solution I propose, accordingly, is an alternative approach that enlists the assistance of an unlikely ally in the Fourth Amendment context: the political process. Under my proposal, if a statute produced by a well-functioning democratic legislature requires that *every* member of the population be subject to the search on exactly the same terms and to exactly the same degree, the passage of the statute through the political process provides prima facie evidence that the search in question is reasonable under the Fourth Amendment. This prima facie evidence of reasonableness justifies judges in departing from the warrant requirement and conducting a balancing test to determine whether the search is constitutional (...) In other words, I propose a narrow “universality exception” to the warrant requirement”, M. MONTELEONI, *Dna Databases, Universality, and the Fourth Amendment*, N.Y.U. Law review, 82, 2007, 249

⁶⁰ C. CASONATO, T.E. FROSINI, T. GROPPI, *Introduzione. L’atipicità del panorama italiano in tema di biodiritto*, in *Dir. Pubbl. com ed euro*, IV/2007, 1651

⁶¹ This anomaly was underlined by Picotti, who reminds us that “despite the ratification law, the process of adopting the treaty is not over yet. In fact the foreseen prevision of the specific instruments has not taken place, as it requires some changes in the internal law. ” And these changes seem quite far to be attained. L. PICOTTI, *Trattamento dei dati genetici, violazioni della privacy e tutela dei diritti fondamentali nel diritto penale*, in *Riv. Inf. e informatica*, 4/5, 2003, in particular see supra note 62

juridical manners regarding samples drawing⁶². This is the reason why in Italy this issue has been discussed mainly by criminal law jurists⁶³. But other types of proposal bills⁶⁴ are more widespread⁶⁵. Focused on the DNA database, methodology of analysis and biological sampling, they directly and indirectly aspire to preserve individual rights. For example, a specific crime is identified where a public official communicates or uses data and information in violation of the law.

Leaving the normative hypothesis aside, it is true as the Constitutional Court writes in one of its judgments, i.e. that this subject “affects not only the sphere of individual freedom, but invades the physical sphere of the person (...) and, in the procedures of a criminal trial, takes away a minimal, but not meaningless, part of that physical sphere”⁶⁶. Unfortunately, in the absence of specific rules, this field is open to abuse.

On this subject, it is interesting to discuss an emblematic case. In 2002 in Dobbiaco, a small town in the Dolomite mountains, an old woman was raped and killed in her house. Nothing was stolen and the lack of forced entry made the investigators assume that the killer was known by the victim and that he was an inhabitant of the small town where the crime took place. Biological stains taken from the crime scene identified the killer’s genetic profile, but this did not correspond to the main suspect. All the analysis demonstrated the recurring presence, in every sample, of the same characteristics, evident heritages of the local community’s close environment. Then it was decided to make a real *intelligence-led screen* with the male population of the small town to make a *low-stringency search* which revealed a family link

⁶² There are many bills on these matters. Some newspapers have announced that the government will present a bill soon. Among the most recent and most interesting bills : Parliamentary bill n.782 “Modifications to the penal procedure code and to the penal code about technical controls which affect personal freedom” 18 May 2006, Parliamentary bill n.809 “Dispositions about coercive drawing of biological material aimed to the execution of DNA analysis of a defendant or an inquired, still less about communication and control of clinical data of persons potentially affected by infective diseases, who had contacts with agents and officers of judiciary Police” 19 May 2006, Bill n.1967 “Modifications to the penal procedure code for making on living persons drawings of biological samples or medical controls”

⁶³ Among them: DE CATALDO NEUBURGER (a cura di.), *La prova scientifica nel processo penale*, Padova, 2007; FELICIONI, *Accertamenti sulla persona e processo penale*, IPSOA, 2007, U. RICCI, C. PREVIDERO FATTORINI, F. CORRADI, *La prova del dna per la ricerca della verità*, Milano, 2005

⁶⁴ For example, Bill n.1877 presented to the Senate 13 November 2007

⁶⁵ The most interesting bill comes from the Working group on Bio-safety, that in 2005 has issued a report analysing the Italian panorama concerning the collection of biological sample for judicial purposes. The bill is about “rules for the creation of a central DNA archive and of a Scientific Committee of guarantee”, 18 April 2005

⁶⁶ Judgement of Italian Constitutional Court n. 238/1996

between donor and killer⁶⁷. None of the inhabitants refused the test which, through concentric analysis, allowed the identification of a genotype belonging to an old man. Providing his DNA sample, he unknowingly gave the authorities the proof of his son's guilt. In his biological sample the son, a soldier on leave in the town on the date of the crime, had a strong and exclusive connection with the evidence taken from the crime scene. The solution of the case, through DNA fingerprinting derived from a consensual but unusual mass screening, obviously opens up another series of legal and moral questions.

Art. 199 of Italian criminal procedural code allows the defendant's close relatives to abstain from testifying in a trial, and that judge must inform them of this. They cannot be incriminated if they decide to make use of this faculty. Certainly, the fields are apparently different. The first regards witness testimonials during a trial and the second relates to drawing samples for investigative purposes. "But what is interesting is the axiological balance of which this evidence is an expression"⁶⁸. Moreover, we know that the crucial phrase "informed consent" is now an acquired part of our lives, deriving from legislation in force, and concerns privacy and also medical data, similar to drawing samples for genetic analysis. There can be no criticism of this, if it is done lawfully in the context of police criminal investigations. Indeed, the principle of personal self-determination for acts concerning the person's body is based in the Constitution⁶⁹, in Art. 32, and in Art. 13⁷⁰. For this reason, informed consent in cases of mass screening should always be required.

It is emblematic that, in spite of a legislative gap on technical controls, which impact on personal freedom, due to the Constitutional Court judgment 238/1996, it is possible for the judiciary police - under control of State's attorney - to take a sample of saliva or hair for identification purposes, even without the consent of the person. This is a rule introduced by the

⁶⁷ In a study analyzing the juridical and ethical critical aspects of Familial searching, Bieber underlines that "The term familial searching, as used by forensic scientists and police officers in the UK, refers to a form of database searching based on knowledge about the probability of matches between the STR markers of two members of the same family" F. R. BIEBER, *"Science and Technology of Forensic DNA Profiling: Current Use and Future Directions"*, in D. Lazer, ed., *DNA and the Criminal Justice System*, at supra note 1, at 23-62. For the problematic aspect of this kind of investigation in the USA, see M.A. ROTHSTEIN, M.K. TALBOTT, supra note 57 at 156

⁶⁸ G. GENNARI, *Identità genetica e diritti della persona*, in Riv. crit del Dir priv., 2005, 628

⁶⁹ See Judgement of Italian Constitutional Court n. 471/1990

⁷⁰ As it has been reminded by the Court in Judgment n.471/1990

⁷⁰ *Amplius* FELICIONI, supra note 59 at 51

anti-terrorism legislation⁷¹, which was inserted into Art. 349 of Italian Criminal Procedural Code, with a general impact and evident problems about the conservation and potential future use of acquired biological data.

Going back to the European level, it becomes clear that the attempt to harmonize the exchange of possible information among different European countries finds major difficulties in the very different national legislations in force. The choice of legislation is necessarily affected by a series of historical, political and socio-cultural specificities. It is clear that although they start from a common basis, the same rights recognized to the individual in the different legal systems – in particular individual dignity and integrity – are realised and actualised in different ways in the different European codes.

4. The treatment of genetic data in the international and supranational protection framework. The Treaty of Prüm: the way for an EU system of collection, access and exchange for extremely personal data such as DNA and fingerprints?

The scientific discussion about genetic applications, and the risks data collection and misuse may generate, has been engaging scientists, academics and politicians for quite a few years. When possible, the international community has tried to suggest and impose general standards for the protection of rights against a distorted use of biomedicine.

One of the milestones is the *Convention for the protection of Human Rights and dignity of the human being with regard to the application of biology and medicine*⁷², the so-called Oviedo Convention, promoted by the Council of Europe and opened for signatures on the 4th April 1997. In 1998 an additional protocol on the prohibition of human cloning (protocol n. 168 of 12 January 1998) was added to the Convention. A whole part of the Convention deals with the protection of “human genome”. In particular, it is specified that the interest of the human being has been more important than any other social or scientific interest.⁷³ Because of that, every person undergoing genetic tests has to provide his/her informed consent.

⁷¹ Sec. 10 of law 31 July 2005, n.155, *Conversion in law, with modifications, of decree law 27 July 2005, n. 144, regarding urgent measures for the fight against international terrorism*. In *Official Journal* n. 177 1st August 2005

⁷² In Italy, published in G.U., 24 April 2001, n. 95

⁷³ Sec. 2 of the Convention

The Convention states that there are norms that cannot be limited, as they guarantee the crucial core of people's fundamental rights. Art. 11 establishes that "any form of discrimination against a person on grounds of his or her genetic heritage is prohibited." Art. 13 expressly states that "an intervention seeking to modify the human genome may only be undertaken for preventive, diagnostic or therapeutic purposes and only if its aim is not to introduce any modification in the genome of any descendants".

The Oviedo Convention was later supplemented by an *Additional Protocol to on Human Rights and Biomedicine concerning Biomedical Research* (COUNCIL OF EUROPE, 2004), which aims to protect the human being's dignity and identity, guaranteeing against any discrimination his/her integrity and fundamental human rights, especially regarding any biomedical research involving intervention on the person.

The Council of Europe has issued several recommendations that, despite their non-binding nature, underline the attention given at a supranational and international level to the use of personal data in judicial investigation. In 1987 a first Recommendation⁷⁴, which aimed at ruling the use of personal data by the police, established that "*the collection of personal data for police purposes should be limited to such as is necessary for the prevention of a real danger or the suppression of a specific criminal offence. Any exception to this provision should be the subject of specific national legislation.*" The document highlights a long list of duties every State should comply with in order to avoid violations against the right to privacy⁷⁵. More specifically, Recommendation R (92), issued on 10 February 1992, deals with the "use of analysis of deoxyribonucleic Acid within the framework of the criminal justice system". While providing the general guidelines, the recommendation gives detailed instructions concerning the collection of samples, and the use of data derived from DNA for the purpose of the investigation and prosecution of criminal offences. According to Recommendation R (92), Member States should

⁷⁴ Recommendation No. R(87)15 *Regulating the use of personal data in the police sector*, 17th September 1987

⁷⁵ "1.1. Each member state should have an independent supervisory authority outside the police sector which should be responsible for ensuring respect for the principles contained in this recommendation. 1.2. New technical means for data processing may only be introduced if all reasonable measures have been taken to ensure that their use complies with the spirit of existing data protection legislation. 1.3. The responsible body should consult the supervisory authority in advance in any case where the introduction of automatic processing methods raises questions about the application of this recommendation. 1.4. Permanent automated files should be notified to the supervisory authority. The notification should specify the nature of each file declared, the body responsible for its processing, its purposes, the type of data contained in the file and the persons to whom the data are communicated. Ad hoc files which have been set up at the time of particular inquiries should also be notified to the supervisory authority either in accordance with the conditions settled with the latter, taking account of the specific nature of these files, or in accordance with national legislation". Recommendation No. R(87)15

ensure that specific instruments of rights protection be foreseen before allowing DNA use for investigation and crime prevention. Point 6 establishes that the member States should ensure the drawing up of a list of accredited laboratories or institutions possessing the appropriate facilities and experience not just in a techno-scientific perspective, but also in order to provide “adequate safeguards to ensure absolute confidentiality in respect of the identification of the person to whom the result of the DNA analysis relates”. Points 7 and 8 were entirely dedicated to “*Data protection*” and “*Storage of sample and data*”. Recommendation R (97) 5, on the Protection of Medical Data of 13 February 1997 ⁷⁶, regulates the criteria that have to be respected in the collection and processing of medical data, always guaranteeing “rights and fundamental freedoms, and in particular the right to privacy” (Sec. 3.1) After giving a precise definition of what “genetic data”, “genetic information”, and “genetic line” refer to, the recommendation establishes the criteria to be respected for a correct use of the collected and processed data. These data have to be used for preventive treatment, diagnosis or treatment of the person or to “allow the data subject to take a free and informed decision on these matters” (Sec. 4.7). “Processing of genetic data for the purpose of a judicial procedure or a criminal investigation should be the subject of a specific law offering appropriate safeguards. The data should only be used to establish whether there is a genetic link in the framework of adducing evidence, to prevent a real danger or to suppress a specific criminal offence. In no case should they be used to determine other characteristics which may be linked genetically” (Sec. 4.8). The recommendation also states that the collection and processing of genetic data should, in principle, only be permitted for health reasons and in particular should avoid any serious prejudice to the health of the person or third parties. From the general analysis of the texts of the Council of Europe, two are the most important criteria that have to be respected in dealing with genetic data: the limitation of the use of DNA data to the purpose they have been derived for, and the principle of proportionality.

On a more general level, the Universal Declaration on the Human Genome and Human Rights of 1997 ⁷⁷, aims at laying down ethic and legal principles that should provide a correct guidance to the international community in the effort to meet the challenges of scientific and

⁷⁶ It is interesting to note that the Council has recently issued a further Recommendation (R (02) 9) on the collection and management of data for insurance purposes. Despite the fact that this type of use may easily open the way to distorted uses of genetic data, the Recommendation is silent on this aspect, so that the whole discipline concerning genetic data is still that laid down by Recommendations R (92) 1 and R (97) 5

⁷⁷ The Declaration was adopted by the 29th UNESCO General Conference, on the 11th November 1997 and was approved by the UN General Assembly on the 9th December 1998

technological development by preventing applications of bio-medical research that may have unacceptable repercussions on human freedom and dignity. Despite its over emphatic general tone⁷⁸, the Declaration is a very interesting document, organized along four main principles: human dignity, freedom of research, solidarity among human beings, and international cooperation. In particular, among the legal rules leading the international community to face the challenges of scientific and technological development, the Declaration underlines: the principle of non- discrimination on the ground of genetic characteristics (Sec. 6); the informed and free consent of every person and the confidentiality of the use of genetic data (Sec.7); the principle that “limitations to the principles of consent and confidentiality may only be prescribed by law, for compelling reasons within the bounds of public international law and the international law of human rights” (Sec. 9). At the end, Art. 17 provides interesting perspectives on the future, encouraging the States to “promote the practice of solidarity towards individuals, families and population groups”, opening the way to and fostering international co-operation in order to support Third World countries in the scientific research and to find appropriate treatment for those genetically based or genetically influenced diseases which affect large numbers of population.

Two further instruments (the *International Declaration on Human Genetic Data*, 16 October 2003⁷⁹, and the *Universal Declaration on Bioethics and Human Rights*, 19 October 2005⁸⁰), adopted by the UNESCO General Conference, intend to provide universal criteria for the new scientific developments applied to DNA, which should always respect fundamental rights and human dignity.

The European Union, at that time CEE, started giving attention to the issue of DNA data in 1989. The *Resolution on the ethical and legal problems of genetic engineering*⁸¹ opens the discussion on the social, economic, environmental, legal, and health implications of

⁷⁸ See for example Sec. 1 “The human genome underlies the fundamental unity of all members of the human family, as well as the recognition of their inherent dignity and diversity. In a symbolic sense, it is the heritage of humanity”

⁷⁹ As can be seen from the title of the Declaration, the document is the milestone of the discipline concerning the definition of common ethic principles for the collection, processing, storage and use of genetic data derived from biological samples

⁸⁰ This second document, that has a more general perspective, answers to the need of pointing out universal ethic principles concerning the researches and the practices on human genome. Against the diversity of national legislation, the document aims at establishing common principles and proceedings that can become the parameters every State may adopt for the advancement of biomedical sciences

⁸¹ In GUCE n. C96/116, 17 aprile 1989, 165

biotechnologies. These implications have clear positive aspects, due to the continuous evolution and advancement of scientific research in the fields of medical diagnosis and therapies, but they present problematic aspects, especially concerning “social control and the segregation of whole social strata”, which may, in the long run, produce “fundamental changes in our society”. It is in the perspective of these general principles that the considerations on possible discriminatory developments in the fields of employment, insurance, and of legal procedures have to be framed. Concerning the legal procedures, the Resolution demands that genetic analysis be admissible “only in exceptional circumstances to be determined by the judge alone and in certain limited areas”.

Another important step is Directive 95/46/CE on the protection of personal data, with Art. 8 including health data within the information, requiring particular precautions, additional to those normally governing the use of personal data. In the absence of more specific regulation, it is possible to include the sub-category of genetic data under this provision: genetic data describe not only physical characteristics, but also a set of indications of current and future state of health of an individual, although these may not be absolutely certain. The most innovative aspect of this provision is the introduction of the principle of proportionality, by allowing the use of genetic data only when they are adequate, relevant and not excessive in relation to the purposes for which they are collected and/or further processed⁸².

The same principles appear in Regulation (EC) n. 45/2001 of the European Parliament and Council, which imposes on Member States an obligation to safeguard freedom rights on individual persons in relation to the collection of personal data. It focuses on their confidentiality in order to ensure free and safe circulation inside the EU. But nevertheless, it does not contain any express mention of genetic profiling.

More specifically, the Council of the European Union, taking into account the important role of DNA analysis in criminal investigations and of the exchange of results among member State⁸³, invited them to fix standard criteria for national DNA databases so that they are compatible, with the purpose of improving efficiency. What emerges from this resolution is the attention for the creation of uniform DNA databases, so that they are compatible and open for a cross-national reading. The whole issue is very sensitive, and the Council emphasizes that only

⁸² See Sec. 6 letter c of this Directive

⁸³ Resolution of 9th June 1996 on the exchange of DNA analysis

information on the non-codified sequences of the DNA molecule can be exchanged. The EU leaves single Member States to lay down under what conditions and for which crimes DNA profiles can be stored.

In 2001, the Council passed a further Resolution on the setting up a forensic database and the need for exchange between all Member States. It invited Member States to use the same DNA markers⁸⁴, in order to improve efficiency in the fight against crime within the Union. However, the Resolution limits data exchange to information from chromosomes which do not give genetic information on hereditary characteristics.

Despite their intrinsic heterogeneity in both their content and normative nature, all documents summarized above are enshrined in the Charter of Fundamental Rights (the Nice Charter), now incorporated as an additional protocol in the Treaty of Lisbon, which is under ratification by EU Member States. An overall analysis of the Charter largely exceeds the scope of this paper⁸⁵, but we will highlight its more important aspects. The founding principles are the respect of human dignity⁸⁶ and the physical and moral inviolability of person⁸⁷. Concerning the treatment of personal data, Article 8 states in details that every person has the right to the protection of personal data. These data must be processed fairly, for specified purposes, and on the basis of the consent of the person concerned or some other legitimate basis laid down by law.

DNA is a very peculiar source of personal data, as it contains not just the person's own data, but also data on family members. Ethical and legal implications are thorny and complex. First of all, the person's own interests have to be considered. In addition to identifying possible implications in a crime, DNA analysis may reveal unrequested biological relations⁸⁸ as well as the diagnosis of genetic diseases or predisposition for diseases of the person and/or his biological

⁸⁴ That is the very same loci of a molecule that have different information in different persons. These markers are specified in the European Standard Set – ESS- with the purpose of facilitating the exchange of results in genetic heritage analysis

⁸⁵ See, among various interesting works, G.F. FERRARI *I diritti fondamentali dopo la carta di Nizza. Il costituzionalismo dei diritti*, Milano, 2001; R. BIFULCO, M. CARTABIA, A. CELOTTO (ed.s), *L'Europa dei Diritti. Commento alla Carta dei diritti fondamentali dell'Unione europea*, Bologna, 2001; R. TONIATTI (ed.), *Diritto, diritti e giurisdizione. La Carta dei diritti fondamentali dell'Unione Europea*, Padova, 2002; M. SICLARI (ed.), *Contributo allo studio della Carta dei diritti fondamentali dell'Unione europea*, Torino, 2003

⁸⁶ Sec. 1, discussed in: M. OLIVETTI, *Art. 1 Dignità umana*, in R. Bifulco, M. Cartabia, A. Celotto (ed.), supra note 85, at 38 ss. and CASONATO C., *Il contenuto della Carta, tra conferme, novità e contraddizioni*, in R. TONIATTI (ed.), *Diritto, diritti e giurisdizione. La Carta dei diritti fondamentali dell'Unione Europea*, supra note 85

⁸⁷ See: v. R. BIFULCO, *Diritto all'integrità della persona*, in *L'Europa dei diritti*, 51, supra note 85

⁸⁸ DNA analysis is frequently used in paternity searches. Actually, the problem is complex if the results of genetic tests supply unwanted information on parental ties which were unknown and may have important effects on socio-familial relations

relatives. The creation of genetic databases for investigative and prosecutorial purposes involves a correct balance between safety and fight against crime on the one hand, and the dangers of infringement of privacy rights and discrimination on the other. While promoting effective investigation techniques, new norms are necessary to guarantee the inviolability of basic rights that are strictly connected with human dignity as “first of all the right to a full individual development, the right to self-determination concerning the access to information, the right to health, and the right not to be informed”⁸⁹.

The common denominator of all European documents we analysed is the close attention given to the protection of genetic privacy against eventual discrimination and dynamics that may have an impact on the person’s fundamental freedoms.

The use of DNA databases is not limited to investigations and policing activities within the states. This is the reason leading to the first protocols of intent drawing different countries together. In May 2005, 7 EU Member States⁹⁰ signed the Treaty of Prüm which paved the way for an EU system of collection, access and exchange for extremely personal data such as DNA and fingerprints, in order to strengthen the cooperation among the different EU Member States polices in the fight against terrorism, trans-national crime and undocumented immigration. The Treaty, open to all Member States, contains the aspiration to be transposed into EU law. Italy signed a common declaration with Germany about its entrance into the Treaty of Prüm on 4th July 2006 in Berlin.

The cooperation established by the Treaty concerns international cooperation in order to fight against terrorism, cross border crime and undocumented immigration. This kind of cooperation is made through information exchange, like vehicle registration, digital fingerprints and information of data coming from the DNA non-codified part. This is a good choice. Exchanged data must not contain any indication leading to the direct identification of the interested person⁹¹. It will become possible to exchange the identification data of the people suspected of having committed a crime only if the analysis has a positive result,

⁸⁹ S. RODOTÀ, *La vita e le regole. Tra diritto e non diritto*, Milano, 2006, 198

⁹⁰ The Treaty of Prüm was signed on 27th May 2005 by Germany, Spain, France, Austria, Belgium, Netherlands and Luxembourg. At present the individuation of common methodologies for having comparable data are under discussion

⁹¹ In fact DNA data in this treaty are used only “for the investigation of criminal offences”(Sec. 2)

On 15 February 2007, an EU Council decision about justice and domestic affairs integrated the main aspects of the Treaty of Prüm into EU law⁹².

There is no space here to discuss the *de iure condendo* or proposal which mentions in such clear terms generic “reciprocal legal assistance”, but it is clear that, in a sense, the future has already arrived. As reported in a press release on the recent meeting of Justice and Home Affairs Ministers at the Council of the European Union, two signatory countries of the Prüm Treaty, Austria and Germany, started preliminary exchange in the reciprocal reading of national DNA databases in December 2006⁹³.

Regarding this, it seems useful to criticise the legal doubts which come from the Council decision of February 2007. The development of DNA data exchange is necessary in order to effectively fight crime inside the European Union. Nevertheless, the proceeding adopted seems to avoid EU principles concerning the so-called “third pillar” of strengthened cooperation. In fact, the law-making *iter* in this field requires unanimity. On the contrary, some European countries have decided to subscribe to the multilateral treaty and have requested its integration into European legislation through the Council. All this while the presentation of a framework agreement regarding these delicate profiles was under discussion⁹⁴.

In July 2007, with unusually harsh tones, the European Data Protection Supervisor criticized that proceeding. This proceeding denied any necessity of a legislative, democratic and transparent process, because it did not respect the already limited prerogatives in the ambit of “the third pillar”⁹⁵. The criticisms are not simply procedural. As a harmonized legal EU outline for the protection of such basic data as genetic data is missing, great caution is required. Hurried and imprecise legislation could negatively affect the safeguard of European citizens, who could

⁹² It requires that “*The contracting states have full and direct online read access to vehicle registration data held by their partners. They give one another access to their DNA analysis and dactyloscopic (fingerprint) databases in what is called a hit/no hit system. Police services may launch a query in the data system of a contracting partner to find out whether it contains data concerning a specific profile, and are automatically informed of the result within a matter of minutes. Further information, such as personal data, may be communicated in the course of mutual legal assistance*” (Council of the European Union 2007)

⁹³ “*The German authorities matched DNA profiles of open cases against data held by Austrian authorities and found hits in more than 1500 cases. In this context, over 700 open traces from Germany could be attributed to persons known to the Austrian criminal prosecution authorities. Broken down by types of crime, 14 hits in homicide or murder cases, 885 hits in theft cases, and 85 hits in robbery or extortion cases have been found (as at 4 January). It is true that every hit needs to be examined carefully, and it will not be possible to clear up open cases by a DNA hit alone. Nevertheless it can be expected that hit her to unsolved cases in Germany and Austria can be closed and the perpetrators be brought to justice*”. COUNCIL OF THE EUROPEAN UNION, Press release 2781st, Council meeting Justice and Home Affairs, Brussels, 15 February 2007

⁹⁴ COM (2005) 490 def

⁹⁵ Advice 2007/C 169/02, in Official Journal of European Community, 21 July 2007, point 18

see their data shared with countries which offer much lower rights protection. Using the Supervisor's words, we can underline problematic profiles already discussed in the previous pages: "the Supervisor observes that the initiative obliges all European Countries to create national files of DNA analysis. It is important to underline that several European Countries already have national DNA databases, while others have very little or no experience in this field. The largest database developed in Europe (and in the world) is currently in Great Britain. With more than 3 million items, it is the widest collection of DNA profiles. The database contains the profiles of those condemned for a crime, those arrested and those who voluntarily give samples. The situation is different in other countries. In Germany, for example, only the profiles of persons condemned for serious crimes are stored. It is even probable that in Germany the DNA drawing for wider aims would not be consistent with the Constitutional Court's jurisprudence"⁹⁶. The Supervisor referred to the Karlsruhe Court's judgement of December 2000⁹⁷, according to which the use of DNA samples for less serious crimes is inconsistent with the proportionality principle. This pronouncement shows a different interpretation from the choices made in England and this different approach may cause contrasts in the EU harmonization process. Last but not least, a critical point consists in the lack of a clear definition between DNA profiles and DNA data, which can give information on the person's genetic characteristics and/or on his/her health. This because "it is also necessary to consider scientific progress: what in a certain period is considered a «safe» DNA profile, could later supply much more information than it is expected and necessary"⁹⁸. Hence, it becomes crucial to give precise definitions so that it is never possible⁹⁹ (point 48) to have information different from that required by forensic investigation.

Aware of the complexity of the subject, the EU Parliament issued a legislative resolution¹⁰⁰, within its consultative powers, about the proposal of the Council's Framework Decision. The Council itself afterwards stated that "it will examine all the solutions suggested by European Parliament, in the spirit of cooperation reflected by the advice"¹⁰¹. In November 2007, waiting for the resolution of some reserves of parliamentary exam, the Council reached a general

⁹⁶ Advice 2007/C 169/02, point 50

⁹⁷ BVerfG, 2 BvR 1741/99, 14th December 2000, at *bundesverfassungsgericht.de*

⁹⁸ Advice 2007/C 169/02, point 47

⁹⁹ See in this sense Advice 2007/C 169/02, point 48

¹⁰⁰ A 06-0205/2007

¹⁰¹ C/07/125, Luxembourg 12-13 June 2007

orientation about the proposal of framework decision¹⁰² for underlining the difficulty, but also the possible solutions which are being examined. It is useful for our analysis to discuss some amendments proposed by the European Parliament to the latest¹⁰³ text of the Council's Decision. In the new dispositions we find a stronger attention to the protection of exchanged data, in particular regarding the access and "withdrawal" rights (Principle 8) and the storage of data. Many of these clauses seem restrictive compared to the original text. The document sets up a series of controls on the law's application, so that they can be strengthened in future¹⁰⁴. Concerning the protection of personal data in the field of judiciary and police cooperation, the law must be more and more precise, individuating 15 principles guaranteeing the protection of data. The first principle reads: "*Personal data must be processed by ensuring a high level of protection of data subjects' rights, fundamental freedoms and dignity, including the right to personal data protection*". The reference to human dignity as the fundamental principle of the rights involved is further underlined by the Parliament in Amendment 14 (Recital 32), to strengthen its importance in respect to any other value, especially economic or social security ones.

So "this Framework Decision seeks to ensure full respect for the rights to privacy and the protection of personal data in Articles 7 and 8 of the Charter of Fundamental Rights of the European Union, ***which are specific expressions of the right to human dignity enshrined in Article 1 of the Charter, Article 47 of which also guarantees the right to an effective remedy and to a fair trial***" (cursive and bold inserted by Parliament).

In this context the value of the Charter of Nice should not be underestimated. When the Treaty of Lisbon is ratified by all European countries, the Charter should at last be "fully" and legally enforced. As a consequence it will further strengthen the international declarations about genetic databases. Still there is a prudential hesitation about the "contortions of the specific protocol"¹⁰⁵ on the application of the Charter of Fundamental Rights to Great Britain (and to Poland). This could give the UK the chance to opt out, especially in the field of genetic data. Whatever the future of the Charter, what is relevant is that it "suggests ways to accommodate the

¹⁰² COM (2007) 87 def

¹⁰³ As of September 2008.

¹⁰⁴ It is interesting to highlight the following sentence: "*Not more than three years after the date of entry into force of this Framework Decision, the Commission shall submit to the European Parliament and the Council an assessment of the application of this Framework Decision, accompanied by proposals for any amendments which are necessary in order to extend its scope pursuant to Article 1(5a)*" Article 27 a new (Amendment 59)

¹⁰⁵ J. ZILLER, *Il nuovo Trattato europeo*, Bologna, 2007, 178

conflict between laws and jurisdictions that shows very well the complexity of the European system of sources, which neither the Charter nor EU want to or can eliminate but that EU, through the Charter, has to govern”.

5. The European Court of Human Rights at crossroads. The expected decision *S. and Marper v. U.K.* stated admissible on January 16th 2007

While discussions on the future of the Charter continue, Great Britain has chosen a pattern of universal database. A choice that is partly disputed today in a case pending with the European Court of Human Rights.

The *Criminal Justice and Police Act* ruling over the collection and storage of DNA samples, establishes that samples can be stored even if they belong to an individual found not guilty and that they can be used for future investigations.

The law was approved while some widely debated legal cases in Great Britain were under discussion. Thanks to DNA evidence it had been possible to link, beyond any doubt, two people with two particularly serious crimes: a rape and a murder. During the trial, the House of Lords, overturning a previous pronouncement of Court of Appeal¹⁰⁶, allowed the use of samples which had not been taken during the investigations of the case, but in previous proceedings the two defendants had been involved. These proceedings resulted in the acquittal of both defendants. According to the pre-existing law, such data should have been destroyed or, in any case, they could not be legally used in subsequent investigations. In their defence, the defendants appealed to the Court of Appeal, seeking protection against a mis-application of their DNA samples. The judgment of the Court of Appeal, in favour of the defendants, was reversed by the House of Lords ruling that the evidences taken in violation of the prohibition could not be considered inadmissible and that the decision to consider or not to consider such evidence had to be “*left to the discretion of the judge in the trial*”¹⁰⁷.

This interpretation opened a harsh debate on the possible balance between public security and the protection of individual rights, with an high risk of favouring public against individual interest. Beyond the specific case, the important question was that the House of Lords gave its

¹⁰⁶ Regina v Weir 26 May 2000 unreported and Regina v. D [2001] 2 AC 91

¹⁰⁷ Explanatory Notes relating to new section 64 (1A)

legal assent to practices that were already taking place *de facto*. The establishment of a widespread genetic database in a legal system based on the principle of *stare decisis* could engender delicate legal developments, as it was the case with the Criminal Justice and Police Act in 2001.

These precedents led to two interesting cases, today unified and pending at European Court of Human Rights, which declared their admissibility on 16 January 2007¹⁰⁸.

The first case concerns a minor, a boy that was eleven years old at the time of the crime (L.S.), who had been arrested in January 2001 and charged with robbery. On that occasion both his fingerprints and a sample of his DNA were taken. In June the minor was acquitted. Subsequently, the police informed L.S. that, in compliance with the new law, his fingerprints and other genetic samples would be stored. The lawyers of the boy asked for the destruction of such data, but the police refused to comply with the request.

The second case concerns an adult, Michael Marper (born in 1963) accused of harassing his partner. In this case, charges were withdrawn before the conclusion of the trial. As in the previous case, Marper asked for the destruction of his fingerprints and personal samples. Again, the police rejected the request. Both L.S. and Marper unsuccessfully lodged a complaint with the Administrative Court¹⁰⁹. They thus decided to appeal against the Administrative Court's ruling at the Court of Appeal, reiterating their request to have their samples destroyed, as they argued that their storage was clearly at odd with Articles 8 and 14 of the European Convention on Human Rights. With a majority decision of two (Judges Woolf and Walzer) to one (Judge Sedley)¹¹⁰, the Court of Appeal held, that the police storage of genetic samples was not in conflict with the right to privacy even if, in particular circumstances, there was a connection between the two situations. Anyway, the violation of the right to privacy consisting in the police refusal to destroy genetic data could be justified in accordance with the second paragraph of art. 8 of the Convention. Still on the interpretation of art. 8 (1) Judge Woolf affirmed that: "*the extent to which the retention of material of this nature is regarded as interfering with the personal integrity of the individual depends very much on the cultural traditions of the particular State*".

¹⁰⁸ "The Court finds that serious questions of fact and law arise, the determination of which should depend on an examination of the merits". EUROPEAN COURT OF HUMAN RIGHTS, S. and MARPER v. UNITED KINGDOM decision, Fourth Section, Decision as to the admissibility of Application n. 30562/04 and 30566/04, 16 January 2007

¹⁰⁹ ADMINISTRATIVE COURT, EWHC 478, [2002]

¹¹⁰ [2003] EWCA Civ 1275

This interpretation, based on the cultural traditions of the particular European States, will be rejected in the following judgement, as we will discuss.

The Association for human rights “Liberty”, authorized to attend the proceedings, underlined that “the intimate samples stored from which DNA can be derived potentially have an amount of personal information on the subject enormously larger than it could be useful for identification purposes”. This statement, interesting from the perspective of a possible future use of this kind of data, was not fully discussed. In fact, it was considered irrelevant, as the use made today of genetic database is to be related only to the fight against crime, leaving the legislator the task of adjusting the rules of these database for any different use or development in future.

Thus, claimants decided to appeal to the *House of Lords*. Although using a partially different reasoning, the *Law Lords* confirmed that the possession of DNA samples collected in the course of a trial resulting in the acquittal of the samples owners, even in the absence of the required informed consent¹¹¹, was not to be considered an interference with the right to privacy of that person. According to the *Law Lords* judgement, the expansion of genetic database and the retention of samples derived even from innocent people could bring enormous advantages in the fight against crime. Lord Steyn also used statistical data according to which more than 6000 profiles of DNA, which should have been destroyed in accordance with the pre-existing law, were in fact used for the solution of different crimes, some of which were serious crimes such as murder, rape and kidnapping.

Regarding the allegations of the infringement of the rights guaranteed by Article 8 of the European Convention, it was specified that the possession of such samples was not jeopardising the right to privacy and that any possible impact on the right to privacy would be “very modest”¹¹².

Once again, the London ruling reveals the peculiar interpretation of the right to privacy prevailing in Great Britain. It is true that the European Court of Human Rights¹¹³ now talks about “the right to self determination in itself”¹¹⁴, which is much nearer to the American than the

¹¹¹ As established by the *Criminal Justice and Police Act* [2001]

¹¹² *Regina v. Chief Constable of South Yorkshire Police (Respondent) ex parte LS (by his mother and litigation friend JB) (FC) (Appellant) and Regina v. Chief Constable of South Yorkshire Police (Respondent) ex parte Marper (FC) (Appellant) (Consolidated Appeals)* [2004] UKHL 39, henceforth *Law Lords Decision on Marper and LS* [2004] UKHL 39. Lord Steyn, Point 31 of preambles

¹¹³ It has been underlined that this features have “notable similarity with the American concept of privacy”. G. TIBERI, *Riservatezza e protezione dei dati personali*, in *I diritti in azione*, M. Cartabia (a cura di), Milano, 2007, 367

¹¹⁴ *Goodwin v. United Kingdom* [GC], judgment of 11 July 2002, *Reports of Judgments and Decisions* 2002-VI

British idea¹¹⁵. But the limitation clause of the second paragraph of Article 8 ECHR “astutely” cited by the judge, can also come into play in determining the essential content of a right, possibly can undermining much of its force and meaning.

The accent put by the Court of Appeal on the different European cultural traditions concerning the evaluation of the unconsented storage of DNA samples against the right to privacy, opened the way to very different and extremely uncertain interpretations of Art. 8 ECHR. Indeed it has been strongly disapproved by the *House of Lords*. In fact Lord Steyn affirmed that the while considerations about the cultural tradition of the particular European State concerned can play a role in applying Article 8(2), they cannot be relevant in determining whether, in accordance with Article 8(1), the right to privacy was interfered with¹¹⁶, *ad adiuvandum* it certainly exists an uniform and consolidated interpretation given by the Court of Strasbourg.

The positions of the House of Lords leading to the decision at hand can be summarized in the five points underscored by Lord Steyn himself: “ (i) *the fingerprints and samples were kept only for the limit purpose of the detection, investigation and prosecution of crime*; (ii) *the fingerprints and samples were not of any use without a comparator fingerprint or sample from the crime scene*; (iii) *the fingerprints would not be made public*; (iv) *a person was not identifiable from the retained material to the untutored eye*, and (v) *the resultant expansion of the genetic database by the retention conferred enormous advantages in the fight against crimes*”¹¹⁷. The possibility of deciding case by case whether to retain samples from innocent subjects, as suggested by the *Court of Appeal*, was thus excluded¹¹⁸. Indeed, this could afford the police with a (too) broad a discretionary power in the enforcement of the law, making it more and more difficult to establish recognizable and objective criteria of assessment. The claimants maintained that the retention of samples of innocent subjects was discriminatory, as it equalized subjects identified by the police (even if declared not guilty or not even brought to court) with

¹¹⁵ “The differences that exist in our DNA database programs so far reveal more than the structure of our respective constitutions. The debate whether law shapes culture or culture shapes law is an old one, but it remains clear that Americans and British have very different cultural notions about privacy, and about the extent to which they will give up their privacy for effective law enforcement. And this should not come as a surprise, given our respective histories. The American Constitution was explicitly built to differ from the British model, and we continue to see the implications of that departure, even in cutting-edge law enforcement technologies of the 21st century”. D. CARLING , *supra* note 27, at 506-507

¹¹⁶ Law Lords Decision on Marper and L.S.[2004] UKHL 39, Lord Steyn, point 27 of preambles

¹¹⁷ Law Lords Decision on Marper and L.S.[2004] UKHL 39, Lord Steyn, point 38 of preambles

¹¹⁸ [2003] EWCA Civ 1275, point 94

those who were not. The *House of Lords* answered that it was not discriminatory to mark out a boundary line between the two groups of subjects (“*that differences is not necessarily on ground of status*”) ¹¹⁹ just because you are in front of an objective event such as a clinical file that inevitably leaves traces of personal data.

The analogy does not seem completely convincing because of the reasons involved. It is not “simply” an issue of storage of personal data. More importantly, it is necessary to consider two subjects in a different way, identifiable on the basis of data taken coercively. In this case, personal freedoms have been compromised *ab origine*, and afterwards violated and discriminated against. It appears even more problematic the case of the maintenance of profiles derived from persons found not guilty or even not brought to trial for the purpose of fighting crime, even without a given timeframe. All this makes a disconcerting question arise. Either these persons are not guilty and their data has to be destructed if they ask so, or they are “supposed criminals”. But in this case their legal status has changed. The principle of presumption of innocence is thus undermined, and the treatment becomes more uneven, due to the indiscriminate and indistinct subjection to forced sampling and consequent inclusion into the database of any person investigated and then found innocent¹²⁰.

What remains unclear in the British judgement is not the presumed attack on the privacy of these individuals, but rather if Great Britain had adopted an appropriate legislation, that could assure the lowest possible sacrifice of interests, or, on the contrary, if the British legislation had placed disproportionate obligations and restrictions on its citizens’ liberties.

The issue becomes even clearer in the case of the minor L.S. Given that the basic objective of the legislation was a higher level of security, the question is whether taking only fingerprints might not have been sufficient, equally efficient and done without endangering

¹¹⁹ Law Lords Decision on Marper and L.S. [2004] UKHL 39, Lord Steyn, point 50 of preambles

¹²⁰ Although the legal system is of course different, it is interesting to note the argumentation of the Italian Constitutional Court. In a case involving enforced blood sampling, it ruled that Sec. 224 (2), of the code of penal procedure was constitutionally illegitimate in allowing the judge to use measures infringing the personal liberty of the accused without making explicit the procedures to be used or the cases and ways in which these could be done. “Taking a blood sample of the accused or a third party is a violation of the inviolability of personal liberty as the cases and modality of this enforced sampling were not determined and physical wellbeing was infringed. It is also a violation of evenness and fairness of treatment, as sampling was undertaken without distinction between suspect and innocent person”. (Judgement of Italian Constitutional Court n. 238/1996) So the positions especially regarding the indiscriminate and indistinct nature of sampling are different. They differ even more with regard to the innocent, such as the numerous people finding themselves by chance in a British police station and forced to give a sample. The lawmaker was perhaps not careful enough in this matter, which involves a restriction on personal liberty in a large number of recordable offences

personal liberty. A closer scrutiny of the case would have emphasised that L.S. was a minor and thus needful of greater protection, *a fortiori* considering that he was charged, and then cleared, simply of theft. The provision of not allowing the removal of his DNA profile from the database, is inadequate for its ostensible purpose, appears disproportionate to the aim, and not strictly necessary.

The principle of proportionality¹²¹, lying at the very core of the problem, is just slightly touched by the judgement¹²². As already mentioned, European legislation concerning the protection of personal data¹²³ subordinates the legitimacy of the use of personal data to an assessment of adequacy, relevance and ‘non -excess’ of the data use against the aims for which it is necessary¹²⁴. This could mean that L.S.’s appeal could be accepted, as it clearly seems that it has not been carefully analysed by the internal courts¹²⁵.

A similar test of “necessity in a democratic society” is required also by article 8(2) ECHR, once the existence of an interference with the right to private life is established under the first paragraph of the same article. Thus, the European Court of Human Rights should consider, instead of the reasonable advantages offered by data banks, how to determine the limits to the “reasonableness” of their use in relation to the aims they pursue.

A possible explanation for the House of Lords’s silence on this particular element is perhaps the desire to avoid interfering with *policy making*, which is, of course, a prerogative of the Parliament and the Government. If a balance between public security and personal liberties made by the judiciary may remain controversial, it is not clear why a balance at the level of the instrument to be used cannot be pursued, bringing in the discussion the principles of unreasonableness and disproportion.

Even the margin of appreciation could lead the Court to consider violated Article 8 of the Convention. It is not yet time to decide about the nature of the restriction, but on which it is pursued through. In that sense it was stressed during the paper, as among the few points of

¹²¹ Concerning this basic principle of European law, see, N. DE SADELEER, *Le statut juridique du principe de précaution en droit communautaire : du slogan à la règle*, *Chaiers de droit européens*, 2001, 122

¹²² See the brief note concerning Point 38 “Cumulatively these factors suggest that the retention of fingerprints and samples is not disproportionate in effect”. Law Lords Decision on Marper and L.S. [2004] UKHL 39

¹²³ Directive 95/46/CE on the protection of personal data. In the absence of more specific norms, it is this directive that covers the sub-category of genetic data

¹²⁴ See Sec. 6 (c), Directive 95/46/CE

¹²⁵ A. ROBERTS, N. TAYLOR, *Privacy and the DNA Database*, in *European Human Rights Law Review*, 1, 2005, 373-392 emphasizes the incomplete nature of the decision

similarity in the legislation has emerged a common convergence (consensus) on samples maintenance of the only persons convicted (or awaiting trial). For this, there must be serious reasons for the interference by public authority, in an area as sensitive, are considered legitimate under Article 8 (2).

The European Court in Strasbourg is now called to find a solution and to try and settle this delicate and very sensitive issue.¹²⁶

6. Considerations and expectations: the establishment of a European central DNA database in the perspective of a common constitutionalism

It is difficult to draw conclusions from this fast changing and pretty confused scenario. We need to lead our analysis concerning this delicate process of *de iure condendo* on a double track.

On the one hand, we have to connect to the scientific developments and discussions taking place in different domains. If law is analysed coldly and clinically, we run the risk of revealing its intrinsic weakness, because by itself it is inadequate to meet the challenges posed by science. A solid basis for legislation requires that law, science, economics¹²⁷ and ethical motivations are integrated and considered in relation to one another.

On the second hand, there is the analysis of the European level, as any reform proposal, especially on this subject, requires to take into account and to incorporate the whole European Union.

It is important to note that DNA databases are an innovative and very effective technique to protect national security, but in defining their functions and use, national governments need to

¹²⁶ ECHR, *S. and Marper v. The United Kingdom*, decision on admissibility of 16 January 2007

¹²⁷ The economic side of the question is another relevant issue, which is not much under discussion at present. Important resources are devoted to these specific projects. Obviously these resources could be used for different purposes in the state's budget. The argument developed by Tracy and Morgan goes in this direction: "We also considered the cost-effectiveness of DNA databases. Here the results were quite convincing. At present, the DNA extraction process is a highly expensive and time-consuming process when considered in the aggregate. The costs associated with increased testing, especially the increased testing necessitated by the more "inclusive" DNA database proposals are astronomical when compared to the expected crime level benefits associated with the databases. For example, we provided an examination of the soon-to-be-launched Federal Convicted Offender DNA Database and found that, while it will cost \$5,335,000 the first year, the current total population of offenders who will be included in the database numbers about 1,200 inmates. This translates to some \$4,445 per inmate. If the costs of analyzing a sample are only \$50, then we must ask the question: Where is the rest of this money supposed to go? Clearly, a legitimate question remains: Are Dna databases and their direct and more indirect or diffuse costs the most effective way to spend scarce criminal justice resources? At this point, the answer must be no". P. E. TRACY, V. MORGAN, *Big Brothers and his science kit: DNA databases for 21st century crime control?*, *Journal of criminal law & Criminology*, vol. 90, 2000, 687-688

take into account, together with benefits, the various problems that they may generate. These problems concern the dissemination of genetic data. Needless to say, it is a peculiar kind of personal data that different international and supranational documents already seek to guarantee. The common denominator of all the documents is the necessity to protect genetic privacy against any possible discrimination stemming from procedures involving genetic features, or affecting fundamental human rights¹²⁸.

There is a clear perception of the need to carry out a very careful cost/benefit analysis of advantages and risks of using genetic techniques in the field of criminal justice, even if sometimes the risks are only potential.

First of all, the danger of a widespread use of genetic data is a sort of determinism which reduces the human being to a mere DNA sequence, so that social or other human problems are exclusively the result of genetics. “A certain type of biological determinism, in fact, tends to conflate individual profiles with genetic inheritance, taking hypothetical conditions as real, without considering the richness of each individual, unique, unrepeatable human being”¹²⁹. The risk of using DNA databases for criminal investigation could lead to reduce the individual to his or her genes¹³⁰, disallowing the individual will and responsibility¹³¹ as basic elements of individual choice. Even further, we could end up establishing direct interrelations between the genetic profile and devious behavior or ethnic origin. Even if this may sound as a futuristic science fiction scenario, indeed what already happened with familial searching prompts Daniel Grimm to write “over time, this scenario risks constructing stigmatic myths about ethnicity and criminal conduct that can be devastating to those affected”¹³². It seems a scaring revival of the long-forgotten theories of Lombroso¹³³.

¹²⁸ Such techniques may have an adverse effect, not only on individuals as a consequence of criminal prosecutions, but also in their social relationships at large (such as employment, family, insurance schemes, etc)

¹²⁹ C. CASONATO, *La discriminazione genetica: una nuova frontiera nei diritti dell'uomo?*, in *Atti del XV Convegno AIDC*, Messina-Taormina, 2001, 2 ss

¹³⁰ Chieffi discusses the problems inherent to biological determinism and emphasizes the danger that “DNA from criminals is used for ‘human biological research’ not only for convicted criminals but also to identify those likely to commit crimes, former criminals and individuals who give rise to suspicion”. L. CHIEFFI, *Ingegneria genetica e valori personalistici*, in *Bioetica e diritti dell'uomo*, L. CHIEFFI (ed.), Milano, 2000, 85

¹³¹ See generally E. CALÒ, *Il ritorno della volontà. Bioetica, nuovi diritti ed autonomia privata*, Milano, 1999

¹³² D. GRIMM, *The demographics of genetic surveillance: familial DNA testing and the Hispanic community*, *Columbia Law Review*, 107, 2007, 1194. This work provides figures on the increase of the Hispanic population in the USA as well as mathematical formulae to illustrate the potential risks of genetic surveillance

¹³³ On the basis of science, which has yet to be made clear, individuals could this be “classified” and “treated” on the basis of their likelihood of future illness, and their inclination towards criminal behaviour. See, for a general

This kind of extremist view reminds us of the Nazi genetic selection techniques perpetrated on Jews. They are absolutely unacceptable and unanimously rejected. Still, it is worth underlining that at present there are phenomena of distinction between “individuals amongst themselves, or even whole social groups between themselves, on the basis of genetic characteristics”¹³⁴. The example often quoted is the campaign for consensual sterilization promoted by the Swedish government because of “social and racial hygiene”¹³⁵. Another even more pertinent example is the screening of thousands of children born in an area of high crime rates in the USA. As Nelkin writes, this was to “help them avoid their destiny”¹³⁶.

Out of any sterile theoretical controversy on this issue, what is necessary is to open a serious discussion on these points before “DNA associated with criminal or antisocial behaviour might become a “scarlet gene” that marks the individual, his family, and his racial or ethnic community as “flawed, compromised, and somehow less than fully human”¹³⁷.

Secondly, a similar, and equally complex, problem concerns the creation of databases in which the profiles of all inhabitants of a given country, and may be in future even of the whole world population, are processed and stored for criminal investigations. It has been noted that such generalized databases could undermine the principles that punishment should aim at re-educating the convicted, as well as that defendant may not be considered guilty until sentenced¹³⁸.

It is worth to consider this point in a wider framework. My discussion and the studies I am building on reveal an interesting story. All began with the discovery made by Dr. Alec Jeffreys, which was immediately followed by a fast race. At the beginning small data banks were set up for investigation purposes. And then, after numerous new laws and declarations at both national and international level, larger data banks appeared with samples from criminals convicted of serious crimes or so-called sex crimes. In order to satisfy the demand for a more effective public safety, this phase was fast replaced by another one characterized by the insertion

discussion, D. NELKIN, *Bioetica e diritto*, in C.M. MAZZONI (ed.), *Una norma giuridica per la bioetica*, Bologna, 1998, 154

¹³⁴ See L. CHIEFFI, *supra* note 130, at 84, for several cited cases

¹³⁵ S. COLLA, *Per la nazione e per la razza. Cittadini ed esclusi nel “modello svedese”*, Roma, 2000

¹³⁶ D. NELKIN, *supra* note 135 at 151

¹³⁷ K. ROTHENBERG, A. WANG, *The Scarlet Gene: Behavioral Genetics, Criminal Law, and Racial and Ethnic Stigma*, *Law & Contem Probs.*, 2006, at 344 (footnote omitted)

¹³⁸ T. SIMONCELLI, *Dangerous Excursions: The Case Against Expanding Forensic DNA Databases to Innocent Persons*, in *Journal of law, medicine & ethics*, 2006, 390-391

of DNA profiles of individuals convicted for common crimes. In some cases, even samples from suspects of non-serious crimes, who were never convicted, were processed and stored. And this is likely not the end, as today there are increasing demands for data sharing between different countries¹³⁹. And meanwhile, the hypothesis of total genetic screening for everyone from cradle to grave is taking roots.

On the one hand, on the filing of legal developments, the process is moving ahead partly due to intense public debate on increasing guarantees for citizens' rights. This can be observed with regard to the IV Amendment in the USA and the European legal fights concerning the insertion or elimination of data in databanks. On the other hand, there has been a compromise, according to which jurisdiction, or legal precedent/judgment has taken the place of laws in setting these sensitive questions. The next 'episode' will probably see the introduction of universal data banks into the various levels of government administration.

As already mentioned, Great Britain and the USA were the first to face up to this challenge. Even if it were possible to leave aside the issue of discrimination in the use of the data, and total screening were to be considered "reasonable" and not a threat to individual personal liberty, there would still be a problem. It is really an ethical problem, a problem of values, rather than a legal one. It is not clear how far a legal system can go in "protecting" its community. Each community has its own "moral dignity" as founding provision of its *pactum societatis*. At present, the spasmodic search for a form of complete safety seems to be pursued to the detriment of those bounds of solidarity society has agreed upon in order to guarantee the reciprocal respect for liberty¹⁴⁰. These legal systems appear to be moving towards coercion rather than shared values¹⁴¹. These forces are difficult to reconcile, but any effort has to be made to prevent our technologically advanced society from becoming morally backward.

¹³⁹ These requirements discussed in Section 4 above concern other nations as well as the EU. Canada and the USA have in fact reached agreement on the sharing of non-coding DNA data

¹⁴⁰ On the more general subject of public safety in Italy, see particularly the first section of T. GIUPPONI, *Sicurezza personale, sicurezza collettiva e misure di prevenzione. La tutela dei diritti fondamentali e l'attività di intelligence*. Paper given at Conference "Sicurezza collettiva e diritti fondamentali", www.forumcostituzionale.it/site/images/stories/pdf/documenti_forum/paper/0043_giupponi.pdf (last visited 28 August 2008)

¹⁴¹ "If a (bio)technological approach to social control, whether concerned with the prevention of crime or the promotion of public health, simply reduces the risks to which agents are exposed, all well and good; but if the effect is to corrode the conditions that underlie the very project of moral community itself, then this is a risk that no community of rights can afford to ignore and which it surely will not wish to run" R. BROWNSWORD, *Genetic Databases: One for All and All for One?*, King's Law Journal, 18, 2007, 273

For this reason it is necessary to ponder on the interests at stake because the future development of the database does not simply impact on the right to privacy respect for private life, but *amplius* on the wider right to personal integrity and to dignity. With regard to this, it is important to remember that, concerning the question of the exclusion from trial of evidence consisting in genetic samples derived in violation of the Canadian Charter of Rights, the Canadian Supreme Court established that: “(there is a) fundamental importance of the innate dignity of the individual. That dignity is, to a large extent, based upon the integrity and sanctity of the body. That sanctity is violated if individuals are prevented from exercising their free will as to the use to be made of their own body by agent of the state”¹⁴².

Despite this, in the recent case *R. v. Rodgers*¹⁴³, which nonetheless concerns the storage of blood samples from convicted criminals, the Court declared legitimate those provisions of the criminal code allowing the retroactive collection of samples from subjects condemned before the enactment of the specific law¹⁴⁴. So, the old problem of the supremacy of public security *vis-à-vis* the wider respect of fundamental rights of a single individual¹⁴⁵ is back again.

The European Court’s judgements on the case *S. and Marper* will take place against this background. Aware of its previous jurisprudence, we are eager to know the decision of the Court of Strasbourg¹⁴⁶. It is possible that the Court will interpret the Convention “on the grounds of present conditions”¹⁴⁷, through analyzing the proportionality of the measures.

I think that the field of science, more than any other, needs to be regulated through common ethical principles¹⁴⁸ and a process of law harmonization. And this has to be rooted on a

¹⁴² *R. v. Stillman*, 1 SCR 607 [1997]

¹⁴³ *R. v. Rodgers*, 1SCR 554 [2006]

¹⁴⁴ *DNA Identification Act 2000*

¹⁴⁵ See the wider issue of the defence of democracy in recent years, not only since 11 September. The same trend seems to characterise our field of interest. See S. CECCANTI, *Le democrazie protette e semi-protette da eccezione a regola*, Torino, 2004, 141

¹⁴⁶ See N. A. MOREHAM, *The right to Respect for Private Life in the European Convention on Human Rights: A Re-examination*, *European Human Rights Law Review*, 2008, 44 for the right to privacy. For the basic principle of *nemo tenetur se detegere* see the ruling by the Great Chamber 11 July 2006, *Jalloh c. Germany*. In this case, the suspect was suspected of having swallowed a plastic bag containing drugs, and had been forced to take an emetic. The Court found that the suspect had been subject to degrading and inhuman treatment (Sec. 6 Convention) and the violation of the right not to provide evidence for the accusation (*nemo tenetur se detegere*). Subsequently, however, the Court ruled that this latter principle could not be extended to actual proof, even where it is acquired by force, making reference to DNA sampling. See on this controversy G. UBERTIS, *Attività investigativa e prelievo di campioni biologici*, Cass. Pen, 1/2008, 6

¹⁴⁷ European Court Ruling 25 April 1978, *Tyrer c. United Kingdom*

¹⁴⁸ C. PICIOCCI, *Le fonti del biodiritto: la complessità del dialogo*, in *Biodiritto in dialogo*, C. CASONATO C. PICIOCCI (ed.s), Padova, 2006, 104, argues clearly and coherently in favour of the need for certainty and shared

serious legislative approach, where consent is necessarily required. Should force be necessary, it has to be regulated in detail by the law. This would grant the subjects' right to privacy on their data legitimately collected and stored in the database. Sanctions against any incorrect use and unlawful procedures would allow for a genuine formal and real safeguard.

The sanctions should consider if the data are used for purposes other than those they were acquired for, or given to people not authorized. This quotation leads us to underline that sec. 8 comma 2 of the European Convention of Human Rights is sombrely silent on the use of the genetic database just for economic purposes. On the contrary, the Convention on Biomedicine states that the limits to privacy can not be justified by interests concerning the economic welfare of a State. At present the Convention on Biomedicine has been signed by the necessary minimum number of States and has entered into force. Other European States of the Council of Europe are still due to sign it. Nevertheless, it represents "*the only international document that can produce binding juridical effects(...) We are in front of a core of principles common to different states, that can influence the coming evolution of legal rules on the protection of genetic data, following the same logic that promoted the progressive insertion of European Convention of the Human Rights into an increasing number of states, giving a contribution to making that common core of principles referred to by internal and international institutions*"¹⁴⁹.

In conclusion, our discussion has revealed that sharing genetic data challenges legislators with quite unusual and sensitive problems that affect the legal measures regarding the use and storage of genetic data for judicial purposes. And it is precisely for this reason that it is necessary to frame the argument in the widest European context in order to look for solutions that can be universal for issues that, in their essence, are nothing but elements of human dignity¹⁵⁰.

The enforcement of rights (*amplius* the political and juridical culture) in Europe should no longer be a rhetorical question or only an iconographical presence¹⁵¹. In spite of conflicting systems and requirements, it is important to¹⁵² seek a common point of equilibrium.

agreement in biological law, although the discussion concerns the different field of the ending of life. The author finds that the same need exists in the context of this paper. Piciocchi writes that "the absence of participation (..) breaks the link between rule and pluralism and between policy decisions and effectiveness of rules. This link, especially in the field of biological law, is the main guarantee for the coherence of legal norms, and is more important than the threat of punishment"

¹⁴⁹ S. RODOTÀ, *supra* note 13 at 177

¹⁵⁰ A. D'ALOIA, *Diritti e costituzione*, Milano, 2003

¹⁵¹ Emphasised in detail in comparison with the law in Europe J.H.H. WEILER, *Diritti umani, costituzionalismo e integrazione: iconografia e feticismo*, Introduction to M. COMBA (ed.), *Diritti e confini. Dalle Costituzioni nazionali alla Carta di Nizza*, Milano, 2002

Against the background of very different laws and underlying principles, we should question is a harmonisation process in reasonable and viable in Europe. An indication may come from the USA. The Combined DNA Index System (CODIS) is a federal system linking nationally and locally obtained data across the fifty States, which have different regulations on investigation data banks¹⁵³. Federal law is however clear in not permitting sampling of suspects or those arrested who are not convicted¹⁵⁴. The issue of databases could thus help to determine “a definition of subsidiarity applied to basic rights”¹⁵⁵ which is not merely a quantitative definition¹⁵⁶.

It is in this perspective that we suggest some guidelines to approach this sensitive theme, with the objective of identifying principles which might provide the basis of harmonization of the different legal systems within the European Union. The purpose is to allow police forces to compare DNA and fingerprints collected on the scene of crime with the DNA samples contained in the DNA bank of every EU member state, and to increase and accelerate the conviction of perpetrators of serious crimes.

To reach this aim and to guarantee the rights of citizens, particularly with reference to the protection of personal data, we consider the possibilities of harmonization as regards to:

- the creation of national DNA banks: in order to exchange intelligence from DNA analysis between EU member states, states will have to set up systems of investigation based on DNA data;
- the standardization of DNA indicators: the EU member states should set up and regulate databases along similar standards in order to make them compatible
- legal guarantees: every country should establish conditions for drawing and collecting genetic data and the types of crimes which allow the police to process and store the personal data in a national DNA bank. Collecting and recording genetic data are activities

¹⁵² M. LUCIANI, *Costituzionalismo irenico e costituzionalismo polemico*, *Giur. Cost.*, 2/2006, 1644

¹⁵³ See note 53 above

¹⁵⁴ The IV Amendment of the US Constitution protects the individual from state interference in the absence of probable cause

¹⁵⁵ M. DANI, *La Carta e il principio di sussidiarietà*, in R. TONIATTI, see supra note 85. “It could be said that as policy definition requires segments of activity at different levels of government, rights may be helped by, or at least should take into account the characteristics of the level they apply to. Subsidiarity in protection (and perhaps promotion) of basic rights, could mean the gradual optimisation of this particular function at different levels”

¹⁵⁶ “The precise scope of a basic right becomes clear in the relationships between different values present in a system. An individual right is never isolated or absolute, but is always related to other rights on similar matters, or the same right extended to other subjects or collective or general interests acting as a constraint on the right under consideration”. M. CARTABIA, *Principi inviolabili e integrazione europea*, Milano, 1995, 31

which must be accompanied by strong guarantees for the protection of the physical integrity of people involved¹⁵⁷. It also appears very important the presence of an Authority with powers of control on these activities (for instance the authority for the protection of personal data). It should be a full EU Agency, a body of European public law, separate from other EU institutions and having its own legal status¹⁵⁸. This Authority should be able to investigate and intervene in the collection, processing, storage and eventual destruction of the personal data. It would be important to give the Authority the power of starting legal proceedings for violation of the principles included in the harmonized European norms.

- the exchange of DNA information within the EU: with the purpose of increasing public safety levels, compatible DNA banks (based on non-coding DNA data) could be set up in each country.

The institutions of the European Union are in a position to supply important indications to all member states on the balance between freedom and safety that today is so important in our world.

¹⁵⁷ The best way of meeting security criteria in data storage is separation in different state organizations of the sample holder from the holder of the identifying code of numbers and letters. Another important aspect is the regulation of these laboratories, but its analysis overcomes the scope of this paper. See C. GIANNELLI, *Wrongful convictions and forensic science: the need to regulate crime labs*, North Carolina Law Rev., 86, 2007, 163

¹⁵⁸ For details concerning EU agencies see E. CHITI, *Le agenzie europee; unità e decentramento nelle amministrazioni comunitarie*, Padova, 2002 e A. PREDIERI, *L'erompere delle autorità amministrative indipendenti*, Firenze, 1997