Katharina Beier,
Silvia Schnorrer,
Nils Hoppe,
Christian Lenk (eds.)

The Ethical and Legal Regulation of Human Tissue and Biobank Research in Europe

Proceedings of the Tiss.EU Project

Universitätsverlag Göttingen

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Introduction

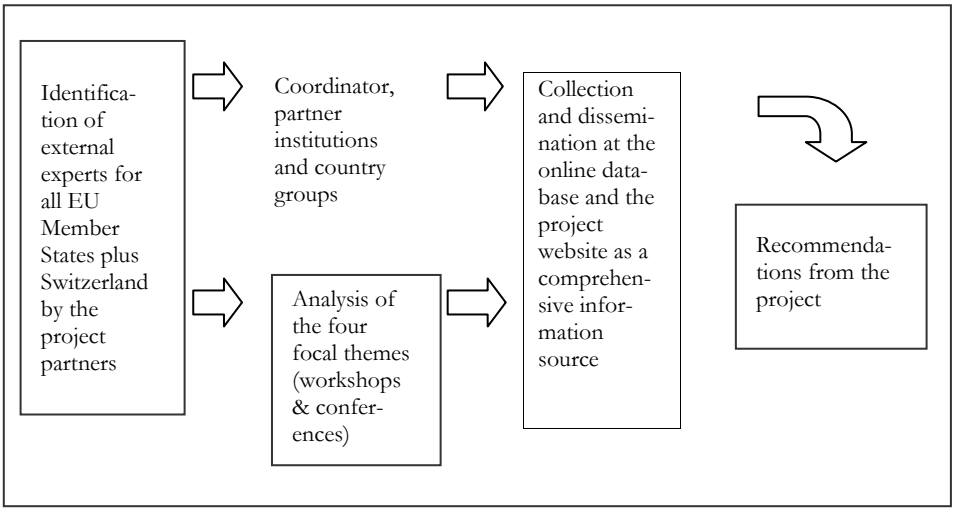
The Tiss.EU project – with full title "Evaluation of Legislation and Related Guidelines on the Procurement, Storage and Transfer of Human Tissues and Cells in the European Union - an Evidence-Based Impact Analysis" – was funded by the European Commission in the 7th Framework Programme from April 2008 until March 2011. Within this project researchers from ten different European countries addressed questions of ethical and legal regulation regarding human tissue research. For this purpose, they analysed the respective legislation and guidelines in and across Europe, evaluating their implementation at a national level, their strengths and deficits, and, where required, created an evidence base for the revision of said legislation. This was made necessary by the lack of a comprehensive EU regulation on human tissue and biobanking, which poses a serious threat to transnational biomedical research. The legislation that exists so far covers mainly clinical application.

In order to achieve its goal, the Tiss.EU project organized nine international workshops and three International Status Conferences during its three year project period, providing a platform for leading experts in the field of human tissue and biobank research. This allowed for the gathering of information on the current legislation in the 27 EU member states plus Switzerland. The present volume collects the revised reports on these events. Besides this, the documents, in their original form, can also be found at the project's website, www.tisseu.org. One of the aims of the Tiss.EU project was the establishment of an information portal freely accessible to interested scientists as well as the broader public. The website also hosts an extensive database of legal documents, ethical guidelines and scientific articles on human tissue and biobanking to facilitate further research in the field. It will be maintained beyond the project period.

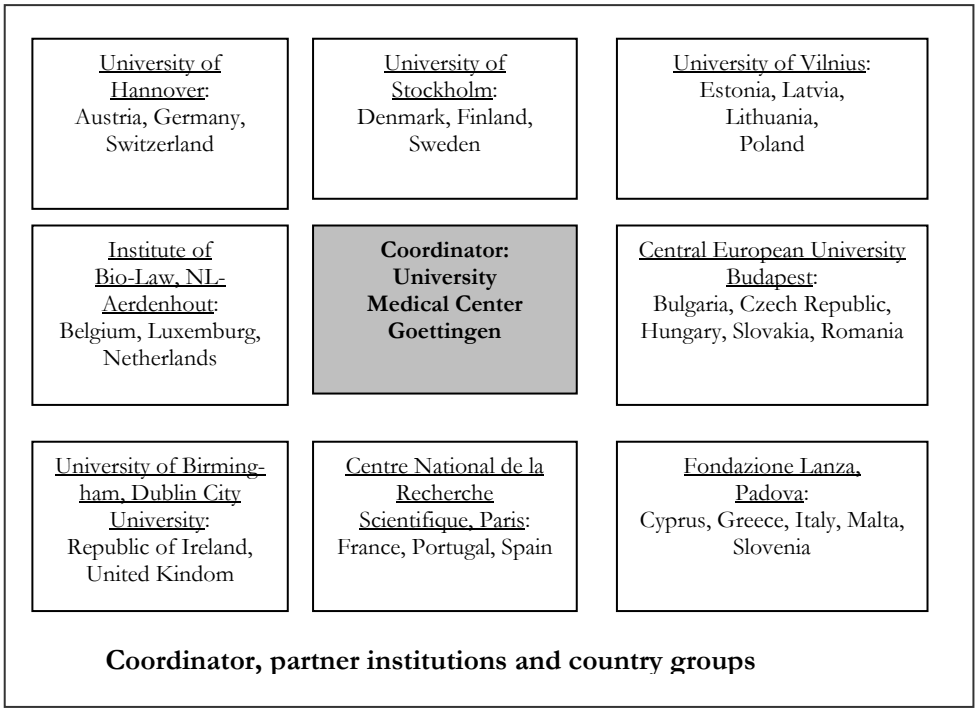
During its term, the Tiss.EU project also set up a network of experts in the field of human tissue research, which connects about 150 representatives from a

multitude of disciplines, including ethicists, lawyers, physicians, policy makers and non-governmental institutions, from the whole of the European Union and Switzerland.

The organizational structure of the Tiss.EU project was two-layered: on the one hand, there was a consortium consisting of the coordinating institution in Goettingen (Germany) and the nine academic partners from different EU Member States, namely France, Germany, Hungary, Ireland, Italy, Lithuania, Sweden, The Netherlands and the United Kingdom. Each partner was assigned a country group of two to five EU countries, which reported on the current regulation on human tissue and biobank research in their respective countries.[1] On the other hand, the partners were teamed up in groups of two to three to evaluate the leading ethical and legal issues for human tissue research that arose with regard to one of the project's four focal themes.



[1] The country reports refer to a range of legal documents and guidelines on human tissue and biobank research. Insofar an English translation is available, these documents are accessible via the Tiss.EU website www.tisseu.org (under the heading 'Resources').



Coordinator, partner institutions and country groups

The four focal themes[2] were:

1 Procurement, storage and transfer of tissues and cells for non-clinical research purposes

Scandals in relation to the procurement and storage of human tissue have recently undermined public acceptance and trust in the respective research institutions, suggesting that if potential donors were to withhold their participation in research projects, important biomedical research may run the risk of decline. There is also a large discrepancy between the public perception of tissue storage issues and the views of medical professionals and researchers, pointing to a need for greater transparency. A particular problem is posed by the storage of human tissue that transcends clinical purposes and as such is not related to the treatment of an immediate health threat. In cases as these, issues of consent and anonymization rise to the fore.

[2] Cf. Beier, Katharina/Schnorrer, Silvia (2011): *Ethical and Legal Aspects of Human Tissue and Biobank Research in Europe: Report of the Tiss.EU Project and its Results*. In: *SCRIPTed* 8:1, p. 99-105. Available at: http://www.law.ed.ac.uk/ahrc/script-ed/issue8-1.asp.

2 Rights, interests and entitlements in human tissues and cells
Among the main issues of this focal theme are questions about the ownership of tissue removed from the body, whether they affect source entitlement (for example when tumor cells are removed from a patient) or stakeholder interests (for example the parents' interest when tissue is excised from their child post mortem). The focal theme also covers issues related to intellectual property rights and addresses questions related to the freedom of movement of goods and services within the EU.

3 Anonymisation and pseudonymisation as means of privacy protection
Standards of pseudonymisation and anonymization of tissue samples may come under close scrutiny these days, because many biomedical projects include research on the genetic dispositions of patients. This raises important questions touching on the subject of privacy and control of personal data. Who should have access to donors' health information, for example? There is a risk that donors may be subject to disadvantage or discrimination on the basis of disease dispositions.

4 Biobanking
It is imperative that mutual ethical and legal standards for the extraction, storage and exchange of human cells and tissues be defined, though different standards will have to be applied to biobanks that focus on the research and treatment of specific diseases, and non-specific and national biobanks (such as the UK Biobank). The property problem that arises when tissues and cells are transferred from donors to research projects or national and international institutions also needs to be dealt with, as a joint ethical and legal regulatory framework is still missing.

The information obtained through the Tiss.EU workshops and conferences led to the drafting of a final recommendation document which covers the most important issues raised in the course of the project. It is aimed not only at researchers in the field, but also at policy makers on a national or European level. The document will be published in an international journal in order to reach a broader audience.

As has been mentioned above, this volume contains the reports on all the workshops and conferences conducted during the Tiss.EU project's three year period, arranged chronologically. The original reports have been slightly amended and brought up to date for this edition. With regard to content, the nine workshops held in Hanover, Budapest, Paris, Padova, Leiden, Stockholm, Dublin, Birmingham and Vilnius focused on the different focal themes and compiled the country reports. The three International Status Conferences (all held in Goettingen, Germany), meanwhile, addressed issues of ethical and legal aspects of human tissue research, privacy, confidentiality and personality rights in biobanking and genetic research with human tissue, and the future of biobanking respectively. The

final chapter of this volume summarizes the most important results gathered during the course of the project with particular regard to the four focal themes.

The editors wish to thank Katharina Lüttich and Tilman Gunz for their generous help in preparing the manuscript for publication.

The Editors
Göttingen, August 2011

Ethical and Legal Aspects of Research with Human Tissue in Europe

First International Status Conference of the Tiss.EU Project

Göttingen, 26 -28 June 2008

Katharina Beier

1 Introduction

The conference on ethical and legal aspects of research with human tissue in Europe was the kick-off meeting of the Tiss.EU project "Evaluation of Legislation and Related Guidelines on the Procurement, Storage and Transfer of Human Tissues and Cells in the European Union − an Evidence-Based Impact Analysis". The conference was organized by the project management team Dr Christian Lenk, Prof Claudia Wiesemann and Dr Katharina Beier in Göttingen and by the project partner Nils Hoppe from Hannover. About 45 people, speakers included, from all over Europe took part in this kick-off meeting that lasted from 26-28 June 2008.

The conference made a first contribution to the overall project aim. In order to assess the impact made by European Union's regulatory activities to date on research in the member states (plus Switzerland) the project will gather and compare national legislative instruments and guidelines. To this end the call for papers requested contributions from the following thematic areas:

- ethical and legal regulations regarding the procurement, storage and transfer of tissue and cells for research;

- rights and entitlements to tissue and cells;
- anonymisation and pseudonymisation to protect privacy rights;
- ethical and legal aspects of research with biobanks;
- national regulations in the field of research with human tissue in individual EU member states.

The selection of submitted papers was guided by the intention to cover a preferable host range of countries in order to get an overview about current ethical and legal standards for research with human tissue. On this basis 14 speakers from ten different countries have been invited to the Tiss.EU conference in Goettingen. Their contributions were assigned to three thematic blocks that naturally featured some overlaps. In particular, the first section was set up to grasp the ethical and legal challenges of biobanks in theoretical and conceptual terms. The contributions within this block provided the framework for the country reports that were at the centre stage of the second block "European approaches to human tissue research". The last thematic block was chosen both to provide some future prospects and to identify remaining challenges for ethical and legal governance of biobanks.

2 The contributions

Part I: Ethical and legal challenges of human tissue research

After an introduction to the Tiss.EU project given by Dr Christian Lenk and Nils Hoppe, the conference commenced with *Michael Barilan* from Tel Aviv University, Israel. His presentation was concerned with the ethics of using human tissues in biomedical contexts. In particular, he argued that human body parts that are detached from a living body cannot be protected by natural human rights for the reason that a real-time link between personal will and a basic human interest of the embodied person is missing. Notwithstanding this, Barilan insisted that the ethics of human rights and dignity may bring important lessons to the ethics of using human tissues and remains: firstly, human tissues are never morally value-free, i.e. they may be used only for specific culturally valuable purposes and only in the absence of reasonable substitutes. Secondly, the appropriation of human remains requires some form of consent or endorsement as well, since the human body and body parts are never "found objects", to be collected, manipulated and exploited at one's own pleasure. Thirdly, dead bodies or tissues are nobody's private affair, but are always of concern to humanity and to communal ways of respect. Although possession of human tissues and human remains may imply elements of property rights (e.g. legal rights to sell in exchange for money; legal immunity from dispossession) this does not override considerations of human dignity as a public value.

Austen Garwood-Gowers, a senior lecturer of law from Nottingham (UK), focused his presentation on the current human tissue discourse. He critically observed that governments are often more concerned with tissue use promotion than with protecting the individual as an end. The discursive distortions range from the misuse of key terms and concepts to "red herrings" which suggest that the law allows more use than it in fact does, and "Trojan horses" which suggest that the law is achieving respect when it is not. By exploring the relevant issues both from a UK and more comparative and international perspective, Garwood-Gowers outlaid certain tensions between overarching ethical and human rights norms and tissue specific discourse, law and practice. He specifically concluded that the existing international instruments are not applied properly to the field of human tissue research yet.

In accordance with Garwood-Gowers' observation of governments' bias towards the use of human tissue, the Director of the "Legal Pathways" Institute in Aerdenhout, The Netherlands, *Jasper Bovenberg***,** was concerned with the issue of tissue samples and data shipment between countries. As this affects Europe's ability to sustain its edge in biomedical research he pinpointed the legal challenges of tissue transfer by taking into account the different concerns of stakeholders and donors, but also acknowledged concerns couched at an institutional or national level. To overcome these concerns Bovenberg suggested thorough informed consent procedures for donors and special sample transfer policies to reassure institutional concerns. Further he recommended, as an answer to national concerns, the accomplishment of export controls and highlighted the importance of individual "Sample Transfer Agreements" for research projects to meet legal patchwork concerns and to promote a "free movement of samples" in the EU Research Area.

What the Kantian formula to treat human beings never merely as a means implies in the context of human tissue research was the crucial question addressed by *Rieke van der Graaf*. The researcher from the University Medical Center in Utrecht, NL, argued that it includes both, an element of consent and an element of endsharing, and made clear that meeting the consent in the Kantian formula is something over and above asking informed consent. According to her analysis it plays a role at a more fundamental level, i.e. we have to ask whether people have sufficient reasons to consent to being used in this way. Van der Graaf's advanced understanding of informed consent had several implications for biobank research. Firstly, the form of consent in the Kantian formula should be regarded as foundational to the much-debated broad consent for biobank research. In line with the Kantian formula she argued that broad consent does not have to be problematic if participants have *sufficient reasons* to give their consent. Second, van der Graaf's analysis shed new light on the issue of re-contacting donors. In particular, she argued that even when the donor would not give his or her actual informed consent, one cannot say that the she is used merely as a means and hence wrongly enrolled. To

ensure end-sharing and sufficient reason to consent van der Graaf strongly embraced Winickoff's & Winickoff's "Charitable Trust Model".[1]

Leen Trommelmans, researcher at the renowned Centre for Biomedical Ethics and Law at the University of Leuven, Belgium was also concerned with the donor's perspective. In particular, she focused on the donation of cells for human tissue engineered products (HTEPs). In accordance with the guideline on advanced therapy medicinal products (which covers HTEPs), Trommelmans argued that cell donors may have remaining interests in the donated cells, and may want to protect these interests. For the reason that at the moment the main element that orders the relationships between the parties in the cell transfer is the informed consent of the donor that is obtained before removal of these cells, she asked whether the existing provisions for informed consent are adapted to the context of tissue engineering and the interests of the donor. In addition, Trommelmans suggested some approaches toward a well-suited informed consent procedure. In particular, she argued that the informed consent process in cell donation has *de facto* a double function: it should firstly provide cell donors with the necessary information to decide whether donation is in their best interest and/or doesn't go against deep-seated worldviews. But the informed consent equally is instrumental in ordering the transfer of cells and defining its criteria. As one conclusion Trommelmans suggested that, as far as concerns informing the donor, the current regulation should also cover cell donation for TE applications that are not intended to be implanted in humans or used as extracorporeal applications but that do contain donated cells.

Part II: European approaches to human tissue research

Following these conceptual investigations on informed consent, *Milena Bister's* talk on informed consent practices in Austria opened the second thematic block on "European approaches to Human Tissue Research" at the Tiss.EU conference. By this she contributed to the ongoing interdisciplinary analysis regarding the question of how to deal with informed consent in the mirror of tissue research and banking in the European Union. The sociologist presented her findings from a case study on the practice of informed consent to medical research on leftovers from surgery conducted from April 2005 to February 2007 at the Medical University and General Hospital of Vienna. Contrary to the Human Convention on Biomedicine Austria allows for "implicit agreement" of the silent patient through a hypothetic interpretation of the contract of treatment between patients and doctors. This enables hospital staff members to use therapeutically unneeded bodily substances in order to fulfil the legally established institutional objectives of teaching and researching. As a result of her investigation Bister suggested an understanding of

[1] D. Winickoff/R. Winickoff, The Charitable Trust as a Model for Genomic Biobanks, 349 *New England Journal of Medicine* 12: 1180-1184 (18 September 2003).

informed consent as a "boundary object" (Star and Griesemer 1989)[2] between medical professionals and donors. This means that informed consent as such might be better understood as an appropriate tool to satisfy divergent interests in the medical encounter than as a tool for patients' empowerment. Bister argued that the different motives for both obtaining and giving consent she observed in her studies account for the contemporary unchallenged practice of informed consent.

Bister's interpretation of Austrian informed consent practices was followed by *Bianka Dörr's* investigation on the Swiss legal and ethical situation for human tissue research. As to date there is no specific legislation on Federal level in Switzerland, but the very influential guideline on biobanking from the Swiss Academy of the Medical Sciences from 2006. By now, the Swiss authorities have recognized the need to take action in this field. As early as in 2006, first preliminary drafts of a Federal Law on Research with Humans (Humanforschungsgesetz) were presented. Against this background Dörr examined the present and prospective legal framework for research on biological material and personal data in Switzerland. She ended with a ventilation of the question of the legal qualification of bodily substances under Swiss law and pointed at a new dualistic approach of property and personal rights. She concluded that the Swiss regulations are a first step forward towards finding a balance between the personal rights of the donors, the interests of research and the third party interests.

Bianca Dörr: Characterization of the Regulative Approach of the Swiss Academy of the Medical Sciences (SAMS)

The text of the guidelines is based on the premise that transparent rules strengthen trust in research in the long term and increase the readiness of potential donors to donate bodily substances. The biobank guidelines aim to consider both the present national and international framework and the essential principles of bioethics (autonomy, welfare, justice). The guideline text is specially designed to balance individual rights against research interests. It contains, therefore, provisions for the protection of the human dignity and privacy of the donor as well as for quality control in the operation of the biobank. All research projects which may directly affect the donor of biological material require the formal approval of the relevant ethics commission for clinical trials (SAMS 2006, 4.1).

Source: Citation from manuscript text

In the same vein *Virginie Commin* from the Centre National de la Recherche Scientifique, Paris, investigated the French legal framework for human tissue research.

[2] Star, S.L. and Griesemer, J.R. (1989): Institutional ecology ‚translations' and boundary objects: amateurs and professionals in Berkeley's Museum of Vertebrate Zoology, 1907-39. *Social Studies of Science*, 19, 387-420.

Although the French law does not name biobanks expressly, the legislator provided them recently with a relatively interconnected legal framework. Commin focused her analysis on the technical specific rules related to the activities of biobanks (on which conditions a biobank can be established, on which conditions samples can be given thereto) and pointed out that there is an application of the big principles of "French-style" bioethics: "non property" principle, informed consent and data confidentiality principles. According to Commin's judgement the French legislator grasped and answered the main part of the questions raised and so paved the way for a sustained activity of biobanks in France. In spite of this dense legal framework, she made also clear that the French law did not succeed in covering *all* the questions arising from the practices of biobanks, notably the rights of the donors such as an on-going control on the use of biological material and associated data they gave for research purposes, as well as researchers' right to access biobanks and current issues related to ownership.

Commin & Noiville: Specific Legal Rules for Biobanking in France

"No property" principle is expressed in a strong way by the Civil Code since it is incorporated three times and that these provisions are public order rules: "Human body, (and also its body parts and products) cannot be subject matter of a property right" (article 16-1 paragraph 3 of the Civil code).

Informed consent principle related to the collection of human body elements and products is provided by article L1211-2 of Health Public code. It is *a sine qua non* condition which is required prior to the collect of human body sample for a medical or scientific use.

Data confidentiality principle is set out in *Loi Informatique et Libertés (*Act relative to computers, files and liberties) of the 6 January 1978 and modified the 6 August 2004. Schematically, this principle is organized around three actions that the researchers must comply with: an application for data access to the *Commission Informatique et Libertés* (CNIL), an independent administrative authority protecting privacy and personal data; information of the donor who can object to his data processing and finally data coding.

Source: Citation from manuscript text

Paola Parente from the Catholic University of the Sacred Heart, Rome, closed the first conference day with an overview about the ethical and legal aspects of the collection and storage of human biological material in her country. She pointed out that in Italy there is a lack of specific rules and regulations concerning this field of research, which also leaves the definition of biobanks to guidelines. However, biobanks have been studied by the National Committee for the Biosafety and Bio-

technologies, which presented guidelines for biobanks' setting and accreditation (2006). The Committee also endorses a uniform legislation on biobanks in the light of promoting a new way of solidarity between groups and generations based on the voluntary sharing of sample and information for a common resource. Notwithstanding this, there is a need for deeper reflection on the limits of the intervention and manipulation of the human biological sample to guarantee human dignity and rights and, at the same time, the own needs of the research. Due to Parente this is particularly necessary because of the different ways of regulating privacy with dissimilar standards of safety in each country.

Spagnolo, Daloiso & Parente: Relevant Legal and Ethical Documents in Italy for Biobank Governance

All relevant data concerning the drawing and storage of human biological samples in the Italian law have been evaluated in:

1. the DPR 285/90 art 41 c. 2 concerning the Mortuary Policy Rules: "drawing and storage of human samples, from foetus too, should be allowed by the local authority …";

2. The Penal law, article n. 413: "Whoever makes a dissection on a cadaver or on its part even with scientific or didactic purpose when it is not allowed will be punished with imprisonment till 6 month and a fine of…";

3. The Constitution of the Italian Republic in the article 32: "The Republic safeguards the health as a citizen's fundamental right and as social interest […] Nobody should be forced to accept a medical treatment […] and the law will never break human rights";

4. The Italian Code of Medical deontology (2006), Art.12, 20, 35, 40, 41.

Furthermore, some main national organizations and foundations have drawn up specific guidelines: "Guideline for biobank setting and accreditation", "Guideline for biobanks certification" by the National Committee for Biosafety and Biotechnology (Ncbb) and "Biobanks and research on human samples" by the National Committee for Bioethics (Ncb).

Source: Citation from manuscript text

Part III: Governing human tissue research – future perspectives

As the first speaker of the second conference day, *Bardhyl Cipi*, Professor and Head of Department of Forensic Medicine and Medical Ethics Sector in Tirana, Albania, completed the second block of country reports by bringing in a South-East-

European perspective. In his talk he admitted that problems of human tissues and cells have not yet been addressed in Albania. Consequently the biotechnical achievements of developed countries could be used, or even misused in Albania, as already happened elsewhere − there were several medical scandals. As a concrete example Cipi referred to the trafficking of human organs that might also affect the handling of human tissue for research purposes. In his conclusion Cipi thus pointed out that the problems arising from the extraction of human tissue and cells, but also organ transplantation etc. should be known in Albania, but are not mirrored in proper legislation yet.

The sociologist *Susanne Weber* from the renowned ESRC Centre for Genomics in Society at the University of Exeter offered a comparative analysis in a specific field of human tissue research. In particular, she investigated how the transposition of the EU tissue directives into the national regulatory frameworks of Germany and the UK are beginning to shape clinical research using autologous stem cells. According to Weber, autologous stem cells represent a particularly interesting case study for an analysis of the implementation of EU tissue regulation and the framing of clinical research, because – although autologous stem cells are considered ethically unproblematic – the integration of the EU Directive equally varies across countries. Whereas Germany has adopted a framework which predominantly treats autologous stem cells akin to medical products, the UK has implemented a two-tier framework. As a sociologist Weber called for a close consideration of the exchanges between actors and systems of governance in defining and shaping regulatory practices and drawing legitimacy from them. She also took up the question of harmonisation and concluded that standardization is necessarily produced locally spreading out into broader biomedical networks of scientific, medical and normative exchange.

Nadja Kanellopoulou, researcher at the Scottish University of Edinburgh, was the first speaker of the third thematic block, which was set up to focus on the challenges for biobank governance. Kanellopoulou discussed the normative assumptions and paradoxes in the regulation of the use of human biological material for the purposes of biobanking research in the UK. She pointed out that research initiatives, such as UK Biobank, operate as resources for the public good. Analysis of their guiding principles and policies for access and benefit sharing, however, reveal critical questions as to whether these reflect anxieties about research accountability and use. According to Kanellopoulou these questions are linked to key "control dilemmas", situated at the heart of the balance between participants' possible entitlements and the public interest. As public concerns are affected by increasing awareness of the value of human tissue in modern research, she asked how the documented shifts of tissue biovalue might affect public willingness to contribute to research. Above all, she critically examined current regulatory emphasis on altruism and genetic solidarity in the UK, in the light of emerging trends for reciprocal research models, and in pursuit of better criteria for responsible biobanking. Her deliberations led up to the crucial question whether it is sustaina-

ble to regulate research on the basis that participants do not see value nor retain an interest in how research samples are used, or the information they contain. Kanellopoulou concluded that there is a need for an optimal balance between such interests and considerations of social responsibility and moral obligation in research participation. Consequently the role of law will have to be placed in a broader social, ethical and economic context.

David Hunter, lecturer in bioethics at the University of Ulster, Northern Ireland, focused on the rather institutional issue of Research Ethics Committee involvement as it is foreseen in the UK Human Tissue Act (HTA) 2004. Given the fact that the HTA does not represent a principled approach but instead a pragmatic approach which balances off several different ethical considerations, Hunter noted that much of the more difficult decisions are left to the Research Ethics Committees (RECs). In particular, it is now the role of RECs to decide whether research can be carried out using human tissue where no consent was given for the use of this tissue in research. Likewise RECs are charged with approving of human tissue banks which then need no further ethical approval to carry out research solely using tissue from that bank. However, according to Hunter there has been little guidance so far in regards to the decisions these committees must make. For this reason he delineated these decisions and offered some philosophical guidance to RECs in making these decisions.

Given the fact that pathologists are responsible for the selection and availability of human tissue specimens for diverse academic purposes – an activity which has generally taken place in an ill-defined ethical and legal framework – the German pathologist *Christoph Brochhausen* analyzed the German, British and European regulations regarding secondary use of human tissue. Whilst the Royal College of Pathologists in London made specific suggestions for the handling of tissue archived after therapeutical or diagnostical resection, in Germany several laws and regulations touch on the subject of archived tissue, but no specific regulations exist concerning the handling of already archived tissue. As Brochhausen pointed out, there is uncertainty about the feasibility of the academic use of surplus tissue. Against this background he concluded that adequate informed consent is needed for the secondary use of surplus tissue samples. In fact, pathologists should be pro-active in the discussion about the framework for the academic use of archival material. Based on the comparison of German, European and British regulations Brochhausen further suggested solutions for a formalized informed consent as concerns the additional use of human tissue samples.

3 Results

This detailed summary of conference talks is evidence of the complex examination of ethical and legal challenges of human tissue banking carried out at the first Tiss.EU conference. Notwithstanding this broad topical spectrum of the contributions, some overall results appear that should be highlighted here.

First, it has to be noted that the notions of human dignity and respect as well as its practical implications need to be clarified in the field of human tissue research. Conceptual suggestions as they were made by Barilan, Garwood-Gowers and van den Graaf pave the way towards an advanced understanding of the ethical implications of using bodily materials for research purposes. Their discussions made clear that in order to respect the human body as well as its removed parts, there have to be adequate rules and responsibilities. To meet this challenge Michael Barilan called for a stronger communitarian approach in deciding on human tissue usage. A "Charitable Trust Model" as has been envisioned by Rieke van der Graaf seems to be in line with this. A need for revisions can also be documented for the concept of informed consent in order to match the specific features of biobanking. Those contributions that dealt with the issue of informed consent revealed that not only the practices of informed consent vary from country to country, but that its functions are also interpreted differently. Whether broad or rather specific consent requirements should be valid or what kind of information needs to be given depends on the stakeholders' interests involved in human tissue research. In this context, the majority of speakers critically noted that the role of the donor is still underexposed and too much is overlooked from a rather institutional perspective. However, there was no consensus on the means of an increasing donor empowerment. In one of the discussions the Tiss.EU project partner Judit Sándor, former Head of the UNESCO Bioethics Section, also called for more cultural sensitivity in the understanding of informed consent practices, especially in those countries with different ethnicities.

The country reports on the ethical and legal circumstances for human tissue research in different European countries that have been at the centre stage of the second block revealed immense variations concerning scope and level of biobank regulation. Whilst some countries as France or the UK passed already laws on human tissue use, others, like Albania, still miss authoritative rule. To bridge this regulative gap in Europe means to set a task besides harmonization requirements. Furthermore, based on the country reports one can hazard two guesses about the future development of tissue regulation: firstly it can be expected that the development of tissue law necessarily interacts with existing ethical guidelines in this field, i.e. the so called soft law, and will also have to take societal discourses into account as they have been encouraged in the UK or Switzerland in order to match expressed concerns. Secondly, there is some evidence that as a consequence of critical assessments the current law on human tissue research will be subject to revision (e.g. in France). This fact strengthens the Tiss.EU project's aim to provide

an overview on existing regulatory approaches as this might provide a valuable resource for comparison and improvement in the field of human tissue law.

Rights and Entitlements in Human Tissue and Cells

First International Workshop of the Tiss.EU Project

Hannover, 28-29 November 2008

Katharina Beier

1 Introduction

The first international workshop within the Tiss.EU project was organized by the project partner Nils Hoppe from Hannover. The workshop's main topic was one of the four Focal Themes of the Tiss.EU project, "Rights and Entitlements in Human Tissue and Cells" (Focal Theme B). In addition, the workshop's regional focus was on the regulation of human tissue research in the countries of Austria, Switzerland and Germany. Due to this focus the academic background of the invited speakers was mainly in law. The debate on legal aspects of human tissue usage was completed by contributions issuing matters of practical application of human tissue for research.

2 The contributions

The workshop started with a general introduction to the Tiss.EU project given by *Christian Lenk* as representative of the coordinating institution in Goettingen. In his presentation he gave a review on the most pressing ethical questions evoked by

human tissue research. Against this background, *Nils Hoppe* delineated the major legal challenges in this field. In particular, he called for a clarification regarding the following three aspects:

- Firstly, the relationship between research and therapeutical applications of human tissue is highly controversial since only the latter is covered by an EU Directive (2004/23/EC) so far. However, an examination of this Directive is expected to provide valuable insights for the pending regulation of human tissue research.
- A second challenge concerns the legal status of tissue and cells. Whereas there is a far-reaching consent among the European countries that the human body cannot be conceived in terms of property (*res extra commercium*), this does no longer hold true regarding its separated parts. As a matter of fact, technically processed tissue is considered a medicinical product in Germany. This amounts to questions such as whether research facilities can rightfully claim property rights on extracted tissues and cells and how such claims might be reconciled with the personal rights of donors to sustain the disposal of their bodily materials.
- Closely connected is the issue of commercialization, which needs to be distinguished from mere economization of human tissue usage. In this context Hoppe called attention to an obvious contradiction: Whereas the prohibition of commercialization regarding the human body precludes profits on the side of the donor, this is not equally true for researchers or other users of human tissue.

In view of these challenges the British jurist *José Miola* (University of Leicester) stressed the need for an improved regulation of human tissue research. In particular, his talk was concerned with a comprehensive analysis regarding the consent provisions of the British Human Tissue Act. Miola related to several human tissue scandals in British hospitals that preceded the enactment of the Human Tissue Act in 2004. Since human tissues were used without asking for the donors' consent, the Human Tissue Act was expected to serve as a punishment to medical misconduct and as such was strongly challenged by the medical profession. Due to this argument, the Human Tissue Act came about as compromise that encounters not only criticism from the research community being in favour of preferably unhampered research conditions, but also from those who insisted on stricter consent provisions. According to Miola's evaluation, the consent requirements of the Human Tissue Act remain unsatisfactory in several respects. Firstly, the medical profession has been successful in lobbying for a "general consent"-provision instead of the originally foreseen specific consent regulation. Secondly, the Code of Conduct which has been released by the Human Tissue Authority as "guidance" to the Human Tissue Act appears somewhat less strict: For example, a failure to follow its stated rules is not regarded a criminal offence. Thirdly, Miola called attention to legal loopholes like in the case of already existing tissue collections as there is still

the possibility to use them without the consent of the donor. However, as "the proof of the pudding is in the eating", Miola regarded it premature to conclude the failure of the Human Tissue Act at the present point of time, but rather argued for an ongoing review of the Act in terms of its adequacy in regulating human tissue research.

Due to the regional focus of the workshop the jurists *Jürgen Simon* (University of Lüneburg), *Bianka Dörr* (University of Zurich) and *Markus Kastelitz* (University of Hannover) informed about the legal regulation of human tissue research in Germany, Switzerland and Austria, their contributions revealing some major concordance. In contrast to Great Britain, human tissue research is subject to a rather fragmented jurisdiction in these three countries, comprising transplantation-, transfusion-, drug- and funeral laws. According to Jürgen Simon, this necessarily leaves severe loopholes: Whereas the funeral laws of the German "Bundesländer" are pertinent to body parts of dead persons, the legal status of materials from living human beings remains unacknowledged. Another problem relates to bodily materials removed in surgeries: as these may be transformed into systematic tissue collections they can no longer be declared simply as "waste." According to Markus Kastelitz, the situation is not much clearer in Austria. Whereas one side argues that hospitals obtain a property right in tissues extracted in surgeries, the Austrian Supreme Court ruled out the possibility of taking tissues from dead persons without their former consent. The Austrian enactment of the EU tissue directive 2004/23/EC does not provide for further clarification either. Restricted to therapeutic applications, it is by no means clear what it means for research in human tissue. Simon as well as Kastelitz thus argued for a comprehensive tissue research law that should furthermore include regulations for the usage of tissues from living donors. The Swiss draft for an all-encompassing research law even exceeds this requirement, but since the law will be enacted earliest in April 2009, an assessment whether human tissue research will be sufficiently regulated by the awaited "Humanforschungsgesetz" is still outstanding. However, in view of the Human Tissue Act, according to Miola, it is at least doubtful whether a comprehensive law is per se superior to a fragmented regulation.

Regarding the legal status of bodily materials, the three speakers widely agreed that the usage of human tissue is a matter beyond property law in their countries; yet as soon as tissue has been separated from the human body, the "source" of this material can claim a *de facto* property-right. According to that, it was stressed by Dörr that this dualism evokes the question how the transformation of human tissue and cells into quasi-property can prevail without risking a substantial loss of personal rights. In spite of far-reaching concordances between Germany, Switzerland and Austria, the workshop also revealed some differences, for example in the transplantation laws. Whereas these regulative differences might affect the usage of tissue for therapeutic purposes, according to the participants' unisonously voiced opinion there is nevertheless no such impact to be expected on the future regulation of research with human tissue.

The need for a coherent regulation of human tissue research was also stressed by two contributions from a rather practical point of view. *Michael Harder*, who is the managing director of "corlife" – a private company that was founded as a spin-off of Hannover Medical School in 2006 –, provided valuable insights into one among many possible applications of human tissue for research. "Corlife" specializes in implants for cardiovascular therapies based on tissue-engineered matrix composites. When integrated into the patient's body they become indistinguishable from the patient's own tissue. In his talk, Harder particularly focused on the production of heart valve replacements by matrix transplants for the reason that the legal status of these very materials is unclear: they can neither be regarded as tissue nor organs. According to Harder, although these matrices are of human origin, they should be seen as medicinical products that by definition do not undergo industrial manipulation. However, as R&D activities are not covered by consent provisions in Germany yet, "Corlife" currently imports heart valves from the US in order to be "on the safe side". Given the fact that the heart valve replacements are meant for the European market at the end of the day, several participants voiced their discontent with this practice. As a second matter of practical importance, *Ralf Heyder* (Referent of the German Association of University Hospitals) cautioned against the currently prevalent demonization of profit in the field of human tissue research. Bearing in mind that all kinds of tissue usage incur costs, profit should not be prima facie excluded; according to Heyder, there should rather be a thorough distinction between legitimate manners of economization and illegitimate practices of commercialization. Whereas he considered it ethically ineligible to profit from the neediness of patients, it is by all means justified to use profit as an incentive to encourage ethically desired behaviour. In particular, Heyder recommended a sufficiently implemented profit system to promote innovation and efficiency. Against this background, he specifically argued for an adequate reimbursement of hospitals undertaking transplantations as a means to overcome the shortage of organs and tissues that results from the currently insufficient remuneration in Germany.

The talk of the legal researcher *Marcello Corrales* (University of Hannover) on the European database directive highlighted that human tissue research is also challenging the present EU legislation. In particular, he pointed to the fact that *genetic* databases are not covered by the EU database directive yet. Starting from the premise that IP rights might be rightfully claimed for genetic databases too, this might not only pose obstacles to the researchers' access to a certain database, but the "creative investor" of the database could even obtain a *de facto*-monopoly on certain data. In addition, Corrales highlighted the fact that the database directive might come into conflict with the individual's right to access her personal data.

3 Results

In summary, the contributions and discussions at the workshop in Hannover reinforced the exigency to address the legal challenges of human tissue research thoroughly from an inter-European perspective. In particular, the country reports of this workshop revealed fundamental questions of human tissue research that are only partly answered by national or EU law. Accordingly, all speakers articulated their regret that human tissue research is not covered by an own legislation so far. Notwithstanding this, the three country reports pointed to important aspects of the current legislation on human tissue deserving further scrutiny. For example, in the case of Germany, Jürgen Simon called attention to the fact that funeral and pathology laws are even divergent between the federal legislations in the German counties. However, the existing concordances between the German, Austrian and Swiss legal approaches display a promising starting point for further legal adjustments within the field. This prospect is additionally reinforced by the fact that even Switzerland as non-member state of the European Union takes pains to adjust its legislation to EU law in certain fields. In particular, the workshop revealed the following common features:

- In compliance with the European Bioethics Convention (art. 21) all three countries regard the legal status of the living human body as *res extra commercium* and follow the non-commercialisation principle of the human body and its parts.
- Regarding separated body material all three countries acknowledge a property-like right of the potential donor on these materials. After the separation, a transfer of property is possible with the donor's consent.
- The three countries stand in the tradition of the personality right and interpret the right of a person or this person's relatives to control the further use of body material as related to the personality right or the "continued personality" of a deceased person.
- In Germany and Austria, proposals have been brought forward that required consent is not necessary in case of research with anonymised tissue samples. However, most of the projects in the field of tissue research use pseudonymised samples.
- There are similarities in the current national recommendations on biobanking of the three examined countries, for example the referral that donors who participate in biobank research should be informed about findings with personal diagnostic or therapeutic relevance (Switzerland) or findings which are essential to life (Austria, Germany).

The obvious differences between the British legal approach and the human tissue legislation in the three examined countries propel the Tiss.EU project's aim to

further examine whether there are other clusters of countries following a similar track of regulation.

Anonymisation and Pseudonymisation as Means of Privacy Protection

Second International Workshop of the Tiss.EU Project

Budapest, 6-8 April 2009

Petra Bárd, Judit Sándor

1 Introduction

The second international workshop within the Tiss.EU project was organized by *Judit Sándor* and *Petra Bárd* from the Centre for Ethics and Law in Biomedicine (CELAB) at the Central European University (CEU), Budapest, Hungary. It focussed on one of the four Focal Themes of the Tiss.EU project by addressing questions of "Anonymisation and Pseudonymisation as Means of Privacy Protection" (Focal Theme C) in relatively unexplored jurisdictions of Central and Eastern Europe such as the Czech Republic, Hungary, Slovakia and Romania. Due to the interdisciplinary nature of the workshop's subject, invited speakers represented a wide range of disciplines such as law, medicine, philosophy and information technology.

The structure of the workshop followed a two-track approach: on the one hand speakers presented their countries' regulatory framework and existing practices concerning anonymisation, and on the other scholars addressed various related theoretical concerns and problems. Emphasis was put on the geographical

scope of the workshop: invited were not only experts to summarize the related legal rules in their own countries, but also scholars from Central Eastern European jurisdictions to address the theoretical issues.

The substantive part of the workshop started with general presentations framing the issue of anonymisation and pseudonymisation.

As a first speaker, *Christian Lenk* as representative of the coordinating institution University Medical Center Goettingen greeted the audience and emphasized the special importance of personal data and genetic data in ethics and law in his introductory remarks. In particular, he asked whether common standards of anonymisation in medical research can be obtained and how the privacy of and control over medical data can be secured.

Judit Sándor, CEU professor and Director of CELAB, representing the host institution of the workshop, gave a thorough analysis mapping anonymity issues. She made reference to different areas of life and illustrated her point on the importance and diverse nature of anonymity with examples from different branches of law. She also drew attention to a perceived relation between anonymity and altruism: according to this view, the ultimate form of altruism is the total absence of a personal relationship, like in the case of an organ donation between complete strangers, where the identity of the donor and recipient is hidden through anonymisation. In the special case of biobanks, however, she was sceptical as to whether altruism can be presumed on the side of the gene donor, especially since biobanks are combinations of research and commercial enterprises. Sándor also emphasized the divergent functions and the lack of a uniform definition of anonymisation in both international instruments as well as Hungarian pieces of legislation.

The keynote speech, delivered by *Bernice S. Elger*, professor at the University of Geneva, Switzerland, went into the clashing interests, the importance of biobanking and that of privacy protection. According to her, the ethical and legal framework for genetic research with human tissue is currently not well defined. In particular, she stressed that terminology varies widely concerning different degrees of anonymisation. The exact definition and understanding of anonymisation is important for sample donors, researchers and ethics commissions for several reasons: it not only informs about the degree of protection and risks to confidentiality, but in most jurisdictions, it also influences the type of required consent to be obtained from sample donors. In the remainder of her presentation, Elger explored ethical, legal and practical problems related to anonymisation and pseudonymisation. In particular, she argued that complete anonymity is difficult to obtain, which leads to the predominant use of linked anonymisation. Following Elger, anonymization does still not mean that researchers are free of obligations to obtain consent. Rather, consent should be as specific as possible; only for future research (provided a Research Ethics Committee's approval) it might be acceptable to allow for general consent. In the end Elger strongly recommended to discuss the different regulatory frameworks at an international level in order to pave the way for a better harmonization of standards.

The second session opened with a presentation by *Ants Nõmper*, senior lecturer at the University of Tartu, Estonia, who presented his thoughts on autonomy by referring to the Estonian population databases. Estonia is of particular interest to researchers in the field of bioethics, and especially to those interested in biobanking. As Nomper pointed out, Estonia has provided controversial innovations in this field. Firstly, in 2000, it adopted a regulation on population biobanks that governed the usage of medical and genetic data and tissue samples of volunteers. Volunteers were asked to give an open consent that justified not only the collection of data and tissue samples but also an almost unlimited usage thereof in the future. In 2007, Estonia abandoned the consent requirement altogether and established its e-health project, in which participation is mandatory for each patient in Estonia, on the possibility of close access to data for third parties. Nomper's presentation also shed some light on the considerations behind both innovations and provided an update regarding the progress of these projects. He concluded his presentation by suggesting that autonomy could be enhanced by better access control, more accurate data and a higher level of data protection.

Josef Kuře, Professor at the University Centre for Bioethics and Department of Medical Ethics, Masaryk University in Brno, Czech Republic, talked about the ethics of biobanking. According to Kure, biobanking represents not only new possibilities in health care but also new challenges for governance framework(s) on the level of both, ethical reflection and legal regulation. In his presentation, starting with the informed consent concept and its application for various forms of biobanking, he provided a short overview of ethical aspects of biobanking. Amongst others, he argued that samples and data should be distinguished. Attention was also paid to concerns about some common research practices, including data availability, specific issues involving research without adequate consent, privacy, the commercialisation of biobank research and discrimination. In the end, Kure envisioned some possible future scenarios. The understanding and safeguarding of privacy and confidentiality may remain the same, or may be slightly altered in the future. Possible divergences may also take two directions: on the one hand we might move towards a strong privacy and confidentiality protection model, or towards abolishing privacy and confidentiality as we understand them today.

2 Country Reports: Slovakia, Czech Republic, Hungary, Romania

The first target jurisdiction to be addressed was Slovakia. Professor *Jan Koller* from the Central Tissue Bank, University Hospital Bratislava, addressed traceability requirements and privacy protection in Slovakian tissue and cell establishments. Starting his presentation with EU imperatives, Koller stated that since 2004, three European Directives (23/2004/EC, 17/2006/EC, 86/2006/EC) on setting standards of quality and safety for the donation, procurement, testing, processing, pre-

servation, storage and distribution of human tissues and cells have been adopted by the European Parliament and Council and the European Commission. In addition to safety and quality measures for human tissues and cells for use in humans, the Directives contain requirements on protection of human rights and privacy, assurance of confidentiality of any health related information, full traceability of donations and distribution of tissues and cells as well. The EU Member States have been obliged to implement the Directives into their national regulations (Slovakia did so at the end of 2007). The Competent Authority for tissues and cells in Slovakia is the Ministry of Health. The donation and transplantation system in the country is coordinated centrally by the Slovak Center for Organ Transplantations (SCOT). Since the beginning of 2009, a new centralized computer information system has been established in the country in order to assure confidentiality and privacy protection as well as full traceability of organs, tissues and cells and related products.

The SCOT uses a validated electronic system, the so-called Transplantation Information System Slovakia (TISS) presented by *Daniel Kuba* from the Slovak Centre for Organ Transplantation and professor at the Slovak Medical University Bratislava. Kuba first explained the organization and structure of the Transplant Network in Slovakia. The initial requirements for TISS at the development phase were accessibility through web application; the existence of a national central information system; organ procurement and transplantation data management; tissue and cells procurement, processing, storage, allocation and transplantation data management; the traceability and safety of recipients at the same time; whilst the legal requirement was the implementation of EU law and the adoption of relevant national pieces of laws. After giving an insight into the technical details of the system, Kuba continued by stressing the importance of safety for both, the hardware and basic software level. He emphasized that traceability and privacy protection are the most important issues of safety in the transplantation chain. Although these two requirements might seem contradictory, efforts should be made to harmonize them. In his view the new information system could become a tool through which these two requirements can be reconciled.

Lukáš Prudil, Associate Professor at the Department of Social Medicine and Health Care Administration, Masaryk University Brno, Czech Republic, presented a country analysis on the Czech Republic. Prudil addressed different aspects of human tissue and cell usage in the Czech Republic: in particular, he explained the legal background including its international aspects regarding the usage of tissues and cells for research purposes, usage of tissues and cells for purposes other than research (e.g. transplantation), research on human stem cells, creation of databases, and data protection issues. The Oviedo Convention, for example, has become part of the Czech Law by being incorporated into Act 96/2001. However, as Prudil explained, there is no unique legal document covering research and usage of human tissues and cells in the Czech Republic. Instead there is a diffuse legal regulation in this field due to a missing conceptual approach and an unreasonable divi-

sion of competencies among state bodies. To find a real legal regulation of this issue is thus like solving a puzzle. However, according to Prudil, the most probable legal solution is conformity with international obligations.

István Peták from the Hungarian Biotech Association, KPS Molecular Treatment Solutions and the Semmelweis Medical University presented the Hungarian country analysis, wherein he emphasized the importance of a uniform regulatory framework. Concerning the recent Hungarian legislation on human tissue research, Act No XXI of 2008 on the "Protection of human genetic data, human genetic tests and research and biobanks", which defines a biobank as a "collection of samples containing genetic samples and related genetic and personal identification data for the purposes of a human genetic study or human genetic research under this Act", is of major importance. According to Petak, however, a number of questions remain open, for example whether storage of biological material without DNA or RNA for research purposes satisfies the definition of a biobank, or whether informed consent for unforeseen research purposes is sufficient in a long-term perspective: can one ask for general consent, and if so, how general can the consent be, etc. Furthermore, he pointed to the review and authorisation practices by ethical committees, which can make up for the necessary and by nature incomplete donor consent. In Hungary, for non-invasive, non-interventional medical research studies either a local ethical committee or the Scientific and Research Ethics Committee (ETT-TUKEB) grants approval. The former decides on research projects done without genetic studies conducted by one single institute, whilst the latter decides if multiple institutes or registered biobanks are involved or if human genetic studies are carried out.

Zoltán Alexin, senior lecturer at the University of Szeged, Department of Software Engineering, addressed the specific topic of the workshop, anonymisation of health care data in Hungary. According to him, the essence of the private sphere is that no one can intrude into it against the data subject's will. If an unwanted intrusion takes place, this violates not only the right to privacy, but also the right to human dignity that includes the right to self-determination and the right to full bodily and personal integrity. Furthermore, Alexin underlined that Hungary is considerably late in implementing the internationally accepted ethical principles concerning medical research involving human subjects. An ethical review and approval for invasive research projects are legally obligatory since 2002; for non-invasive research since March 2007. However, as he pointed out, even today, some research is still done without ethical review. In fact, any ethically approved retrospective database research can be done without informing the participants and without obtaining their consent. Within this legal framework an expressly progressive step was made by the adoption of the Act on the protection of personal genetic data, on human genetic examinations, research and biobanks in 2008. In his presentation, Alexin also discussed some elements and deficiencies of the Hungarian legal system in connection with the ethical and data protection rulings. In particular, he criticized the current anonymisation methods by contending that neither the

American HIPAA guideline nor pseuonymisation provides a secure method to cease the connection between the data and the data subject. For this reason he pointed to a solution proposed by Johannes Gehrke (Cornell University), who advised a slight distortion of data, which would ensure the anonymity of the data subjects.

Ioana Berindan-Neagoe, Head of Functional Genomics Department, and Assistant Professor of Immunology from the Cancer Institute "Ion Chiricuta" Cluj Napoca Romania, addressed the issue of tumour banks and their use in functional genomic studies in Romania. She referred to Law no. 677 of November 2001 for the protection of individuals regarding the processing of personal data and free movement of such data as this moulds the background for the Romanian regulation concerning medicine and biomedicine and the international instruments ratified by the Romanian legislator. Neagoe also listed Romanian pieces of legislation covering the field of human tissue research. Decree no. 1242/2007, amongst others, deals with the approval of standards selection and the evaluation of donors' (healthy or diseased) tissues and cells. Decree 1763/2007 lays down the technical requirements for donation, sampling, testing, processing, preservation, distribution, coding etc. These provisions are transposing the Directives 17/2006/EC, 23/2004/EC, 86/2006/EC and 23/2004/EC into national law. The Romanian legislation makes sure that Romania participates in the establishment of a single European code, which will use a specific numerical code for identification of all human cells and tissues donated to the banks of cells and tissues, except for reproductive cells donated between partners. Neagoe emphasized that the obtainment of tissues and cells is considered a donation act that is regulated by certain ethical principles such as avoiding discrimination and securing people's confidence in research by assuring confidentiality to the patients.

Continuing with the Romanian jurisdiction, *Simona Zanfir*, counsellor at the Legal and Communication Department of the Romanian National Supervisory Authority for Personal Data Processing, addressed the question of the processing of personal data regarding the state of health and human medical research in Romania. The presentation focused on the general aspects concerning the legal framework for the processing of personal data in Romania, including certain information about the Romanian National Supervisory Authority for Personal Data Processing. The necessity of anonymisation was at the focus of her presentation. Due to the methodology of the National Institute for Statistics, confidentiality, access to medical data, security of data basis and the necessity of anonymisation related to human medical research were the main issues. Zanfir discussed the practical aspects of the processing of data regarding the state of health and human medical research in Romania before she derived her conclusions.

3 Results

Professor *Judit Sándor* and CELAB researcher *Petra Bárd* summarized the findings of the workshop. Recognizing the scale of the problem, they addressed two important issues in the field of anonymization and pseudonymisation: privacy concern and efficiency through standardization.

- All presentations – implicitly or directly – dealt with both issues: privacy on the one hand and the question of how anonymisation should be realized on the other hand, i.e. how to make the coding or pseudonymisation efficient enough so that researchers, donors, recipients and society in general can benefit.
- These issues, however, have to be preceded by a preliminary question: what is the goal of the given repository of genetic samples and data, i.e. what type of biobank are we dealing with? Theoretically, even in the absence of any information attached to a sample, the donor can be identified if a matching sample is taken from her/him. Therefore only (i) archaic samples, (ii) samples which underwent the pooling procedure or (iii) mathematically distorted data can be regarded as truly anonymous.
- Total anonymity is not only hardly conceivable or practical; it is not even desired in the diagnostics context. Donors may have compelling reasons to claim access to the tissues in the future. Therefore many jurisdictions have opted for allowing doctors and/or researchers access to the code (the Slovak model, for instance, seems to be in line with this proposal), whereas a number of scholars speak out for linkable anonymous samples where doctors do not have access to the code – a theoretical model that has been realised by the Romanian system.
- Anonymity requirements as laid down by Hungarian law are particularly interesting, firstly through the example of reproduction, but also in relation to the recently adopted law on biobanks. While the laws and definitions may be missing or contradictory, researchers, practitioners and scholars in the field seem to agree on the need for common ethical, legal and technical standards.

Peculiar characteristics of the national pieces of legislation in the target countries include the following:

- In the *Czech Republic*, extensive human subject research is executed, while a corresponding legal framework is missing. Rules applicable to biobanks, research conducted on cells and tissues, and anonymisation requirements cannot be found in a single legal document. There are however a number of general pieces of national legislation and international instruments governing the field.

- With regard to donation, there is a presumed refusal (i.e. a full written informed consent is required), except for deceased donors, in which case consent is assumed.
- Interestingly, according to the Act 227/2006, Ministry of Education approval (*not* Ministry of Health approval) is needed for stem cell research, which is a unique solution in Europe.
- In the Czech Republic, surplus embryos are still being created and may be used for research purposes, without being coded like other tissues and cells.
- *Hungary* had the first biotechnology association founded in 2002. The country has a solid record of attracting and conducting international clinical trials, with over 250 performed each year, which is outstanding especially if seen in light of Hungary's population.
- Since 2002 there has been an ongoing legislative process which resulted in the Parliamentary Act XXI of 2008 on the protection of human genetic data and the regulation of human genetic studies, research and biobanks.
- The law addresses the use of genetic information only in the very narrow biomedical sector: in the fields of genetic testing, screening and research. It restricts the use of genetic data only in this biomedical context; however, even given the lack of regulation on the broader use of genetic data, according to the Act XXI of 2008, data processed for diagnostic or research purposes cannot be disseminated for the purposes of insurance. The Act applies to genetic sampling for human genetic study and human genetic research performed under the Act on the territory of the Republic of Hungary, the processing of genetic data irrespective of the place of sampling, and to genetic testing and screening, human genetic research and biobanks.
- Genetic samples and data anonymised in accordance with the requirements of the Biobank Act even before its entry into force may be treated in line with the Act for human genetic research and study. One of the specificities of the Biobank Act is that it regulates three different levels of coding and anonymity: (i) encoded genetic sample or data, meaning the replacement of all personal identification data relating to the donor by a retained code; (ii) pseudonymous genetic sample or data, meaning encoded genetic samples or data that is provided to the person concerned together with the code replacing the personal identification data; (iii) anonymised genetic sample or data, meaning genetic sample or data where all personal identification data has been rendered inapt of identifying the person.
- For the purposes of human genetic research only anonymised, encoded or pseudonymised genetic samples or data may be transmitted to third coun-

tries, and only on the condition that the law of the given country provides for data protection corresponding to that under the Biobank and the Data Protection Acts. In the course of transmitting encoded genetic samples and data to third countries, the code key necessary for personal identification must not be relayed.

- For the purposes of human genetic study, only encoded genetic samples may be transmitted to third countries. Genetic samples or data may enter the territory of Hungary only from a third country where the requirements laid down in the Hungarian law are ensured; this has to be verified by the health authority.
- Review and authorisation by ethical committees can make up for the necessary yet naturally incomplete donor consent. In Hungary, for non-invasive, non-interventional medical research studies either a local ethical committee or the Scientific and Research Ethics Committee (ETT-TUKEB) grants approval. The former decides on research projects that do not include genetic studies and are conducted by one single institute, while the latter rules in cases where multiple institutes or registered biobanks are involved and human genetic studies are done.
- In *Slovakia* all European Union pieces of legislation have been transposed into national law.
- Concerning donation in line with the Health Care Act, the service provider uses a unique numerical code assigned to the donor and to all the products connected to him/her which is derived from the uniform coding system. The SCOT (Slovak Centre for Organ Transplantation) uses a validated electronic system, the so-called Transplantation Information System Slovakia (TISS).
- In *Romania*, tissue and cells sample collection is considered as a donation act that has to satisfy a number of requirements. Romanian law provides for a general prohibition to process particular categories of data, including data regarding the state of health, as well as for exceptions for processing special data.
- The National Supervisory Authority established in 2005 issues certain regulations on anonymisation, recommending the adoption of adequate security measures on a technical and organizational level. Accordingly, data controllers must evaluate the potential risks for data processing, establish adequate security policies, inform and permanently train the employees, and establish the control on access to avoid unauthorised access from administrative personnel or anyone else.

Judging from the workshop's presentations on the regulation of human tissue research in the Eastern European countries, at least some common tendencies can be derived:

- All national legislations refer to the Oviedo Convention on Human Rights and Biomedicine.
- International standards are considered far more important than in many long-time Member States of the Council of Europe.

Despite the fact that all national legislations refer to the Oviedo Convention and adhere to European Union standards, Member States of this particular country group (Hungary being an exception) do not seem to take the lead upon their own initiative to go beyond the European minimum standards.

Biobanks for Research Purposes

Third International Workshop of the Tiss.EU Project

Paris, 24-25 June 2009

Christine Noiville, Florence Bellivier, Virginie Commin

1 Introduction

The third international workshop within the Tiss.EU project was organized by the project partners *Christine Noiville*, *Florence Bellivier* and *Virginie Commin* from Paris. It provided a major contribution to the fourth Focal Theme of the Tiss.EU project by addressing questions of "Biobanks for research purposes" (Focal Theme D). In addition, the workshop's regional focus was on the regulation and practice of human tissue research in the countries of Spain, Portugal and France. The workshop was completed by a fourth country report on the UK. Due to the Tiss.EU's cooperative structure regarding the examination of focal themes, the workshop was enriched with an additional presentation from the UK. The academic background of the invited speakers encompassed philosophy, law, political science, medical ethics and humanities, medicine, sociology, and natural sciences.

The workshop started with a general introduction of the Tiss.EU project given by *Nils Hoppe* as a representative of the project management. In his presentation, he focused on the major legal issues in the field of human tissue research. Among others, he referred to property and consent issues in human tissue research by illustrating them with common law cases. In doing so, he pointed out that whilst these issues are highly controversial within society, jurisprudence in this area re-

mains firmly rooted in the "no property principle". Questions of consent to the removal and use of human body parts remain important conditions for the societal acceptability of biobank research.

Following Hoppe, *Christine Noiville* and *Florence Bellivier* from the hosting institution in Paris presented the major issues to be discussed at this workshop. Besides the issues of consent and property they also stressed the need of an in-depth analysis regarding the protection of confidentiality in the context of biobank research. In particular, a confidential treatment of health data that are derived from stored biological samples might be important to erase fears of discrimination or eugenics in the public.

2 Country Reports

2.1 Spain

Starting the first section of country reports, the Spanish jurist *Carlos Romeo Casabona* (Professor at the University of Deusto, Bilbao) presented the Spanish Biomedical Research Act (Biomedical Research Act nr.14/2007, 03 July 2007), including specific provisions for research biobanks as well as the forthcoming Royal Decree. According to his assessment the Act displays a very complete legal device for the regulation of consent, privacy and property. As to the latter, he pointed out that access to biological samples for scientific use is not hindered by property rights. Also the regulation of consent is a really sophisticated one: on the one hand, the individual's rights are protected by the requirement of two consents given separately for both, the obtainment of samples and the samples' use for specific research purposes (article 60.1). However, if no consent is given or in the case of withdrawal, healthcare assistance is still guaranteed. On the other hand, the Spanish consent rule has been shaped to fit the biobanking practice. For example, specific rules apply when difficulties arise for obtaining consent on already collected samples that shall be used for purposes not covered by the initial consent (article 58.2): provided that (a) an ethics committee approves the research, that (b) research occurs in the same institution and that (c) the obtainment of secondary consent imposes too much burden. Notwithstanding these comprehensive consent provisions, according to Casabona it remains yet unclear whether the secondary use of samples has to be operated in the same health unit or if the law allows for a broader interpretation of this point, though he thinks that the latter is true, by inferring that research interests prevail over stringent requirements.

Regarding the issues of property and access, institutions running biobanks have a right of ownership but do not have any right of commercialization. The stored samples in a biobank shall rather be freely assigned to third parties who need them for biomedical research (art. 69.2). Although cell lines in principle can be given for free as well, Casabona doubted that this provision is sustainable in

practice. He thus expected this provision to be displaced by a for-payment regulation in the future.

2.2 United Kingdom

In the following discussion *Heather Widdows* (Professor for Global Ethics at the University of Birmingham) agreed with her Spanish colleague on the importance of consent. Yet according to her, there is a specific "inadequacy of individual consent" in the context of huge biobanks such as the population-based UK Biobank. Indeed, Widdows explained that the "key feature of genetic information is that it is typically information about a family, or even … about a larger community not just about an individual patient"[1]. For this reason, the managers of UK Biobank rather relied on a "trust model" bearing on a broad consent rule: Whilst no specific information on particular research purposes needs to be given, individual consent is still maintained. Admitting that this implies a weakening of consent, Widdows sees this tendency however counterbalanced by a right of withdrawal guaranteed at different levels (e.g. no further contact, no further access, no further use). An additional ethical safeguard is attained by the Ethics and Governance Council that monitors the compliance with ethical provisions in order to ensure "the promotion of health throughout society" (Ethics and Governance Council 2007). As a reaction to Widdows it was yet doubted by Nils Hoppe that this "trust consent goes very far" since there is no feedback of information.

In her talk, *Donna Dickenson* (University of Bristol) approached the issue of property from a different perspective. By referring to recent law cases she pointed to a partial exception to Common Law (excised tissues as either waste or *res nullius* are no one's thing). In the Bristol Sperm Donors case (2008), the judges stated that "a sperm donor was entitled with a property right on to his sperm but did not have a commercial interest". However, she explained that at least on a "Lockean basis", the act of an egg or sperm donation can be seen as creating a property right (intentionality, risk and effort) since it is a real effort compared to the donation of saliva. In the same vein, the Catalona judgment (2007) – although subject to criticism – did at least recognise that separated tissue can be a rightful object of property rights. Following Dickenson, this distinguishes it from the Moore and Greenberg cases, which concerned patients' claims to patent rights and profits, not to tissue samples as such. According to Dickenson it is "obvious that there is a value in excised tissues for research" due to its potential for scientific findings, the high costs for the biobanks' maintenance and commercial interests at stake. However, as for the procession of different types of tissues the amount of work involved varies strongly, the Lockean notion of property is no longer tenable. Accordingly Donna Dickenson proposed a "sliding scale of property rights", thereby taking the

[1] See Brock DW (2001) Genetics and Confidentiality. *The American Journal of Bioethics* 1(3), pp. 34-35.

Common Law notion of property as a bundle of rights[2] into account. According to this notion, property rights should be graduated according to the donors' and biobanks' different scales of involvement.

In the following presentation, her British colleague, *Jane Kaye* (University of Oxford), focused on privacy issues by adopting a prospective approach. In particular, she referred to international research networks where data sharing is so complex that traditional privacy safeguards do not fit this practice. As a major problem she identified the continuous growth of these international networks. From her point of view, it will be impossible to control the transmission of individual data or to obtain new consent for every secondary use of already collected samples. In the same vein, "retracting data from different data sets" will make withdrawal impossible. The weakening of consent also impacts the protection of privacy. Provided that there will be a broad consent with "proxy decision making by Research Ethics Committees (RECs)" this could undermine the individual's control over her personal information due to the fact that RECs have no "expertise in disclosure", "no transparency in decision making (not publicly available)" and only an "uncertain legal authority". According to Kaye, data sharing should thus firstly be regulated by reforming the RECs (i.e. putting them on a professional footing, equipping them adequately to carry on the role they have been entrusted with), and secondly by the establishment of "mechanisms" that allow individuals to "control their data" and to be "involved in active decision making". Against this background she called for a strengthened national regulatory framework (Human Tissue Act, November 2004) in order to take international research activities better into account.

Although in the subsequent discussion most participants agreed on the fact that the monitoring of data confidentiality is weaker on account of intense and complex data flows within international research projects, some differences regarding the consequences of this observation remained at the workshop. Whilst some discussants argued that a confidential treatment of data is provided anyway by a stringent anonymization process where coded data are not nominative anymore, others doubted that this is a sufficient means for the protection of confidentiality.

2.3 France

In her presentation on the French legal framework for biobanking, *Fay Betsou* (Biobanque de Picardie, France) underlined that in the biobank she is in charge of, data are always coded by the physician before they are transferred to the biobank. Moreover, an access code is required for using the biobank computers. Due to

[2] "The theory of property rights held by the modern specialist tends both to dissolve the notion of ownership into a mere shadowy 'bundle of rights'. Thus a thing can be owned by more than one person, in which case it becomes necessary to focus on the particular limited rights each of the co-owners has with respect to the thing." In: Clarke A/Kohler P (2005) *Property law commentary and materials*, Cambridge University Press, p.187. Applied to biobanks, it could entitle not only donors but also researchers and institutions hosting biobanks with a right to property on biological samples.

these provisions, the breach of confidentiality is considerably reduced. Betsou yet admitted that there are still "legal grey zones" regarding the protection of confidentiality. For example, a break of code through the physician might be required by a justice decision (criminal offence, paternity tests etc.). However, according to Betsou, Biobanque de Picardie complies with very stringent privacy requirements. In addition, the issues of consent and property are also taken into account. According to Betsou's judgment, the legal requirements for consent and property issues are often in conflict with the requirement of biobanks which are dedicated to biological sample transfer. Against this background she argued for several revisions. Firstly, consent to sample storage should be replaced by a "semi blanket" consent, as this would optimize access to biological collections not only for a single specific research purpose through a narrow consent as it is provided by 2004 Bioethics Law[3]. Secondly, she argued that "in 99.9% of cases, patients do not exactly know what they have consented for", despite detailed information provided to them. Betsou inferred from this that patients do not mind and trust in their physician (above all, they usually hope medical research and healthcare to be improved). After "three years of discussion" Biobanque de Picardie finally succeeded in obtaining the right to use this kind of broader consent ("semi-blanket" consent). As to the issue of property, Betsou critically remarked that the French law does not make a clear distinction between raw material which cannot be sold in virtue of the "no property" principle and transformed material which can be sold. Firstly, she criticized the lack of a binding definition regarding the labor that has to be invested for the storage and processing of samples. According to Betsou, this would be crucial for a biobank's economic sustainability. It is difficult to charge for the real incurring costs of the samples given that the work and skill involved are not assessed by common standards. Secondly, Betsou cautioned against the development of an "unequal market" in practice where prices for certain biological samples are higher than others, e.g rare disease samples of Banque Généthon are more expensive than common disease samples because there is a "larger market" for the former ones.

The following discussion took up the issue of the donors' rights on their biological material. *Christian Lenk* (University of Goettingen) argued that the donation principle *per se* does not hinder a potential feedback of health-relevant information to the donor. *Christine Noiville* and *Florence Bellivier* agreed that donors' rights are very important. However, they also pointed out that these entail certain dangers regarding the biobanks' sustainability. In this light, they regard the Catalona case not as "bad case", since there might be more risks for the scattering of collections if donors are granted a property right in their samples. On the other hand, they argued that the focus on donors' property rights misses the point of the property issue that is relevant in the case of biobanks. In fact, the "no property" principle

[3] Bioethics Acts, 29 July 1994, nr.94-653 for the protection of the human body (Civil Code) and Bioethics Act nr.94-654 for the procurement and use of bodily elements (Public Health Code) amended by the Bioethics Act, 06 August 2004.

does not prevent human body parts of having a value for patients and research (e.g. for diagnostic tests, the production of cell lines etc.). Noiville and Bellivier thus called for a clarification of property rights in the French law. In particular, by taking into account that "property means exclusivity", they raised the problem of access to biobanks, as for example hospitals tend to justify their restrictive access policies by claiming a right of ownership for their collections. According to Emmanuelle Rial-Sebbag (Inserm, France) this is however no common feature. As a proof to her claim, she pointed out that unlike hospitals the French Medical Institute for Research (Inserm) is ready to share its collections (in compliance with OECD guidelines about biological and associated data sharing within Biological Resources Centers). According to Safa Saker (Banque Généthon, France) the same is true for the Banque Généthon as it works on an open access basis, i.e. researchers who create a collection are obliged to respect this open access policy due to the fact that their research projects are funded by Banque Généthon.

2.4 Portugal

The country report on Portugal was provided by *Paula Lobato de Faria* (Professor at the University of Lisbon). Since she had to cancel her participation on short notice, Lobato's talk was presented by *Virginie Commin* instead. Portugal has a specific law on biobanks used for research purposes since 2005 (Act nr.12/2005, 26 January 2005). The creation of a national DNA profile database for the purpose of civil and criminal identification is regulated by an Act from 2008. According to Lobato's assessment, there are many similarities between Portugal and the countries of Spain and France. This is especially true for the regulation of consent which has to be given for a specific research purpose (narrow consent). In Portugal there is also a very stringent regulation of data confidentiality in place. In particular, it is required that health and genetic data in health information systems should be kept separately, e.g. through different levels of access. Compared to other countries, Portugal, however, adopted a very original position concerning the issue of property. Indeed, it is clearly stated by the law that "the donor is the owner of his/her biological samples and associated data". Interestingly enough in practice no problems, such as the scattering of biological collections, occurred so far.

3 Results

Although research biobanks tend to grow in number around the world, in the absence of a common European framework, many uncertainties remain. The existence of specific national legal provisions and guidelines provides only a weak remedy to this fact. In particular, the storage of biological samples and associated data, the scientific use of biobanks as well as their respective mode of operation raises

several issues (e.g. regarding procurement, storage, transfer, profiling, risk of racial discrimination etc.).

Three of these issues have been chosen for being discussed in detail at this workshop: consent (1), privacy (2) and property/access issues (3). Since the question of feedback emerged as a fourth issue during the workshop's discussions, it will be embraced by this report as well (4). The country reports on the legal frameworks of Spain, Portugal, France as well as the UK have been provided against this particular background. In addition, it was the aim of the workshop to highlight some convergences and divergences between the domestic frameworks of these countries.

As a preliminary result, the following features can be derived from the workshop's presentations and discussions:

- Whilst some countries have adopted specific rules on biobanks, others rely on general regulations on public health or biomedical research. In particular, Spain and Portugal have passed/are about passing specific regulations (Spain relies on the Biomedical Research Act 2007[4] and is about to adopt a Royal Decree on biobanks; Portugal relies on the Personal Genetic and Health Information Act 2005[5]). In contrast, the UK and France regulate biobanks on the ground of general legal provisions (Civil Code and Public Health Code for France[6]; Human Tissue Act 2004 for UK). In addition, the UK Biobank operates on the basis of a specific and detailed Ethics and Governance Framework.[7] For this reason, some of the countries are more equipped with accurate rules capable to face the major challenges of biobanking than others.
- This distinction (specific biobank provision/general regulation) does not overlap with another important distinction in the field of biobanks, i.e. between countries running population biobanks (UK) and countries having a huge number of dispatched sample collections at their disposal.

3.1 Consent issues

Prior informed consent has become the thread of most national legislations. Indeed, this ethical and legal mechanism is the cornerstone of donors' decision to be involved in biobanking. However, given its individual dimension, individual consent does not exhaust the communal aspects of this activity, particularly concerning access and benefit sharing (see below).

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4 Biomedical Research Act nr.14/2007, 03 July 2007.

5 Act nr.12/2005, 26 January 2005.

6 Bioethics Acts, 29 July 1994, nr.94-653 for the protection of the human body (Civil Code) and Bioethics Act nr.94-654 for the procurement and use of bodily elements (Public Health Code) amended by Bioethics Act, 06 August 2004.

7 UK Biobank Ethics and Governance Framework (EGC), version 3.0 (October 2007).

In the countries of Spain, France, Portugal and the UK there is an agreement on the fact that consent is mandatory, must be informed and that donors can revoke their consent at any time. Nevertheless, a review of the existing regulations tends to show that they do not capture all practical issues at stake. As a matter of fact, there may be much more decisive issues than the general but vague principle of consent. For example, if article 60.2 of the Spanish Biobanks Act provides for an extension of primary consent for further similar research, neither the law nor public agencies have clearly set up the meaning of "similarity" so far.

More precisely, three weaknesses appear. Firstly, a gap remains between legislations which provide for an opt-in system and those which foresee an opt-out mechanism. Secondly, it is not always clear whether or why the legislator has provided for consent in specific circumstances – e.g. for wasted or abandoned biological material, for deceased donors, etc. – or if he has provided for specific requirements when biomedical research includes particular risks – e.g. genetic research and discrimination risks, R&D and the risk of commercialisation. Lastly, questions remain regarding the exact withdrawal modalities. For example, in France, no legal provision specifies the way how donors can withdraw from biobanking, whereas other models like that promoted by UK Biobank establish comparatively clear and graduated withdrawal rules.

3.1.1 Opt in/opt out and blanket consent specific consent

In France, Spain, Portugal and the UK informed and express consent is obligatory before any extraction of samples. Nevertheless, some countries require only a "minor" consent when the sample is obtained in the context of healthcare/surgery (France). In this case, the patient is presumed to agree that cells and other tissues extracted for his own sake during surgery may be kept for research. Of course, even in this case, the patient is informed of the planned use of his specimen, giving him a chance for withdrawal ("opt-out" system[8]). Unlike France, Portugal requires a new consent by the donor if his biological material collected for medical or research purposes will be used for research once again ("opt-in" system[9]). Contrary to the UK, the French legislator decided not to rely on any blanket consent. Donors give their consent for a specific research program (cancer, diabetes, etc.) and if there is any change in the research agenda (for example, if samples collected for cancer research are to be used in another research like, say, asthma), they have to be informed of this alteration and may oppose to it. Nevertheless, the distinction between blanket/specific consent appears as a nuanced one: in practice, the French system is based on a semi-blanket system (e.g., a donor gives his samples for every type of cancer research). Spain currently provides for a specific and narrow con-

8 Articles L.1235-2 and L.1241-5 of the public health code respectively related to surgical waste and fetal tissues.

9 Article 18 of the Law nr.12/2005.

sent ("specific research purposes") but the forthcoming Royal Decree is expected to switch to a blanket consent system. Portugal still provides for a specific and narrow consent.[10]

From a general point of view, two tendencies are striking here:

- In certain circumstances, an increasing acceptance for the application of broader consent can be observed.
- Express consent is generally required, except when impossible or difficult to obtain (see below).

In anticipation of a prospective harmonization of EU law, it might be reasonable to distinguish between tissue donors who would give blanket consent and research participants consenting to a specific research purpose. EU law would probably benefit from the implementation of this distinction as it respects not only the donors' autonomy but fits the practice of research.

3.1.2 Consent in specific circumstances/Secondary use

Regarding specific circumstances, like the obtainment of foetal tissues or tissues from deceased donors, the consent requirements vary across the countries. In France, the Bioethics law (articles L1235-2 and L1241-5 of the Public Health Code) relates to surgical waste and foetal tissues and provides for an express consent. On the contrary, as far as deceased donors are concerned, only a presumed consent is needed[11]. In Portugal, in case of dead or disabled persons, consent is given by family members of first line or legal representatives (art.18§4, §5)[12]. In the UK, the Human Tissue Act provides for a written consent (Part 1, 1.3) in case of deceased persons.[13]

In a similar vein, domestic rules provide for specific requirements when research tends to compromise confidentiality, for example genetic research. In France, when genetic research is envisioned, express consent is needed. Spain has adopted a similar rule, whereas neither Portugal[14] nor the UK[15] provide for any specific rule.

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[10] According to article 18§1, the donor must be informed of expressed research purpose under which the collection is made.

[11] See Rapport de l' Académie Nationale de Médecine (ANM), Paris, 17 March 2009, available at http://www.academie-medecine.fr/detailPublication.cfm?idRub=26&idLigne=1550.

[12] In Spain, it seems that Law nr.14/2007 does not provide for any specific consent requirements.

[13] There are two consent modalities: consent is signed by the person in the presence of at least one witness who attests the signature or, consent is signed at the direction of the person concerned of at least one witness who attests the signature.

[14] If no particular requirement is provided for consent in case of genetic research, nevertheless Act nr. 12/2005 provides for a specific non-discrimination principle (art.11) as well as restricted access by other health units (art.6).

[15] UK Human Tissue Act, part.3, "Miscellaneous and general".

As far as secondary use is concerned, France has adopted an opt-out system: donors must be informed of new uses and can oppose them, except in cases where it is impossible to contact them again. Spain provides for a quasi similar rule (art. 58.2 and 58.2.2) with just two exceptions: Firstly, "similar research lines" allow the research to proceed without any new consent or information; secondly, when the new research is not similar or when the donor cannot be found, an ethics committee may allow the research to proceed but only after its general interest has been proven. In the silence of a general law, UK Biobank has set up a rule that encompasses secondary use by a blanket consent system.[16] Portugal, in contrast, provides for a secondary consent if biological material collected for medical or research purposes is used for another research purpose (art.18§3).[17]

3.2 Withdrawal

All four countries allow for a donor's withdrawal of consent, but regulations diverge concerning its concrete modalities (destruction? definitive anonymization?) and the consequences of withdrawal.

In France, nothing is said about these two issues and practically, biobanks do not seem to face these problems. In Spain, however, according to article 60.3 BMRA 2007, the material must be destroyed. Portugal also explicitly provides for biological sample destruction in case of a donor's withdrawal or withdrawal by his/her family members if the donor himself is disabled or dead (art.18§3)[18]. Interestingly enough, UK Biobank provides for three options: "no further contact", "no further access", "no further use". "No further contact" means that UK Biobank will still have the permission to use information and samples as well as to obtain further information from health-relevant records, but will no longer contact the participant directly. "No further access" implies that UK Biobank will no longer contact the participant or obtain further information from health-relevant records in the future, but will still have the participants' permission to use the information and samples provided previously. "No further use" means that "in addition to no longer contacting the participant or obtaining further information about them, any information or samples collected previously would no longer be available to researchers".[19]

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16 UK Biobank EGC: " Because it will be impossible to anticipate all future research uses, consent will be sought for research in general that is consistent with UK Biobank's stated purpose (rather than for specific research)", p.5.

17 No ethical review board is required except if transfer relates to a certain population or the whole population – respectively National Council on Ethics review or the Parliament approval will be required (art.19§7). In case of death or disability, consent is given by family members of first line or legal representative (art.18§4, §5).

18 But there is no clear answer about data destruction except a right of information of every citizen on his/her genetic data use, notably how it is stored and the storage period (art.6§9).

19 UK Biobank EGC, point 3, p.9.

Given these different modalities of withdrawal, its effects (anonymization? destruction?) need to be examined more thoroughly. Whilst obviously not all regulations take up these questions directly, at least Spain provides for detailed rules as far as minors and disabled persons are concerned (BMRA 2007, art. 58.5) and also includes temporary provisions for samples collected before the Act entered into force (not to speak about the fundamental issue of information feedback).

3.3 Privacy issues

How and to what extent are personal data contained in biobanks preserved from external interference? What is the exact content of national legislations on this question? Is a homogeneous answer possible (going further than the stringent European harmonization in 1995 about personal data that includes health data[20])?

For the assurance of privacy, the four countries in the workshop's focus have set up strict rules like the vast majority of EU countries:

- First of all, biobanks must be declared or authorized in a way or another by an institution in charge of data confidentiality.
- Secondly, as soon as data allow for the identification of individuals, they must be encoded (exceptions might be admitted in the case of specific research projects). However, coding must occur in such a way that donors can still be found when they want to withdraw from research (except if one considers that irreversible anonymisation is an obstacle to withdrawal). Currently not all national legislations define clearly what coding/ anonymisation/pseudonymisation means.
- Thirdly, rules have been enacted which forbid any commercial exploitation of identifying data as well as any transfer of data to employers or insurers. In case of violations, the law provides for criminal sanctions.
- To conclude, all these rules are meant to efficiently prevent breaches of confidentiality. In fact, potential breaches of confidentiality relevant to health data associated to biological samples are rather similar to medical data: the police can break the code with the help of a clinician; or in case of infection traceability, it is also possible through the clinician to have retrospective testing for an infectious agent to prove spouse contamination. But it is rather unlikely that it should be possible to access data for employers/the health insurance industry, or in case of paternity testing: on the one hand, these practices are forbidden or require at least a judicial authority decision; on the other hand, data are coded, access to the computer requires a code, and/or only the clinician, not the biobank, can access nominative data (Fay Betsou).

[20] Directive 95/46/EC

This is not to say that all participants of the workshop were on a similar line. Some insisted that biobanks may constitute a real threat to privacy for several reasons:

- Biobanks accumulate huge quantities of personal and generally sensitive data which are meant to be shared with other research teams and to be kept for a long time.
- From this perspective it was emphasized that even if legal and technical precautions may successfully prevent the invasion of privacy, there remains the much broader question of health profiling[21] or genetic discrimination. Real or imaginary risks such as the use of biobanks by the police (for other uses than public health interests[22]) have also been evoked.

On the other hand it was stressed from a more positive point of view that the legal and technical precautions taken are sufficient to prevent the invasion of privacy. However, the defenders of this position admitted that there remain technical issues to be answered in this context. A more serious problem is linked to the development of private companies (e.g. 23andMe, DeCodeMe, etc.) that offer genetic testing. Concerns arise particularly from the fact that privacy protection is generally vague in this context. In addition, some companies transfer samples and data to research institutions on the basis of unclear confidentiality guarantees.

3.4 Property and access issues

Collections of samples and data have a value; but who creates this value and who can claim to hold some rights in the content of these collections? Is it the donors' right or the right of the facilities' hosting the biobank (e.g. hospitals)? Is it the researchers' right since they collect the samples for their own research or rather the firms' right since they eventually develop new medicines? In fact, all the actors mentioned may rightfully claim some rights in the collection of samples and data, but the way how these rights could be shared is an open question so far. In particular, there is a need to clarify the issues of property and access in the field of biobanking. Property and access issues may thus be the most tricky questions as far as European harmonization is concerned since they are both, the cornerstone of patients' interests and decisive for stakeholders involved in biobanking activities.

21 For example, SARS epidemic justified breach of confidentiality in health data such as public naming of SARS patients, and threats of severe legal penalties for non-compliance.

22 For example, the police could access the Swedish Newborn registry (PKU) in order to search for Tsunami victims after the parliament's amendment of the Biobanks in Medical Care Act.

3.4.1 Whose property?

According to most European legislations – except Portugal[23] – the donor is not entitled to any property rights in his biological material since he/she gives his/her samples on an altruistic basis. That is clearly formulated by all national laws even if they recognize the possibility to compensate donors for the expenses incurred by their gift.

For example, in France, raw biological material cannot be the subject matter of any property right according to the "no property principle": "The human body, its elements and its products may not form the subject of an inheritance entitlement" (art. 16-1, paragraph 3 of the Civil Code) associated with the interdiction of lucrative gain (art. 16-6 of the Civil Code). This means that human samples cannot be owned by donors. Spain has established a similar rule.

Researchers, hospitals, patient organisations, biobanks: all stakeholders should get their own share. However, the participants of the workshop agreed that the legal conditions remain unclear in this respect. In particular, how much labor is needed to create a legitimate property right? Should property be recognized on the same basis, irrespective whether it is for brain slides or for mere cheek swab? Can institutions and/or researchers appeal to any property right on raw material for the sole reason that they collected and stored it for scientific use? And finally, which degree of transformation turns biological samples into commodified goods?[24]

Apart from these two relatively consensual points, divergence became noticeable on the question whether property is a relevant concept to embrace biobanking. Most participants argued for a property model that is in favor of the donor. This argumentation is based on the assumption that any other solution would be detrimental to the latter. The proponents of this perspective thus deplored the US Catalona decision as a set-back to patients' rights and criticized the underlying gift metaphor. As a remedy they suggested a recourse to the common law concept of "bundle of rights" in order to elaborate models of property sharing.

Other discussants, in accordance with most regulations and case law, argued that the property concept is not sufficiently adapted to biobanks and thus should be overcome. The complexity originates in the fact that the sample is an entity *extra commercium* which is supposed to fit a general interest (research, equal access etc). However, the status of samples might change in the course of the research process: The further we proceed in the transformation of a sample, the more its

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[23] Law nr.12/2005, art. 18 §2 states that the material stored in the biobank is "the property of the people from whom it was collected and after their death or incapacity it is the property of their family members." Consequently, the dispute on whether DNA is a thing or still a part of the person – according to Roman categories between thing/person – does no longer exist (see Lobato De Faria P. (2009) Ownership rights in biobanks for research. Do we need a new kind of "biological property"? in: *The Ethics of Research Biobanking*, Part 2, Springer, pp. 263-276.

[24] According to certain biobanks, it seems that preservation and conditioning activities for research purposes are in essence a transformation insofar as this activity requires highly qualified professionals and sophisticated machinery which drive up costs.

scientific value increases. As a matter of fact, even within flexible concepts such as the "bundle of rights" theory, property still implies the legal right of the owner to prevent others from accessing his property. In practice, this could lead to a closing and blocking of the precious resources gathered in biobanks. However, it is important that samples are not "kidnapped" by just a few, otherwise that could be detrimental to the whole research. For the proponents of this position, the crucial issue is not to recognize property rights on biobanks, but to organize access to their resources.

3.4.2 Access issues

Biobanks are a source of unique biological samples and a very important tool for research. For this reason, there is a fairly wide consensus on the fact that their content should be available to all researchers as freely as possible. For example, in Great Britain, UK Biobank has established a "stewardship model" even though, UK funding institutions are "the legal owner of the database and the sample collection", and promotes this as a way to manage the biobank according to collective interests. In Spain, the legislator has provided for a steady administrative management of biobanks through the Biomedical Research Act (2007). The Spanish law also supports the idea of broad access to biobanks by researchers (equality criteria, no payment for the resource, except a compensation for costs). It even provides that stored samples shall be "assigned freely to third parties who need them for use in biomedical research" (art. 69-2). This provision applies to any researcher, public or private, provided that his research is not for profit. In France, an embargo system is generally used by patient organisations' biobanks. In this case, the use of biobank samples is reserved to a specific researcher for two or three years. This limitation ensures that the material is not blocked forever and can circulate throughout the whole research community. The Portuguese law on biobanks (art. 16 §2) provides for free access to data arising from research in the human genome for the scientific community. One may yet wonder whether this provides equal access for industry and academics. Moreover, it seems that donors can consent to the transfer of a few samples[25] solely if the physician has asked for the samples' provision (art. 19§4).[26] Even though donors are not aware of this right yet, it could give rise to many difficulties in practice, such as the scattering of biological sample collections.

[25] Lucrative gain is forbidden according to article 18§8 which provides for no commercial use, non patent, no financial gain on rough biological material.

[26] Through an *a contrario* interpretation of art.19§17: transfer of numerous biological material or collections, cannot be made solely with their consent, a local ethical committee approval must be also respected.

3.5 Feedback of information

The question here is whether donors' placement of samples in a biobank justifies the feedback of information to them. More precisely, two questions of unequal difficulty arise in this regard. First, when samples are mainly used for scientific research, does the donor have a right to be informed of the overall results of the research? Second, does he have the right to be informed of a health problem concerning him personally that could have been identified during the sample analysis?

Most states answer the first question positively: As they have given something of themselves, sample donors have the right to be informed regularly about the overall results of the research. However, the French law does not explicitly require this for research on biological material but only for clinical trials where participants are involved (Article 1122-1 of the Public Health Code), whereas UK Biobank requires it explicitly in its charter (point 4, "Ongoing engagement with participants and the public"[27]). The same is true for Spain and Portugal, even though the Portuguese law solely provides for the donors' right to be informed of the investigation abandonment or biobanks closure (art.19§15).

The second much more delicate question is object of controversies and elicits more varied responses. As the field of medical discoveries continues to grow, so grows the need to protect individuals from too much interference into their personal lives. The potential discovery during genetic examinations that a child's legal father is not his biological father is a standard example of ethical issues that is engendered by the power of genetic information. In this, but also other imaginable cases the "right not to know" may collide with the right to know (about a family member or about a sexual partner, for example) (see Spain, art. 4.5, 2nd section BMRA 2007). A real-life illustration of this issue was given by *Judith Sándor*, who referred to a Hungarian case of a man who gave his sperm to two different hospitals, specialized in assisted conception, in order to have a baby not only with his wife but also with his lover. By a curious coincidence, the physicians working with the respective sperm at the two distinct hospitals happened to meet at a conference. Whilst talking about a patient affected with a very rare disease, they had to realize that they were talking about the same patient. They wondered how to deal with the dilemma of two women longing for a baby. Were they obliged to inform them?

In contrast, when the biobank's aim is research, the question of possible feedback of information to the donor is not raised in terms of the "right not to know", but in inverse terms: The question is whether the donor has the right to be informed of a potential health problem that is incidentally identified during the re-

[27] UK Biobank EGC point 4, p.8: "Regular communication will be important to inform participants of general findings from research based on the resources and to encourage continued participation. UK Biobank will therefore, look for a variety of ways for communicating with (including listening to) participants, the general public, research users and the scientific community […]."

search. For the UK Biobank the response is negative[28]: Though donors receive an identification form stating their blood group, fat mass, etc. when their sample is banked, any feedback of more detailed personal information is ruled out from the very beginning. In contrast, a rather fuzzy regulation is applied in France: from a strictly legal perspective, the researchers working on a collection are not obliged to report any health problems identified during the research. Certainly, in a care relationship, that is when the person is the doctor's patient, the doctor is required to provide information, except in emergencies, when it is impossible, or when the patient does not want to be informed. But in a research relationship, the researchers have no such duty of care. In France, it is difficult to imagine that they might be sued or prosecuted for non-assistance to a person in danger, for not providing the information. Although researchers certainly must not provide medical information unrelated to their profession, nevertheless both efficacy and ethics call for legal rules that make research and medical activity more consistent in this field. Unlike France, Spain and Portugal explicitly provide for a donor's right to be informed of research results which might be relevant for his/her health. In Spain, there is a right to know one's genetic data (art.59.1). Also in Portugal, the donor is entitled to know the entire clinical process. This is also true for family members the donor has indicated. Health professionals thus have a duty to provide information on the risks of diseases (art.18§6)[29].

From a more general perspective, it can be stated that the Western European countries that have been at the centre of the workshop in Paris provide for fairly specific regulations regarding human tissue research. This fact becomes mostly striking if one compares the countries of Portugal, Spain, France and also the UK to the Eastern European countries or even the German speaking countries where human tissue research, if at all, is subject to a diversified field of laws, guidelines and statutes. However, this is not to say that the current regulations in these four countries are perfect or sufficient. The workshop rather identified several questions that require further elaboration and clarification.

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[28] UK Biobank EGC, point 3, p. 6-7: "UK Biobank will aim to ensure that participants understand that enrolment does not provide them with a health check […]. However the value of such feedback is questionable because the data would be communicated outside of a clinical setting and would not have been evaluated in the context of the full medical record. As a consequence, the significance of the observations might not be clear and UK Biobank would not be in position to interpret their implications fully. Further, it […] might even be harmful (including causing undue alarm and having potentially adverse effects on insurance and employment status), to provide information without prior counseling or support" (which UK Biobank will not be able to provide: as explained below).

[29] The results must be made by a physician specialized in genetics (art.19 §12).

Privacy, Confidentiality and Personality Rights in Biobanking and Genetic Research with Human Tissue

Second International Status Conference of the Tiss.EU Project

Göttingen, 16-18 July 2009

Katharina Beier

1 Introduction

The Second Status Conference of the Tiss.EU project focused on "Privacy, Confidentiality and Personality Rights in Biobanking and Genetic Research with Human Tissue". The conference was organized by the project coordinator Dr Christian Lenk, Dr Katharina Beier and Prof Claudia Wiesemann from the Department of Medical Ethics and History at the Medical Center Goettingen together with the project partner Dr Nils Hoppe from the University of Hannover. During the planning phase and at the conference, the organizers received also inputs from two other EU projects in this field: GeneBanC and Privileged.

In order to do justice to the topical focus of the conference, the organizers explicitly invited several keynote speakers that are known as legal and ethical experts in this field. In addition, the conference benefited from the contributions that have been accepted due to a call for papers that was announced in the European research community. The talks of all speakers were assigned to three thematic blocs at the conference that allowed for different perspectives on the issues of privacy,

confidentiality and personality rights. The first bloc was meant to provide for a definition of terms, such as privacy, integrity or confidentiality that were at the focus of the conference. After these rather theoretical contributions, the second part was dominated by the perspective of legal scientists who addressed issues and means of data protection in the field of human tissue banking. The third panel of the conference finally dealt with questions of application and particular models of biobank regulation. Almost 40 participants, speakers included, from all over Europe took part in the Second International Tiss.EU conference that lasted from 16-18 July and was held at Goettingen University library.

2 The contributions

The conference started with a general introduction to the Tiss.EU project given by *Christian Lenk* as representative of the coordinating institution in Goettingen. He pointed to the rapid changes regarding the availability of health information. Whilst in the 19th century only sparse information of the individual and her health was existent, we are now facing an immense increase in health and data registries which is additionally spurred by the progress in information technologies. As this development is not merely beneficial but may also pose several challenges to law and biomedical ethics, Lenk specifically asked whether our traditional understanding of privacy that dates back to the 19th century is applicable to the context of human tissue research. In particular he expressed doubts that privacy can be simply transferred to today's information society. This might call for an adaption of the privacy concept in the light of new challenges and contexts of application.

The presentations of the first panel directly reacted to this question. Regarding the ethical challenges of human tissue banking a seminal input was provided by the talk of *David Townend* from Maastricht, who is one of the coordinators of the EU funded project PRIVILEGED. By outlining the structure of this project, he particularly discussed the issues of informed consent and whether exemptions for research can ever be justified. Furthermore he took up the issue of data access as well as matters of commercialization and benefit sharing. Whilst there is no common regulation of these aspects so far, Townend also pointed out that our knowledge of peoples' interests in genetic information and biobanking is currently only derived from piecemeal surveys. Despite their disparity regarding methods and research questions asked, these surveys reveal, however, concerns regarding genetic research as some common trend. As it is important that research takes peoples' attitudes and fears seriously in this context, Townend strongly voted for a specific EU-wide survey. As to privacy, the analysis of existent surveys revealed, that privacy interests vary with contexts, historical experience and the respective notion of citizenship. In fact, people are mostly concerned about commercial uses and consequently interested in the organizational structure of biobanks and databases. For a better understanding of the specific nature of a sample-data-complex,

Townend suggested the analogy with "words". Like a word that always contains a piece of information, the sample is a personal data which cannot be separated from it. Against this background Townend finally raised the question whether people's specific interests, for example in privacy protection, are adequately mirrored by the existent law. In particular, he criticized that it is not very clear about the harms it aims to protect.

Mats G. Hansson, Professor for Biomedical Ethics at the Centre for Research Ethics & Bioethics at the University of Uppsala, went deeper into the philosophical investigation of the privacy concept. He argued that whilst all languages have a word equivalent to "private", the distinction between the public and the private realm varies between cultures, depending on ideology, cultural and economical conditions. Consequently, the distinction between the private and public sphere is an ongoing discussion in moral theory, law and constitutional theory. As to the definition of privacy in the Western countries, Hansson pointed to the prevalence of privacy as a negative notion of non-interference into one's personal sphere. Since this is a rather one-sided notion, he voted for a more positive understanding of privacy. In particular, he referred to the notion of integrity. Instead of merely defending one's personal sphere against others, integrity refers to the individual as agent or ruler of her social relationships. It can thus be seen as a property of the social agent who navigates the intersection between public and private spheres. Consequently, "respect for integrity" implies a social and political recognition of the individual agent. According to Mats Hansson, this more positive understanding of privacy needs to be taken into account by developing more democratic and transparent regulations of human tissue research as integrity enhancing mechanisms. As to the practical implications of his view for human tissue research, Hansson stressed that people's primary interest is not to be left alone, but rather to achieve certain goals together with others. For this reason it is necessary to balance consent against other interests, such as the interest of not being exposed to unacceptable risk and the interest in scientific results. As a matter of fact, he regarded it acceptable to waive consent for the benefit of important research results that finally may increase the welfare of all.

In line with Mats Hansson's argument, *Georg Lauß*, Researcher at the Life-Science-Governance Platform at the Political Science Department at the University of Vienna, pointed to the difficulties of distinguishing between public and private sphere as in practice there are complex entanglements. Notwithstanding this, in the public debate usually a clear-cut distinction is drawn between the public's interest in science and the individual's right to privacy. Lauß challenged this distinction by claiming that in the field of genetic research personal and private interests very often overlap with what is regarded as the common good. However, the distinction what is regarded as private and therefore needs to be protected is a matter of political power. In fact, it is always a particular constellation of interests that can successfully claim the status of a common good. At the same time, each appeal to a common good provokes claims for privacy since some do not want to be part of

this "common" good. According to Lauß, references to the public are however misleading. This is due to the fact that research issues are discussed by experts rather than the alleged "public". For this reason the lay public is rather a phantom than reality.

The distinction of public and private sphere was also addressed by *Lars Øystein Ursin*, who works as a Post Doctoral Fellow at the Department of Philosophy at the Norwegian University of Science and Technology in Trondheim. In particular, he argued that the limit of private matters is determined by the respective social relations of a person. Privacy is thus to be defined in relational rather than in individualistic terms; i.e. it depends on the relationships we enter and thus on a normative assessment of oneself and others whether the revelation of an information displays a violation of privacy or not. From this perspective, things loose their privacy status if people decide to leave their matters to the public. Against this background, Ursin cautioned against an understanding of peoples' interests in terms of property since this ignores the relational aspect of privacy. By taking this relational approach to privacy seriously, he concluded that privacy not only comprises rights but also specific duties to keep certain things in the private realm. In the context of human tissue research there is consequently a need to define the exact duties of tissue researchers and biobanking institutions for the protection of privacy and confidentiality of the research participants.

Judit Sándor, Professor and Director of the Centre for Ethics and Law in Biomedicine at the Central European University in Budapest, opened the second panel of the conference that comprised ethical and legal perspectives on human tissue research. In particular, she examined the implications of privacy for the realm of human tissue research. Thereby she pointed out that the "old" concept of privacy cannot easily be transferred to nowadays affairs. This is mirrored by several authors who criticize privacy for not being an efficient concept given the vast amount of data that is said to invade privacy. Sándor cited Ruth Chadwick, who is in favour of an open consent model and argues to tell people in advance that full privacy cannot be guaranteed in the field of human tissue research. Against this background, Sándor described our understanding of privacy as strongly shaped by technology and its progress. However, although the processing of personal data in DNA-banking might imply several harms such as loss of control, unwanted observations or the misuse of data, these harms need to be balanced against certain positive effects, such as the improvement of security matters. Consequently, Sándor argued for a more nuanced assessment of privacy in genetics. In particular, privacy should be assessed on a specific project basis, as for example population based research poses only minimal risks to the participants. In addition, one should be aware of that fact that, for example, in the Personal Genome Project people voluntarily disclose their personal information to researchers. To prevent this by legal means may thus entail the risk of enforcing privacy by paternalism. Sándor finished her talk by concluding that privacy is still a very useful concept in shaping safeguards for human biobanks through a limited and culturally contextual right; in this

regard, informational privacy is still an important concept. However, she also admitted that the cultural and historical dynamism that shapes our understanding of privacy makes it almost impossible to build legal harmonisation of biobanks.

Martin Sebastian Haase, Senior Research Associate at the Institute of Legal Informatics at the University of Hannover, examined the personal character of data that result from genetic research from a legal perspective. He pictured data as "dynamite" as it can be misused in several ways. He thus analysed the provisions of the EU Data Protection Directive (95/46/EC) which applies to every processing of personal data. To this purpose he went into the particular wording of the Directive. According to Haase there is a tendency to speak of data as personal data as soon as a set of data is unique. Data become unique if different factors are accumulated in such a way that they allow for identification. Consequently, from this perspective it is argued that data from human tissue research (since they often are genetic data), are to be considered as personal data. However, according to Haase, one has to be aware of the fact that one piece of information can be personal information for different people due to hereditary connections amongst family members. Against this background the theory of "unique character of data" appears too formal to define personal data. For example, although human tissue as such is unique, Haase argued that it should not be classed as personal across the board. He rather suggested that the character of data should be determined by the sense and purpose of their collection. For example, whilst even incorrect data can be personal data this does not apply to group and statistical data.

Kris Dierickx, Professor of Biomedical Ethics and coordinator of the GeneBanC project at the Centre for Biomedical Ethics and Law at the Catholic University in Leuven, explained the structure of the GeneBanC project to the audience. Its major aim is to provide for an analysis of the ethical, legal and governance issues of three different types of biobanks: disease-related biobanks, population and forensic biobanks. In his talk, Dierickx first addressed the question whether harmonisation is ever feasible in the field of biobanking. In particular he identified fife types of biobanking networks that can be seen as a first step into that direction. For the regulation of biobanking however, the diverging aims of different types of biobanks need to be taken into account. Against this background, Dierickx critically remarked the weak legal safeguards regarding the privacy and confidentiality of forensic data. In fact, when it comes to privacy, forensic DNA sampling does not rest under the same protection measures as clinical genetic sampling. Also the Council of Europe's guidelines are only valid for samples, but not DNA profiles.

José Miola, who works as a Senior Lecturer at the School of Law at the University of Leicester, addressed the problem of lacking trust in biobanks. Although privacy and confidentiality are concepts that are used by the courts, these two concepts are often conflated. In particular, it is not clear what makes information confidential. Whilst an English court has argued that the anonymization of medical information is an effective means to avoid invasions into privacy, and that patients have no right of ownership over their information, it remains yet questionable

whether this information can be used for any purpose without the source's consent. In fact, Miola argued that the issue is not about owning one's information but to be able to control it. The court in his rule to the case of "Source Informatics", however, took this control from the patients and gave it instead to the doctors, researchers and pharmacists. According to Miola, the anonymisation of information neither removes the duty of confidence, nor, in the absent of consent, in itself provides a legal or ethical justification for its use. This assessment is also in line with European dicta. As a matter of fact, consent remains the key concept to protect the interest of donors. In particular, any consent gathered should be careful to include all possible uses of the information, including potential future uses.

Marion Albers, who works as a professor of Public, Economic, Information, Health and Environmental Law at the Faculty of Law at the University of Augsburg, outlined the legal situation for using human tissue in Germany. Although tissue materials after separation from the body turn into an object according to German law, the person from whose body these materials stem has the right of control. Thus, for the collection and processing of data the concept of informational self-determination is central to the German legislation. After the German Constitutional Court's rule on the population census, the right to informational self-determination even displaced the notion of privacy. The court's decision in this case includes that everyone has a right to determine the collecting, processing, alteration, transfer and also dissemination of his personal data. However, as Marion Albers noted, the concepts of property, privacy and informational self-determination imply a rather individualistic view. From this perspective the question how individual data control can be accomplished within complex systems is neglected. In particular, this approach ignores the social context of data. In fact, the German Constitutional Court has recently extended the sphere of privacy. As to the privacy of a person, the court did not argue with a distinction between public and private sphere, but referred to the fact that certain things are regarded as private since their disclosure might lead to embarrassment or discomfort for a person. Consequently in certain places and situations the individual can reasonably expect to be free from observation. In line with Lars Ursin, Albers stressed that the protection of privacy can only be explained in relation to others and is thus to be regarded as a relational and contextual right. According to her, it is thus not the meaning of personality rights to protect the freedom of behaviour or expression, which are covered by other rights. In fact, personality rights should not be understood as rights of isolated human beings, but rather refer to individuals within relationships. Due to Albers, personality rights are a reaction to the protection requirements of individuals in sociality, that is, individuals acting in certain social contexts. She thus invited for a rethinking of individual rights. In particular, personality rights and the freedom of science should be elaborated as relational and context-oriented rights. Marion Albers concluded her talk by outlining some consequences for the field of biobanking: firstly she stressed that informed consent should not to be regarded as waiver of important obligations towards tissue do-

nors. For this reason, she rejected blanket consent as it has no relationship to the research project concerned. Secondly, she pointed out that the general law in Germany treats privacy still in a conventional way by disregarding the social contexts of individual actions. In fact, there are several questions in the field of genetic data banking that cannot be solved by reference to the concept of informational self-determination and rather call for the elaboration of new and/or additional tools of protection.

Paul Chummar, who works as a Senior Lecturer and Senior Research Fellow at the Catholic University of Eastern Africa in Nairobi, Kenya, and has his disciplinary background in Medical Anthropology, addressed the field of human tissue research from a more general perspective. He started his talk by the critique that the holistic perspective on ethical questions is increasingly lost of sight in medical ethics and recommended the perspective of Medical Anthropology as a remedy to this trend he observed in the discussion on human tissue research. His critique was particularly directed against a partial understanding of the person in this field which is mirrored by respective partial rights regarding the person's control over research. Chummar yet conceded that there are no coherent, universal principles any longer that can be applied to medical research. Notwithstanding this, solidarity, the avoidance of exploitation and the protection of the vulnerable retain an important appeal in the field of human tissue research. For their accomplishment, however, one cannot simply refer to the law, but it is rather the society itself that is required to establish the principles of humanity and fairness amongst its members. Given that the technological development will not be stopped, it is our task to promote the morally correct use of these techniques. By taking the proposed person-oriented approach seriously, Chummar argued for an intensified dialogue between different disciplines in order to establish more common ground in the field of human tissue research.

Claudio Tamburrini, Research Associate at the Centre for Health Care Ethics at Stockholm University addressed the question of what is wrong with the forensic use of already existing genetic medical databases. In the course of his talk he particularly aimed to refute the objection from privacy that is usually raised against the application of medical data for forensic purposes. As a guiding question for his investigation he asked whether it would be justified to hand over samples from medical biobanks for forensic uses even without the consent of the donors. To answer this question, Tamburrini first examined the deeper meaning of privacy and argued in line with former speakers that it needs to be seen as a means that helps people navigate their social relationships. Thereby privacy acts as a shield that offers protection in several ways: e.g. from interference and pressure from others having access to one's personal sphere. However, Tamburrini stressed the fact that the right to privacy is different regarding its strength of protection. Whilst in the context of medical treatment it is a non-overridable right of patients, this is not equally true for the context of tissue research. In fact, the donor's right to privacy appears overridable by other competing, absolute claims, which displays a highly

relevant observation for forensic databases. Against this background Tamburrini raised the question whether it would be justified to match samples from a crime scene with existing samples from a medical biobank. He thereby admitted that it would be irrational to risk the public's trust for the clarification of minor crimes. For serious crimes, however, he argued in favour of a forensic use of medical databases. As a justification he pointed out that confidentiality is only one aspect of privacy that is worth being protected, whilst there are other facets of privacy that are negatively affected by crime. For this reason he regarded it justified to sacrifice confidentiality in certain cases in order to protect other aspects of privacy as there are the physical and psychological integrity of an individual for future autonomous actions. In the remainder of his talk Tamburrini refuted several objections that are often raised against the forensic use of existing medical databases. As to the objection from social discrimination, he argued that this can be met by building up comprehensive registers that avoid any biases towards certain people or groups. Secondly, he addressed the objection from wrongful conviction by stating that this is also not a powerful one due to the general existence of judicial error. Although we know that wrongful convictions occur, nobody ever argues to abolish the criminal system itself. Consequently, no serious argument against forensic databanking can be derived from this objection that, according to Tamburrini, is an ideological one. Concerning the objection from authority's misuse, he finally argued that this focuses on the wrong thing. In fact, if misuses occur, the failure lies not in forensic databanking itself, but in the lack of appropriate democratic control mechanisms. Tamburrini concluded his talk by stressing that privacy should not be used as an objection to forensic usages of medical databanks. Since it is not an absolute right, restrictions of privacy are both possible and necessary. For this reason it is much more useful to clarify which aspects of privacy are concerned and whose privacy shall be protected in a particular case.

Christina Schröder, who works as group leader of the Biobank Network at Fraunhofer IBMT in Potsdam, revealed insights into a particular privacy regime, the Central Research Infrastructure for Molecular Pathology (CRIP). In her talk she made clear that the protection of privacy is not only in the interest of donors, but also that the operators of biobanks do not want to disclose their information due to scientific and economic competition. The CRIP privacy regime was developed alongside with the Genome Research Network and is based on a public-private partnership. In particular, it is constituted by a database contract that regulates the workflow for data and transfer and is signed by all pathologists and partners in the network in equal terms. All partners are provided with a software that allows the extraction of research relevant data from existing records. These data are then imported to the IBMT database that is open for enquiries from registered users. If there is an enquiry of a researcher, this is returned to the respective partner institution which then has to decide whether it hands the samples to the researcher or not. This system enables a very quick identification of samples that are relevant to a study. As to the protection of privacy, Schröder emphasized that

partner biobanks cannot look into each other's sample collections. Furthermore, the data that are collected at the database are structured in cases. Consequently, researchers cannot go for individual patients, but only for certain groups of diseases. Finally, the access to the database is restricted to scientists that need to register personally to the system. Schröder concluded her presentation by pointing out that the German TMF concept (Telematic platform for medical networks of research) of genetic data protection serves as a model for the CRIP data protection regime, which may thus become a model for other biobanking networks as well.

3 Results

After these twelve extremely rich and sophisticated talks, *Christian Lenk* undertook the task of summarizing the major findings that emerged during the three days of discussion.

- Firstly, the talks and discussions revealed obvious difficulties in defining the concepts of privacy and confidentiality unambiguously in the context of human tissue and genetic databanking.
- This cannot only be explained by different philosophical, legal and national traditions. In addition, several speakers convincingly articulated their doubts that the traditional notion of privacy can simply be transferred to the field of electronic data processing and genetic research biobanks.
- Given this development, some speakers expressed their sympathy for a liberalisation of biobank research. If privacy cannot be guaranteed in this field, this may speak for the establishment of open consent rules.
- However, as to the protection of privacy there seems to be no homogeneous development. In fact, the presentations provided examples of both: the strengthening of the private sphere of the individual, but also the weakening of the individual's rights.
- However, the presentations reached a consensus that the definition of privacy depends not only on the individual and the nature of data collected, but is also closely related to the surrounding culture, societal relationships and the specific context of communication of information. If privacy is not an individualistic, but rather relational concept that consists of rights and corresponding duties (this was most clearly stated by Lars Ursin), it will be a future task to define the duties of tissue researchers and operators of biobanks towards the individual donors.
- Concerning the violation of privacy, several presentations emphasized that potential harms are not only to be found on an individual level as concrete harms, but they also affect the social level by engendering an

atmosphere of surveillance and social control that liberal democratic societies should avoid.

- Whilst the concerns towards the Personal Genome Project are by all means justified, one has to be aware of the fact that this is not the standard case of biobank research. The challenges in this context arise from the extension of the sphere where data is communicated, shared and distributed. According to Lenk, one particularly has to think of distributions from the patient-physician relationship to the local medical hospital, to national networks and finally to international networks inside and outside the EU.
- Given that privacy and confidentiality are typically located in the patient-physician relationship it appears as a future task to examine how these concepts can reasonably be applied to other spheres.
- Lenk critically remarked that the instruments for the protection of privacy that have been mentioned at this conference are still rather traditional ones, such as data protection, anonymization, confidentiality and informed consent (might it be broad or more specific). Consequently there is a need to think of an adequate adaption of already existing ethical and legal instruments in the field of human tissue research instead of inventing completely new concepts and methods for the protection of privacy and confidentiality.
- In the final discussion it was also mentioned that the idea of benefit sharing should take a much more prominent stance in the discussion about human tissue research. In particular, it was argued to divert some of the revenues from biobank research to Third World Countries. Whilst so far contributions consist mainly of taxes and foreign aid, there is also good reason to think of support in terms of biobank research results, as there are improved medical care and new drugs to severe illnesses.

In terms of the Tiss.EU projects' overall aims, the conference made a major contribution to all four focal themes. It was obvious that the topic of privacy, confidentiality and personality rights has many overlaps with other ethical and legal issues, such as informed consent, rights and entitlements in human tissue and cells, and last but not least also to anonymization and pseudonymization. The conference deepened already existing cooperations with several researchers, but established also new contacts in the wider European research community. In particular, all speakers agreed to join the network of experts that is to be established and continuously enlarged in the course of the Tiss.EU project.

Procurement, Storage and Transfer of Tissues and Cells for Non-Clinical Purposes in a Legal and Ethical Perspective

Fourth International Workshop of the Tiss.EU Project

Padua, 24-26 September 2009

Alessandra Bernardi, Luciana Caenazzo, Renzo Pegoraro

1 Introduction

The Fourth International Workshop within the Tiss.EU project was organized by Renzo Pegoraro, Fabrizio Turoldo, Luciana Caenazzo, Alessandra Bernardi and Marco Agostini, from Fondazione Lanza of Padua (Italy), in cooperation with the University of Padua. The workshop was prepared in close collaboration with two partners of the Tiss.EU project, Dublin City University (Ireland) and University of Vilnius (Lithuania). About 30 persons, speakers included, participated at the workshop from 24-26 September 2009.

The main focus of the workshop was one of the four Focal Themes of the Tiss.EU project, "Procurement, storage and transfer of tissues and cells for non-clinical research purposes" (Focal Theme A) in Mediterranean Europe. Due to the interdisciplinary nature of the workshop's subject, invited speakers represented a wide range of disciplines, such as Ethics, Law, Medicine, Philosophy, Sociology and Biosciences (Genetics and Biology). In order to explore the topic, the workshop was divided into four steps:

1) introduction to the state of the art of the focal theme from a scientific, legal and ethical point of view (see presentations given by Angelo Rosolen, Alexander Schuster and Eugenijus Gefenas);
2) country reports by experts from Cyprus, Greece, Malta, Slovenia and Italy on relevant laws and ethical guidelines which regulate the procurement and retention of human tissues and cells at the national level and description of the impact of current EU legislation and related guidelines on biomedical research in each country;
3) presentation of contributions on ethical and legal issues concerning forensic DNA databases and the forensic use of DNA biobanks;
4) public session recovering basic information for the general public as well as specific aspects (e.g. type of consent and data protection) and perspectives of the focal theme (e.g. a sociological comment on public perceptions of the involvement in research biobanks).

2 The contributions

2.1. The state of the art

This first layer served to define the state of the art of the focal theme A, considering different aspects of the topic. From a scientific point of view, the following points were clarified by *Angelo Rosolen* (University of Padua) and shared with workshop participants:

- Biobanks are invaluable tools for biomedical research.
- There are two major types of biobanks: population-based biobanks and disease-oriented biobanks. Population-based biobanks are needed for epidemiological studies and for studies of environmental and genetic factors and human health. Disease-oriented biobanks are most meaningful if organized in the context of clinical trials and/or multicentric groups with some specified objectives and priorities defined upfront.
- Biotechnology developments heavily influence the type, setting and scope of a biobank.
- The establishment of a biobank must rely on sufficient and continuous availability of resources.

The second contribution by *Marco Agostini* (University of Padua) was on the European Networks that collect human biospecimens annotated with essential clinical data and properly consented for broad investigational use. In fact, the shortage of standardized, high-quality biospecimens is widely recognized as a significant roadblock (especially in cancer research). The mission of several different EU networks (e.g. Tubafrost, BBRI, Conticanet, EuroBioBank , CNIO Tumour Bank Network, Confederation of Cancer Biobanks) is to guide, coordinate and develop the Insti-

tute's biospecimen resources and capabilities and ensure that human biospecimens for research are of the highest quality. This is accomplished through the development of a common biorepository infrastructure that promotes resource sharing and team science, in order to facilitate multi-institutional, high throughput genomic and proteomic studies.

From a legal perspective, the aim was to offer an outlook of the current situation in European law in the area of procurement, storage and transfer of human tissues and cells. The main difficulties to achieve this goal have been recognized as the scarcity of a national legal regulation and as the fast development of the matter spread over different legal systems and levels.

Alexander Schuster (University of Trento) gave an overall view of the EU Tissue Directive (Directive 2004/23/EC), deepening in particular the principle of voluntary and unpaid donations through the cited Directive, the Oviedo Convention, the EU Charter CoE Rec (2006)4 and the Directive 02/98/CE. In his speech, Schuster also dealt with need, characteristics and actual models of consent. Furthermore he underlined that criteria for accreditation and authorisation of biobanks appear still uncertain. A relevant document is the 2007 OECD Best Practice Guidelines for Biological Resource Centres. However some countries – e.g. Italy – refer to those standards without clarifying them extensively and make a merge of several sources (OECD, CoE Rec (2006)4, CE Dir. 04/23).

From an ethical point of view, *Eugenijus Gefenas* (Vilnius University) identified two scenarios: the research on retrospective collections of human biological samples and in contrast the research on prospective ones, dividing the latter into collections for specific research purposes (biobanks) or secondary uses ("research storage" of residual tissues). The case of samples taken for a specific non-research purpose (e.g. therapeutic, diagnostic or previous research interventions) can later become scientifically interesting. Gefenas explained that re-contacting and obtaining specific consent is thought to be the best policy from the ethical perspective, but depending on the circumstances it may be impracticable for a number of reasons. He suggested that in cases where re-contacting is not acceptable, it may be possible to use samples without consent (public interest may override autonomy requirements) and suggested that Research Ethics Committees (RECs) may under certain conditions decide whether the secondary use of human biological specimens for research purposes can be exempted from consent requirements. On the other hand, Gefenas discussed different levels of consent (from specific to blanket) for prospective collections. At the end, he underlined that discussions on consent focus on themes of procurement and use of biological material for research purposes but little attention is given to issues related to storage and transfer which also introduce possible logistic challenges (for instance regarding the growing length of consent sheets, which is already considered problematic).

3 Country reports

3.1 What are the provisions regarding the procurement, storage and transfer of tissue and cells for research purposes in your country?

Greece: The collection and processing of sensitive data require prior authorization by the Data Protection Authority. There are exceptions, such as data collection from physicians that are bound by confidentiality, but they do not apply to biobanks.

Cyprus: From the legal point of view, Cyprus does not have any laws that regulate the question, but regarding the ethical position, the Cyprus National Bioethics Committee (CyNBC) has published its "Opinion on the Establishment and Use of Biobanks and Registries of Human Biological Samples for Research Purposes". The CyNBC' s statement distinguishes between "biobank" and "biobanking" and "sample collection" or "sample databasing".

Biobanks by definition, contain human biological samples and/or substances with or without personal data and other relevant information. The state must legally recognize the purpose and role of the biobank, the principles and procedures governing the collection and provision of the samples/data by researchers, and the transparency/dissemination of the research results originating from biobank samples/data. The state must also assure free and informed consent from the individuals donating samples/data. In particular, they must know that their samples will be placed in the biobank, that samples are collected to support several present and future research projects both within and outside the country, that researchers from both Cyprus and abroad can access the samples/data of the biobank by following established procedures. Finally, the establishment and operation of the biobank should be reported to the Data Protection Commissioner. Consistent quality assurance procedures must be guaranteed, with a process of official accreditation of the biobank.

Sample Collections or *Sample Databases* by definition contain human biological samples and/or substances with or without personal data and other relevant information. They fall under the responsibility of a person and/or organization/ establishment/institution and are collected for specific research projects. Free and informed consent can be either be "closed" or "open", the establishment and operation of the biobank should be notified to the Data Protection Commissioner.

Malta: Malta is still bound by EU legislation. *The Human Blood and Transplants Act*, that incorporates the EU Directive 2004/23/EC (published as Bill No. 62 in the Government Gazette, No. 17886, 28/2/2006), sets standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells, including "haematopoietic peripheral blood, umbilical-cord (blood) and bone marrow stem cells, reproductive cells (eggs, sperm), foetal tissues and cells and adult and embryonic stem cells". This Directive

only applies to research on human tissues and cells when applied to the human body (i.e. *in vitro* research is excluded).

Slovenia: Slovenia recently passed *The Act on quality and safety of human tissues and cells intended for medical treatment* (Act on Human Tissues) (UL RS 61/07).The first institution responsible for performing the Act on Human Tissues is the Agency for Medicinal Products and Medical Devices (Agency) of the Republic of Slovenia, established on 01 January 2007. Some legal provisions regarding biomedical research are also included in actual *Penal Code* (UL RS 95/04). The Act on Human Tissues is compatible with requirements and obligations of OC, Directive 2004/23/EC of the European Parliament and the Council of Europe (31 March 2004) on setting standards of quality and safety for the donation, procurement, testing, processing, preservation, storage and distribution of human tissues and cells, the Commission Directive 2006/17/EC (8 February 2006), which implements the Directive 2004/23/EC and the Commission Directive 2006/86/EC (24 October 2006) implementing Directive 2004/23/EC.

Italy: There are two reference Acts (the Council of Europe's "Recommendation on research on biological materials of human origin" and the National Committee for Biosafety and Biotechnologies Guidelines for the Institution and Accreditation of Biobanks) that contain the following provisions: specific information and consent or dissent of the donor, non-profit purposes of the donation, exclusion of donor's remuneration, prohibition to interfere with the private life and prohibition against engaging in personal discrimination for participation in research or the knowledge of data derived from conserved samples, right to access and control the personal data of the party concerned, evaluation of the scientific pertinence and ethical acceptability of the research project by an independent commission. On the basis of the *Authorisation of the Guarantor of Privacy of 22 February 2007* it is furthermore required that when the genetic data management cannot take place without identification of the patient, specific measures must be adopted for keeping data separately from the very beginning of the collection. Except when such measures are not possible or require a disproportionate effort, the storage of genetic data and biological samples for research purposes can be carried out until the analyses are completed or the goals of the research project are achieved. The origin of the sample should be specified in addition to the measures taken to guarantee that the donor has given his/her consent, and genetic data and biological samples should be identified using codes or other means and be decoded only when necessary. In case that the database also contains information regarding genealogy or the health status of individuals, appropriate technical measures must be taken to secure the separation of this information (genealogy or the health status of individuals) from genetic and other personal data.

3.2 Does your Country have a discrete tissue law?

Greece: There is no tailor-made legislation on tissue, but the Constitution contains some fundamental principles such as the Protection of Dignity and Privacy, Protection of Health and Genetic Identity (Art 5), Protection of Public Health is an obligation of the state (Art 21).

Cyprus: There is no discrete tissue law.

Malta: There is no specific mention of the use of tissues in research in Maltese legislation. There is however a *Human Blood and Transplants Act*, and it is envisaged that the EU Directive 2004/23/EC will be incorporated into this Act.

Slovenia: Yes, it has a discrete law (*Act on Human Tissues*, 2007).

Italy: There is no specific legislation, but some reference Acts and guidelines: "Guidelines for the Institution and Accreditation of Biobanks" (National Committee for Biosafety and Biotechnology, 2006), the Italian National Bioethics Committee's document on "Biobanks and research on human biological material" (2006), the Decree of Ministry of Economic Development which establishes the procedure for the institution of organisms deputed to certification of biobanks as biological resource centres (2006), the "Guidelines for Genetic Biobanks" of the Italian Society of Human Genetics and Telethon Foundation, 2003, the Authorisation of the Guarantor of Privacy of 22 February 2007.

3.3 Who is allowed to procure, store or transfer tissue and cells?

Greece: In Greece it is not defined who can procure, store and transfer tissues and cells but according to the conditions of consent, access is only granted to named persons.

Cyprus (CyNBC Recommendations):

- *Biobanks* – Any organization, university, institute or other legal establishment, private or governmental, which obtains approval by the CyNBC, obtains the permission of the Government (Ministry of Health) and notifies the establishment of the biobank to the Data Protection Commissioner.
- *Sample collections* or *sample databases* – Any legal entity which obtains approval by the CyNBC and notifies the establishment of the collection/database to the Data Protection Commissioner.

Malta: In Malta it is not defined who can procure, store and transfer tissues and cells but according to the conditions of consent, access is granted only to named persons.

Slovenia: The *Agency* and the *donor centers* are allowed for the procurement, storage and transfer of tissue and cells. Article 10 of the *Act on Human Tissues* provides the

conditions for traceability in both directions (from donor to user and back) with strict adherence to personal data protection (necessary double-blind marking of each part of tissue, cells or product).

Italy: In Italy it is not defined who can procure, store and transfer tissues and cells but according to the conditions of consent, access is granted only to named persons.

3.4 What type of consent is required in order to do research in human tissue and cells?

Greece: The collection of biological material without consent is unconstitutional. Physicians also need the patients' consent for any medical intervention. The Data Protection Act requires that consent is "freely given, explicit and specific indication of will"; also the subjects should receive "information as to the purpose of processing", "the data or data categories being processed", "the recipient or categories of recipients of personal data as well as the name, trade name and address of the controller and his/her representative, if any"; such consent may be revoked at any time without retroactive effect.

Cyprus (CyNBC Recommendations):

- *Biobanks* – In general: individuals must provide their consent freely after having been informed that their samples/data will be stored for research purposes and that their samples/data may end up in different research teams in different parts of the world. They are given the opportunity to declare whether they would like to be informed of any research result that may directly or indirectly affect their health; they are also told what would happen to their samples/data in case the biobank closes down; finally they are informed that they have the right, at any given time, to withdraw their sample/data. The consent form is approved by the CyNBC or its Ethics Review Committees.
- *Sample Collections* or *Sample Databases* – In general: individuals must provide their consent freely after they have been informed that their samples/data will be stored for research purposes. Possible options comprise a "closed consent" (meaning that any tissue or DNA obtained from the patient will be analysed and then destroyed. Specifically the patient gives his/her consent for a blood/tissue sample to be taken for testing related only to a specific condition, and that sample and any DNA extracted from it will be destroyed once the results of the testing are available) being very specific about the project's content and procedures and duration; or an "open consent" (meaning that samples of tissue or DNA obtained from a patient may be stored indefinitely or will be used in research relating to specific conditions) which allows that samples/data can be used also for other fu-

ture research programs provided they are approved by the CyNBC and its established Ethics Review Committee. Donors are given the opportunity to declare whether they would like to be informed of any research result that may directly or indirectly affect their health, and they are also told what will happen to their samples/data in case that the collection/database closes down. They are informed that they have the right, at any given time, to withdraw their sample/data. The consent form is approved by the CyNBC or its Ethics Review Committees.

Malta: There are no specific laws yet on what type of consent is required in order to do research on human tissue and cells. However, Malta will most probably adopt the broad consent, which is currently being practiced.

Slovenia: Slovenia does not have a specific legal regulation related to informed consent (IC). However, *The Law on Patient's Rights* (2008) has defined some requirements about information and full consent. In principle, full IC is required, except in those cases where the obtainment of consent would involve unreasonable efforts or the risk of undue invasion of privacy is minimized.

Italy: In accordance with the *Authorisation of the Guarantor of Privacy of 22 February 2007*, informed written consent of the patient is necessary to store biological samples and to manage genetic data, unless the data are used entirely for statistical or research purposes foreseen by law. For different research purposes informed consent has to be obtained anew, but not if biological samples and genetic data are anonymized, if it is impossible to inform the patient despite reasonable efforts and if the research program (approved by the Ethics Committee) is authorized by the Guarantor according to article 90 of the Data Protection Code. The consent given by the patient can be freely withdrawn every time.

3.5 What are the provisions for the secondary use of samples (i.e. research endeavors diverging from the originally foreseen purpose)?

Greece: Data can be processed for purposes that where included in the information given prior to the donor's consent. Data can be lawfully processed for research and scientific purposes on the condition that it is anonymised. Public authorities can access data without an individual's consent but need to follow the authorisation of the Data Protection Authority.

Cyprus (CyNBC Recommendations): For all samples collected *after 2004*, all researchers must ask the donors of samples to declare whether they provide either a "closed" or an "open" consent. Samples collected legally before 2004 can be used for research, provided the research activity is approved by the CyNBC and that the samples are anonymized.

Malta: The *Data Protection Act* protects the individual insofar as any samples obtained can only be used for the intended purposes for which the informed consent was obtained. There is also a time limit how long samples can be stored. Article 8, following the EU Directive 2004/23/EC, allows for an exemption when data is processed for historical, statistical or scientific purposes. However, the term "scientific purposes", as in the EU counterpart, remains unclear. Many would interpret this as meaning that once data is anonymised and no results which may identify individuals are obtained, the procurement, storage and use of these tissues is allowed. However, recital 26 of the same Directive makes this doubtful.

Slovenia: Article 33 of the *Act on Human Tissues* provides the link between the institutional units which regulate the use of tissues and cells and the "third person" (secondary user, research institution as for example the Biological Institute of Slovenia).

Italy: On the basis of the *Authorisation of the Guarantor of Privacy of 22 February 2007*, the storage of genetic data and biological samples for research purposes can be carried out until the analyses are completed or the goals of the research project are achieved. For different research purposes informed consent has to be obtained anew.

3.6 Does your country have a regulation on forensic DNA Databases?

Greece: The Penal Code regulates the analysis of DNA (Art. 200A) deriving from biological material collected by suspects of criminal offences. Biological materials should be destroyed after DNA analysis. DNA fingerprint should be destroyed if they do not match with a crime scene or be kept until the end of the trial, in case that the result is positive (and then destroyed after the trial). The current legislation does not allow the creation of forensic genetic fingerprint data bases.

Cyprus: Cyprus does not have a law for the regulation of forensic DNA databases. It does, however, maintain a National Forensic Database which is governed by the *Data Protection Law* (2001) and the *Police Establishment Law*. Basically, the genetic profiles of all individuals who are sentenced to imprisonment are entered into the forensic database. The genetic profiles remain there until their record is removed based on the Police Establishment Law (i.e. depending on the crime committed). Genetic profiles originating from unidentified crime scene stain samples are stored in the forensic database.

Malta: There are no legal provisions on forensic databases. The *Traffic Regulation Ordinance* allows police officers to take breath and urine samples on pain of being found guilty of an offence if one refuses. By contrast, any use of blood samples for purposes of identifying DNA must have the consent of the individual.

Slovenia: Slovenia has a regulation on forensic DNA databases since 2008 (informal since 2001, when the EU countries agreed on the use of a common set of DNA-markers).[1]

Italy: Italy ratified the Prum Treaty with the Law n.85 (30 June 2009) into national law. It regulates the establishment of DNA databases and introduces modifications of the Code of Penal Procedure in relation to measures which may infringe individuals' rights of freedom of the person.

4 Forensic uses of samples and data

The session was kicked off by *Pamela Tozzo* (University of Padua) with a lecture on "Biobanks for medical research: does the Italian context safeguard minors?". The background was that genetic research on biological material from minors can yield valuable information, which can improve our understanding of genetic-environmental interactions that could not be fully understood if only adults participate, as well as the development and genesis of early-onset genetic disorders. In this context, the major ethical concerns on biobanks are related to consent, privacy, confidentiality, commercialization, and the right to be or not be informed. Moreover, research on paediatric data raises specific governance and ethical questions with regard to consent and privacy, which are not well deepened in the debate on adults' samples collection and storage. The talk analyzed different European guidelines and position papers devoted to these themes, with particular reference to the Italian context, focusing on what is mentioned in each document on the ethical and legal requirements that guarantee minors' rights.

Subsequently, *Renzo Pegoraro* presented the work of *Petra Bard* (CEU Center for Ethics and Law in Biomedicine, Budapest) entitled "The fight against terrorism: European data protection and the establishment of a surveillance society". The presentation started with an introduction into the positive developments of forensic sciences on the one hand, and a warning against the dangers of measures intruding into privacy on the other, which are sometimes touching the borders between what is permissible and what is not from a human rights perspective. The role, benefits and dangers of genetic biobanks in the forensic context have been outlined. After having shown that the fear of crime is deepening in contemporary liberal societies – leading to the development of a "preventive state" (i.e. a state perceiving all citizens as suspects) – DNA collection, storage and analysis were singled out as means in the fight against real and perceived dangers of serious crimes and terrorism. The presentation of Petra Bard outlined a theoretically viable model with due regard to a perhaps not so utopian population-wide forensic database. This part was followed by an analysis of forensic genetics in the European

[1] The database is directed by the Ministry of Interior, Central Police Administration, Center for Forensic Investigation (http://www.policija.si/index.php/generalna-policijska-uprava).

Union. Finally, special emphasis was given to the principle of availability introduced by the Hague programme of 2004, and the exchange of forensic DNA data amongst the member states.

The following speaker, *Nils Hoppe* (University of Hannover), focused his presentation ("Only problems, no solutions: reflections on some of the more annoying discrepancies in the discussion of commodification") on the fallacy of the primacy of law, the misguided notion of wanting to shackle technology, the abuse of language and law and the despotism of the principles of autonomy. In particular, he criticised that in the vast majority of academic discussions in relation to commodification, the language being used is either not suited for this purpose or simply wrong. It is supposed to convey elements of altruism and altruistic giving where no such altruistic elements are present. Hoppe first suggested that we ought to critically question whether regulation is necessary in the first place, further on levelling the bulk of his criticism at the fact that, despite deploying property law principles when dealing with human tissue, we shy away from calling it property. This, he claimed, is not a deficiency in the law but a terminological uneasiness on the part of the public. Finally, he strongly criticised that the current regime disenfranchises the individual whilst underpinning commercialisation of the human body through industry – which seems to be precisely the outcome which is deemed most undesirable.

Claudio Tamburrini (Stockholm University) presented the lecture "Forensic biobanks and privacy trade-offs: who should bear the burden?" He adopted an utilitarian point of view regarding forensic DNA biobanks. Tamburrini argued that a widely held critique against forensic biobanks is that they violate donors' privacy. In his view, it is both unfair (we would be using donors merely as means to solve crimes) and counterproductive (people might become reluctant to contribute their samples in the future) to disregard donors' rights in order to fight crimes. On the other hand, he added that this traditional objection to forensic biobanking affects only one aspect of the notion of privacy. In particular, this objection does not take properly into account the fact that the right to privacy, although an absolute one, can sometimes rightfully be overridden by other, more important considerations such as serious crime prevention. Accordingly, the privacy-based criticism against forensic uses of biobanks cannot be considered as a decisive reason to ban this practice.

5 Public session

The public session started with an introduction into the Tiss.EU project by the coordinator, *Christian Lenk*. Lenk's presentation focused on the research objectives, on the essential questions in the areas of ethics and law, on the connections between theoretical issues and practical research, on the necessity of harmonisation of public values and research policies in the European Union and finally on the

cooperation among different countries, universities, disciplines, science and politics.

The second talk was given by *Mirella Filocamo*, who works at the IRRCS G. Gaslini, a paediatric institute in Genova, and at the Telethon Foundation. Filocamo's presentation was an exhaustive outline of the main characteristics of biobanks and of implied scientific, legal and ethical issues. Filocamo started with a definition of biobanks, sketching their goals, peculiarities, and typologies. He also discussed the provenience of samples, research applications, beneficiaries, requirements, guidelines, certification criteria, sample quality, data management, sample registration, data registration and services such as storage and distribution. The second part of Filocamo's presentation focused on the ethical and legal issues implied in biobanks, such as confidentiality, privacy, correct use of samples, informed consent and avoidance of discrimination. Finally, in the third part, Filocamo talked about his personal experiences at the Gaslini Insitute and at the Telethon Foundation.

Corinna Porteri from the Bioethics Unit of "IRCCS Fatebenefratelli" of Brescia, offered an overview of the ethical issues related to biobanks for non-clinical purposes. The main topics of her presentation were: 1) information and informed consent procedures; 2) protection of confidentiality; 3) return of results to the subjects; 4) access to samples and data; 5) commercial exploitation and benefit sharing; 6) public participation and trust.

Carlo Petrini, chair of the Bioethics Unity at the "Istituto Superiore di Sanità" in Rome, reflected on several ethical issues in genetic research. Regarding the transfer of tissues and data protection, Petrini argued that the protection of privacy interests must be balanced against the interest in advancing research. He particularly focused his attention on the following ethical issues: individuality and respect for autonomy, recognition and respect for difference, the multivariable nature and expression of genetic information, mutual exchange through consultation and communication, protection from discrimination and stigmatization, security, accountability, equity, citizenship and universality.

The last presentation by *Federico Neresini* (Department of Sociology, University of Padua) focused on the sociological aspects of biobanking. In Neresini's opinion, biobanks can be perceived as an example of the mutual constitution of scientific and social dimensions, because they collect, purify and conserve biological material. This material, which seems to stem from an environment external to that of science, is made available for scientific research by reorganising the environment according to its needs. From this view, two main consequences have been discussed. Firstly, the contradictory character which emerges: on the one hand, the "pieces of ourselves" which are conserved in a biobank must be made independent from the donor; on the other hand, the organic material is always part of someone, and its value depends on the maintenance of a link with its original owner. Secondly, biobanks are culturally legitimated because they produce scientific knowledge which is useful for curing a body, which is a precious but fragile material support

for individual identity. All these elements can contribute to an explanation why people are willing to become donors even if they are aware that they cannot directly benefit from the advancement of science which biobanks could prompt. This conclusion reaffirms the importance of an attentive evaluation of autonomy of sample donors and protection of their privacy and the need for a shared legislation on this matter.

This session provided an opportunity for stressing the importance of an interdisciplinary approach by allowing the participation of various health care professionals as well as other experts of the ethical debate on biobanks. The participation of health care professionals and the public was particularly welcomed in order to realize a broad disseminating of the results of the Tiss.EU project.

6 Results

In summary, the workshop in Padua offered an introduction to the most crucial scientific aspects of the Focal theme A and provided valuable insights into the state of the art of the European legislation in the area of procurement, storage and transfer of human tissues and cells for non-clinical purposes. Despite major difficulties in the process of harmonization of Biolaw at the European and international level, such as the lack or the variety of national regulation and the rapid development of biological knowledge, supranational instruments have been indicated as a tool for scientific community and civil society.

The ethical issues in Focal Theme A are closely connected to the issues of the other three Focal Themes when related to non-clinical research. The issues that have been identified as most specific to "procurement, storage and transfer" concern the autonomy of sample donors and the protection of their privacy. In particular, speakers and participants discussed the types of consent (specific or broad) and the types of data security (coded materials, linked anonymised materials, unlinked anonymised materials). The major question was whether strategies of softening standard criteria can be defined (e.g. allowing to broaden consent and to waive consent/recontacting requirements under certain circumstances). Other possible ethical problems in Focal Theme A concern the justice-benefits rate, the commodification of the human body, issues regarding specific types of tissues and cells (e.g. embryonic tissues), perspectives from various cultures, research on vulnerable populations, balancing interests of individuals and society.

The country reports offered the possibility to discuss the main similarities and differences between national legislations and ethical guidelines as well as the application of EU legislation in the respective country group. The participating countries show different levels of development concerning the legislation in the respective Focal Theme. In particular, Slovenia is the most developed state in this respect (i.e. it has a discrete law and other reference Acts). Greece and Italy demonstrate an intermediate state of development (no "tailor-made" legislation but they make

reference to the national Constitution, Guidelines or other Acts). Malta is the country that seems to be most bound by EU legislation, having no specific laws for managing the topic. Finally, Cyprus as well does not have any particular laws to regulate the procurement, storage and transfer of tissues and cells for research purposes but the Cyprus National Bioethics Committee (CyNBC) has published its "Opinion on the Establishment and Use of Biobanks and Registries of Human Biological Samples for Research Purposes". In fact, the CyNBC is playing a key role in the national organization of sample collections and biobanks. Despite the small size of the country, this national approach appears very interesting and might be useful for other countries as well. Concerning the regulation on forensic DNA databases the country group situation appears homogenous: Slovenia, Cyprus and Italy have specific laws, Greece has reference Acts but no tailor-made legislation, Malta does not make any legal provisions for this topic.

The workshop in Padua also promoted a public session in order to encourage the public debate on questions of procurement, storage and transfer of tissues and cells for research purposes. In fact, the social perception and exchange of experiences could help to figure out which ethical and legal standards should be applied in the harmonization process of European regulations. From the workshop's presentations and discussions the following aspects of the Focal Theme A have been identified:

- Clinicians and clinical researchers routinely obtain human biological samples and often store them for future research (sample collections) with internal procedures on quality and confidentiality, mainly consistent with the EU guidelines.
- Existing tailor-made and reference laws permit to deal with several issues of the Focal theme in a national context, but ethical dilemmas (e.g. how to guarantee autonomy of sample donors and the protection of their privacy) remain partially unsolved. For instance, the country reports suggest that the patients' consent for research should always be required by law but there is no agreement on the type of consent to be obtained (one-time general, specific consent, blanket consent).
- The country reports proposed some original solutions to cope with the Focal Theme A. The Cyprus's experience in particular deserves to be mentioned. Cyprus does not have any laws to regulate the procurement and storage of human tissues but the Cyprus National Bioethics Committee (CyNBC) has published its opinion on the establishment and use of biobanks and registries of human biological samples for research purposes and is playing an active role in the process of organization of sample collections and local biobanks.
- A discrepancy between the public perception of the tissue storage issues and that of the medical professionals and researchers seems to exist, but the workshop's participants agree that it can be managed giving independ-

ent and comprehensive information and elaborating shared recommendations for future EU policy decisions.

- The necessity of having a specific session of forensic aspects of DNA databases arises first of all from the fact that advances in DNA technology and the discovery of DNA polymorphisms have facilitated the creation of DNA databases for the purpose of criminal investigation, followed by a considerable range of possibilities for criminal investigations.

It turned out as a main aspect of the Focal Theme A that apparently in some countries of the Mediterranean area the interests of the Penal Law overcome the individual right of giving informed consent regarding the procurement, storage and transfer of biological sample for judicial purposes.

Rights and Entitlements in Human Tissue and Cells: the BENELUX Countries

Fifth International Workshop of the Tiss.EU Project

Leiden, 9-11 December 2009

Jasper A. Bovenberg

1 Introduction

The fifth Tiss.EU International Workshop, organized by the Legal Pathways Institute for Health and Bio-Law, took place in Leiden, the Netherlands, 9-11 December 2009. More than 25 participants and speakers from all over Europe engaged in discussions on *Rights and Entitlements in Human Tissue and Cells in the BENELUX Countries*.

The core of the workshop, the country reports on Belgium, the Netherlands and Luxembourg, was preceded by a scientific session where workshop participants had to analyze various sorts of tissue, learn about PCR, and perform extraction and processing of DNA (headed by Dr Carin Cruizen, University of Utrecht). Following this session an invited speaker, Natasja Kliouеva LLM MSc (Netherlands Brain Bank/Brain Net Europe), addressed the importance of brain tissue banking for research into neuropsychiatric diseases and issues encountered with such tissue collections, including the right of access, use and stakeholder interests. She stressed the need for transformation of the "private" tissue collections into professionalized research biobanks.

In the country reports, the legal experts from Belgium (*Herman Nys* of Leuven University), Luxembourg (*Mike Schwebag* of the Luxembourg Ministry of Health) and the Netherlands (*Jasper Bovenberg* of the Legal Pathways Institute for Health and Bio-Law) gave a review of the laws and regulations of their respective countries regarding the rights and entitlements in human tissue and cells, or, notably, the lack thereof. In order to put their overview into a context, the experts were asked to consider a series of legal issues and questions for their respective jurisdictions raised by a real life case scenario concerning the development of human skin models. The scenario was specifically prepared for the workshop by *A. El Ghabzouri*, a prize winning dermatology researcher of the Leiden University.

The last day of the meeting was kick-started with *Arnaud d'Agostini*'s presentation of the government funded $200 million research enterprise - Integrated Biobank for Luxembourg (IBBL) initiative, comprising three complementary projects in collaboration with high profile US research institutions. The legal issues triggered by the IBBL were subject to subsequent Moot Medical Ethical Review Boards (a role playing game). Assuming the role of a Medical Ethical Review Board, three different groups of the workshop participants had to discuss and agree on draft language in the research protocol, in particular: ownership of tissue, control of use, tissue of mentally incompetent participants, feedback, cross-border flow, creation of and research on cell lines, IP and benefit-sharing.

In the final presentation given by *Sven Bostyn*, a Belgian patent attorney affiliated with the University of Amsterdam, the focus shifted from the traditional rights and entitlements in tissue, such as consent and feedback, to the IP-rights. Bostyn eloquently guided the participants through the intricacies of morality embryonic stem cells research and the European patent law by providing a thorough analysis of European and US patent case law.

The objective of the meeting was that legal experts from Belgium, Luxembourg and the Netherlands present a *"country report"* on the laws and regulations of their respective countries regarding rights and entitlements in human tissue and cells. The experts were expected to list the various types of tissues in a matrix and then briefly go over the associated legislation and self-regulation.

2 Country Reports

2.1 Country Report: Belgium (Herman Nys, University of Leuven)

Legal rules:

- Law of 19th December 2008 regulating the procurement and the use of human bodily material for medical application in humans or for scientific research (entered into force on 01 December 2009). The law also implements the Directive 2004/23/EC.

Basic principles of the law:

- Removal from a deceased source: opting out rules of Organ Donation Law 1986 are applicable (art.12)
- Removal from a living source: informed and written consent of the donor or legal representative in case of a minor or incapacitated donor is required (art.10)
- Primary use: articles 10 and 12
- Secondary use *not* for scientific research:
  - Informed consent of the source, unless asking consent is not appropriate/impossible, in which case a positive advice of EC university hospital is required (art.20 §1)
  - Every secondary use has to be approved by an EC licensed minister (art.21)
- Secondary use for scientific purposes:
  - consent of the source is presumed after written information on the use and no opposition by source or legal representative before any use is made (art.20 §2)
  - Positive advice of EC is required (art.21)
- Removal of human material is a legal monopoly of a physician in a hospital (art.4 §1)
- No benefits may be offered in exchange for the patient's donation of human material (art.6 §1)
- All human material has to be transferred to a bank for human substances, which has the legal monopoly for the allocation of human material to users (art.2, 24). A bank for human substances has to be operated by a hospital and has to be a not-for-profit legal person (art.7)
- The removal of human material without specific preventive, therapeutic or scientific objective (art.8) is prohibited
- The law contains a prohibition of removal and storage for so called delayed autologous or allogeneic use for a specified recipient (umbilical cord blood) except if the recipient suffers from a serious illness and sufficient material is preserved for use in other persons (art.8)

- Right of the donor to be informed of any serious information on health status discovered during processing or use of human material (art.11)
- Material exported from Belgium and imported to Belgium is governed by a Royal Decree 29 September 2009, art.18 §1 and §2

Conclusions:
A new law, which regulates the removal of tissue from living and deceased persons, has entered into force in 2009. It contains specific instructions to transfer all tissue to a monopolist bank for human substances, which is designated to allocate the transferred tissue to the users. The law also contains specific prohibitions such as removal without legitimate purpose and umbilical cord blood banking for a specific recipient.

2.2 Country Report: Luxembourg (Mike Schwebag, Ministry of Health of Luxemburg)

Relevant existing acts:

- Act on autopsy, cadavers (Loi modifiée du 17 novembre 1958 concernant l'autopsie, le moulage, ainsi gue l'utilisation de cadavres humains dans un intérêt scientifique ou thérapeutique)
- Act on blood (Loi du 15 mars 1979 portant réglementation de la transfusion sanguine)
- Act on removal of human substances (Loi du 25 novembre 1982 réglant le prélèvement de substances d'origine humaine) *governs mainly organ transplantation on living donors (med) and cadavers: removal of human substances, including research*
- Act on tissue and cells with human application (Loi du 1er août 2007 relative aux tissus et cellules humains destinés à des applications humaines jo DIR 2004/23/Œ) *governs tissue and cells with application to human body (human use)*
- Control over research (on tissue)
  1) Biomedical research including intervention on a human being: Material collected for purposes of research or for double purposes
     - Consent has to be given
     - Consenting may authorize future use of material
     - Ethics review board (CNER) / Health Department
  2) Use of material lawfully collected at an earlier stage: no clear framework at the moment, Oviedo Convention (art. 22)

Important bioethics acts are imminent to be adopted:

- *Proposed act on ratification of the Oviedo Convention,* including additional protocols on cloning, on transplantation of organs and tissue and on biomedical research
  Status: Pending in parliamentary process (2006/Parl. Doc. 5528). Generic ethical standards for both research and medicin*e* (includes changes to existing legislation)
- *Proposed act on biomedical research*
  Status: Pending in parliamentary process (2006/Parl. Doc. 5552). Framework for biomedical research *(proposed: must include intervention on a human being)*
- *Act on medically assisted procreation* (no details on status and scope)

Conclusions:

- Very limited legal framework, but major "bioethics" texts pending
- At current state, some domains have no clear regulatory answer
- Status of waste material removed on non-research grounds is unclear

2.3 Country Report: Netherlands (Jasper Bovenberg of the Legal Pathways Institute for Health and Bio-Law)

Mapping the Dutch legal landscape requires a preliminary identification of (i) the various types of tissue that may become available (e.g. garnets, blood, bone etc), (ii) the various uses to which they can be put (e.g. clinical, therapeutic, industrial, research etc) and (iii) the various sources of tissue or contexts in which tissue becomes available (e.g. adult volunteers, surgical patients, deceased persons etc.). Complicating matters is the fact that the same tissue type may be used for different purposes, or that tissue obtained from one and the same source may become available in different contexts, thus subject to different legal regime.

This highly contextualized nature of the availability of tissue is reflected in the many different, divergent and sometimes even conflicting rights and entitlements in cells and tissue such as:

- Environmental laws on medical waste
- Public health laws
- Archive status
- Data protection laws
- Constitutional rights to bodily integrity and privacy
- Doctor-patient laws
- Property rights (civil code)

In addition to specific tissue legislation on garnets, embryos, fetal tissue and blood, generic legislation applies across the spectrum of tissues.

Generic Tissue Legislation (The Netherlands)			
Context/source	**Legislation**	**Tissue type**	**Use of Tissue**
Surgery/patient	Act on Doctor Patient Contract	Surgical "waste" (skin, fat, bone, muscle, arteries, veins, etc.	Storage and research; Production of tissue products on basis of consent
Living Donor	Act on Organ Donation	Organs and all sorts of tissue	Storage and research
Living Donor	Act on Blood Donation	Blood	Transfusion, storage, research, production
Post mortem donor	Act on Cadavers	All sorts of tissue, corpse	Storage, training and research
Post mortem donor	Act on Organ Donation	All sorts of tissue	Storage, processing, preparation for transplantation, transplantation related research

One crucial aspect of rights in cells in tissues is the right to control the use of the tissue in research. The Dutch legal framework grants the donor the following rights in this respect:

Control over research on tissue (The Netherlands)			
Tissue type	**Control by**	**Type of control**	**Conditions**
Sperm	Donor	Explicit consent	METC approval
Ova	Donor	Explicit consent	
Fetal tissue	Mother	Explicit consent	
Blood	Donor	Opt out	
Surgical waste (skin, fat, bone, muscle, arteries, veins)	Patient	Opt out for anonymous and coded research; opt in for non-anonymous research	Self-regulation Approval scientific committee in certain cases Approval privacy committee in certain cases
Post mortem donations	Donor	Opt out for transplantation research	

Conclusions:

- The Netherlands have a detailed legal framework for use of specific tissue (sperms, ova, fetal tissue etc.)
- This framework incompletely addresses research use
- The Netherlands have a generic framework for research on tissue becoming available in specific contexts (hospital, post mortem donation)

- Both frameworks are complemented by civil code and penal code
- Both frameworks are fragmented, overlap, and do not provide answers to detailed questions
- Cross border tissue flows are not problematic
- Much is left to informed consent

3 National legal contexts applied to a case study

Ghalbzouri's case: Building skin and other tissue models

In order to put their schematic overview of national laws and regulations into context and to highlight pertinent issues, they will each use their overview to address the various legal issues and questions raised by the same real life case scenario. The case scenario was presented by a researcher of the Leiden University Medical School, Dr. *A. El Ghabzouri*. The case and the questions it has triggered for Ghabzouri and his team can be summarized as follows:

Ghalbzouri's prize winning research pertains to the development of human skin models that could serve as alternatives for the use of animals for testing cosmetics, chemicals and pharmaceuticals. The demand for such alternative models is growing, as the European Union is committed to curtail animal testing, but, on the other hand, keeps stepping up the number of products that require pre-marketing testing on animals (e.g. REACH).

Ghalbzouri's and similar forms of *human tissue engineering* require large quantities of human skin. So while his work may be good news for rabbits, mice and guinea pigs, he faces a number of issues regarding the rights and entitlements of humans (donors, laboratories, scientists, medical ethical review boards, funding agencies, industry) in their tissue and cells. In the case of Ghalbzouri: where and how can he legitimately procure, store, engineer and market the human tissue he needs for building his skin and other tissue models?

The experts were asked to pay particular attention to the following aspects:

- The issue of the *legitimacy of the procurement and engineering of the human skin* by researchers such as Dr. Ghalbzouri (academic) or others, e.g. L'Oréal (industry). Potential sources for the human skin they need are leftover tissue from cosmetic surgery (e.g. breast reductions) or foreskin removed during circumcision. *Can the researchers lawfully obtain the human skin they need? From whom? Under which conditions?*
- Must *consent* from skin donors be explicit and informed opt-in? Or can it be informed opt-out? And is implicit opt-out a possibility?
- The issue of rights of the skin donor. Is her right exclusively "binary", i.e. *can she only say "yes" or "no"?* Or can she subject her donation to certain conditions? For example, can she stipulate that the skin may only be used for not-for-profit research or that the skin may not be exported, in whatever form?

- The issue of *ownership* of the donated skin. Will ownership be transferred from the donor to Dr Ghalbzouri or his employer or to L'Oreal? Does ownership vest in the removed tissue in the first place?
- As the skin is being preserved, processed and engineered into a "model", at what stage does the law stop calling it "human skin" for purposes of determining ownership? How does tissue engineering affect *ownership*?
- The issue of *feedback*. Any donated skin is likely to be screened or even genotyped by the researchers. Do donors have a right to receive any feedback of the findings or results of such screenings or genotyping?
- "*Droit de retour*". A healthy donor (e.g. young boy after circumcision) may become a patient over time. Will he have any residual rights in his donated tissue? Can technological developments such as growing stem cells from healthy skin give rise to rights to return or use of once donated material? Or does the law provide for an irrevocable donation?
- The issue of *export*? Can Ghalbzouri lawfully obtain human skins from Belgium? From Luxembourg? Do any import or export regimes apply?
- "*Non-commerciality*". Does the donor have a valid and enforceable claim for a profit share in the event the researchers (academic of industrial) are granted a patent or otherwise succeed in marketing their model?

4 Results

A comparison of national legal contexts applied to Dr Ghalbzouri's case			
	Belgium	**Luxembourg**	**The Netherlands**
Legitimacy of procurement and engineering of skin tissue	• Procurement by physician in a hospital • Under responsibility of a not for profit bank for human material • Allocation by such a bank to Dr Ghalbzouri	• Tissue and cells act: other uses are possibly foreseen with implicit consent • Future biomedical research law: other uses are possible with explicit donor consent • Oviedo: future use of material is possible with appropriate information / consent • Conditional consent is possible	Depending on the source of the tissue: Living donor: Removed body tissue can be used for medical statistical or other medical research Deceased donor: Act on organ donation has limited purposes of donation: Either: donation for transplantation; Or, if donated skin is unfit for transplantation, donated skin may be used for research, but only for transplantation research • Not allowed to go beyond statutory purposes • Individual must sign specific donation codex
Informed consent and donor rights	• Primary use: informed and written consent if living donor/opting out if deceased donor. No information required at this moment • Secondary use for scientific purposes: opting out after written information • Living donor: yes or no • Deceased donor during life he may or may not object to removal of human material • Secondary use: yes or no/ object or not		Must consent from skin donors be explicit and informed opt-in? Source of the tissue (the patient): Research on anonymized tissue is allowed, provided no objection after information Research on non-anonymized tissue requires explicit consent No statutory requirement that consent be in writing Act: Research on anonymous tissue means "research which guarantees that the tissue that is to be used in the research is not traceable to the person" Research on coded tissue? ▪ Code Proper Use • Opt out Act on Quality and Safety requires coding for tissue to be used in other humans Can the patient-donor attach conditions to consent? Research that is allowed under the Act is worded "medical statistical, or other medical research" Act does not require specific consent; statutory broad consent

Ownership issues	• No rules in human material law • After removal of human material it becomes a "good" with a price (Royal decree 14 October 2009 fixing the prices of human material) and owned by the (not for profit) bank for human material ▪ After being engineered into a "model", it will become ownership of …?	• At present state this is particularly unclear: Traditionally there is no ownership on the human body (but rights of the human being) ▪ Oviedo and existing legal framework prohibits profit ▪ Does the engineered tissue change status?	Patient-donor: Statutory permission to use the tissue for medical research No statutory transfer of ownership Civil law ownership: Ownership is most comprehensive right to an object Objects are all *material capable of human control* "raw tissue" capable of human control "raw tissue" capable of ownership (transferable) "Processed tissue"- rules of conversion apply
Feedback to the donor	• Living donors have the right to be informed of any serious information on their health status discovered during primary use of their material (art.11) • No provisions in case of secondary use	• Donor has the right to receive feedback, however the donor can decide he doesn't want to know	
Droit de retour	• Firm prohibition of removal and storage for delayed autologous or allogeneic use for a specified recipient (art.8) • Donor loses after removal any rights regarding the human material (irrevocable donation - consent can only be revoked before any act with the material - art. 10 §5)	• Uncertain	**Doctor-Patient, Act on Quality and Safety, Act on Blood Supply Embryo, Embryo Act and Fetal Tissue Act** No benefit share provision Benefit sharing may violate statutory principle of non-commerciality of donation **Civil law** Depends on terms of informed consent. Unjust enrichment Impact of International Instruments (Unesco, HUGO)
Import/Export	• Material exported from Belgium and imported to Belgium: Royal Decree 29 September 2009, art.18 §1 and §2 • In both cases all provisions of the human material law 2008 have to be respected		**Doctor-Patient Act, Act on Blood Supply, Embryo Act, Fetal Tissue Act, Act on Organ Donation** No provisions on import **Act on Quality and Safety of Human Tissue** Free flow of tissue/Import must take place via Dutch tissue bank if tissue is intended for use in humans
Non-commerciality	• Donor has no enforceable claim for a profit share • Article 6 human material law 2008: only a compensation, no benefits or profits		**Doctor-Patient Act** Silent on profit making. Explanatory Notes allow use of surgical waste for commercial research (not applicable in this case) **Act on Quality and Safety of Human Tissue, Act on Blood Supply** Silent but commercial production of blood products is allowed Explanatory notes allow tissue banks to sell tissue to (commercial) third parties NB hospitals can establish tissue bank for surgical waste tissue

The legal experts provided a detailed sketch of their national legal regimes for procurement, storage, use and transfer of human cells and tissues. The speakers paid particular attention to new legislation and regulations of their respective countries as well as documents which are currently in development. The national regimes presented by the experts appear to be fragmented, comprising rules and norms originating from different legal fields. The regulations frequently resemble tangled conglobulations rather than a set of clear instructions and limitations. When applied to a real-life scenario, the differences and gaps in the national legislative regimes of Belgium, Luxembourg and the Netherlands reveal themselves. It becomes clear that the gaps create uncertainties both for the donor (the source of the tissue) as well as persons or entities obtaining cells and tissues. The uncertainties are particularly evident where non-diagnostic and/or non-therapeutic applications of the tissue are concerned. Ownership of the tissue, control by and feedback to the donor, commercial interests and benefit-sharing as well as cross-border flow require more attention from the law and policy makers.

Anonymisation and Pseudonymisation as a Means of Privacy Protection

Sixth International Workshop of the Tiss.EU Project

Stockholm, 24-26 March 2010

Claudio Tamburrini

1 Introduction

The Sixth International Workshop within the Tiss.EU project was organized by *Claudio Tamburrini* from the Centre of Health Care Ethics (Stockholm University) in close cooperation with the partners from the Central European University who are engaged in the same Focal Theme, "Anonymisation and pseudonymisation as a means of privacy protection" (Focal Theme C). In addition to this topic, the workshop dealt with the regulation of human tissue research in the Nordic countries (Sweden, Finland and Denmark).

The Stockholm Workshop combined three different approaches: a (mainly) descriptive, a normative and a more practically-oriented one. In accordance with this structure, "the state of the art" regarding privacy issues related to biobanking in Sweden, Finland and Denmark was first presented by researchers from these three Nordic countries. Although this part of the workshop was intended to be mainly descriptive, important ethical and policy issues were addressed as well, by the speakers and during the discussions following their presentations. In between the country reports, a couple of more theoretically-oriented papers were presented

by bio-ethicists affiliated to the Centre for Healthcare Ethics. In particular, this part of the workshop addressed the philosophical foundations of the notion of privacy and the underlying ethics of granting donors the right to withdraw from a project. Finally, in the third part of the workshop, a more practically-oriented discussion on privacy was carried out, specifically about possible forensic and police investigative applications of biobank repositories, but also about sportsmen's right to privacy in the context of anti-doping controls.

2 Reports

2.1 Sweden

In her presentation "Anonymisation and Pseudonymisation – Concepts and Legal Standards in Swedish Biobanking", *Elisabeth Rynning* (Faculty of Law, Uppsala University) underlined that the key issues in the Swedish biobank legislation (currently under revision) concern the terminology applied (how we define the concepts and how we distinguish between them); how the choice of policy may affect different stake holders such as patients and research subjects, researchers and society; and what the legal implications of anonymisation or pseudonymisation are. In addition to this, regulators also need to address the fact that the status of tissue samples may change, not only from pseudonymised to anonymised, but also from anonymised to re-identifiable, by new scientific developments and changes in society.

Unfortunately, there is wide variety of definitions and criteria used to explain these concepts, in national as well as international hard law and soft law documents. In the European context, some Members States – including Sweden – focus on the fact that pseudonymised data can always be identified, at least by the person holding the code key, and are thereby never anonymous.

Pseudonymisation is achieved by exchanging all direct personal identifiers – such as name, address, social security number etc. – for indirect ones, such as a randomly picked number, linked to the sample/data by a code key. However, it must not be forgotten that samples/data can also be clearly identifiable without any direct identifiers or code keys if sufficient associated data are accessible, e.g. information on the time and place where the sample was collected, and various features of the donor. Even internal information such as DNA can be used for identification.

In spite of the regulations laid down by the Swedish Personal Data Act (1998:204), the legal situation is not clear. Furthermore, there is no guidance as to what the wide identifiability concept of the Personal Data Act may imply with regard to biological materials and DNA.

So what difference does it make in practice if samples and data are anonymised or pseudonymised? Despite the remaining risk of future re-identification, it

would seem clear that anonymisation offers better protection of informational privacy. However, protecting autonomy becomes more problematic when the individual concerned loses control over the use of the sample/data and many legal safeguards cease to apply. Feed-back and other exchanges of individual data are no longer possible in the case of anonymisation. This means that both anonymisation and pseudonymisation have their advantages and drawbacks, from a privacy perspective.

Under Swedish law, no special privacy regulation will apply to samples and data that have been rendered anonymous. Such materials and data fall outside the scope of the Personal Data Act and the Biobanks Act, as well as the Act on Ethics Review.

With regard to research involving pseudonymised tissue samples and associated data, ethics review is mandatory and a specified, informed consent will normally be required. For new research on samples and data already collected, the Ethics Review Board may allow an exemption from this requirement. The donor will always have the right to withdraw, but in such cases the sample does not necessarily need to be destroyed, since the Swedish Biobank Act also grants the biobank administrator the choice to have it anonymised.

The Swedish Biobanks in Medical Care Act does not cover all collections of identifiable human tissue samples, but limits its scope to such samples that have been collected within the activities of a health care provider, be it for health care purposes, research or other medical purposes. This means that tissues collected e.g. directly by research institutions or pharmaceutical companies will not be covered as a rule. This is one of the issues to be addressed in the ongoing revision.

When the Biobanks Act *does* apply, pseudonymisation is a standard procedure adopted to protect privacy while still ensuring traceability. A coding system is thus required and the code keys must be kept safe and separate.

The Biobanks Act also lays down certain restrictions on international transfer. Although research cooperation across borders, for example, is not prohibited, it is required that samples sent abroad are anonymised or pseudonymised, and after they have been used for the purposes intended, the samples must be returned or destroyed. In this context it has also been discussed whether it would be acceptable to have the samples anonymised instead of destroyed, since the Biobanks Act would then no longer apply.

In his talk "Biobanks: how do we protect donors' privacy?", *Anders Brinne* (Head of IT at Karolinska Institute Biobank) presented the services offered by KI Biobank to medical research studies, during the sample collection process from integration of a new study through sample handling and storage, to withdrawal of samples in different formats. Maintaining traceability from each stored sample back to individual donors is vital in biobanking, not only to ensure long-term usability of biobanked samples, but also in order to follow Swedish legislation, which stipulates the donor's right to demand his/her samples to be discarded or de-identified. KI Biobank information that may allow identifying individual do-

nors is used solely for identification purposes, at the time when the sample is collected or when there is a request for it to be discarded. Identifiable donor information is never used in internal biobanking sample management processes, in reports or in routine communication with customers or research groups. Strong safeguards are maintained at KI Biobank to ensure that identifiable donor information is obtained and stored securely. All identifiable donor information sent to the biobank is encrypted and stored in a dedicated system, accessible only by staff with sufficient privileges. The KI-Biobank continuously improves quality and security in the information management and stays up-to-date with information security technology to ensure donor privacy.

2.2 Finland

In Finland, population statistics have been conducted for centuries, for instance by the Church (since 1500). The unique personal identification numbers, introduced in 1964, and early computerised registers combined with patient records and biological samples provide a rich and versatile source for public health research and longitudinal population studies. The legal framework for research using registries, patient records and biological samples is very complex, as it consists of several acts and decrees given at different times. The interpretation of the acts has also varied, and genetic research in particular has no special provisions. In her presentation entitled "Finland, the promised land of health registries – Law and practise of Finnish biobank research", *Sirpa Soini* (Finish National Institute for Health and Welfare and the Faculty of Law, University of Helsinki) presented an outline of the national legislation. The Act on the Status and the Rights of Patients (785/1992) provides the basic rules for patient records. Under §12, health care units and health care professionals who are practising their profession independently shall keep patient documents (as well as the samples containing biological material collected in connection with organ examination and treatment) for as long as it takes to arrange and provide care and treatment for a patient, investigate possible claims for compensation related to care, and carry out scientific research. Other acts set the conditions for delivery of such data and samples for scientific research.

In principle, all health information, whether in patient records or national registries, are handled as sensitive data, but delivery of such a data for scientific research is exempted under certain conditions set in the other acts even without consent of the data subject. There are no provisions stipulating the feedback of the research to the individuals involved. Due to the incoherent legislation, an explicit Biobank Act has been demanded for a long time. A draft proposal was at last announced for a public hearing in March 2010. The proposal is scheduled to be submitted to the Parliament in spring 2010, and to come into force in 2011. Ideally, the Biobank Act is envisaged to foster effective use of both old and new sample collections in research and in activities aimed at furthering development

and innovations relevant to health care. A broader consent will be introduced for future collections. Nevertheless, some issues are still open, and thus their outcome is uncertain.

The National Institute for Health and Welfare (THL, formed after the merger of the National Public Health Institute (KTL) and the National Research and Development Center (Stakes)) has been collecting samples for epidemiological studies for decades. The Act governing the Institute contains specific provisions of collecting and using samples and data. To carry out the research and investigation tasks assigned to THL in the law, THL may gather and process personal data and blood and tissue samples. THL also functions as a statistical authority and maintains seven statutory health registries which can be used for research. The registries are confidential and governed by the Act on National Health Registries (556/1989). However, delivery of personal data from these registries for research is possible under certain conditions set by the law. The data ombudsman shall in that case be heard. The Act explicitly prohibits the use and delivery of the information contained in the national health registries for decision-making concerning the data subject. Similar provision is in the draft Biobank Act. THL is authorised to give permission for register research. If the research setting is about to use patient records as well, then the permission of the Ministry of Health and Social Affairs will be needed in addition according to the Act on the Status and Rights of Patients (585/1986).

In his talk on "Privacy Issues in the Finnish Biobank Legislation", *Lasse Lehtonen* (Dept. of Law, University of Helsinki) stated that, at present, it is the Act on the Use of Organs and Tissues for Medical Purposes (101/2001) that defines the use of organs, tissues and samples for medical and other purposes (such as research) in Finland. If the sample has been collected for treatment and diagnosis and then used for research purposes, it can be used for research without a new consent of the sample donor, if the consent is impossible to obtain because of the large number of samples, their age or for another comparable reason, or because the person has died. If these samples have been collected for research purposes they can be used for another research purpose only with the consent of the research participant or his/her legal representative. Only if the person has died may the National Supervisory Authority for Welfare and Health give permission for the further use of these samples. This has raised the question if the purpose should be close or similar to the primary purpose, so that the original consent could be interpreted to be valid. The Ministry of Welfare and Health is currently preparing a new Act on Biobanks to solve the issues raised by old sample collections.

In Finland, genetic data is considered to be medical data and as such falls under the provisions for the protection of sensitive personal data. In Lehtonen's view, and despite the fact that there has been some criticism for the automatic inclusion of all genetic data as sensitive medical data, the issue of genetic privacy has not stimulated vivid discussions in Finland. Only the possibility of employers

and insurance companies to carry out genetic testing has raised major concerns, and Finland now has a legislation that bans this type of genetic testing. Concerning the issue of whether samples are considered as data in Finland, the Finnish Data Protection Act does not specifically mention biological samples. However, the data protection legislation applies to patient registries that include identifiable data on biological samples. Furthermore, the Finnish Tissue Act (101/2001, §20) states that biological samples can be used for research with the authorization of the health care unit in question, if no personal data is processed.

Regarding the question of restricting basic individual rights, the aim of the restriction needs to be compatible with the principles of the Finnish legal system and it must also comply with the international obligations of the Finnish state. Thus, e.g. genetic privacy can be broken in paternal disputes, since it is required by an important social aim (the best interest of the child). Similarly, medical confidentiality can be broken in cases of dangerous contagious diseases to protect the safety and health of third parties.

According to the Finnish Act on Personal Data, an express consent is required for the processing of sensitive data. Processing sensitive data without the consent of the data subject is a crime according to the Finnish criminal code. However, data processing for health care purposes, when professional secrecy is guaranteed, does not require the express consent of the data subject. There is also a research exemption in the legislation: processing personal data for research purposes does not require the consent of the data subject (Finnish Act on Personal Data §12, item 6). This notwithstanding, medical research requires the informed consent of the study subject on the basis of the Act on Medical Research. In addition to that, Tissue Act (101/2001, §20) requires that, when the purpose of use of the samples is changed, the consent of the patient should be obtained. The abovementioned research exemption does not cover commercial utilization of data (e.g. pharmaceutical trials).

2.3 Denmark

Mette Hartlev, from the Faculty of Law, University of Copenhagen, explained in her paper "Balancing of privacy and other interests in Danish Biobank regulation" that the only population-based biobank in Denmark is the PKU-registry, where samples from all newborns have been stored since 1982. Most other biobanks are located in the health care services. However, there is also a collection of tissue samples kept by the national police as part of a forensic DNA-register.

There are a number of different stakeholders which have various interests in regards to the storage and use of tissue samples in biobanks, and these interests are not necessarily compatible with each other. The tissue donor will normally have a strong privacy interest as tissue samples contain very sensible information about the donor. Furthermore, donors might also have an interest in controlling or influencing the use of tissue samples for various purposes. This could be la-

belled as an autonomy interest. Some tissue donors, for example, might not want to contribute to a specific kind of research or may not want samples to be used by the police or disclosed to family members. Most tissue samples have been collected in connection with diagnostics and treatment, and there could be weighty diagnostic arguments for keeping the samples in a biobank – at least for a period of time.

However, the main purpose of storing the samples is research, and there is consequently a very strong research interest in storing and having access to tissue samples for scientific purposes. This is also in the interest of society and for public health purposes. Private companies – such as pharmaceutical companies – could also have an economic interest in establishing and using biobanks. Furthermore, the police services could have a forensic interest in getting access to tissue samples. Finally, in families with a history of genetic disorders, family members might – for diagnostic purposes – be interested in having access to tissue samples from other family members. Although the donor's interest in respect for privacy and autonomy must be balanced against other interests, it is also important not to overestimate the conflict between the interests of the donor and other stakeholders. Many tissue donors will be positive towards the use of tissue samples for research purposes or to help family members. Furthermore, creating trust in biomedicine is of immense importance from the perspective of research, society and industry, and respect for donors' privacy and autonomy rights is a way to create trust. The legal regulation of biobanks provides a framework for this assessment, and reflects the importance attached to the different interests.

Compared to other Nordic countries, there is no single Act regulating biobanks in Denmark. Hence the regulatory framework includes a number of provisions in various Acts. The most important acts are the Health Act (2005), the Act on Processing of Personal Data (2000), and the Act on Biomedical Research (2003). Most tissue samples are collected in connection with diagnosis and treatment of patients in the health care services. Collection of tissue samples in connection with patient care is primarily regulated in the Act on Health which includes provisions on informed consent to medical intervention. Tissue samples collected exclusively for research purposes are covered by the Act on Biomedical Research which also requires an explicit informed consent of the donor.

Storage of tissue samples is not specifically regulated in the Act on Health, and it is not demanded that the patient gives explicit consent to the storage of tissue samples obtained in connection with diagnosis and care. In the same vein, the Act on Processing of Personal Data does not require an informed consent to the storage of tissue samples for research, medical or forensic purposes. However, the Act on Health provides tissue donors with a right to retrieve and/or require the destruction of tissue samples obtained in connection with medical treatment. In regard to tissue samples obtained directly from a research participant, informed consent is necessary to comply with the Act on Biomedical Research. All in all it seems that the Danish regulation is more concerned with other interests than

donor privacy in regards to storage of tissue samples. However, donors still have some influence through the right to retrieve and demand the destruction of the samples.

In her talk "Biobanks in Denmark as a research resource" (based on a co-written paper with Sanne Ellegaard Jörgensen), *Lisbeth Knudsen* (Department of Public Health, University of Copenhagen) presented an account of the different biobanks existing in Denmark. They provide human samples and data for studies on for instance prenatal exposures and later development (Danish National Birth Cohort), lifestyle exposures and cancer risk (Danish Cancer and Nutrition Cohort), longitudinal studies with repeated sampling (Copenhagen Prospective Study on Asthma in Childhood), ex-vivo studies with placental tissue from human births. In her presentation she described informed consent, access to data, data protection, feedback to study persons and incentives to participate related to research projects. In general, there is no requirement for explicit consent regarding the storage of tissue samples gathered within health care. Donors are, however, granted the right to withdraw by the Act on Health, which gives them the possibility of retrieving or requiring the destruction of tissue samples gathered in connection with medical treatment. Regarding tissue samples directly obtained from a research participant, informed consent is necessary to comply with the Act on Biomedical Research. To sum up, Knudsen pointed out that although consent and withdrawal procedures are not as clearly stated as one may wish them to be, donors still have some influence through the right to retrieve and demand the destruction of the samples.

Finally Knudsen presented a European human bio-monitoring program regarding environmental exposures of children and their mothers with participation from most EU countries.

3 The philosophical and ethical foundations of privacy

What is anonymisation? What is the rationale of anonymisation and the right to withdraw consent? What is the relationship between these two notions? These were the questions addressed by *Niklas Juth* and *Gert Helgersson* from the Department of Learning, Informatics, Management and Ethics at Karolinska Institute, in their talk on "Anonymisation and the right to withdraw consent". They distinguished four meanings of anonymity of biological samples in a biobank:

1) There is no identifying information (name, address etc) directly associated with the sample(s), but researchers have access to a code linking the sample(s) with such information (sometimes called *coded samples*),
2) There is no identifying information (name, address etc) directly associated with the sample(s), but there is a code linking the sample(s) with such information to which the researchers do not have direct access, but some-

one else does (as in e.g. LifeGene, where special administrative personnel have the code, sometimes called *reversibly anonymised (linked) samples*),

3) There is no identifying information (name, address etc) directly associated with the sample(s), and there is no code linking the sample(s) with such information (sometimes called *irreversibly anonymised (unlinked) samples*). The term Juth and Helgersson used when there is no such code due to the fact that it has been "deleted" or destroyed was "anonymisation through de-identification", and this type of anonymisation was the focus of their talk,
4) The biobank has no identifying material, since the sample has been discarded or destroyed (except perhaps registers showing that the person in question once had samples within the biobank so that the person will not be contacted again), what they called the "destroying-option". The Swedish Biobank Act (chapter 3 §6) states that withdrawing consent should lead to 3) *or* 4). It is then up to the biobank in question to choose which policy to implement among these two.

Anonymisation understood as de-identification may be sufficient to protect individuals' privacy, since it prevents researchers and others to link the biobank information to any specific individuals. However, it may be insufficient to protect autonomy: if someone starts to object to certain research made in a biobank to which they have contributed and therefore decides that he or she no longer wants to contribute to the research, de-identification may not be enough, since some research can also be performed on de-identified material (for instance research aimed at investigating the prevalence of biological markers in a population). In this case, the "destroying-option" is the only guarantee that a person makes no contribution to further research.

If we move to the definition and justification of a right to withdraw, we will notice that anonymisation is a way of implementing the right to withdraw your consent to participate. So which type of anonymisation is to be preferred? This depends partly on why the right to withdrawal is important to be respected, that is the reason or rationale for the right to withdrawal. If the primary reason is to avoid possible harms, then anonymisation through de-identification will take us a long way. However, as regards respect for autonomy, de-identification falls short when compared to the "destroying-option". And on both solutions, we fail to respect those who want to opt-out of further participation altogether, since only the "destroying-option" will satisfy this demand. So for those who would defend research interests over the autonomy of donors, anonymisation through de-identification goes too far, whereas those who would have it the other way around, i.e. defending the autonomy of donors over research interest, anonymisation through de-identification does not go far enough. So what to do in the light of this? In this regard, Juth and Helgersson maintained that anonymisation through de-identification is not satisfactory, unless it is complemented by other options for withdrawal. Since there is no evidence yet to suggest that research

interest would be compromised to a significantly larger extent by also allowing complete withdrawal and anonymisation through the "destroying-option", they suggested that this option as well should be offered by biobanks. If participants are aware from the outset that this option exists, with no strings attached, they may be more at ease to participate to start with, which could even have a positive effect on participation rates.

It is a contested question what kind of right the right to privacy is, and there are various different rationales behind this putative right. Each of them, if taken seriously, gives different answers to practical questions related to biobanks. In his presentation "Why Should We Respect the Privacy of Donors of Biological Material?" *Torbjörn Tännsjö* (Centre for Healthcare Ethics, Stockholm University) discussed four basic moral outlooks upon which the right to privacy might be founded. These are: (a) an ethics of honour granting the individual the right to control his or her public image, (b) a libertarian moral rights theory conceiving of our right to privacy as an aspect of our self-ownership, (c) an idea about the intrinsic value of autonomy granting us a narrow right to privacy and, finally, (d) utilitarianism. Starting from these different moral approaches, Tännsjö particularly asked what conclusions we can draw from each of these views with regard to the following four practical questions:

1) Broad or narrow consent: Do we need to be specific when we ask the donor for consent, or is it sufficient to ask for a broad consent, to all future uses? Here Tännsjö also discussed the related question of whether the donor should have a right to withdraw his/her consent.
2) Implicit or explicit consent: Is it necessary to ask the donor for consent, or is it perhaps sufficient that there is a possibility for the donor to opt out of the system if he or she wants to (thereby assuming that everyone who does not say otherwise does consent)?
3) Forensic uses: Should biological material be available for forensic uses? Should special banks be established for this purpose? Would it be objectionable to construct a biobank to be used for forensic purposes, where everyone had to participate (donate)?
4) Spare genetic material: What are we to say about the use of spare genetic material which has been involuntarily left behind by a "donor"? Is it morally unobjectionable to send it to a lab for genetic analysis if we happen to get hold of it? May for instance a hair dresser send hair from a client to a genetic laboratory, have it diagnosed, and then the result published?

Tännsjö pointed out that although some overlapping consensus between these views on the above outlined issues can be reached, there is also radical and fundamental disagreement. In the present context, the disagreement between the moral rights view and utilitarianism is most important. Tännsjö illustrated this point by asking what would be wrong with taking efforts to ascertain the genetic characteristics of people using biological material that – as in the hair-dresser's

example – was left behind by some person. He emphasized that, although many of us might tend to argue that allowing this practice would amount to a violation of the individual's right to privacy, there are heavy practical (consequentialist) reasons not to forbid these kinds of "genetic investigations", mainly on the grounds that they cannot be stopped and that the costs of enforcing such a prohibition will be too high. Who, for instance, is going to be made legally accountable for the findings? The hair-dresser? The laboratory who performed the analysis? Or perhaps the customer himself, who acted negligently by not seeing to it that no biological traces were left behind?

4 Practical applications

In his paper "The use of bio-bank samples in forensic applications" (co-written with Kerstin Montelius), *Bertil Lindblom* (Department of Forensic Genetics and Forensic Toxicology, National Board of Forensic Medicine, University of Linköping, Sweden) underlined that biobank samples can be and actually have been used in forensic applications but probably to a much lower intensity than expected. In just a couple of cases, samples from the Swedish PKU-biobank have been used for the search of suspects in criminal investigations by DNA comparisons. One of these cases was the investigation after the murder of the former Swedish foreign minister Anna Lind. Stored samples from pathological investigations have in some cases also been used after decision by the court to solve questioned family relations. This has been done a few times a year in cases where for example an alleged father has died.

For the identification of deceased Swedish citizens after the Tsunami 2004 in Thailand a temporary law was issued in which it was stated that samples from the PKU-biobank could be used for the identification process. Identification of dead bodies is performed in different ways and by using different techniques. The main methods are comparisons of DNA profiles and comparisons of dental information or fingerprints. In addition, physical evidence and personal properties can give information, but this is just added as secondary information. Visual identification is not a valid way to identify deceased persons in mass disasters like after the Tsunami in Asia 2004. The process of identifying a missing person is based on information concerning the missing person so called *ante mortem* (AM) information. For DNA comparisons, the DNA information can be obtained from analysis of a self-sample taken before the disaster or analyses of samples taken from close relatives (parents, children or siblings). Similar information must also be collected from the dead bodies, so-called *post mortem* (PM) information. PM samples for DNA analysis must be taken and stored in a way that they can be analyzed for DNA polymorphism. Degradation and contamination can heavily destroy the possibilities for a successful investigation. With DNA information from AM samples and PM samples, a comparison (*matching*) can be made. De-

pending on whether the AM information originates from a self-sample or from close relatives, the evaluation will be based on a direct comparison between the PM and AM profiles or a kinship analysis.

Ulrika von Döbeln, who is the director of the Swedish PKU-biobank and also works at the Centre for Inherited Metabolic Diseases at Karolinska University Hospital, presented a vivid view of the process that led to the handing over of data about Foreign Minister Anna Lindh's suspected murderer to the police. In her presentation "PKU-biobank and crime: what can and what cannot be done", she established the starting point for neonatal screening for PKU in Sweden to 1965. Since then, blood spotted on filter paper (DBS, dried blood spots) is sent from all newborns in the country to one centralised laboratory, the PKU laboratory. Gradually, more disorders have been included in the neonatal screening programme. Samples have been saved since January 1975 comprising the youngest 3.5 million people of the 9 million population. In accordance to the Swedish Biobank Law implemented in 2003, they are saved for an unlimited time. The samples are used routinely in medicine for verification of congenital CMV-infections by determination of CMV-DNA and for research projects mainly based on DNA studies. An issue with the PKU-biobank is the limited amount of blood in the samples, 100-200 cubic millilitres (uL) per person, but also the manual organisation of the bank and the fact that the samples have been taken before the infants have been given their social security number.

When the Swedish Foreign Minister was killed in 2003, the Swedish prosecution authority requested a sample from the suspected murderer from the PKU-biobank. It was sent to the Department of Forensic Genetics for DNA-profiling and comparison of traces found at the crime scene. Some weeks later the PKU-biobank became famous through a vivid discussion among experts and the media of "what can and what cannot be done" with biobank samples. About 2000 people requested destruction of their PKU-samples as a consequence. The Biobank Law is presently being revised. Hopefully, the revised biobank law will provide more distinct rules for the treatment of biobank samples. Von Döbeln made it clear that the issue of making biobanks available to prosecutors and police investigators lacks practical relevance at present. Due to the great amount of samples and the way in which they are stored it is practically impossible to get a matching, unless one already has the identity of the person whose samples one sets out to control.

In his presentation "WADA's anti-doping policy and athletes' right to privacy", *Claudio Tamburrini* (Centre for Healthcare Ethics, Stockholm University) discussed the World Anti-Doping Agency's (WADA) Anti-doping Code, according to which athletes are regularly tested for forbidden doping substances in connection with sport competitions. Their samples are stored for long time, in case new doping detection techniques are developed in the future that might allow for the identification of forbidden substances not detectable at present. As WADA's ambition is not only to have clean competitions, but also clean athletes, different

measures need to be implemented to facilitate testing in-between competitions as well. One of them is making sportspersons fill a form to keep doping controllers informed about their whereabouts, so that they can reach the athletes and make them undergo unannounced tests.

WADA's anti-doping policy has been widely criticized for violating athletes' right to privacy. However, this debate is often carried out as if it was crystal clear what kind of right this supposed athletes' right to privacy is. This is far from being the case. So, Tamburrini underlined, it seems as if we need, if not a definition, at least a characterization of what this presumed right to privacy might be thought to cover. As a preliminary conclusion he suggested to perceive of the right of privacy not as a single right, but rather as a cluster of rights, each one designed to protect different areas of our lives, and each one derived in its turn from other, more fundamental rights. A further conclusion he advanced as a consequence of this conceptual analysis was that violating athletes' right to privacy cannot be condoned by any of the moral-philosophical approaches traditionally discussed in connection with privacy.

5 Results

- In general, it can be said that all three Scandinavian countries reported in the workshop have a long history of keeping records. The unique personal identification numbers and early computerised registers combined with patient records and biological samples provide a rich source for public health research.
- Although the Nordic countries in general and Finland, Denmark and Sweden in particular cooperate and consult each other in order to adopt uniform legislation based on a common interpretation of European law, there are clear differences among these countries. To begin with, they differ in whether biological samples are covered by the definition of personal data in the laws implementing EC Data Protection Directive 95/46/EC. This also gives rise to differences regarding whether consent for new and different uses is required as well as the options implemented to make withdrawal possible.
- In spite of the different regulations laid down in all three countries, the legal situation is not clear yet. Under Swedish law, for instance, no special privacy regulation will apply to samples and data that have been rendered anonymous. Such materials and data fall outside the scope of the Personal Data Act, the Biobanks Act, as well as the Act on Ethics Review. Since there are no legal safeguards against unethical research on anonymous samples or data, the only available means of privacy protection seems to be the possible requirement to respect prior restrictions made by the per-

son concerned. Whether or not such a requirement is actually recognised under Swedish Law, however, is not clear.

- In Finland all health information, whether in patient records or national registries, is in principle handled as sensitive data, but delivery of such data for scientific research is exempted under certain conditions set in the other acts (even without consent of the data subject). There are no provisions stipulating the feedback of the research to the individuals involved.
- In Denmark, compared to other Nordic countries, there is no single act regulating biobanks. Storage of tissue samples is not specifically regulated in the Act on Health, and it is not demanded that the patient gives explicit consent to the storage of tissue samples obtained in connection with diagnosis and care. In the same vein, the Act on Processing of Personal Data does not require an informed consent to the storage of tissue samples for research, medical or forensic purposes. Thus it seems that the Danish regulation is more concerned with other interests than donor privacy. However, the Act on Health provides tissue donors with a right to retrieve and/or require the destruction of tissue samples obtained in connection with medical treatment, and this gives donor some influence on the storage of such samples. In regards to tissue samples obtained directly from a research participant, informed consent is necessary to comply with the Act on Biomedical Research.
- Regarding international transfer of biobank samples, cooperation across borders is not prohibited in the three Nordic countries, but it is required that the samples are anonymised or pseudonymised. After they have been used for the purpose intended, the samples must be returned or destroyed.
- There are strong practical (consequentialist) reasons not to forbid people to obtain knowledge about other people's genetic constitution, even against their will, mainly on the grounds that the prohibition would be difficult to uphold and the costs of enforcing it too high. However, whether or not these reasons also are conclusive was left as an open question by the workshop participants.
- Anonymisation through de-identification does not seem satisfactory, unless it is complemented by other options for withdrawal. In that regard, the option of destroying the samples is to recommend and should be offered by biobanks. This might lead to participants being more at ease to donate their samples to biobanks.
- Biobank samples can and actually have been used in forensic applications but probably to a much lower intensity than expected.

- There are at present rather few possibilities of using biobank material for police investigations, other than for matching a sample gathered at the crime scene with an already identified suspect.
- The kind of violation of athletes' right to privacy related to the implementation of the World Anti-Doping Agency´s (WADA) anti-doping policy cannot be condoned by any of the moral-philosophical approaches traditionally discussed in connection with privacy.

The Transfer, Storage and Procurement of Human Cells and Tissues

Seventh International Workshop of the Tiss.EU Project

Dublin, 27-28 May 2010

Elizabeth Yuko, Bert Gordijn

1 Introduction

The second international workshop in the transfer, storage and procurement focal theme was organised by *Bert Gordijn, Shiofra Murphy* and *Elizabeth Yuko* from the Institute of Ethics at Dublin City University. In addition to the Ireland country report, the workshop also addressed various issues falling under the transfer, storage and procurement of human cells and tissues focal theme. Particular attention was given to ethical and legal aspects of special tissues, such as embryonic stem cells, and the issue of commercialisation. The speakers came from law, medicine and philosophy backgrounds.

The workshop began with an overview of the Tiss.EU project by *Nils Hoppe*, a project partner from the University of Hannover. In his presentation, Hoppe went over the issues at stake in the project, the project objectives and deliverables, and the work accomplished thus far.

2 Country Report: Ireland

Elizabeth Yuko from Dublin City University presented Ireland's country report, which focused on the current state of bioethics regulation. At present, Ireland's only legal regulation of human tissues for research purposes comes via two statutory instruments implementing the three EU Directives.

The Irish Minister for Health and Children adopted the European Communities) Regulations (the "Quality and Safety of Human Tissues and Cells Regulations") in 2006 as a means of implementing Directive 2004/23/EC of the European Parliament and of the Council of 31 March 2004 (the "EU Tissue Directive") and Commission Directive 2006/17/EC of 8 February 2006.[1] The Quality and Safety of Human Tissues and Cells Regulations is a statutory instrument, meaning the Minister for Health and Children implemented it directly, unlike primary legislation, which is debated and must pass through the Irish legislature, known as the Oireachtas.[2]

The Quality and Safety of Human Tissues and Cells Regulations explicitly states that it pertains to tissues and cells that are applied to the human body in clinical trials.[3] It does not otherwise add to the scope of the EU Tissue Directive. The Irish Medicines Board is named as the State-designated competent authority, as required by the EU Tissue Directive.[4]

Another statutory instrument, the European Communities Regulations 2007 ("Human Tissues and Cells Traceability Requirements", "Notification of Serious Adverse Reactions and Events and Certain Technical Requirements"), implemented Commission Directive 2006/86/EC.[5] The Irish Medical Council has published the *Guide to Professional Conduct and Ethics for Registered Medical Practitioners*, which is only binding upon medical professionals.[6] The guidelines contain regulations of clinical trials and research, detailing the rights of the patients and responsibility of the medical professionals in research situations.[7]

In 2008, the Government proposed a Human Body Organs and Human Tissue Bill ("Human Tissue Bill") that addresses certain elements of tissue regulation. This bill regulates the removal, retention, storage, use and disposal of human tissue from deceased persons and consent for the use of donated tissue from living per-

1 Commission Directive 2006/86/EC is not implemented with this statutory instrument.

2 See Byrne, Raymond and J Paul McCutcheon. *The Irish Legal System, Fourth Edition.* Dublin: Butterworths, 2001, 442-443 for further information on Irish statutory instruments.

3 European Communities (Quality and Safety of Human Tissues and Cells) Regulations, S.I. No. 158 of 2006, Art. 3(3).

4 See supra note 3, Art.4(1).

5 European Communities (Human Tissues and Cells Traceability Requirements, Notification of Serious Adverse Reactions and Events and Certain Technical Requirements) Regulations 2007, S.I. No. 598 of 2007.

6 Irish Medical Council,*Guide to Professional Conduct and Ethics for Registered Medical Practitioners*. 7th Edition, 2009.

7 See supra note 6, at p. 47.

sons for the purpose of transplantation and research.[8] In April 2009, Minister for Health and Children Mary Harney announced that there would be public consultation on the proposals for the Human Tissue Bill.[9] Bodies such as the Department of Health and Children submitted proposals, and a revised version of the bill was drafted.[10] The latest version of the bill was not publicly available at the time of writing, but at 200 pages, the Department of Health and Children's proposals are likely to be similar to the final version of the bill.

Many of the provisions of the bill were recommendations from Dr Deirdre Madden's Report into Post-Mortem Practice and Procedures ("Madden Report"),[11] primarily that no hospital post-mortem examination should be carried out and no tissue retained for any purpose whatsoever without authorisation.[12] The bill also goes into areas not covered by the Madden Report, such as consent procedures for the use of tissue from living and deceased donors for the purpose of research.[13]

The bill contains several other provisions pertaining to research. First, when consent is given for organ and tissue removal and retention as part of the post-mortem examination process, consent for the purposes other than the diagnosis of the cause of death may not be presumed, but must be specifically obtained for research.[14] Tissue from deceased persons may be used for research if the removal, retention and use for the purpose in question are authorised either by an advance healthcare Directive, by next-of-kin or a nominated proxy.[15] The consent for research may be general, or be specific, limited or qualified.[16] Furthermore, subsequent research on the same tissue must be submitted for separate approval if the research is of a substantially different nature to the approval originally given.[17]

Tissue may be used without consent for research purposes if it was held before the date of enactment of the act, the researchers are not able to identify the person, and the research is ethically approved by a research ethics committee; or if the tissue has been imported.[18] Tissue from living donors for research purposes is permitted if it is given with proper consent; freely and without coercion; without the promise of benefits likely to result from participation; and on the basis of appropriate information on the nature and purpose of the research.[19] If the tissue

8 The Department of Health and Children. "Draft Proposals for General Scheme of the Human Tissue Bill 2009." 9 April 2009, p. 6. http://www.dohc.ie/consultations/closed/human_tissue_bill/

9 See supra note 8.

10 See http://www.dohc.ie/consultations/closed/human_tissue_bill/draft_proposals.pdf?direct=1

11 http://www.dohc.ie/publications/madden.html

12 See supra note 8, at p. 6.

13 See supra note 8, at p. 6-7.

14 See supra note 8, at p. 81.

15 See supra note 8, at p. 89-97.

16 See supra note 8, at p. 129.

17 See supra note 8, at p. 129.

18 See supra note 8, at p. 129.

19 See supra note 8, at p. 132.

from a living person was donated as a by-product of a medical procedure, it is also acceptable to obtain general consent to future unspecified uses.[20] The donor may freely withdraw authorisation or consent at any time.[21]

The Human Tissue Bill does not include any regulation of assisted human reproduction, and neither gametes nor embryos are considered to be "tissue" under the bill.[22] In Ireland there is currently no legal regulation on spare embryos created during IVF treatment for research or other purposes. The Irish Medical Council provides *The Guide to Professional Conduct and Ethics for Registered Medical Practitioners*, which contains provisions on IVF treatment, but only regulates the actions of the physicians. The only part relevant to using IVF embryos for research purposes states that physicians should not participate in creating new forms of life solely for experimental purposes, nor engage in human reproductive cloning.[23]

A recent case before the Supreme Court found that frozen embryos which have not yet been implanted do not enjoy the protection of the guarantees provided to the right to life of the unborn in the Constitution.[24] The case involved a woman who wished to become pregnant using frozen embryos created with her husband prior to their separation, despite his opposition to becoming a father again.[25] The primary issue in the case was to determine whether the constitutional protection afforded to the life of the unborn[26] extends to fertilised embryos which had been frozen and stored in a clinic.[27] Mr Justice Murray stated that that it was not for a court of law to determine when life begins.[28] Mr Justice Hardiman stated that although frozen embryos may not fall under the relevant sub-article of the Constitution, it does not mean that they should not be treated with respect as entities that have the potential to become a human life.[29] Mr Justice Geoghegan stated that it is up to the Oireachtas to provide regulation on spare embryos.[30] Mr Justice Fennelly did, however, state that although there may be a constitutional obligation on the State to give a concrete form to the respect due to an embryo, if neither the executive or legislative organs of the State take action, it may be open to the courts to consider the legal status of an embryo in a future case.[31]

The underlying reason behind the scarce regulation of human tissue in Ireland is a lack of political will. As explained previously, Ireland's regulation has all been

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20 See supra note 8, at p. 132.
21 See supra note 8, at p. 132.
22 See supra note 8, at p. 14.
23 See supra note 6, at section 20.4.
24 Roche -v- Roche & ors, Judgment of Mr Justice Fennelly. [2009] IESC 82, 15 December 2009.
25 Roche -v- Roche & ors, Judgment of Mr Justice Hardiman. [2009] IESC 82, 15 December 2009.
26 Constitution of Ireland, Article 40.3.3.
27 Roche -v- Roche & ors, Judgment of Mr Justice Murray. [2009] IESC 82, 15 December 2009.
28 See supra note 27.
29 See supra note 25.
30 Roche -v- Roche & ors, Judgment of Mr Justice Geoghegan. [2009] IESC 82, 15 December 2009.
31 See supra note 24.

reactive, and a direct result of the EU mandate for the adoption of the Tissue Directive and the accompanying technical directives. No existing human tissue regulation in Ireland has originated in the Oireachtas, nor has gone through the legislative process or debates. As a result, from an Irish standpoint, the regulations in place are not specifically tailored for Irish needs.

The saying that "all politics is local" truly applies in Ireland. Many politicians do not see the merit in initiating or supporting any sort of bioethics-related regulation, for fear that it may harm their electability. While there may be a few votes to be gained supporting human tissue regulation, there are far more to be lost. It also may be difficult to make distinctions between regulations for research on human tissues, and embryonic stem cell research – a highly controversial topic. Along the same lines, following long and bitter debates surrounding various abortion referenda and high profile court cases, both politicians and members of the public may be weary of approaching any areas that may require revisiting that debate. However, the results of a small public opinion survey indicate that the Irish public may not be as conservative as politicians think. For example, 82% of people surveyed said that surplus embryos should be used for medical research into disease, even if that means they will be destroyed.[32] Furthermore, 53% of those surveyed either agree or strongly agree that the Irish Government should provide funding for embryonic stem cell research.[33]

Another possible reason for the lack of regulation is that with the fluctuating economy in Ireland over the past two decades, there have been other issues seen to be more urgent to legislate on than the regulation of human tissues. While every country does have economic matters to contend with, Ireland has experienced drastic changes in its economy over recent years, which necessitated rapidly implementing new legislation. Matters relating to the economy may have been viewed as being more important than human tissue regulation.

3 Other presentations relating to Ireland

Eoin Gaffney, a pathologist and founder of Biobank Ireland Trust gave a presentation entitled, "An Irish Biobank Network for Patient-Focused Translational Research and Improved Global Healthcare". He cited the importance of developing a cancer biobank network as a bridge between research and care. Gaffney stated that biobanks are important because fresh or frozen samples are better than traditional ones, which could ultimately lead to better patient care. The Biobank Ireland Trust was established in 2004, with a primary objective of creating an all-Ireland biobank network. The Biobank Ireland Trust would specialize in patient-focused research, better treatment, and biomarkers. He noted that it is important for the public to

[32] Irish Council for Bioethics. *Bioethics Research*. September 2005, p. 34. http://www.bioethics.ie/uploads/docs/129171-Bioethics%20Research.pdf.

[33] See supra note 33, at p. 36.

understand that biobanks are the way to research disease and that biobanks should be government funded.

According to Gaffney, the tipping point for the Biobank Ireland Trust came in 2008 with the Vodafone Award given to Blanaid Mee to work with Biobank Ireland Trust for one year at St. James's Hospital in Dublin. In August 2008 the St. James's Hospital Cancer Biobank commenced biobanking breast and colon cancer samples. It is also collaborating with the biobank at Beaumont Hospital in Dublin. Gaffney noted that there is a large team of people required to operate a biobank, including the patients, surgeons, pathologists, researchers, nurses, medical scientists and porters. There are breast and colon cancer samples from 172 patients in St. James's Hospital, and 472 samples from Beaumont Hospital and the Royal College of Surgeons Ireland over the past four years. The funding comes from fundraisers, the National Lottery and 10 pharmaceutical companies. The governance of a biobank involves the management and protection of those who are vulnerable. Gaffney stated that a biobank network must maximise the use of the tissue. It also must be accompanied by a better understanding of the early stages of disease by physicians. He said that in Biobank Ireland, 94% favour once-off consent.

Adam McAuley from Dublin City University gave a presentation entitled, "Tissue and cell transfers: the regulatory framework and the impact on trust". McAuley examined the EU Tissue Directive 2004/23/EC and its two accompanying technical Directives in order to identify the issues surrounding the transfer of human cells and tissues. He noted that the word "transfer" is not used in the Directive at all. It does, however, talk about distribution, imports and exports. According to McAuley, it is not simply a matter of transport under the framework of the Directives; rather, it is a transfer of tissues and cells, in addition to legal duties and responsibilities. Such responsibilities include obtaining a license, record keeping, traceability and the inspection of tissue establishments and third-party facilities. Imports and exports from non-European Economic Area (EEA) States require having an agreement in place between the research establishment and laboratory. The agreement is in relation to ensuring that the safety standards and technical directives are adhered to, and that the establishment has the capacity to fulfil functions set out by the Directive. This is essentially delegating the monitoring functions to a private individual.

McAuley questioned how detailed the regulations should be, and noted that the EU Tissue Directives were extremely comprehensive and contained several annexes. He indicated that the EU Tissue Directive may contain too many specifics. This may subject individuals working with tissues and cells who previously may not have been regulated, or were regulated with a soft touch, to a significant degree of regulation. In Ireland, the regulator is the Irish Medicines Board. There are currently 19 tissue establishments in Ireland, mostly in the area of assisted human reproduction. Twenty-five serious adverse events and reactions were reported in Ireland, but fewer in the UK. McAuley noted that Ireland does have a tendency to

mirror the UK from a regulatory perspective. He said that the amount of regulation in the UK has been overwhelming for scientists. The Human Tissue Authority issues Codes of Practice and also has the power to issue directions to the 176 tissue establishments – a figure that is high in Europe. The large amount of regulation is a clear indication of noncompliance. The organ retention scandals in the UK caused mistrust in science and scientists. Reviewing steps that States had taken to solve problems with noncompliance – particularly in relation to the organ retention scandals – resulted in the implementation of regulation. However, according to McAuley, this has not led to an increase in public confidence in science, but has led to more mistrust. It is impeding the professions rather than helping them. In his view, we are moving from a system of non-regulation or limited regulation, to an overarching all-encompassing regulation.

Against this background, McAuley asked whether we were in a transition period, and whether in the future, everyone will be used to the processes brought about by the regulation. He also asked whether the design of the EU regulatory system is appropriate and whether whoever designed the system looked at how tissues and cells are moved and processed. McAuley is also concerned that whenever licensed tissue establishments give material to a non-licensed tissue establishment, they must ensure that they abide by the rules, thereby making them mini-regulators. He noted that international imports from outside the EEA into the EEA must meet quality and safety standards of the Directives, but there is no rule with regard to consent. He suggested using another mechanism – potentially similar to a safe harbour agreement.

Maureen Smyth from the Forensic Science Laboratory (FSL) in Dublin spoke about forensic DNA databases. She noted that there is very little transfer of samples in Ireland, but there is a lot of data transfer from those samples. Most crime in Ireland is local, and most of the transnational crime is between the Republic of Ireland and Northern Ireland. Forensic service in Ireland is a public service, and has a simpler setup than in most countries. In England and Wales, for example, forensic science is commercial (but that has changed in her time in service). From Smyth's perspective, a complete change in atmosphere occurred once privatisation of the laboratories was established; she doubted however that privatisation in Ireland will happen in the near future. Forensic science operates between science and law, using different languages and concepts, and is not confined to DNA and biology. The end result of the work in the FSL is court cases, and Smyth explained that those working in the lab often may end up defending their work in court. She said that interaction with lawyers is interesting since they either want the scientists to be vague or narrowly black and white with their explanations in court – but science is very rarely black and white.

Smyth explained the importance of transparency in the FSL, promoting a very open setup and often receiving visits. Moreover, the FSL is used to maintaining records and having internal audits. There is, for example, a peer review of every file

since 1981 and audits are no problem because so much of the information is public.

The use of DNA in crime investigation started in mid-1980s with the drive to make it more sensitive and discriminating. Nowadays, DNA is used in a greater range of cases than it ever was, and there are strengths and weakness of testing. Currently, emphasis is not only placed on whether or not DNA matches other DNA found in a crime scene, but other factors such as how long it had been there are also taken into account. 1989 saw the first case using DNA in Ireland, but there were transfer issues at that time because the samples were transferred to the UK. Lastly in 1994, profiling began in the Irish FSL. Unlike in most EU countries there is currently no national DNA database in Ireland, nor is there any legislation to establish one, which leads to DNA work being done on a case-by-case basis.

Smyth questioned whether samples should be stored in a database, or only their profiles (the digital piece of information), and whether the profiles from unidentified bodies or the deceased should be stored. The EU Data Retention Directive from 2006 must be implemented by 2011, although Ireland and many other States may not comply and will have to pay a fine.

Smyth went through the timeline of events leading up to the introduction of a bill establishing a DNA database. Under a current proposal, people will only be sampled for crimes that carry a sentence of five years or more, in addition to burglary. The samples will remain in the database for three years and there is a detailed appeals system. In two cases, the European Court of Human Rights has ruled that indefinite retention of samples violated Article 8 of the European Charter of Human Rights. Legislation enacted by the new UK government may mirror that in Scotland, which has been approved by the European Court of Human Rights. Smyth is of the opinion that any new legislation should offer increased protection to many people. A vast majority of samples are taken under common law and therefore there is no onus on anyone to destroy them, as well as no legal protection. Now all samples taken in criminal work will come under the legislation. Smyth stated that forensic science prefers regulation to open-endedness, and that the FSL would be very willing to work with a piece of legislation with clear provisions and regulations.

4 Special tissues

Kris Dierickx from the Catholic University Leuven gave a presentation on the ethical considerations on use of stored samples from minors for non-clinical research. Before World War II there was a history of abuse of children in research, with some researchers using their own children as objects for research. The Council for International Organisations of Medical Science (CIOMS) 2002 presented the guidelines for children's participation in research. Dierickx explained that the reasons for paediatric biobanks include studying interaction between genes and the en-

vironment in childhood and adolescence; genetic factors of disease; and studying genetic aspects of childhood occurrences. He is of the opinion that research must occur in order to have better insight into what is happening with children. More than 75% of drugs developed and used for children are not being tested on them, and only 18 of the 29 biobank guidelines examined mention children. A recurring theme in the ethical discourse is who should consent to the storage of material from children. Dierickx asked if consent from both parents is feasible, and then stated that he thought that consent from one parent was enough. Other themes dealt with risk, benefit, return of result, anonymisation, and ownership. Issues surrounding consent include who should grant consent, whether consent is needed, the scope of consent, and the right to withdraw.

Dierickx said that children should be exposed only to minimal risk. Risks in this context include physical as well as emotional aspects, discrimination and privacy issues. There are also dangers associated with returning results, and Dierickx wondered if this is good practice, and whether parents should be able to opt-out from receiving such results, especially concerning information for early-onset diseases. He concluded that there should not be opt-out information for early-onset, preventable or treatable diseases. However, other types of information should not be accessible to parents. Children can contribute to research if there is direct benefit to them, and/or benefit to persons of the same age or with the same condition. Dierickx also questioned whether anonymisation removes all privacy risks, and who owns the tissue and data taken from children and stored in biobanks. He also presented research from a focus group study, which looked at burden and benefit, parental responsibility and growing autonomy of the child. He included the results of interviews with professionals in the areas of bureaucracy and good research, the process of decision making, and burden and benefit. Dierickx noted that children can be asked to participate in research, but have a restricted duty to solidarity and the limitations of their participation is based on the risk involved. In terms of consent, Dierickx stated that parents can give consent within limited scope, and children themselves should be asked to re-consent at age 18 if possible (this should be done on a best-effort basis).

Sorcha Uí Chonnachtaigh of Keele University spoke about the ethical, legal and socio-cultural challenges of embryonic stem cell research (ESCR) in Ireland. She stated that ESCR faces a number of obstacles including a lack of regulation, the socio-cultural dominance of the conservative view of the embryo/foetus, and the moral issue of the embryo's status. Uí Chonnachtaigh contends that the ambiguity of Article 40.3.3 of the Irish Constitution's protection of the unborn makes it difficult to legislate on any aspect of assisted human reproduction. In the "frozen embryos" case from 2009, the High Court ruled that there was no evidence of specific consent of what to do with the embryos when they were created, and that Article 40.3.3 did not apply to embryos *ex utero*. Accordingly, the Supreme Court decided that the embryos are not "unborn" for the purposes of Article 40.3.3 and are not guaranteed the right to life under the Constitution. Uí Chonnachtaigh noted that

Ireland's Catholic past was a reason behind the lack of regulation of ESCR. She explained that the economic prosperity of the 1990s brought liberalism, and polls indicate that indeed Irish people nowadays disagree with the Catholic stance on many issues. However, the polls also indicated that with regard to abortion and embryo destruction, the Irish appear to defer to the authority of the Catholic Church. She also noted that being anti-abortion is an "Irish thing," as opposed to a "Catholic thing." As a result of the extremely divisive abortion debates in the early 1980s, people have been reluctant to approach the issue – or related topics – again.

In addition, both legally and socio-culturally, the "unborn" has a special status in Ireland, which makes the debates on the moral value of embryos/foetuses highly divisive. Uí Chonnachtaigh stated that since those in favour of ESCR must bear the "burden of proof", a socially-acceptable liberal alternative would be very difficult to create. The Commission on Assisted Human Reproduction published a report in 2005 recommending that ESCR be permitted on surplus IVF embryos up to Day 14, and a 2008 report from the Irish Council for Bioethics recommended the same. University College Cork furthermore passed a resolution in 2008 allowing ESCR on imported lines. Uí Chonnachtaigh said that even though there is discussion of using induced pluripotent stem cells (iPS cells) as an alternative, since 99% of somatic cells are not reprogrammable, comparative studies are necessary for progress in iPS cell research. Uí Chonnachtaigh concluded by arguing that a lack of ESCR regulation does not mean that it is legal.

Dónal O'Mathúna from Dublin City University gave a presentation on the ethical issues in the procurement, storage and transfer of human embryos and foetuses for research. In terms of procurement, O'Mathúna explained that foetal tissue can come from spontaneous abortions (in which case it is similar to other human tissues); embryos from assisted reproductive therapy; and embryos and foetal tissue from elective abortions. He noted that in research, the live human foetus should be treated with the same principles that apply to treatment and research conducted with children and adults. O'Mathúna also mentioned the importance of maternal consent and the separation of the decision for abortion from the decision for research donation.

Not only is there no consensus on the regulation in Ireland, but according to O'Mathúna, there is none to be found within the EU either. The general consensus in the EU Working Party is that no matter whether directly or indirectly applied, embryonic and foetal research should be directed towards health purposes. The Party said, "There is a well-established principle that a person cannot be bought or sold. In the same way that people are not generally regarded as goods it is difficult to see why an embryo should be so regarded." O'Mathúna then discussed the "parental project" – the problem of what happens to unused embryos when the parental project ends. He also questioned what should be done with the "fruit" of research acquired through research involving embryos and foetuses if it is believed that the research itself is unethical. All of the criteria set out in the Oviedo Convention apply to embryos and foetuses as well as born persons, which is the crux

of much of this debate. O'Mathúna ended his presentation by asking the attendees whether there is a legitimate reason to say that the moral status of the embryo changes at a certain point.

5 Commercialisation

Sarah Wilson from the University of Central Lancashire gave a presentation on biobanks, justice and benefit sharing. She said that benefit-sharing is important because the Human Genome Organisation (HUGO) and the UNESCO Universal Declaration on Bioethics and Human Rights both address the need for benefit sharing, given there is not automatic access to benefits through property rights and furthermore to encourage participation. She cites other reasons benefit-sharing is important for, including reciprocity, fairness, equity, beneficence and global justice. The specific benefits are advantages or profits derived from the use of human genetic resources. Wilson explained that there often already is an implicit assumption of benefit sharing, even when it is not explicitly mentioned. In addition, there are certain other advantages to be gained by benefit-sharing, including increased health, better science, specific treatment options, the good feeling of altruism and financial reward. Wilson indicated that the sharing of benefits differs within humanity, population groups (developed countries tend to benefit more than less developed countries), genetically interesting groups and participants.

Wilson explained that the public good model is used by the UK Biobank to determine how the benefits are to be shared. These include the publication of findings, the dissemination and sharing of data, increased health, better science, the positive feeling of altruism, et cetera. Benefits can be shared with specific groups through financial gains, provision of treatment and feedback of results. Wilson asserted the importance of motivation because it constitutes commutative justice, distributive justice, compensatory justice and global justice/social justice. Commutative justice means giving a portion of the advantages/profits derived from the use of human genetic resources to the resource providers in order to achieve justice in exchange. Distributive justice is justice in the distribution of benefits and burdens and not to increase existing inequalities. The burdens/risks of benefit sharing include unauthorised access, "unauthorised" use, genetic label and restricted access. Wilson also noted that there should be no exploitation of vulnerable groups and no "unjust enrichment," but instead shared vulnerabilities and altruistic participation. She ended by asking the attendees whether the sharing is more important than the benefit itself, but withheld a definite answer.

The final portion of the workshop was comprised of a debate over whether or not the human body should be commercialised. *Siobhán O'Sullivan* was asked to argue in favour of commercialisation, whilst *Mark Cutter* was given the anti-commercialisation position. Their positions in this debate do not necessarily reflect their own views on the subject.

Siobhán O'Sullivan from the Irish Council for Bioethics spoke in favour of the commercialisation of the human body. She noted that commercialisation of the human body is nothing new and has become increasingly prominent with advances in biotechnology, with a general acceptance of intellectual property rights based on human tissue. According to the *Moore* case before the U.S. Supreme Court, if material is voluntarily donated, it is considered to be a gift once it leaves the body. O'Sullivan asked why, if a person does not own his/her body, can donating material from it be acceptable, but at the same time selling be prohibited? She also emphasized the obtuseness of the "human dignity-concept".

In terms of commodification and the loss of human dignity, O'Sullivan said that the end result – a healthier person – is more important than the process of getting there, and compensating a person for his/her donation does not lessen his/her dignity, nor the dignity of the recipient. She noted that the concept of human dignity is selectively applied, depending on the type of human biological material in question: selling blood, sperm and eggs for example is acceptable, but selling other materials is not. In terms of coercion, she said that when someone is paid for their donation, it ensures that they are not being coerced into giving it, and it cannot be called "coercion" if a person is not worse off declining the offer. Society routinely allows people from lower-income backgrounds to take high-risk jobs – such as firefighters and soldiers – voluntarily which is not seen as coercion either. In order to further promote this point she explained about Iran being the only country in the world that has a State-sponsored system facilitating the buying and selling of human biological material. Although most people who sell are poor, they do get some sort of long-term care. There is therefore no place for a black market in the Iranian system. O'Sullivan also discussed the autonomy paradox – i.e. that a high value is placed on autonomy as a legal right, yet this right is not upheld with regard to autonomous decisions to sell biological material.

She also counteracted the notion that commercialisation undermines the relationship between donors and recipients, which will lead to a decrease in altruistic donations, by claiming that offering financial incentives will increase rates of research participation. O'Sullivan mentioned reciprocal altruism, or the fact that gifts are never "free", but tend to give rise to reciprocal exchanges. She also argued that commercialisation will not undermine the public trust in research and professional scientists because research is already becoming increasingly commercially-based at this point in time. O'Sullivan concluded that with proper regulation in place, the body can be legitimately viewed as a useful and exploitable resource, which can advance scientific research and potentially provide life-saving benefits to others. Furthermore, it would appear that deriving profits from biological material is acceptable as long as the source of the material (the donor) does not share the profits. Lastly, many of the arguments against commercialisation are primarily based on emotions such as revulsion – which heavily reduces their acceptability, since the very reason we have ethical discourse is so that value-based reasoning becomes the basis of accepted behaviour rather than emotions.

Mark Cutter from the University of Central Lancashire spoke against the commercialisation of human cells, tissues and organs. However, he is personally in favour of commercialisation of any part of the research project, except the parts that deal with the human body itself. He noted that selling the human body is different than selling other types of inventions since according to Cutter, we should not consider ourselves as having property in our own bodies in order to prevent us from having property in other people's bodies. He said that you cannot sell parts of the body that you want to use in research, but did not deny that there is a value in being able to sell organs. Cutter is also against commercialisation because he does not think it should be necessary; people should not participate in research for monetary reasons but out of solidarity.

Cutter is in favour of a whole population biobank without compensating the participants, because everyone will benefit from the research results and the healthcare system in general. The samples could belong to the research communities as a whole. He believes that such a model would be the most useful way of moving forward with these kinds of debates, so we would have access to the best possible research outputs without worrying about property rights. Cutter said that one of the problems arising in commercial settings is that it is so difficult to get a product market in large-scale biobanks. He predicted that this debate will become even more important with new technologies, such as synthetic biology. Cutter concluded by saying that rather than fear commercialisation, people should envisage the many benefits they will get from the results of the research.

6 Results

- There is a distinct lack of legislation and regulation of anything to do with human material or assisted human reproduction. The only existing human tissue law is a statutory instrument that merely incorporates the EU Tissue Directive into Irish law, but does not in any way add to the scope of the legislation, or add anything uniquely Irish.
- In 2008, the Human Tissue Bill was introduced in Ireland, but the Government has yet to even publish the latest version of the bill, following public consultation, let alone take further action.
- The lack of bioethics-related legislation in Ireland is a result of a lack of political will and a reluctance to address anything that may in some way relate to the definition of "unborn". In this context, Ireland's Catholic background was brought up frequently, as was the divisive abortion debates of the 1980s, from which the country has yet to fully recover. In addition, the Irish Government may view other issues – such as those relating to the struggling economy – as more urgent to legislate on than human tissue.

- Biobanks – an integral part of the transfer, storage and procurement of human tissues and cells – were mentioned in several presentations and discussions. While they are invaluable to the research and scientific community, a lack of funding and opportunities for collaboration may hinder their development. Other types of biobanks – such as DNA databases – were also treated.
- Consent was another overall theme of the workshop. The subject arose within the topics of patients' willingness to donate their samples to biobanks, and who should consent to the biobanking of material from children.
- Research on embryonic stem cells, embryos and foetuses was also discussed in several presentations. Positions vary on these issues, depending on the conception at which point a person considers human life to begin. Consequently, it is very difficult to regulate these areas of research, particularly for countries like Ireland that has difficulty reaching a consensus on issues dealing with the beginning of human life.
- Benefit-sharing is an important and necessary part of biobanks, but there must not be any exploitation of vulnerable groups and the benefits should be shared as fairly as possible.
- With all the talk of regulation and lack thereof, the question of whether a large amount of (or any) regulation is necessary, was asked frequently. There was discussion of the implications for scientists and researchers from being overregulated, and whether that would impede their research. Most participants agreed that whilst some level of regulation is required, the regulation should not be so detailed that it hinders research. Furthermore, in the context of the EU, regulation should be in place that encourages the monetary economy and the knowledge economy, as well as ensuring the protection of the human rights of citizens.
- In addition to the usual issues surrounding property and ownership of the human body, the commercialisation debate also saw a discussion on whether altruism exists and the extent of its importance, enlarging upon the difference between solidarity and altruism. Several participants concluded that a certain level of commercialisation is acceptable and necessary, but that it must be harnessed within well defined limits in order to foreclose any coercion or violation of human rights.

Biobanking: Ethics, Governance, and Regulation

Eighth International Workshop of the Tiss.EU Project

Birmingham, 3-4 June 2010

Sean Cordell

1 Introduction

The Eighth International Workshop of the Tiss.EU Project was organized by project partners *Heather Widdows* and *Sean Cordell* from the University of Birmingham. The workshop dealt with the fourth focal theme of the project (Focal Theme D: Biobanking), comprising presentations on the ethics, governance and regulation of Biobanking practices given from a broad range of perspectives. Topics discussed included: the state of current legislation in the UK; models of relationship and consultation between biobanks and the public; participants' withdrawal from biobanks; the conditions for participants' autonomy; fledgling legislation concerning transfer of genetic materials in Belgium; and the effectiveness or otherwise of ethics committees regarding biobanks. To reflect and accommodate this wide scope, the two days' sessions were divided under three sub themes: "Biobanking, Community and Society"; "The Individual and Biobanking"; and "Regulation, Governance and Law". Accordingly, a number of distinguished experts in the fields of medical and bioethics, law, philosophy, social sciences and politics attended the workshop.

The meeting began with a brief introduction and welcome from *Heather Widdows*, who outlined the theme of the workshop and its place in the project. The

first formal presentation was "A Short Introduction to the Tiss.EU Project" given by lead partner *Christian Lenk* from the University of Goettingen (Germany). He explained that the project consists of a number of thematic workshops, of which Birmingham is one and that together, these aim at assessing the legal and ethical regulation of research using human tissue in the EU countries. Regarding the Birmingham workshop more specifically, Lenk linked it to the previous Paris meeting (June 2009) on the same focal theme and outlined the key issues raised there: questions of informed, "specific" and "broad" consent in biobanking; privacy and confidentiality; forensic use of biobanks; feedback and disclosure of medical information to participants; access to donated genetic material and whether or not such access is construed as a right to one's "property". The talk ended with a look ahead to the Tiss.EU workshop in Vilnius, Lithuania (September 2010).

2 Country Report: United Kingdom

David Price (Leicester De Monfort University, UK) delivered his report on the state of current UK legislation and practices relating to biobanking. The report initially offered an interesting overview of current regulation, which reflected the relatively new and developing nature of biobanking itself: "an incomplete patchwork, with a plethora of sources and rules and guidance yet simultaneously replete with gaps and interfaces". It began by identifying the key issues as:

- How biological materials are entered into the bank
- Research biobanks as institutions
- Under what conditions researchers can access materials in the bank; problems concerning ownership of biological materials and of intellectual property
- How information is collected and stored

With regard to the adequacy or inadequacy of the existing legal framework in addressing these issues, the report went on to note that the removal of tissue from living persons is governed by the common law and specific statutory provisions such as the Mental Capacity Act 2005; and that all research involving NHS resources *de facto* requires NHS Research Ethics Committee approval (mandatory re: clinical trials), data protection and confidentiality and human rights laws.

At the same time, there are several areas on which laws and guidelines are relevant but less than clear on the challenges raised by biobanking specifically. On "consent" for example, the Human Tissue Act cites "appropriate consent" and "qualifying consent" as required for research projects, where the appropriateness or the qualification for biobanking is not, as yet, clearly distinguished or tailored to large scale collections of material that contain DNA and other genetic information. A further problem identified here regards how Research Ethics Committees and regulatory bodies are to act concerning consent. A predominant view is that the

relatively low risks involved in biobanking research (as opposed to medical research on living patients, for example) favours a "biobanking exceptionalism" which need not adhere to the strict informed consent condition. This in turn has led to a focus on broad consent, where, as stated in the Human Tissue Authority Code of Practice on Consent, "if conducting research on samples of tissue, it is good practice to request generic consent because this avoids the need to obtain further consent in the future." Implicit in the last part of this statement, however, is the assumption that broad consent is a "one off" act, but as has been noted elsewhere, this need not be the case.

It was also noted that anonymity of a tissue sample (such that the researcher could not discern the identity of the donor), in conjunction with approval by a Research Ethics Committee, is sufficient to provide exemption from the consent condition. Lastly, Price's presentation dealt with the issue of commercialization, which to a large extent stands on the question of property in the body. Here too, there was a possible tension between UK law and biobanking regulations and practices. For example the UK's EGF (Ethical Governance Framework) is clear that "UK Biobank Limited will be the legal owner of the database and the sample collection… Participants will not have property rights in the samples"; whilst the judgment given in the *Yearworth* sperm storage case was that the men – whose sperm was inadvertently destroyed – had a valid claim on the grounds of "property". The upshot of the report was that the emerging challenges of biobanking are themselves shaping legal and regulatory practices as much as, or more than, they are responding to laws and regulations. To quote Elizabeth Rynning, "The regulation of research biobanking should be perceived as an ongoing step-by-step process, rather than a problem that will soon be solved once and for all."

3 Biobanks, communities and society

Mairi Levitt's paper "Biobanks, Rights, and the Regulatory Environment: Relating to participants: how close do biobanks and donors really want to be?" considered the relationship between biobanks and participants, contributors and beneficiaries. The philosopher from Lancaster University began her talk with the claim that public engagement was crucial to the success of biobanking projects in three ways: to ensure that the biobank is constructed and run in ways acceptable to the public; to be best placed to secure funding; and to invite participation and instill confidence in those participants. After detailing the ways in which such consultation was carried out in the case of UK biobank (e.g. face to face Q and A sessions, postal correspondence), the main public concerns about biobanking were outlined as: the potential harm to individual donors and their interests; the possibly commercial or nefarious motivations of "big Pharma"; the attendant issue of trust; and the wider societal implications of relinquishing one's genetic material to research (how is benefit sharing assured, who will be doing research to which ends?).

In light of these concerns, different kinds of inter-personal relationships were considered as candidates as those which the biobank might do well to cultivate as a model for its own relationship with the public. These were acquaintances; partnerships (i.e. business or collaborative task-based partnerships); colleagues or neighbours; and friends. With reference to an actual project – *The Avon Longitudinal Study of Parents and Children* (ALSPAC) – which is also known as *Children of the 90s* – it was suggested that elements of all four kinds of relationship were salient, and that the prevalence, or otherwise, of one or of these features would depend on the nature of the project: for example on how much ongoing commitment would be needed (more of a partnership and possibly friendship in the case of ALSPAC; more of an acquaintance relationship in a shorter term clinical trial, perhaps). In discussion, the issue was then raised of whether a biobanking institution needs to be responsive to different participants' expectations. Perhaps, for example, one person is happy to see themselves as engaged in a friend-type relationship, whilst another is on a "strictly business" footing. Thus, some interesting points were raised about the essentially social structure of biobanking and how this is best interpreted and embodied in the construction and ongoing practices of biobanks.

Continuing with this last point about structure and practices, in his presentation on "The Function of the Institution and its Place in Biobanking Ethics", *Sean Cordell* from the University of Birmingham argued that in the ethics of biobanking, there is a place for considering the biobank itself as an "ethical subject", i.e. an institution that can do better or worse according to how well or badly it operates as a thing of its kind: a thing that is "fit for purpose" just as we might think that a tool or artefact is (a good pen writes well, a good knife is sharp, and so on). He began by motivating such an account: explaining that much of the ethical debate about biobanking has been framed in terms of the relationship between individual agents on one hand and larger groups, social benefits or legislative agencies on the other. In such debates the question of the "purpose" or the "function" of the biobank is often implicitly or explicitly raised but, equally often, left unaddressed or simply assumed to be broad or vague – for example in terms of "public health", with which all sorts of institutions are concerned in some way or other.

Cordell went on to suggest that a more specific conception of biobank's function – its "characteristic activity" – could usefully inform its professional practitioners; its participants (e.g. as to what kind of venture they are giving their consent); and its advisors (e.g. which of its projects are essential and non-essential) as to how a biobanking institution should best be structured. It was claimed that the appropriate view of such an institution was that it is socially constructed for the human goods of medical research and that it realizes these goods in distinct and defining ways – i.e. through large scale data collection and long term research into disease prevention – where these aims may be analysed further according to specificity of function (e.g. the Irish biobank for cancer research).

The ensuing discussion raised, among other things, the questions of whether a biobank's purpose can be understood as unchanging from its outset, and whether that purpose can be construed as singular. That is, as biobanks develop as institutions, so might their function(s). Notwithstanding these pertinent critical points, the role of the institution's function in biobanking ethics, for example in constructing codes of practice and mission statements, was highlighted and constructively considered.

4 The individual and biobanking

In his presentation on "Biobanking: The Requirements of Respect for Autonomy" *Iain Law* (University of Birmingham) set out 1) to clarify some ways in which "autonomy" and "respect for autonomy" might be understood and what conditions they might include; and 2) argued that such an understanding is needed to clarify what's at stake when we talk of respecting autonomy in the biobanking context. He started by claiming that to say that someone is, or is not, "autonomous" is rarely, if ever, merely to make a purely descriptive claim about an attribute that person has or fails to have – such as we might when we say they are "tall" or "outgoing". Rather, "autonomy" is value-laden, and this means that claims about the conditions for autonomy will at least partly depend on certain values that motivate the claims. So for example, a primacy on the value of non-interference – an emphasis on so called "negative" liberty – will beget a similar conception of what autonomy *consists* in, namely the individual's freedom from external constraints on their choices and actions. However, a quite different construal of autonomy can be made in terms of the instantiation of an individual's capacities to make certain kinds of choices and then act upon them. On a version of this view, for example, there can be circumstances in which intervening in an individual's life could be increasing, rather than constraining, their autonomy. (An example would be enforced rehabilitation for drug addicts.) Law illustrated this diversity of autonomy by briefly surveying some of the vast philosophical and ethical literature on the subject, and the varying numbers of different conditions for autonomy that the authors have cited in their accounts.

Given this background, the question for biobanking ethics is how autonomy is to be understood, figuring importantly as it does in the rationale for the requirement of participants' informed consent. More specifically it concerns what is owed to donors in order to respect their autonomy. Law suggested a strategy of examining cases in which persons are clearly wronged in a way that involves violating their autonomy. By distinguishing these cases from other ways in which people may be wronged (by being harmed, or having their privacy invaded, etc.) it is possible to identify more easily what respect for autonomy *per se* demands. In other cases in which someone lends, gives or sells some of their possessions (including information about themselves) to someone else the only constraints imposed by the

need to respect autonomy appear to be avoiding coercion and deception. These constraints are not in themselves minimal or easy to meet in all circumstances, but they are less extensive than the demands created by respecting autonomy are often stated or implied to be. For instance, the constraints of autonomy themselves, on Law's view, entail only that a consenting person is not deceived, so will not include or entail any requirement of actively supplying full information at every stage of a biobank's activity involving participants. (Although again, there may well be convincing arguments, separate from appeals to autonomy, for such information being supplied.)

In conclusion, an interesting implication of the paper is that the talk of autonomy is often quite loose, and there is no reason to think that it is generally any more careful in bioethics. If we are to make respect for donor autonomy a cornerstone of biobanking ethics, then we need to be clear about what it is we mean by autonomy and what a requirement to respect it does and does not entail.

Søren Holm (Centre for Social Ethics and Policy, University of Manchester) opened his talk on "Withdrawal from Biobanking Research – Justification and Problems" with a pithy observation: whilst it would be impossible to account for everything that has been written on the conditions for participation in research, it might prove similarly difficult to find literature on the conditions for withdrawal. Holm took off from what he called the "established view" of the right to withdrawal. On that view the right is: absolute; unconditional; immediate; complete (i.e., includes withdrawal of already collected data); and non-tradable ("inalienable"). Having granted that there are some good historical reasons and principles for this view, the argument put forward was, that there may be cases in which components of this right should be relaxed, so on this view the right to withdraw is not inalienable, nor is it necessarily unconditional.

In support of the argument, some grounds for denying the unconditional and inalienable status of the right to withdraw were presented. Firstly, consent to biobank research involves a commitment, such that granting a right to renege on it for *any* reason – or indeed for *no* reason at all – may undermine the obligating force of active consent, i.e. the commitment in agreeing to participate. Secondly, there is the right of participants to waive their right to withdrawal; where this denial could itself be seen as a violation of participants' autonomy and a constraining of their choices. As to the aspects of immediacy and completeness in the biobanking context, whilst immediate withdrawal of genetic samples might be possible, the complete withdrawal of all the data gathered from those samples may not be. This underlines the way in which the process of "withdrawal" is not a one-off act, but may comprise more than one action. In light of these considerations, some suggestions were made as to how biobanking research might best proceed with respect to the right to withdrawal. For example, in the case of a mass withdrawal due to an emerging media scandal over a biobank project, it could be that the right to immediate withdrawal of material is maintained, whilst the right to complete withdrawal

of data is denied for at least a "cooling off period" until the full information is discovered and made available.

A further suggestion, arising from the challenge to unconditional status of the withdrawal right, was that participants should have, and give, good reasons for their withdrawal in order to withdraw. Such good reasons would include the fact that they were deceived or misled, or less than fully informed about the project(s); that harm to them or others would result from continued participation; and that the overall purpose of a project had changed (such that one would not have consented if this had been the stated purpose at the time of initial donation or participation). Accordingly, insufficient reasons included mere whim or a fit of pique. Hence a person's change of mind can be an acceptable reason, but only if there is a good reason *for* them changing their mind, or so it was proposed.

5 Regulation, governance and law

In her presentation "Biobanks: Comments on the New Belgian Law from an Ethical Perspective" *Sigrid Sterckx* (Bioethics Institute, Genth University) looked at Belgium's Law regarding the procurement and use of human body material destined for human medical applications or for scientific research purposes, which due to a one-year delay, was just about to be implemented at the time of her presentation. As stated, the act is intended to cover "every biological body material, including human tissues and cells, gametes, embryos, foetuses, as well as substances extracted therefrom, whatever the degree to which they have been processed" (Art 2 (1)). Nevertheless, the act distinguishes between a "bank for human body material", which has "the sole responsibility to decide on the allocation of human body material" and a biobank, which "stores and provides human body material, exclusively for scientific research". A further distinction is between "primary use" – any use of the human body material to which the donor has explicitly and specifically consented in the context of the removal, and "secondary use" – any other use of human body material than that to which the donor has consented in the context of the removal. There are actions that are excluded from its scope – e.g. "the donation and the actions performed with a merely diagnostic purpose for the benefit of the person from whom the body material is removed (e.g. a biopsy), provided that the body material is not destined for another use". There are also certain bodily materials exempted: the law does not apply to hair, body hair, nails, urine, mother's milk, stools, tears and sweat (a non-exhaustive list). The act is explicit in its prohibition of financial payment for bodily materials ("No benefit whatsoever may be offered in exchange for the donation of human body material"), though compensation for costs or loss of income may be provided.

One issue raised was the issue of donor information and its availability. The act states that "If in case of an action performed on human body material or the use of human body material, analyses provide relevant information regarding the

health status of the donor, the donor has a right to this information" and that "the physicians who learn such information in the context of an action with or use of the material, the governors of the human body material and the chief physician of the hospital where the removal took place are, each in the context of their function and role, responsible for the application of [this provision]". Sterckx asked the questions: "What counts as relevant information?"; "What if there are diverging interpretations of the relevance (which is likely)?"; and "What if the donor does not want to know?". In response, she discussed the possibility of the risk of a "diffusion" of responsibility – whereby a number of individuals pass on such responsibility or assume that others have taken it on – could result in nobody providing the information to the donor. This possibility can be seen as especially important when we consider that the right to be informed also applies to cases of "secondary use" outlined above.

Another related issue concerns the role and status of the ethics committee in relation to the law. The act states that in cases where gaining consent to secondary use is impossible, such usage can be permitted by the positive approval of an ethics committee. Thus the ethics committee is, in effect, deemed to be more than advisory. It is also, in a sense, extra-legal, as in this case it acts in the absence of the consenting party normally required by the law.

Roger Brownsword (School of Law, King's College London) opened his presentation on "Biobanks, Law and the Regulatory Environment" with what he sees as the main legal and regulatory challenges for biobanking. Currently, these are (1) the terms and conditions for participation; (2) the terms and conditions for access; (3) interoperability; and (4) *effective* regulation. For future consideration, he offered the following points as central: (1) the application of an improved understanding of the conditions for public health (articulating State stewardship); and (2) the implications of a risk-focused technology-based regulatory environment. As to the current concerns, the question was initially posed as to whether we have a right – or an absolute right – to opt not to participate in public health projects. We do not, for example, cite such a right in the case of vaccinations or jury service. This mapped on to a wider question of whether, and why, we prioritize public goods or individual rights. And the perspective we take on this question – or "where we stand on the bioethical triangle" (of rights, public goods and regulatory/legislative bodies) directly affects the answers we give to questions about e.g. respecting the informational interests of participants; privacy; confidentiality; data protection; and clinically relevant information that is fed back to participants.

Within this framework, Brownsword identified the need for the right kind of regulatory environment that recognizes the "gap between background legal provisions and foreground practice". Moving to future challenges, he pinpointed the crucial area of State stewardship, i.e. competence and responsibility in relation to the conditions for public health. UK Biobank delivers an improved understanding of the causes of serious diseases, and the State is the agent responsible for the application of such new intelligence. On this crucial point, it was argued that stew-

ardship in this area can be affected, and is in fact hampered, by a general trajectory of society: in particular the tendency to frame issues in terms of risk assessment and risk management, and to commit regulatory resources to prevention. UK Biobank, it was claimed, is a token of this trajectory in the field of public health; and the national DNA database is a token in relation to criminal justice. These developments can be damaging to the regulatory environment, and in addition to risk and risk prevention, the stewardship role must include the provision of conditions essential to life (public health being one instance) which are necessary for the development and sustenance of a moral community.

The question of the role and effectiveness of the Ethics committee in biobanking was dealt with by *Jean McHale* (Birmingham Law School), whose aim in her presentation "Accountability, Governance and Biobanks: The Ethics Committee as Guardian or 'Toothless Tiger'?" was to explore whether it is correct to regard such ethics committees as "toothless tigers", and consider alternative structures which may provide a more appropriate regulatory paradigm for the future. The first kind of problem she identified was in definition and scope of a biobank's activities. In the words of Susan Gibbons, the subject of legal constraint as described in recent (2001) legislation ("collections of genetic sequence information or of human tissue from which such information might be derived that are or could be linked to named individuals") is a broad statutory definition, but in an important sense it is also too narrow. For in referring only to "genetic sequence information", it omits collections of personal, medical or genealogical data" (*Legal Studies* 2007). Partly in relation to this vagueness and to the fact that biobanking essentially always deals with such materials, there has been an increasing emphasis on the place of ethics committees to decide upon and approve particular projects and practices, and has for example been reflected in the Implementation of the Clinical Trials Directive (2004).

This raised the question of whether the ethics committee serves as "legitimator" of research or as a means of ensuring accountability (or both). Acknowledging good reasons of objectivity and independent perspectives, for ethics committees to exist, the worry outlined was that the ethics committee is nevertheless all too "toothless". So for example, there is the concern that the sanctions available to them in the UK – such as reporting ethical concerns to UK Biobank Funders; making their concerns public or resigning en masse – were insufficient to effect genuine prevention or change to a project or practice it might deem unethical. A further concern was whether the power of ethics committee was weakened by, rather than supported by, the complex legal framework in which it operates. For instance the data protection act; the ECHR; and the aforementioned lack of definitive definitions in the case of "appropriate consent" and uncertainty of the Codes of Practice of the Human Tissue Authority, alongside "Common law consent" as employed in legal cases. In the context of these problems, the question of "who watches the watchers" also becomes relevant: not least because if ethics committees are to have regulatory leverage and possibly even de facto legislative power,

then these bodies themselves would require regulation. In response, Professor McHale tentatively put forward some positive recommendations for facilitating good regulatory bodies and their effective regulation as a whole, as follows:

- A National Bioethics Council with e.g. sub-groups to advise on biobanks.
- Placing the Human Genetics Commission on a statutory footing and expanding its powers.
- A broadening of the role of the Human Tissue Authority.

After an explanation of how they would help achieve a regulatory environment that overcomes the problems outlined earlier in the presentation, the final – also tentative but no less thought-provoking – idea was that we might well benefit from a "Regulation of Research Act 2011".

In their paper "Involving Publics in Biobank Governance: Moving beyond existing approaches" *Graeme Laurie* and *Kathryn Hunter* (both from the University of Edinburgh) identified as crucial the question of how to involve people *well* in biobank governance. In addressing this question it focused on ways to effect greater participant involvement in the management and oversight of UK Biobank as a means to secure public trust and support.

After setting up the issues via the perceived failures of the UK Biobank consultations, the paper examined David Winickoff's proposed "shareholder model" of governance, which seeks to move beyond public consultation to embrace representational forms of participation for the donor collective in biobanking. Such a model, Winickoff argues, in which the donor collective has "real representative power", could close the "agency gap" between public expectations and biobank managers, thereby enhancing participation rate, participant trust, and project sustainability. Laurie and Hunter claimed that while Winickoff's proposal has contributed greatly to the discussion of biobank governance, the shareholder model is problematic both practically and conceptually. They argued that not only the very notion of "shareholding" is antithetical to the structure and purpose of UK Biobank (UKB), which is aimed at benefiting the wider community or society and not the happy few, but also that the model raises questions about whether a form of representation based on a shareholder analogy is appropriate as a means of engagement.

Whilst Laurie and Hunter agreed that there is much value in models from the corporate sphere, they urged a "stakeholder model" of governance, which goes beyond representation to more deliberative and inclusive processes of participation, as more fitting. Unlike the shareholder model, the stakeholder model of governance resonates with democratic notions of "participation", "involvement" and "inclusion", which not only reflects the growing trend towards more deliberative and participatory mechanisms for involving publics/citizens in decision-making processes generally, but also with UK Biobanks's own commitment to engage with a wide variety of stakeholders. The stakeholder model requires not only a commitment on the part of biobank management to engage frequently and sys-

tematically with all relevant stakeholders, but also a willingness to respond and adapt to stakeholder concerns over time. Furthermore, the wider scope of stakeholder view involves corporate responsibilities that extend beyond immediate consideration of participants. For example "to perform in a manner consistent with expectations of social mores and ethical norms; to recognize and respect new or evolving ethical/moral norms adopted by society; and to prevent ethical norms from being compromised in order to achieve corporate goals."

In the second part of the presentation, Laurie reported on a recent workshop held by the UK Biobank Ethics and Governance Council (EGC) and discussed the extent to which the preliminary conclusions of the Council do, or do not, support the stakeholder approach. In light of the workshop, it was found, among other things, that there is no obvious and natural single model for best communicating and involving the public, and hence that a "mixed methods" approach, consistent with the stakeholder model, is required. Both UKB and the EGC, whose roles need to be clearly distinguished, need to be open to the possibility of change with respect to consultation. For example a consultative committee may be useful, but must avoid being "too cozy" if it is to represent the appropriate range of parties and interests.

6 Results

As the issues and implications of collecting large scale bases of genetic information continue to develop, so does the need to identify and clarify them. In focusing on both the ethical questions and the actual regulation of biobanking, the workshop significantly advanced overlapping conceptual, socio-political, moral, and legal debates about the appropriate ethical and legal framework for biobanking practices and governance. The upshot of these debates is summarized below.

Conceptually, the ways in which we think about biobanking practices, biobanks themselves, and their relation to participants as well as to the wider public and society, shapes the normative perspective from which the ethics and regulation of biobanking is developing. From this angle the discussion opened up some crucial lines of inquiry. One was the need for thinking clearly about what individual autonomy means, what it does and does not encompass in terms of donors' consent and privacy and, therefore, the work it can and cannot do in prescribing biobanking regulations. Another theme was how best to envisage the way in which the public stands in relation to biobanking projects which rely on their participation and support, and then how such a model would be best cultivated in consultation and communication. Similarly, the importance of the purpose and aims for which a biobanking institution is constructed was discussed.

The accompanying ethical, social and political issues aired concerned the structural relationship between biobanks, individuals, and the state, within which an exclusive appeal either to individual rights or to public goods will not do all the

work in deciding how to regulate biobanks. Here the part the State plays its part in both protecting rights and facilitating biobank research and, as such, its directives should guide regulation positively towards these goals and away from instilling a risk-avoidance culture. In keeping with this suggestion, the question of the legitimacy of donor's withdrawal from biobanking is at least open for discussion. That is, whether the individual's right of withdrawal is unconditional, inalienable and immediate in the case of biobanking, is open to question (immediate withdrawal may be possible for material but not data); and interrogation (should we be able to withdraw participation for no good reason when doing so might compromise beneficial research? Can and should we be able to waive the right to withdraw?)

Legally, there clearly remains a lack of consistency in UK law, and this is mirrored in at least one other European country, i.e. Belgium. In the UK case, the key areas in which biobanking legislation could benefit from clarity and precision are a) what constitutes "appropriate consent" in which cases, and why; and b) whether genetic material is ever in some sense the "property" of the donor – and, if so, what sense and under what circumstances – and whether such material is the property of UK Biobank. One positive recommendation for more effective regulation here was a strengthening of the powers and remits of ethics committees, standing as they do at the cusp of extant legal provisions and the new challenges of biobanks. In the Belgian case, there are additional concerns about providing donors with information: whether this is what should always be done regardless of a particular donor's wishes as to being informed, for example; and how this communication is, or is not, ensured by legally conferring responsibility on a number of medical professionals.

Procurement, Storage and Transfer of Tissues and Cells for Non-Clinical Research Purposes

Ninth International Workshop of the Tiss.EU Project
Vilnius, 9-10 September 2010

Vilius Dranseika, Eugenijus Gefenas

1 Introduction

The last international workshop within the Tiss.EU project was organized by the Department of Medical History and Ethics, Medical Faculty, Vilnius University in cooperation with the Lithuanian Bioethics Committee. It was focused on the Focal Theme A, "Procurement, Storage and Transfer of Tissues and Cells for Non-Clinical Research Purposes". The workshop's regional focus was on human tissue research regulations in Poland, Estonia, Latvia and Lithuania. In addition, the situation in Belarus was addressed. Beyond this, the programme included several presentations on more general issues of research on human biological materials.

2 The contributions

The workshop started with a general introduction to the Tiss.EU project given by its coordinator Christian Lenk (Dept. for Medical Ethics and History of Medicine, Goettingen). After summarizing the results of the two previous workshops on the

same focal theme (Padova and Dublin), Lenk identified some areas in need of further work and discussion:

- contradictions in official EU documents (for example: secondary use of tissue samples);
- different interpretations of the no-property rule;
- a tendency to broad or blanket consent in the area of biobank research;
- rather homogenous guidelines and expectations in the field of privacy and confidentiality within the EU;
- differences regarding the right to feedback for health findings of therapeutic relevance.

2.1 Country report: Estonia

The first panel started with a presentation by *Aime Keis* (Estonian Genome Center) who reported on the history, legal framework and day-to-day operations of the Estonian Genome Center, a large-scale population-based biobank currently affiliated to the University of Tartu. The main document regulating this biobank (the Human Genes Research Act) contains provisions on the procedures of data collection, storage and use (including consent requirements: the biobank has an official broad consent form); the rights of the participants (withdrawal of consent, the right to know and not to know; the right to be informed of incidental findings); the role of the ethics review; and the ownership of the data and samples. The main challenges yet to be addressed were identified as:

- feedback of genetic information to the donors;
- establishing a genetic consultation network;
- establishing a follow-up system for the collected data.

Andres Soosaar (Estonian Medical Journal/Eesti Arst) discussed the status of small project-based biobanks in the Estonian biomedical research environment. He claimed that small biobanks are underregulated in comparison to the biobank at the Estonian Genome Center, which is governed by a special law. This underregulation follows from both a loose moral framework (neither researchers nor RECs are adequately trained in research ethics; scientific, technological and economical challenges sometimes override moral requirements of biobanking) and a fragmentary legal framework (the Human Genes Research Act can be used by analogy only in some situations; there is no general tissue law, some issues are regulated by other legal acts, e.g. the Personal Data Protection Act). Soosaar concluded that RECs have a crucial role in improving the moral climate around biobanks. The establishment of regulatory frameworks, education and mutual exchange of information about biobanks are the main tools for improving the situation.

2.2 Use of human biological material for research

Arvydas Laurinavičius (Lithuanian National Centre of Pathology) presented the pathologist's perspective on the use of human biological material for research. Collections of biological materials removed for diagnostic or therapeutic purposes may also function as disease-oriented research biobanks. In such cases it is crucial to find the right balance between the interests of the physician and the individual on the one hand and interests of the researcher and the public on the other. Laurinavičius argued that from the pathologist's point of view, collection and storage requirements should be relatively liberal while the requirements for research release should be rather strict.

2.3 Country report: Latvia

Solvita Olsena and *Signe Mezinska* (Riga Stradins University) reported on the situation in Latvia, starting off with a presentation on the legal, ethical and practical aspects of sample collections in the Latvian Human Genome Project. Establishment and operation of the Latvian Human Genome Project is regulated by the Human Genome Research Law and a number of cabinet regulations. These regulations define the voluntary nature of participation; the prohibition of any discrimination on the basis of the genetic data; the rights of the donors (to become acquainted or to refuse to become acquainted with the data; to prohibit the supplementation, renewal or verification of the description of their state of health in the genome database; to revoke their consent at any time); consent requirements (the donor shall receive written information regarding the purpose, content and duration of the research project; potential risks; the right to freely express his or her consent and to revoke it at any time; and the possibility to perform genetic research outside of Latvia); the possibilities to include children and incapacitated adults; REC review; coding, storage and restrictions of use (it is only permitted to use the genome database for scientific research, research and treatment of the diseases of a gene donor, research of the health of society and for statistical purposes). A number of legal shortcomings were identified including the unclarity of the text of the provisions; contradictions within the law and with other laws; no proper provisions for the inclusion of vulnerable donors; no proper way of handling possible damage. One challenge among others was the fact that most of the information is available in Latvian only, which is problematic in face of the fact that there are populous ethnical minorities whose members may lack proficiency in Latvian. During the following discussion the problems of broad consent were addressed as well as the cultural background of the Latvian Human Genome Project, which initially – at least in the public mind – was closely related to the issues of national identity.

In the second part of their talk, Mezinska and Olsena stressed the need for a coherent national regulation on human tissue research in Latvia. In Latvia there are no specific national regulations regarding ethical review of biomedical research

except clinical drug trials, research on medical devices and research on the Latvian population genetic database. In particular, there are no specific legal requirements regarding ethical review of research on archived biological materials removed for diagnostic purposes. Thus the main practical reason in such circumstances to apply for ethical review is participation in the international projects or requirements of scientific journals. Mezinska reported that recently there has been a discussion to pass a general biobanking law.

2.4 Country Report: Belarus

The last presentation on the first day of the workshop was given by *Andrei Famenka* (Belarusian Medical University). Famenka reported that Belarusian legislation governing biomedical research is patchy and fragmentary except in the case of clinical drug trials. For example, no consent is legally required for the secondary use of biological materials removed for purposes other than research. European legal acts pertaining to the field of biomedical research have made almost no impact on the situation in Belarus since the country is neither a member of the European Union nor is it a member of the Council of Europe. The Russian law in contrast to the European law has had much more significant influence. The current research ethics infrastructure is not sufficiently strong and efficient and ethical regulations are currently not considered a priority by the health care authorities.

2.5 Results from the PRIVILEGED project

The first speech on the second day was delivered by *Claudia Pitz* and co-authored by *David Townend* (Dept. of Health, Ethics and Society, Maastricht University). Pitz summarized the main results from another European project, PRIVILEGED (Determining the Ethical and Legal Interests in Privacy and Data Protection for Research Involving the Use of Genetic Databases and Bio-banks). At first the similarity between samples and data in genetic research was discussed. Is a sample to be perceived as "data" for data protection purposes, or is it a vehicle for data? There seems to be no coherent approach in the EU Data Protection Directive. Ingrained in the Directive itself is a lack of clarity around research, particularly research on data (and samples) that is a secondary purpose to the initial collection of the data. There is also a harmonization problem: the Directive leaves the decision as to how the secondary use should be regulated to the discretion of the Member States, which leads to a wide divergence in the differing ways of implementation. Secondly, Pitz discussed the nature of the harms involved in dealing with the genetic information in samples and data, which are informational when it comes to the secondary use of human biological materials and result primarily from the use of the data. As her third main point, Pitz considered the nature of consent in genetic research and the ways the Directive copes with the possibility of secondary proces-

sing. In her opinion, there is still a need for discussion as to whether there is a need for a new Directive on data protection in the field of research.

2.6 Country report: Poland

Krzysztof Marczewski (Dept. of Bioethics, Anthropology and General Theory of Medicine, College of Management and Public Administration, Zamosc, Poland) presented a survey on Polish tissue banks he conducted together with Jakub Pawlikowski and Jarosław Sak (Dept. of Ethics and Philosophical Anthropology, Medical University of Lublin, Poland) in 2008. The survey shows that Polish tissue banks differ significantly in the ways they handle such issues as coding of the samples (almost 25% of the banks do not code the samples) and consent to conduct research (written consent is being secured in 92% of the banks; only in half of the biobanks an additional talk with the professional staff was possible; only 70% of the biobanks acquire the consent for future investigations or other use of samples). The problem of the comprehensibility of the consent forms was also mentioned. Marczewski emphasized the need for a harmonization of legal regulation of human tissue research in both Poland and Europe.

The current legal situation in Poland in relation to biobanks was surveyed by Joanna Rozynska (Dept. of Ethics, University of Warsaw). At the moment, a new law on biobanks is being drafted. However, it is not clear when it will enter into force. Currently Poland has detailed regulations on clinical trials of medicinal products and medical devices (implementation of the EU Directives). Regulations on other types of biomedical research involving human subjects are scattered in different documents, poorly written (unclear, messy, incoherent) and often inconsistent with international standards. There are no specific regulations in such areas as research on human biological materials and associated data; collection, storage, processing, and utilization of biological samples and data collected for research purposes; research biobanks; usage of residual or archived biological material for a purpose other than that for which it was removed (e.g. for research). However, this does not mean that there is a total normative vacuum since general principles from the Constitution, the Criminal Code etc. can usually be applied.

2.7 Country report: Lithuania

Vilius Dranseika (Dept. of Medical History and Ethics, Vilnius University) presented a paper on regulations of human tissue research in Lithuania. Even though Lithuania has a specific law regulating biomedical research (Law on Ethics of Biomedical Research) a number of issues remain unclear. First, it is not clear whether broad consent is compatible with the consent provisions in the said law. Second, only very general regulations exist in relation to anonymization. There are no specific regulations for different levels of anonymization. Third, there are no regulations concerning the ownership of biological samples. Fourth, it is not clear

whether obtaining samples from the deceased for scientific purposes is possible at all. Fifth, broad definition of research covers all types of biomedical research but activities not directly falling within a particular research project (procurement in case of secondary use, transfer and storage) are not addressed.

2.8 Research on the deceased

Jūratė Šerepkaitė and *Asta Čekanauskaitė* (Dept. of Medical History and Ethics, Vilnius University) discussed whether consent is always required in research on human post mortem samples. Different European countries follow very different regulations on research with samples removed from the deceased, ranging from no consent to written consent obtained when the donor was still alive. The latter is the case in Lithuania. This makes research on *post mortem* samples virtually impossible. The analysis of legislation from different European countries suggests two possible approaches to the consent problem: (a) to obtain consent from the relatives; or (b) to set the conditions under which the waiver of the requirement of consent would be possible.

2.9 How does ethical review of research on biological materials compare to other types of human research?

Eugenijus Gefenas (Dept. of Medical History and Ethics, Vilnius University) posed the question how ethical review of research on biological materials compares to other types of human research in the Baltic States. First, in Lithuania, the same rigid requirements as those applied to clinical research (e.g. specific consent, REC approval of every project, third party insurance of the PI and the sponsor) are also pertinent to prospective studies on human tissue samples, even though the latter type of research seems to present fewer risks. Second, there seems to be an asymmetry between the stringency of regulations for the national genome projects and other types of research on human biological materials. In Latvia and Estonia, national genome projects are regulated by specific legislation which defines clear standards for the collection, storage and research use of biological samples. In addition, these biobanks have been assigned specific ethics bodies that supervise their activities. At the same time there is no specific national legislation to deal with research on other collections. Third, regulations are often vague and unspecific. For example, there are no clear criteria under which conditions the waiver from the requirement of informed consent can be granted; the strategy to re-contact the donor seems not to be defined in any national documents; there seem to be no specific provisions to use discarded pathological specimens without personal identifiers or pathological specimens after the required period of their storage is over.

Christian Lenk concluded the workshop by emphasizing the fact that many non-specific regulations hamper the work of RECs, which in many cases do not have proper guidelines. However, it is not clear whether the introduction of

another European guideline would be helpful in this situation. Perhaps it would be better to stick to the current principles and try to make them more concrete. According to Lenk, more work is needed to clarify current contradictions before proceeding with new legal developments.

3 Results

Most of the workshop was devoted to the country reports (four countries and a special report on the situation in Belarus) with a special emphasis on the large-scale population biobanks and the secondary use of human biological materials for research. The main results are the following:

- The legal developments in the field of human tissue research in Poland and the Baltic States were shaped to a large degree by the integration into the European structures (EU and CoE).
- The only countries that have specific laws regulating activities of biobanks are the ones that have implemented national genome programmes (Estonia and Latvia). However, these laws do not cover other types of biobanks.
- In most cases of research on human biological materials that does not fall within the remit of the national genome projects there is either a lack of regulation, or regulations are not sufficiently specific in relation to different types of biomedical research. In Lithuania, for example, the regulations on prospective research on human biological materials are rather strict, since they mirror those applicable to clinical research. The lack of specific regulations may also result in insufficiently nuanced systems which do not provide a possibility for any type of expedited review for research that involves only a minimal risk. This is the case in both, Poland and the Baltic States. Finally, research on human biological material may not be reviewed by the RECs at all, as is usually the case in Belarus.
- The lack of specific regulations in the field of human tissue research in contrast to the presence of legally-binding regulations of research involving physical or psychological interventions in humans seems to mirror the development of the Council of Europe guidelines where human tissue research is regulated by a recommendation instead of a legally-binding document.
- Research on biological materials removed from the deceased follows very different regimes in this country group. In Estonia, Latvia and Poland it is possible to remove materials from the deceased without consent for the purposes of scientific research, while in Lithuania consent must be secured while the donor is still alive.

To sum up the mentioned particular points in the context of the Focal Theme A, two more general observations can be made:

- First, the situation in Poland, Belarus and the Baltic States encourages to pay more attention to the possibility of situations where very different legal regimes in terms of their content and stringency are applied within a single country in relation to different types of human biological materials obtained and used in research, e.g. very detailed regulations with regard to population biobanks as compared to non-specific or even absent normative framework in other types of tissue research.
- Second, having only very general legal documents may lead to the situation where discrepancies and ambiguities emerge as soon as there are any digressions from the most common scenarios for which the legislation was put together, e.g. when the normative framework developed for clinical trials is applied to the research procurement of biological materials which otherwise would be discarded, or legal documents dealing with procurement of and research on tissues from the living are applied to the tissues removed from the deceased.

The Future of Biobanking in Europe: Searching for Answers to the Ethical and Legal Challenges of Human Tissue Research

Final International Status Conference of the Tiss.EU Project

Göttingen, 19 - 21 January 2011

Katharina Beier, Silvia Schnorrer

1 Introduction

Whilst in the course of the Tiss.EU project the major ethical and legal challenges have been outlined, the Final Status Conference aimed at providing answers to the most outstanding issues in human tissue research, as there are issues of informed consent, privacy protection and the balancing of individual and public interests by adequate governance mechanisms. The conference was organized by the project coordinator *Christian Lenk* and *Katharina Beier* in cooperation with the project partner *Nils Hoppe* from the University of Hannover.

In order to do justice to the ambitious goal of the conference, the organizers targeted invitations to seven keynote speakers being known as legal and ethical experts in this field. In addition, the conference was enriched by contributions that have been accepted due to a call for papers that was announced in the European

research community. Except for the keynote talks which were held in plenary sessions, the other papers have been presented in parallel sessions focussing on the topics "Trust, privacy and data protection", "Rights of donors", "Vulnerable Populations", "Biobank Governance" and "Informed consent". The scientific discussions were additionally enriched by the participation of several biobanking practitioners – mostly from Germany and a panel discussion with four stakeholders at the first evening of the conference. In total, almost 80 participants, speakers included, from all over Europe took part in the Final International Tiss.EU conference at the venue "Paulinerkirche" in Goettingen from 19-21 January 2011.

2 The Contributions

The conference commenced with a general introduction into the Tiss.EU's major topics and research questions by the representative of the coordinating institution in Goettingen, *Christian Lenk*. In his talk he emphasised the importance of biobank research by pointing out to a variety of existing biobank projects on different levels (transnational, national, local, small-size biobanks) and gave an outline of the most pressing ethical and legal questions in this field. In particular, as regards patients' rights and participation in the context of large-scale biobank research, he asked whether it is still acceptable to capture patient participation in terms of an individual right or whether a governance model might be more suitable to tackle this issue. Another problem relates to informed consent in biobank research. According to Lenk, we are not only confronted with different concepts (specific, broad, open, blanket consent) and contexts (epidemiological vs. disease-related biobanks), but also with the more general question whether informed consent might be dispensable at all in biobank research. Thirdly, there is the issue of trust and data protection in biobanking. Given that trust is an inevitable precondition for the enrolment of healthy volunteers, there is the need to balance the participants' rights to information as well as the researchers' interest in accessing samples and data on the one hand, and the maintenance of secrecy of personal information on the other. In addition, it seems most appropriate to establish special safeguards regarding vulnerable populations, including amongst others, children, mentally handicapped people or patients with severe psychiatric disorders. Finally, Lenk addressed the question of property rights in human tissue samples. Starting from the fact that there is no common perception of this issue across the European Member states, Lenk questioned the relevance of property rights in this context and asked whether we should not rather be concerned with the establishment of adequate rights of control. In his conclusion, he stressed that the ethical and legal issues of human tissue research are already tackled by a number of national and also EU documents. However, as there are diverging national traditions it is up to debate whether we need a more homogeneous regulation of biobank research in Europe.

In the first key-note talk *Judit Sándor,* Professor and Director of the Centre for Ethics and Law in Biomedicine at the Central European University in Budapest, went into the genesis of the biobank concept. In her analysis she interpreted biobanks as a "benevolent legal fiction". Although a biobank clearly does not function as a bank, Judit Sándor argued that our fiction to call it a bank serves an important benevolent purpose, e.g. the generation of trust and the idea of personal benefits which in the long run will enhance participation rates. The same is true for the quite common practice of handling samples as data. Although the underlying assumption is clearly false, the fictional equation of samples with data serves an important purpose: it enhances the rights of the individual on her samples. Against this background, Sándor stressed the necessity of different dimensions of privacy protection due to different potential harms, as there are: loss of control on personal data; exposure to unwanted observation; misuse of data or potential human error. In particular, she argued for a project-specific assessment of privacy issues: whilst genetic tests and commercial or forensic uses are undoubtedly of substantial interest to the individual, this is less true for population or epidemiologic research. However, besides different practical contexts, privacy rights are also strongly shaped by cultural norms and expectations. According to Sándor, we should thus perceive of privacy as an important, though a limited and culturally contextual right.

The second key-note speech by *Graeme Laurie*, Professor of Medical Jurisprudence in the School of Law at University of Edinburgh and Director of the SCRIPT research centre, focused on the protection and promotion of public and private interests in biobank research. Whilst it is often argued that there is an inevitable tension between public and private interests in this field, according to Laurie, their reconciliation is possible. He fleshed out his thesis by pointing out to the special governance model of UK Biobank. As it builds on an "Ethics+" approach, it exhibits several advantageous features for meeting the ethical challenges related to UK biobank as a national resource. In particular, Graeme Laurie argued, the Ethics and Governance Framework (EGF) of UK Biobank appears as a "living instrument" due to its reflective and anticipatory governance mechanisms, e.g., an in-tandem development of project and ethical oversight and the implementation of revisions in the EGF due to unforeseen developments. In addition, the UK Biobank Ethics and Governance Council succeeded in engendering a form of "institutional distrust" by holding a mirror to UK biobank on a regular basis. Coming to the reconciliation of public and private interests, Laurie argued that it is indispensable to make these interests explicit. In addition, whilst exclusive access is not desirable, access should at least be limited to health benefits and an overt commitment to benefit-sharing should be made. Furthermore, Laurie admitted that public consultation is not sufficient anymore and has to be replaced by more active participation in governance mechanisms. In particular, a stakeholder model that builds on a partnership between stakeholders and the management of the biobank appears as a promising road for establishing a dynamic process of dialogue. Laurie

concluded his talk by summarizing some requirements for ensuring that a biobank is in line with the public interest, i.e. to protect proportionally individual rights to privacy and confidentiality, to actively promote access to the resource on sound, scientific, ethical and legal principles and to commit responsibility to benefit sharing.

In the third and final keynote talk of the first day, *Anne Cambon-Thomsen*, Director of research at the French National Centre for Scientific Research (CNRS), outlined the European approach to the ethics of biobanking from different perspectives. She started at a more general level by highlighting specific tensions of values in the field of biobank research and also gave an overview on the regulatory landscape of ethical issues in the European Union. She concluded from this that partial aspects are approached in different ways. For example, whilst therapeutic use of biological materials is covered by a European Directive, other fields where safety and public health aspects are concerned are subject to much stronger regulation. Given the variety of activities in the field of biobank research, their coordination remains an important task in future. In this context, Cambon-Thomsen identified several "switches" in the landscape of biobank research – from biological material issues to challenges about data generated; from time-defined use to unlimited timeframes, from defined uses to undefined uses; from team related research to international sharing; from separation of clinical and scientific research use to blurring limits; from research teams to research infrastructures, from a biobank to a network of biobanks, from prior ethics committee opinions to sustainable governance structures. Following Cambon-Thomsen, these changed dimensions in time and organization can be labelled as "biobank-omics". Coming to the ethical regulation of this field, she identified amongst others tendencies towards larger consent the possibility of follow-up, more sophisticated data security control, empowerment of Research Ethics Committees and specifications of what will be done after death. Beyond internal government mechanisms, Anne Cambon-Thomsen finally described the aims of the Biobanking and Biomolecular Resources Research Infrastructure (BBMRI) as a platform for harmonising ethical, legal and societal issues of biobank research on European level. Therefore, the BBMRI has set up an ELSI working group for designing a framework for such an infrastructure. In particular, it should include a methodology to address public perceptions, a coordinated review process and a data protection policy for cross border data transfer and tools that can facilitate harmonisation. Although empirical studies document general positive attitudes across the European population towards biobank research, Cambon-Thomsen stressed that this support is neither unconditional nor irreversible. For the future of biobanking she thus argued to "go ahead, but proceed with caution" by making trust as a key-matter in this regard.

The first day ended with a panel discussion moderated by *Christian Lenk* on the question whether there is a need for a more homogeneous framework for human tissue research. The four invited discussants – *Graeme Laurie*, representing the perspective of the UK Biobank Ethics and Governance Council, *Judit Sándor* as repre-

sentative of the human rights and international law perspective, *Anne Cambon-Thomsen* representing the European Group on Ethics and finally *Georges Dagher* as representative of the BBMRI – elaborated their position on different aspects in regard to this general question. During the discussion it became apparent that all four speakers seemed to be in favour of at least some form of harmonization. However, beyond this general consensus they were also very much aware of existing obstacles. For example, it was stressed by Judit Sándor that people in Europe are concerned about different things. Even the quantity and quality of samples does matter in their assessment of biobank research. In addition, she suspected that a harmonization of the ethical and legal conditions for biobanking might create a stricter regime of regulation. As a consequence, there might be a preference to use samples under the former framework rather than the new, harmonized one. Despite these obstacles, the representative of BBMRI, Georges Dagher, argued clearly in favour of some form of harmonization. According to his judgment, the BBMRI might even function as an independent driving force on European level. According to Graeme Laurie, another pathway towards harmonization in the field of biobanking could emerge by sharing best practices on a global level. Finally the panel discussion was opened for questions from the audience. The questions were related to the four discussants' statements in the panel discussion but also to the three key-note talks presented before.

The first talk of the second day was given by *David Townend*, Associate Professor of the Law of Public Health and Care at Maastricht University, who presented a co-authored paper by Knut Ruyter on the issue of consent in biobank research. For explicating the particular challenges, he employed the analogy of medicine as a road. Whilst we have been travelling the road of autonomy, individual patient rights in the context of clinical research, this road is not applicable to biobank research in the same manner. According to Townend, the reason can be found in the different nature of harm. In biobank research we are not concerned with the risk of the first intervention, but rather with risks connected to secondary processing of samples and data. For dealing with this different kind of harm he explored the possibility of choosing another road, i.e. turning to alternative consent forms, as there are broad, open or blanket consent. However, Townend dismissed this option on the account that it is still "thinking" in the mechanisms of consent. In fact, Townend argued that since information on sample usage can never be definite due to the open-ended nature of biobank research, this might not be acceptable to many people. In his further talk, he discussed two alternatives to informed consent. For example, the European Data Protection Directive allows for a waiver of consent provided that the research is in the public interest. Although this entails the difficulty of deciding when the public interest should apply and who has the right to make this decision, Townend argued that the "public interest" is not substantially different from other competing interests since the former still consists of individuals rather than an abstract mass. Consequently, there are situations in biobank research where the rights of others might legitimately override

individual interests. As another alternative, Townend pointed out to the "register of sensitivities" as it became established with the Norwegian Health Research Act (§28). According to this provision, material collected by the health service may be used for research purposes without the patient's explicit consent, provided that the research is of significant interest to society and the participant's welfare and integrity are ensured. In addition, all patients have to be informed on the possibility of opting-out and researchers are obliged to check their research project with the register in advance. Townend concluded his talk by admitting that the opt-out scheme is based on a rather passive citizen model; however, according to him there is no substantial reason, why opting-in mechanisms would be *per se* superior to opt-out models. Notwithstanding this, there is good reason to search for more interactive forms of participation. In particular, Townend envisioned a portal where people can upload their particular sensitivities and inform themselves about ongoing research activities.

After David Townend's presentation the conference went into parallel sessions. Panel A (chaired by *Judit Sándor*) focused on trust, privacy and data protection, whilst panel B (chaired by *Renzo Pegoraro*) dealt with the issue of donor rights.

2.1 Trust, Privacy and Data Protection

Liam Curren, researcher in law at the HeLEX Centre for Health, Law and Emerging Technologies at the University of Oxford, presented a paper co-authored by Nadja Kanellopolou, Jane Kaye, Prodromos Tsiavos and Edgar Whitley. In his talk, Curren outlined the aims of the EnCoRe project, a multidisciplinary UK research project between academic and industrial partners. The primary goal of the project is to facilitate the giving and revoking of consent for participants in biobank research, thus accrediting participants with a higher level of control over their own information and promoting trust in the biobank. For this purpose, the EnCoRe project works closely together with a local biobank in Oxford. In the beginning of his talk, Curren gave an overview over how the informational landscape presents itself in our time: data subjects give away their information to a variety of contexts while relinquishing all control over said information. This practice holds particularly true for the internet; users usually do not know who controls their data given to websites such as Google or Amazon, or what is going to happen to their information. Curren then introduced the notion of user-centric systems of dealing with personal information, which are in line with the discussion about a possible revision of the European Data Protection Directive. The aim of the Directive, according to Curren, is to promote participants' control over their data and to improve information privacy rights for data subjects. In this context, Curren spoke out in favor of a model of "dynamic consent". Consent in this view is seen as a dynamic process, as opposed to "static" consent that is given once, with the participants relinquishing all future control over their information. In order to put the theory of dynamic consent into practice, Curren referred to "participant-centric

technology". In the case of the EnCoRe project, the plan is to set up a simple and usable interactive website where participants can enter their preferences for the whole duration of the research project. These preferences are then fed to the researchers and clinicians involved, ensuring an ongoing dialogue between all parties concerned as well as transparency of the research done on the participants' data. A prototype of the website is scheduled for July 2011.

Eugenijus Gefenas, Associated Professor and Head of the Department of Medical History and Ethics at the Medical Facility of Vilnius University, presented a paper co-authored by Vilius Dranseika and Jurate Serepkâite. Gefenas started his talk by identifying three different types of residual human biological materials: leftover materials, materials archived during the compulsory storage period, and materials archived after the compulsory storage period. Each of these types requires a different type of consent: While for archived residual materials, "traditional" re-consent is sufficient for their secondary use, with leftover materials, more "flexible" modes of consent are needed, like broad or presumed consent. Further regulatory asymmetries result from the divergent implementation of these modes of consent in different countries and the varying treatment of population- and disease-based biobanks respectively. Whereas population biobanks usually require additional measures like special laws, assigned research ethics or governance bodies, or clear operational procedures for data safety, the research on residual materials, in most cases, is less stringently regulated. There is however no difference to be found between population- and disease-based biobanks when it comes to the question of the donors' privacy and autonomy. So where does this contrast in stringency stem from, and is it realistic to strive for equal stringency of ethical regulations regarding the research use of both leftover and archived residual materials within a country? Gefenas thinks it is. In his conclusion, he thus argued for a stringency of regulatory oversight, referring to the principle that "research projects imposing equal risks on research participants should be subjected to equally stringent oversight procedures".

The final presentation in this session was given by *Shawn Harmon*, a research fellow in Medical Law & Technologies at Imogen and SCRIPT, and *Kuan-Hsun Chen*, a PhD research student at the School of Law, both at the University of Edinburgh. Harmon started his part of the talk by stating his objective: to discuss competing interests in the biobank and genomic research settings focusing on the substantive issue of data-sharing. To illustrate, Harmon went on to describe the new research model in biobanking that is, among other things, interdisciplinary, collaborative and segmented, and relies on new and quickly evolving technologies. With this new model in mind, it is essential that bioscience is based on certain values such as solidarity, justice, and honesty in order to retain public trust. Data-sharing is another key feature for advancing values within the new research model, but it is weighed down by the fact that science culture often acts as a counter to sharing achievements. In Harmon's view, the key is to identify to what extent science-relevant laws and policies recognize the new model, and what they say about

data-sharing and about the competing interests at stake. In the second part of the presentation, Kuan-Hsun Chen went on to talk about the governance legal framework, which is both complex and contradictory. Although there are a number of governance instruments that promote sharing, they also recognize limiting concepts such as consent, confidentiality and privacy. Chen gave a few examples where these instruments can be found at the highest level of law, like the CoE's Additional Protocol on Biomedical Research (2005) and the UNESCO International Declaration on Human Genetic Data (2003). He then went on to present possible solutions to the complexity found in the regulation of conducting research. After identifying some key problems, he outlined a possible way to strike a balance between public and private interests. Possible solutions, according to Chen, include public participation in science/biobank governance and harmonizing practices regarding data-sharing. To sum up their presentation, Chen posed a number of key questions for this new approach, for instance how important it is to get all relevant stakeholders to agree on standard principles and harmonized practices across borders, and how to find the appropriate balance between pro-data-sharing and countervailing policies and mechanisms.

2.2 Rights of donors

Jasper Bovenberg, a Dutch lawyer and director of Legal Pathways Institute for Health and Bio-law, introduced a novel model of how the donors' inequity in biobank research could be remedied. By talking about inequity, he particularly referred to the problem of commercialization and the donors' "cash and control inequity" resulting from this. Whilst people usually give their bodily materials for free and are even prevented from any remuneration, biomedical research enterprises are in the position of making profits of it. Bovenberg criticised this as an inacceptable double-standard. In fact, donors might either receive direct control through property rights, or through indirect governance mechanisms, such as benefit sharing. As Bovenberg's preference is with the latter, he argued for a "shares for sample-sharing" model. This is not without precedent, as the Dutch company Johnson & Johnson offered shares on the Crucell PER.C6 cell line. Following Bovenberg's suggestion, the share of donors does not necessarily represent a financial gain, but might rather allow for rights that are proportionate to their shareholding. Being aware of the fact that commercialization on the one hand often appears as stumbling block to biobank research, but on the other hand is inevitable, e.g. for the development of vaccines, Bovenberg argued that by assigning donors a share in their samples they might obtain a say in both, the governance and the gains of their samples. In the following discussion it was, however, questioned whether this model is suitable on a practical level given that people ask for benefit sharing on a collective rather than an individual level.

Miguel Ruiz-Canela, Associate Professor at the Department of Biomedical Humanities at the University of Navarra in Spain, presented a paper co-authored by

Marta Saénz de Tejada on the impact of the Spanish Biomedical law on the content of consent forms in pharmacogenetic studies. They presented results of an empirical study that particularly examined whether the new law contributed to an increase of information in the consent forms regarding the donor's right to disclosure of his genetic results. As a general result, Ruiz-Canela and his colleague observed an increase in information about the right to disclosure. In particular, improvements were found concerning the donor's general right to ask for their genetic data and the information about the right not to know. In total, however, information on disclosure is still scarce. In addition, there is also a gap between providing information on disclosure of results and an explicit offer for proving access to results. According to Ruiz-Canela these findings might indicate that researchers are more interested in fulfilling legal requirements than in really acting in the interest of donors. In this light, the inclusion of information in consent forms appears as a rather formalistic act, leading to an oversimplification of research ethics. In fact, given that 48% of the research participants, but only 17% of researchers support the disclosure of results to individuals, Ruiz-Canela stressed the necessity of increased research in this field in order to show more respect for participants, but also for applying the rule of disclosure in the donor's best interest.

The final presentation in this session was given by *Allane Madanamoothoo*, a PhD student in Private Comparative Law at the University of Toulouse in France. She discussed the ethical, medical and legal aspects of cord blood banks. After outlining some basic organisational and medical facts on cord blood banks, Madanamoothoo went into the discussion of some ethical and legal challenges that apply to both, public and private cord blood banks. In particular, Madanamoothoo addressed the issue of property – who is the owner of the cord blood? A second concern relates to the safety of the cord blood and the question which requirements for consent should apply. As a particular concern for public cord blood banks, she further pointed out to the issue of sustainable funding and the fact, that cord blood in public banks is not necessarily available to the donating child/the family. Private cord blood banking, however, is very expensive and it could be seen as discrimination in health matters since not all can afford it. Another issue derives from the fact that the ability to use cord blood from a private bank depends on its economic viability. Finally, there is also criticism on the way of advertising cord blood banks as it might pressure couples to donate cord blood just for the profits of private companies. In the last part of her talk, Madanamoothoo described the current legal situation for cord blood banking in France. At present, there is no legal provision in place; however, in 2010 a bill was introduced to promote the organisation of umbilical cord blood banks in the country. In summary, Madanamoothoo argued that cord blood banks should be allowed for the sake of the individual's autonomy, but should be subject to thorough regulation.

After the first parallel session, the conference proceeded in plenum with the fourth keynote talk. *Margit Sutrop*, Professor of Practical Philosophy at the University of Tartu (Estonia), approached the issue of informed consent in biobank re-

search from a philosophical point of view. She started her talk with the observation of a growing dissatisfaction with the prevalent individual rights-centred ethical framework and asked whether the protection of individual interests might have gone too far. In particular, given that the limits of informed consent, but also the principles of autonomy and privacy can hamper research, Sutrop argued that there is reason for re-thinking the current ethical framework. In fact, there are examples of alternative consent requirements in the case of human genetic databases (open consent). Furthermore, the Estonian Electronic Health Record system does not foresee consent at all but rests on an opt-out system and if it comes to forensic and biometric databases there is neither a consent required nor an opt-out rule foreseen. Sutrop pointed out the different justifications behind these approaches. In the case of genetic databases the establishment of a broad consent rule can either be explained by an instrumental argument (i.e. "impossible to obtain informed consent") or a substantial argument ("genetic information is by nature shared by others"). According to Sutrop, the Estonian Electronic Health Record system can be interpreted as "soft paternalism" approach as it rests upon a restricted right to autonomy: whilst participants cannot make a decision to drop in, they can at least refuse the disclosure of their data. The rationale of this system can be explained by the expectation that the electronic health record will support the public interest. However, Margit Sutrop admitted that these arguments in favour of the public interest or the common good are somewhat vague and can easily become manipulated. She thus argued for a less dichotomised understanding of the public-/private interest divide. In fact, so-called conflicts between public and private interests can often be reconceptualised simply as conflicts between two individuals. Furthermore, Sutrop criticized the prevailing understanding of autonomy as a too narrow one. Rather than focussing merely on autonomous decisions, we should take the deeper implications of moral autonomy into account, for example, by respecting the will of demented people. In addition, the public debate might contribute the promotion of individual autonomy as it may enable people to express their personal interests and even to understand public interests as their personal ones. According to this ideal of deliberative democracy, individual autonomy is respected by allowing the individual to engage in meaningful public debates on values and their respective balancing. In her conclusion, Margit Sutrop argued that it is not justified to abandon the individual right of autonomy, but we also should not perceive of it as an absolute right. In addition, she stressed that the concepts of public or common good should not be manipulated in order to promote particular interests in the guise of common ones.

The fifth keynote talk of this conference was given by the Danish doctor and philosopher *Søren Holm* who currently works as a Professor of Bioethics at the University of Manchester. In his presentation he discussed the issue of using material from children. By looking at the age statistics of the PG3 project, Holm showed that besides the obtainment of material from newborns, there are several large studies with children and even children-parent cohorts across the countries of

the European Union. He thus raised the question whether parents can validly consent to the biobanking of their childrens' tissue. On the one hand it could be argued that this is not in the best interest of the child; but on the other hand, the contrary argument might also be applicable. The parents' decision to biobank their childrens' biological material could then be compared to other things parents are usually allowed to give proxy consent to. A rather strict reading of article 17 of the Council of Europe's Convention on Human Rights and Biomedicine does not yet support this latter suggestion. However, while it prescribes the protection of persons not being able to consent due to a state of illness or disability, following Søren Holm's analysis this is not applicable to children since childhood is no disorder but rather a human condition. Given this rather negative finding, he thus approached the issue from another perspective. In particular, he asked whether the fact that we all have an interest in research might matter here. Although we might have a prima facie obligation to contribute to research, Holm conceded that this obligation does not only have to be balanced against other obligations and interests but that the personal costs of participation can even outweigh this obligation. In the remaining part of his talk, he went into the question what rights children should have in relation to their banked tissues and information at the time when they become competent decision makers. According to his analysis the most acceptable model would be to make the biobank visible, the withdrawal option clear and communication easy to the matured child. This issue appears as somewhat more complicated if there is a commingling of samples in parent-child cohorts or twin-studies. Notwithstanding this, Holm concluded that biobanks storing material from children have an obligation to organize the bank in such way that there is a real possibility to withdraw and to carefully and clearly set out and signpost the withdrawal options rather than "hiding" the bank. In the following discussion the Danish philosopher clarified that – since the child is the main stakeholder of the respective material – even children at the age of 14 may have a right to withdrawal if they are capable of reasonable decisions.

After Holm's presentation the conference went again into parallel sessions. Panel A (chaired by *Jasper Bovenberg*) focused on biobank governance, whilst panel B (chaired by *Katharina Beier*) dealt with vulnerable populations.

2.3 Biobank Governance (I)

Sean Cordell, a Tiss.EU research fellow at the Department of Philosophy at the University of Birmingham, started his talk by distinguishing two kinds of interests to be addressed by biobank ethics: individual interests like privacy, autonomy or protection, and socio-political interests like public health or the well-being of future generations. Purely individual models are not adequate, according to Cordell, so he went on to outline two alternative models: broad or future consent, which has the potential to do justice to the multiple purposes of biomedical research; and

the "stakeholder" model, with its wider scope including participants like the board of directors, ethics committees, funders and the wider public or society. Cordell went on to distinguish two kinds of biobanking communities and their goods: the participant community with its aggregative goods (i.e. goods of individual persons which add up into community goods, like "rights", "interests", "needs") and the public community with its corporate goods (i.e. goods attached to a community *itself* and distinct from those of the particular individuals within the group, like "heritage", "culture", "cohesion"). In his conclusion, Cordell argued that it is vital to distinguish the relevant communities of biobank ethics and their ethically important goods. He suggested that goods such as public health, research and preserving genetic heritage are best understood as corporate, as aggregative models fail to capture the ethical features of these goods.

Jane Kaye, Director at the HeLEX Centre for Health, Law and Emerging Technologies at the University of Oxford, focused on feedback to participants in genomics. To start off her talk, Kaye remarked on the nature of genomic information in our time: it is increasingly difficult to make information anonymous, and the increased amount of information on individuals also increases the likelihood of identifying serious treatable conditions and incidental findings. Kaye posed the question whether there is an obligation to feedback to participants in genomic research, and if, what kind of data should be fed back. To illustrate her theoretical findings, Kaye quoted the UK10K project as an example. This (Wellcome Trust funded) project's aim is to better understand the link between low-frequency and rare genetic changes by studying 10,000 genome sequences. The project is supervised by an Ethical Advisory Group, of which Kaye is a member, and whose remit it is to provide guidance for investigators on consent and feedback issues. Kaye went on to distinguish two types of findings in the project: findings that pertain to the disease being studied – with this type, feedback to participants is generally encouraged – and findings that are incidental to the research aims, but not necessarily of lower clinical validity or significance. As laid down in the project's policy document, UK10K researchers have no obligation to search for potentially significant findings; they do, however, have an obligation to establish management pathways to find out if the participants in question have consented for feedback. Kaye made it clear that she understands the obligation to feedback as a moral rather than a legal one. In concluding, she outlined some possible ramifications of the UK10K project: it challenges the clinical/research divide and raises questions about how the project fits in with National Health Service financial resource allocation, but it also has the potential to enable the translation of results to the participants.

The session closed with a joint presentation by *Matteo Macilotti*, a post-doc researcher in Comparative Private Law at the University of Trento, and *Simone Penasa*, a fellow researcher at the Department of Legal Studies, also at the University of Trento. Macilotti started his talk by referring to the distinction between the legal treatment of research on the human body and of research on human tissue. Whereas the human body falls under the "no proprietary principle", human tissue,

once it is removed from the body, is considered an autonomous and independent entity. Therefore bodily integrity rights cannot automatically be applied to human tissue. In fact, there are two dimensions to be considered when it comes to the legal status of human tissue: the material and the informational. While the material dimension implies property rights (the owner and the owned object are two separate identities), the informational dimension implies rights of personality (though the speakers identify the supposed correspondence between owner and owned object as a *legal fictio*). In the actual regulatory framework both in the EU and in Italy, there is an overlap between the bundle of property rights and the bundle of personality rights. Macilotti pointed out that complete anonymization is impossible to achieve, as the material and the informational dimensions are not completely separable. As a consequence, Macilotti argued, there is a traceability liability within the biobank's proceedings, as well as a new object of rights – the so-called "corporality rights" – that develops from the overlap of property rights and rights of personality. Simone Penasa, in the second half of the talk, elaborated further on the aforementioned distinction. In his point of view, there is another multidimensional relationship to be found: the individual or personal, and the social-communitarian dimension (which belongs to society as a whole). As "corporality rights" involve a plurality of subjects and inter-subjective relationships, regulators will have to deal with this plurality. Penasa went on to introduce three important questions for a possible legal framework: Who is entitled to achieve a reasonable balancing?; Should the link between sources be exclusive or mutual?; and: Could the Italian legal system act as a virtuous example? With regard to the last question, Penasa remained skeptical: though there are many advantages to be found in the Italian hybrid-mixed legal system – it combines a very limited legislative intervention dedicated to genetic data treatment with an administrative act to which the legislator has substantially delegated the systematic regulation –, the disadvantages of such a system are just as great. In particular, the Italian system is characterized by a lack of legislative regulation, regulatory particularism, and a "supply function" developed by the National Authority for Personal Data Protection.

2.4 Vulnerable Populations

The issue of disclosing individual genetic data to research participants was addressed by *Annelien Bredenoord*, an Assistant Professor of Medical Ethics at the University Medical Centre in Utrecht (The Netherlands). She started her argumentation with a sketch of two extreme positions, either full disclosure or no disclosure at all. Since neither of these arguments is defended in its pure form, Bredenoord's further argumentation focused on the moral landscape "in-between". In particular, she went into the question whether researchers should disclose genetic research results when these are other than or beyond life-saving data. Following her thorough analysis, there are several arguments in favour of disclosure, amongst others a positive account of autonomy, arguments of beneficence or the promotion of

donor engagement. Although there are also several objections against these arguments, Bredenoord dismissed them by presenting respective counter arguments. As an interim conclusion of her analysis she arrived at a *prima facie* moral duty to disclose individual genetic research results; however, this duty has to be considered in light of competing values. In the remaining part of her talk, Bredenoord envisioned different practical models of disclosure. After dismissing again two extreme positions – either the researcher selects which information will be subject to disclosure, or the patient himself decides – she argued for an intermediate approach by offering "packages of menu options". The first package would include standard default options, such as disclosure of live-saving data. People would receive this information unless they had explicitly indicated that they do not want this information. The second additional package would reveal data of potential or moderate clinical utility, but compared to the default package it would involve lower benefit but higher risks for the participants. The third package would include data of personal or only recreational significance. According to Bredenoord's model, all additional packages that go beyond the default package would follow an opt-in procedure. In addition, the researcher's obligation to disclosure is rather context-specific. According to this qualified disclosure policy the general rule should be: the less significant the finding, the looser the duty to return results to the participant.

Kristof van Assche, a philosopher from the Free University of Brussels, presented a paper co-authored by Sigrid Sterckx on the Havasupai case as an example of severe misconduct in biobank research. Whilst this native American tribe was originally approached for the examination of the causes of diabetes amongst its members, the research leader gave priority to his own research interests. In addition, a consent form was used that was deliberately vague. Moreover, towards the tribe only the study on diabetes was mentioned. In truth, however, the samples were used for studies on schizophrenia, inbreeding and population migration. Assche interpreted this case as an instructive example as it reveals some obvious shortcomings of the present ethical and legal safeguards. In particular, he argued that there are factors beyond commonly anticipated risks that must be taken into account. The Havasupai case reveals that – beyond obvious tangible harms – there are also intangible, dignitary harms, e.g. psychological and cultural harms. Consequently Assche argued for a revision of the existing biobank research guidelines in order to extend the rights of research participants and to prevent the occurrence of dignitary harms in future.

The last talk of this session was given by *Sylwia Maria Olejarz*, a PhD candidate from Warsaw University (Poland). She focused on the question of how vulnerable populations can be protected in the context of pan-European biobank research. For answering this question, she applied the concept of "biocitizenship" to this field and argued that research participants from vulnerable or stigmatized populations should ex ante be provided with a "biocitizenship" (that encompasses particular rights and duties) as a means of empowerment. Olejarz argued that this might not only strengthen the rights of vulnerable populations, but could help in

overcoming the so-called "agency gap" (Winickoff) between the collective of the donors and the managers and supervisors of biobanks. In the long run, Olejarz argued, this might also encourage participants from stigmatized populations in the Eastern European countries to join the project of a pan-European biobanking initiative. In the discussion, however, some doubts where raised whether the concept of "biocitizenship" provides for an adequate tool of empowerment as it might rather reinforce than remove existing stigmatisations.

The second conference day ended with the keynote talk of the Norwegian philosopher *Bjørn Hofmann*, Professor at the University College of Gjøvik, who addressed once more the issue of informed consent in biobank research. In his analysis he explored twelve arguments that can be found in support of the application of a broad consent rule in the literature and dismissed them. For example, by pointing out the genuine function of informed consent, i.e. the justification or legitimization of otherwise unacceptable or illegitimate actions, he argued that broad consent cannot fulfil this task of protection in a comparable way. He also criticized current tendencies to adopt consent rules to the specific nature of biobank research. In this regard, he dismissed the proposal to answer the issue of unpredictability of research by the introduction of broad consent as this would be an inacceptable confusion of the motivation for and the justification of biobank research. As, according to Hofmann's further analysis, the premises underlying broad consent are also flawed, he cautioned against an easy replacement of informed consent by broad consent rules. Apart from the fact that the current "hype of hope" regarding the benefits of biobank research might prove false, Hofmann showed himself concerned that something of the genuine function of informed consent might be lost throughout this debate.

The next day started with parallel sessions. Panel A (chaired by *Claudio Tamburrini*) focused on informed consent, whilst panel B (chaired by *Nils Hoppe*) dealt with the issue of biobank governance.

2.5 Informed Consent

The Portuguese lawyer *Rafael Vale e Reis*, Assistant Professor at the Faculty of Law at the University of Coimbra, addressed the rather provocative question whether we have to boost our concept of informed consent. He started from the assumption that broad consent could be interpreted as an opt-out from informed consent for the sake of autonomy. For fleshing out his thesis, he compared the existing regulations on biobanking in Portugal and Spain, but also took a look at the European level. In particular, Vale e Reis pointed out the differences between the Spanish and the Portuguese regulations which already start at the level of defining biobanks. While the Portuguese law employs a rather broad definition (all samples whether anonymized or not, whether obtained for research or therapy are perceived of as biobank), the Spanish law adopted a more restrictive interpretation by defining biobanks as a collection of samples for diagnosis or research only. Given

these differences Vale e Reis recalled the tradition of harmonising biobanking by soft law. However, whilst the Council of Europe's Recommendation 2006(4) requires consent to be as specific as possible, the Portuguese law even stipulates informed consent as a rule and interprets the Recommendation as a prohibition of broad consent. According to Vale e Reis' analysis, this is no stringent conclusion as of yet. Given that informed consent is usually seen as an instrument of fighting paternalism, the imposition of informed consent in the Portuguese law could be interpreted as a new form of paternalism. From this perspective, the prohibition of broad consent results in a kind of "hyper-protection" of the individual. However, Vale e Reis also acknowledged the objections to broad consent; in particular the issue that consent in biobank research cannot be informed in the original sense. Against the background of this conflict he showed himself in favour of a pragmatic solution on this aspect. In any case, Vale e Reis argued that biobanking requires us to leave the "comfort zone" of theorizing about informed consent.

Mark Sheehan, Research Fellow at the Ethox Centre and the Faculty of Philosophy at the University of Oxford, elaborated further on the issue of consent by asking whether a broad consent can also be a valid consent and answered this question clearly with "yes". For the justification of his thesis he started from the question of what makes consent a valid one. According to his analysis, the most important preconditions are the ability of making decisions with understanding and by having an amount of information that is material to the decision in question (i.e. not all information that is possible). In addition, Mark Sheehan reminded the audience to the primary justification for the obtainment of informed consent, i.e. the respect for autonomy and self-governance which does not include any restriction on the range or content of choices or decisions. He illustrated this fact by employing an analogy of broad consent, i.e. asking a friend for choosing a menu for you in a restaurant after having been informed about some general ideas of your likes and dislikes. Although Sheehan admitted that there are clearly choices that cannot be made autonomously (e.g. giving up all one's future choices, selling oneself into slavery etc.), the general argument that decisions without information are not autonomous decisions is not sound. Moreover, as it can be seen in the restaurant example, it would even have absurd consequences. Sheehan thus concluded by arguing for a qualified understanding of a valid consent. In practice this would mean that patients should be provided with an appropriate level of information in order to function as rational choosers.

As the talk of *Luciana Caenazzo*, a Research Professor at the Department of Environmental Health at the University of Padua, revealed, informed consent is also an issue in the context of residual tissue application. In her co-authored paper by Renzo Pegoraro she started with a distinction between tissue archives for diagnostic purposes and tissue biobanks for research purposes and also described different ways how residual tissue emerges. As Caenazzo made clear, we must distinguish between different types of residual materials for deciding whether informed consent is necessary or not. For example in case of irreversible anonymized sam-

ples their obtainment might be perceived of as a donation from the donor, whereas in case of reversible anonymization the consent should be clear and obtained in an opt-in form. In the final part of her talk, Caenazzo outlined some positive effects of applying the donation framework to residual tissues: the promotion of solidarity. In fact, studies have shown that participants express an overwhelming readiness to donate their leftover tissues for research because of the good it might bring to others (their family, friends, or even community members). The likelihood of this scenario is strengthened by the fact that residual tissues would otherwise be discarded. In addition, the unease that is related to other forms of donations is not the case with residual tissues. Taking these facts into account, Caenazzo concluded that a system built on solidarity is likely to increase the credibility and trust of the overall biobanking system.

The session closed with *Giorgio Stanta*'s presentation of some general ethical considerations on residual tissues. The Italian Professor of Pathology from the University of Trieste stressed that one major ethical challenge derives from the fact that residual tissues are related to clinical records. The pathologists who run the respective archives thus have access to all information; however, they are bound by the professional obligation of secrecy. From the patients' perspective it has to be stressed that their consent comprises merely the drawing of samples in the course of a biopsy or autopsy, whilst the further treatment of obtained tissues is rather implicit. In addition, there are several sensitive information related to archived tissues; e.g. personal, clinical and pathological data. Whilst the former must be anonymized, the latter ones can but must not be coded. In the remaining part of his talk, Stanta outlined the basic conditions for a Pan-European archive tissue-banks network (PatB-network) which will help to collect very large numbers of samples in well defined sub-types and promote the collection of sufficient samples of rare entities. In this context he pointed out to the necessity of large financed studies and voluntary and collaborative participation. As regards the question of conflicting public and private interests, Stanta argued that there is a considerable alignment of interests in this field. For all actors in transnational clinical research – the patient as donor, the researcher as operator, clinicians as users, and patients as beneficiaries – it is ethical that tissues are used in the best way and with the most efficient results. However, he also admitted that the time for clinical results is very limited – often no longer than one year. In particular, there are problems for obtaining consent since many patients are already dead after one year (for example due to cancer). Stanta further explained that most retrospective studies in adjuvant therapy are preliminary researches, in which hypotheses are often tested for the first time and expected results are badly defined. Consequently, there is no possibility to give correct information to the patient and in addition, it is difficult to re-contact patients due to death. In his conclusion, Stanta once more stressed the ethical value of clinical research for patients and society.

2.6 Biobank Governance (II)

Mária Šuleková, a PhD fellow at the Institute of Bioethics of the "Agostino Gemelli" School of Medicine at the Catholic University of Sacred Heart in Rome, presented a paper co-authored by her colleagues Dario Sacchini and Antonio G. Spagnolo. Šulekovà started her talk by giving an overview over the biobank context in Italy. As of now, there is no binding regulatory framework for genetic biobanks in Italy, but a network of by-laws and non-binding instruments to govern the collection and use of DNA and human tissue. After naming some essential ethical principles with regard to donors in biobank research (like autonomy, solidarity and the intangibility of the human person), Šulekovà identified five conditions how to govern a research biorepository in the best interest of donors: informing them about the biobank project, informing them about future research, guaranteeing privacy protection, offering individual benefits, and guaranteeing interdisciplinary counseling. She then went on to outline possible strategies to fulfill these conditions, using the "Moli-Sani" project as an example. Moli-Sani conducts an epidemiological study on 25,000 donor samples to evaluate cardiovascular and cancer risk factors and its prevention in the adult population of the Molise Region in Italy. The project launched a large-scale communication campaign to fulfill its aim of creating a "community" for Moli-Sani, where already recruited people are meant to keep in constant touch with the project. Šulekovà strongly argued in support of a policy for information about future research where the operator of the biobank expresses which kind of research will be excluded in the future, if no other prediction can be made. In order to guarantee privacy protection, biobank projects should use double coding and make it clear whether and under which conditions they refuse access to or disclosure of the participants' biological materials or data to third parties. When it comes to individual benefits, Šulekovà proposed benefit sharing in biobank research. Patients and healthy donors should be guaranteed high quality sample storage for future autologous use. They should also have the possibility to make use of interdisciplinary counseling (genetic, psychological, ethical, legal, social) when it comes to the disclosure of incidental health findings.

Virginie Commin, a Jurist at the Centre National de la Recherche Scientifique (CNRS) at the Université Paris I Panthéon-Sorbonne, presented a paper on biobanks' financial sustainability and a concept from the European Union Law, the SGEI (Service of General Economic Interest). The SGEI concept is laid down in Art. 16 and 86(2) of the Treaty of the European Union, where the term is used but not defined, and the White book of the European Commission COM (2004)374 final of 12 May 2004. The SGEI refers to services of an economic nature which subject the Member State or the community to specific public service obligations. Regarding biobanks, Commin argued, the criteria of the SGEI concept seem to be fulfilled: they serve the general interest and are economically active. Commin then outlined how the SGEI concept could be applied to biobanks in compliance with

the European regulation, using a two-tiered approach: on the one hand, a "minimum service" for storage activities at the cost price for access to collections could be claimed from academics (dispensatory rules from the rules on competition would apply), whereas for industrial partners, there would be an "added-value service" for access to collections charged the market price (which would fall under the rules on competition). These provisions, according to Commin, could also be based upon the EU Tissue Directive (2004/23/EC), or the rules on competition (Art. 95) of the aforementioned Treaty of the European Union. In practice, she concluded, the SGEI could either fall under the principle of social justice (distributive justice), be set up as a non-profit storage (a guarantee for sustainable collections), or as a modification of the biobank entity (a dichotomous functioning "non-profit/for-profit").

Kristi Lõuk, Project Manager at the Centre for Ethics at the University of Tartu, presented a paper on a new ethical framework for non-interventional research. Lõuk started her talk by posing some basic questions about consent, governance and informational autonomy, then went on to outline her argument. She clearly distinguished between interventional and non-interventional research: whereas interventional research (diagnostic, preventive or therapeutic) is marked by a risk of physical harm, in non-interventional research (for collections or databases), it is values like privacy, confidentiality and integrity that are at stake. In the latter case, it is impossible for the participants to have meaningful control over their data, whereas explicit consent is an essential condition for interventional research. According to Lõuk, research on human tissue samples should be seen as non-interventional, but there is no reason to presuppose that one ethical framework is suitable for all types of biomedical research on humans. Lõuk went on to talk about a possible new framework, which should cause neither a relaxation of rules nor a slippery slope effect. An important question for Lõuk was if the research subjects should be able to control and decide about every possible use of their information, leading to a choice between a "rules of the game" (where participants give a general consent) or a "tick of the box" (where consent is given to specific procedures) approach. Out of all the possible solutions available (like broad or no consent, reflexive governance or written authorization), Lõuk prefers having trustworthy institutions and giving consent to governance. Trustworthy institutions in this sense are defined by a democratic public sphere and technical, procedural and control mechanisms. They are institutions in a broad sense, with the general public accepting the role they will have. Lõuk closed her talk with a reference to the Estonian Human Genes Research Act (2000), which is currently under debate.

The final talk of the session was held by *Reinhard Thasler*, Project Manager at Bio^{M} GmbH in Munich, who presented a paper co-authored by Isabel Hackl, Horst Domdey, Karl-Walter Jauch and Wolfgang Thasler. In the beginning, Thasler described how the m^{4} Munich Biobank Alliance fits into the context of current biobanking initiatives with public funding. He then went on to discuss the key aspects of their sustainability: market orientation, functionality and public ac-

ceptance, the latter being highly relevant when it comes to the participation of patients in biobanking efforts. In Thasler's opinion, the milestones towards achieving public acceptance are respect for the donor, transparency, access and benefit sharing, secrecy and functionality. He outlined the perceived balancing act between the demand that biobanking has to be self-financing on the one hand, and ban on commercialization of body parts on the other hand. Whereas the call for self-financing leads to a vendor-customer relationship between the biobank and its participants, the ban on commercialization points towards a model of trusteeship. This model is at the root of HTCR (Human Tissue and Cell Research), a non-profit foundation under civil law located in Regensburg, Germany. The HTCR foundation acts as the patients' trustee and allocates a minimum of 51% of its resources to academic use and a maximum of 49% to commercial use. Within the ten years since its formation, the focus within the existing HTCR ethical framework has shifted from obtaining informed consent to ensuring public benefit and trusting the biobank "in general". In addition, data is no longer transferred anonymously, but anonymized yet identifiable. HTCR has also made great progress when it comes to transparency, with continuous PR work and evaluation of research and algorithms for government within a quality management system. Despite all these efforts, Thasler pointed out that it is still an open question whether the HTCR model can be applied to existing biobanking networks.

The conference closed with a last keynote talk given by *Georges Dagher*, a senior investigator at Inserm (Institut National de la Santé et de la Recherche Médicale) and representative of the Biomolecular and Biobanking Research Infrastructure (BBMRI). He started his talk by outlining the potential of the genetics of diseases. In the long run it might help explaining why some become sick whilst others do not. This can be seen as main motivation behind all initiatives for the development of personalized medicine. According to Dagher, however, there are several bottlenecks in this context, such as sample shortage, fragmentation of research on national level, and also ELSI issues. The development of a pan-European and broadly accessible network of existing and *de novo* biobanks and biomolecular resources needs to be seen against this background. About 290 biobanks coming from 51 institutions and 30 countries expressed their interest in BBMRI. BBMRI will be implemented under the ERIC (European Research Infrastructure Consortium) legal entity. As a possible legal structure, Dagher envisioned the model of a distributed hub and spoke structure where one centre is in charge of the coordination of this entity. The BBMRI-ERIC headquarter will provide a common access portal to resources available in Member states as well as appropriate facilities and expertise. The national hubs are also established under the ERIC legal entity and will link the national scientific community (e.g., universities, hospitals, research institutions, resource centres) to BBMRI-ERIC. Following Dagher, the incentive for Member States to join this infrastructure would be an improved quality and interoperability of national biobanks and biomolecular resources. Additionally however, there are several challenges to deal with in order to start this infrastructure, e.g., amongst

others the necessity of harmonized processes, incentives for contributors, access rules, and the need of a sustainable funding for the next 15 years. According to Dagher, there are already some good starting points for a future integration of existing biobanking activities – the OECD best practice guidelines for biobanks and the P3G international harmonization of biobanks. Looking at the existing biobanks, Dagher showed himself in favour of an "adaptor approach", i.e. rather than standardizing everything, criteria should be defined by which samples from different biobanks can be collected. In addition, tools should be developed that allow for data exchange and cross-border transfer of samples. In the remainder of his talk, Dagher described the main features of BBMRI's policy: the primacy of national legislation; no data on individuals will be made publicly available and fair access in the context of specific research. In the long run, he expects BBMRI working as an "incubator" for regional development (e.g. the establishment of biotech and pharma clusters and the opportunity for joint ventures with industry) and the accomplishment of cheaper and faster projects.

3 Results

In his concluding remarks, *Christian Lenk* pointed out that the regulation of human tissue research is not in its infancy anymore; however, more initiatives in harmonizing this field are needed. On a more general level, the most important insights from this conference can be summarized as follows:

- The third status conference revealed once more that there is European-wide attention to the scientific potentials, but also to the ethical and legal bottlenecks of human tissue and biobank research.
- One major focus of this conference was on the reconciliation of public and private interests. Several speakers thereby argued for a re-conceptualised and less dichotomized understanding of public and private interests in the field of human tissue research. In addition, on a more practical level, several suggestions were made for the realization of such an alignment of interests.
- Another point at issue was the conceptualisation of informed consent. Whilst the majority of speakers – though from different perspectives – argued that a broad consent would be acceptable in the context of human tissue research, others were rather reluctant to approve broad consent as a valid alternative to informed consent.
- The issue of biobank governance was addressed in several talks. In general, all speakers pointed out already existing governance models, guidelines and legislations that can be seen as a step towards harmonization in this field. However, it was widely agreed that this is not

sufficient yet. In particular, there are pan-European initiatives, such as BBMRI, that are still under way.

- On the other hand, most of the speakers but also the audience were rather reluctant to accept a "one size fits all approach" to the governance of biobanks. The same result could be found in terms of particular ethical and legal provisions, for example the protection of privacy or the disclosure of genetic results to individuals. Beyond the two extreme poles of full or non disclosure, reasonable arguments for a more nuanced step model of disclosure have been brought forward.

- That regulations should be context-sensitive was an additional insight that derived from the discussion on residual tissue application. Whilst these materials are expected to make an important contribution to research, the burdens for donors are comparably low. For this reason donation might be encouraged by a notion of solidarity.

- Finally, it was almost consent amongst the speakers and the audience that there should be more forms of genuine donor participation in biobank research. These participation rights should include more rights of control and shareholding for the participants. Thereby it was stressed that these participation rights should not be confounded with material gains. The underlying aim of this democratic approach is rather to give donors a say in the application of their samples. In addition, when it comes to vulnerable populations, it turned out that beyond these participation rights even special and additional safeguards might be needed.

Conclusions

Katharina Beier

1 Introduction

As outlined in the introduction to these proceedings, the Tiss.EU project's workshops and conferences followed a two-layer structure. Conclusions can thus be derived from both perspectives: the analyses of the European Member States' regulation on human tissue and biobank research and the more theoretical examination of the four Focal Themes.[1] Given that the first perspective is at the focus of several other project publications (see Beier/Lenk 2011), at this place the project results will be mainly summarized along the four Focal Themes, giving the country reports a rather explanatory character.

2 Focal Theme A:

Procurement, storage and transfer of tissues and cells for non-clinical research purposes

As a general insight from the Tiss.EU project's workshop and conferences emerges the fact, that in almost every country clinicians and clinical researchers procure, obtain and store human tissue samples for present but also future research purposes. In this regard the most crucial ethical concerns relate to the donors' protection

1 The conclusions in this volume are an extended version of a formerly published article in *SCRIPTed* (2001), 8:1, http://www.law.ed.ac.uk/ahrc/script-ed/issue8-1.asp

of autonomy and privacy. Whilst the importance of these issues is acknowledged by all European Member States, the means of protection and the type of regulation differ not only across the countries, but are also divergent at the level of institutions. In particular, there is a spectrum of regulations ranging from the UK (which has a discrete law and other reference Acts on human tissue), over countries like Greece or Italy (which make at least reference to some national Acts or Guidelines), to countries like Malta or Bulgaria (being only bound by EU legislation in this field).

Notwithstanding this regulative diversity, there is no evidence that countries with a discrete tissue or biobank law have necessarily a "better" or more comprehensive regulation. Rather, the different approaches tend to have their own strengths and weaknesses.[2] Whilst Estonia and Latvia, one the one hand, issued particular Acts for the regulation of their national genome programs, other types of biobank research are left to a legal grey zone. In Cyprus, on the other hand, where no national human tissue or biobank law exists, the opinion of the National Bioethics Committee on the establishment and use of biobanks has gained importance in the regulation of sample collections. Due to its comprehensive and sophisticated evaluation, the Cyprian approach is perceived as a successful example of soft regulation.

Despite the divergent and multilayered legal landscape in the field of human tissue and biobank research, some common practical standards have emerged. For example, for the transfer of samples and data it is usually required that the receiving institution or country adheres to the domestic rules of the sender country. Given that the value of biobank research increases the more samples and data can be consolidated, this provision might promote the incremental legal harmonization of the ethical and legal rules in this field.

Furthermore, the reports gathered in this volume support the impression that the obtainment of the donor's consent is regarded the default condition also for research applications of human tissue, but the *type* of consent (open, specific, broad, or blanket) that is required in this context is contested.[3] For example, according to the Declaration of Helsinki the informed consent of the donor is obligatory (art. 24). However, given the peculiarities of human tissue and biobank research – e.g. its open character regarding research purposes and time, the unknown extend of gathered information due to new analysis methods, the collective dimension due to the involvement of healthy volunteers in long-time studies with potential impact on future generations etc. – it seems that this requirement is not equally

[2] However, it has to be noted that countries with only very general provisions run the risk of legal vagueness as soon as deviations from the most frequently occurring scenarios emerge; for example, if legal documents that deal with the procurement of human tissues of the living are applied to research with tissues from the deceased (see report from the Vilnius Workshop in this volume).

[3] The removal of material from deceased persons follows for example very different regulative regimes: whilst in Poland, Estonia or Latvia no consent of the deceased is required for scientific research, in Lithuania the donor must consent while he is still alive.

applicable to the different kinds of human tissue research. In contrast to epidemiological research projects where donors can be provided with quite detailed information, population-based studies are prone to the application of a broad consent rule. However, it has been argued by the members of the Tiss.EU project (see Lenk et al. 2011 forthcoming), that a broad consent is not inevitably detrimental to the protection of the donor's rights provided that it still allows for a range of information and individual protection guarantees. Notwithstanding this, it is quite likely that the regulation of informed consent remains subject to changes. In particular, a trend towards less strict interpretations of informed consent can be observed which is triggered by the endeavor to adopt this concept to the field of human tissue and biobank research, rather than to abolish it.

Another issue arises from secondary research purposes that are not covered by the donor's original consent. Whilst the Oviedo Convention requires the informed consent of the donor if the removed material is "stored and used for a purpose other than that for which it was removed" (art. 22), the Council of Europe's Recommendation 2006(4) does allow for a waiver of secondary consent provided certain conditions are met (art. 22). Against this background some EU Member States allow for exemptions if the obtainment of secondary consent is too burdensome compared to the high value and low risk of the respective research (e.g. Portugal, Spain) or if the research has been approved by a Research Ethics Committee (e.g. Denmark, Lithuania).

Another challenge in the context of procurement, storage and transfer of human tissue samples and data results from its potential forensic use. For example, it turned out that in some countries in the Mediterranean area, but also in at least two reported cases in Sweden, the aim of criminal persecution has been given precedence over the protection of individual rights, i.e. the request for an informed consent to the procurement, storage and transfer of samples and data. From the perspective of privacy and data protection this might be a startling result which evokes the general question of whether the ends justify the means or more practically speaking: where to draw the line between high ranking public interests and individual interests worthy of protection. This question touches a particular sensitive issue because the success of biobank research depends heavily on the donors' participation which in return calls for their trust in research (see also Focal Theme C and D).

3 Focal Theme B:

Rights, interests and entitlements in human tissues and cells

Human tissue and biobank research also raises questions regarding the legal status of human bodily material. In line with the European Convention on Human Rights and Biomedicine (1997, art. 21) and the Council of Europe's Recommendation 2006(4) on research on biological materials of human origin (art. 7)[4] provision that "the human body and its parts shall not, as such, give raise to financial gain" almost all EU Member States perceive the human body as *res extra commercium*. However, divergent positions regarding the question of whether donors can be granted property rights in their tissue samples can be found across the European Member States. According to a strict interpretation of the so-called "no property-principle" (e.g. in France and the UK) donors do not hold proprietary rights in their biological materials. In contrast, other countries' jurisdictions grant donors a property right in their tissues after its extraction from their body. For example, in the German-speaking countries the "source" of the removed tissue can still claim a de facto property-right for the reason that removed human materials are perceived as "continued personality". Donors do thus not only keep the material disposal of their samples, but retain also further rights of control, e.g. the right to decide on their tissues' use for research. Following this approach, an automatic transfer of property in human tissues is excluded since donors have to transfer their rights by an explicit consent.

Despite the existence of different approaches to the issue of property rights in human tissues and cells, both of the aforementioned accounts seem to be compatible with the above cited EU documents' provision "the human body and its parts shall not, as such, give raise to financial gain". Taken literally, this wording seems neither to exclude proprietary rights in human tissues and cells nor their trading as long as this does not amount to financial gains. In fact, a closer look at current applications of human tissue samples reveals rather different levels than a strict prohibition of commercial practices in this field (see Lenk/Beier 2011). For example, the non-commercialisation principle no longer applies if human body materials are turned into products (e.g. in Germany); and in Belgium, according to a Royal decree of 2009, separated human biological materials become even a "good" with a fixed price that can be owned by a not-for-profit biobank. However, the degree of sample procession that is needed to convert it into a product is still an open question in most national jurisdictions. The same is true regarding the question who might then become the rightful owner of the processed material.

[4] See for example the European Convention on Human Rights and Biomedicine (1997, art. 21) or the Council of Europe's Recommendation 2006(4) on research on biological materials of human origin (art. 7).

Against this background, it does not come as a surprise that human tissue research raises also questions of justice: Given that donors on the one hand are mostly barred from any property rights in their tissue samples and – in the majority of countries – may not receive any remuneration for their donated tissues, researchers or companies on the other hand may derive profits thereof. For this reason the interests of various stakeholders involved (e.g. the participants, researchers, biobanks, enterprises) need to be taken more thoroughly into account. For example, whilst it might be justified that the operator of a biobank demands a fee for covering the maintenance costs of the biobank, this has to be distinguished from the obtainment of real profits as they can be made by private enterprises. As regards the latter, there are serious doubts that this should be permissible without having any benefit sharing procedures with the donors in place. In order to provide fair shares to all actors involved, practices of indirect benefit-sharing become increasingly important in the field of human tissue and biobank research. In fact, several empirical studies document that the public is predominantly positive towards participation in this strand of research provided that the benefits of research are not for the economic benefit of an industrial enterprise only. This attitude is mostly explained by the wish to help those who suffer from a presently incurable disease and to prevent future illnesses. In light of this motivation, remunerating donors directly in financial terms seems to be beside the point. Participants are rather interested in getting a say about the potential research purposes of their samples and in being informed of incidental health findings. In some countries, such as Austria or Estonia, it is thus obligatory that biobanks provide patients with results being of relevance for their health. Moreover, given that biobank research involves the participation of healthy volunteers the provision of feedback displays an important tool of strengthening the trust between biobank research and its potential participants.

If it is true that donors are mostly interested in maintaining some control over their samples it can be doubted whether the concept of property rights is an adequate framework for meeting this rather participation-oriented attitude. As an alternative account, the so-called "bundle theory of rights" suggests that human biological materials should not be regulated across the board by the same category of rights but rather by a more nuanced perception (Björkmann 2007). In this regard it is also conceivable that property issues become displaced by more urgent questions, such as how equal access and efficient usage of human biological materials for research can be assured, while maintaining the donors' privacy at the same time.

4 Focal Theme C:

Anonymization and pseudonymization as means of privacy protection

The protection of the donor's privacy is another important issue in the context of human tissue and biobank research. As regards the protection of human samples and data derived thereof, most Member States refer to their national Data Protection Laws (implementing the European Data Protection Directive 1995/46/EC). The Directive allows for several exemptions for the use of *health data* "for reasons of substantial public interest" (art. 8, §4). However, amongst legal experts there is disagreement whether these exceptions are also meant to apply to *research* (Pöttgen 2007). In addition, there is considerable disagreement about the provisions of anonymization and pseudonymisation of samples and data across the EU Member States.

Although the anonymization of samples and data might be the most effective means in protecting donors' privacy, in the context of human tissue and biobank research outright anonymization might neither be desirable, nor obtainable. Its desirability is questioned by the fact that only with the donors' traceability significant research results regarding the development of certain diseases can be obtained. On the other hand, the practical realization of full anonymization is challenged by the possibility of genetic analysis which – at least theoretically – allows for univocal individual identification. Taking these limitations of anonymization into account as well as the fact that the re-identification of donors is indispensable for many research projects, the coding of samples (i.e the code-key is not accessible for the researchers who work with the samples, but kept separately by an authorized person or body) emerged as the most important means of privacy protection in the field of human tissue and biobank research.

As another common feature, several countries (e.g. France, Sweden) are in favor of exempting anonymised samples and data (i.e. materials that are not easily retraceable) from the protection measures which normally apply for sensitive data. This implies that there is often no other available safeguard for anonymized samples than to respect the donor's explicitly stated restrictions at the time of sample donation. However, as it has been stressed in the Swedish country report, there is no guarantee that this will be done. In addition, there are doubts that the means of anonymization by de-identifying samples might not be a sufficient safeguard, but needs to be complemented by options for withdrawal or sample destruction. Furthermore, a balance needs to be found between informing donors of incidental health findings, whilst at the same time respecting a donor's wish of not being informed in such a case.

It was also argued at several workshops that the fragmented terminology in this field results in a considerable lack of transparency regarding the effective provisions for data protection in the European Member States. Whilst the prevailing

terms in the current debate are often overlapping or even contradictory, a point of convergence can be found in Recommendation 2006(4) of the Council of Europe (see art. 3). By distinguishing between identifiable and non-identifiable materials, it avoids looming misconceptions of "anonymity" in this context.

Taken together, the analyses of the workshops on this Focal Theme suggest that the issue of data protection displays as a highly context-sensitive matter; i.e. whether the safeguards for the donor's privacy are sufficient can only be decided by taking the goal of the respective biobank as well as the kind of samples which it stores into account. Beyond the necessity of a context-specific assessment of privacy protection measures, however, there still remain a number of ethical, legal and technical issues in this field to be solved in future.

5 Focal Theme D: Biobanks

In the context of human tissue research, biobanking deserves particular attention from an ethical and legal point of view. In the last two decades, several countries, for example the UK, Sweden or Estonia, have established national biobanks, but also the number of local and small-scale biobanks is growing. For this reason, biobanks increasingly become the object of ethical and legal regulation. The analyses of the Tiss.EU project group bears on the insight that the public perception of biobanks, their practices and their relations to the participants, have a considerable impact on the emergence of ethical and legal frameworks in this field. Given the different national experiences with biobank-based research in the European arena (for example, the Scandinavian countries hold different registries already for centuries, whilst other countries are about establishing their first systematic large-scale collections) it does not come as a surprise that also the regulation of biobank research varies across the Member States. The current legislative activities are also shaped by aberrations in this field that are to be prevented in future (see for example the release of the British Human Tissue Act in 2004 as consequence of organ retention scandals).

At the current stage only few countries feature discrete laws on biobank research or guidelines on particular biobank projects (e.g. Sweden, Estonia, UK). There are also countries that have adopted a somewhat wider framework which entails research with humans in general (e.g. the Swiss draft for a Human Research Law). Still other countries have made biobank research subject to more general provisions on public health or biomedical research (e.g. France, Portugal), whereas some European Member States have no national regulation in this field at all. It is important to note that although countries with national biobanks might be more prone to release biobank-specific regulations, according to the Tiss.EU project's country analyses it is neither justified to speak of a general overlap between these

two features, nor is it right to conclude vice versa that countries with scattered and small-scale collections tend to adopt more general legal frameworks in this field.

Despite this diversity regarding the scope, type and level of biobank regulation, also in this field some common standards have emerged. For example, participants in biobank research are usually assigned a right to be informed about the use of their samples and data. In particular, if material is stored in a disease-specific biobank, the aim and purpose of the collection are well-known to the researchers and can thus be communicated to the potential participants. In this context, the requirement for obtaining the donor's informed consent is still applicable. In contrast, in the case of population-based biobanks there is an increasing acceptance of broad consent models as it is impossible to foresee all potential future purposes the samples might become useful for. As an alternative to the donor's informed or broad consent, some countries prefer an opt-in model for the regulation of tissue research. In Sweden, for example, human materials obtained in the context of health care can be made available for research unless the patient explicitly rejects this. However, as the potential drawbacks of an opt-out model are well-known from the discussions on post-mortal organ donation, these concerns cannot be ignored in the context of human tissue and biobank research either.

As another common feature, according to most countries' legislations, donors are also granted a right to withdraw their materials from research. However, what this right really entails and how it can be assured is still an open question. For example, the UK biobank provides for a sliding scale of withdrawal options reaching from "no further contact" over "no further access" to "no further use", whereas in Sweden researchers may still make use of the data even after the materials' withdrawal. As a matter of fact it is contested in the current debate whether a right for withdrawal should be granted immediately (samples might be easily destroyed but not necessarily the data) and unconditionally (some types of research might lead to profound benefits for the public health, but entail only low risks for individual participants) or whether this option should only be admitted when the participant can present sufficient reasons for his withdrawal (see Eriksson and Helgesson 2005).

In this regard a last issue of this Focal Theme which shall be addressed here relates to the organization of the relationship between participants and the biobank. Given the fact that the research purposes stored human tissues will be used for are often not clearly defined at the time of sample taking and for this reason (particularly in population-based biobanks) the obtainment of broad consent holds sway, the success of biobank research is heavily dependent on the donors' trust in research. On the account of this, in several countries biobanks are run on a non-commercial basis and work as a public body for the public good. The so-called trust model, which has been most famously suggested by Winickoff and Winickoff, is largely in line with this approach. According to this model, the tissue donor formally transfers her property interest in the tissue to the trust and also appoints a trustee of the property. The trustee then has a legal fiduciary duty to keep or use

the property for the benefit of a particular party (for example, the general public in the case of a charitable trust model). Whilst this latter model is mostly practiced in the Anglo-Saxon countries, alternative models which follow a similar impetus are emerging in the European arena. For example, the Norwegian HUNT biobank has been established as a 'for-profit-for public company'. Amongst others, this implies that economic benefits gained by the HUNT biobank have to be re-invested in medical research for the promotion of the public good (see Solum Steinsbekk et al. 2009: 148).

Admittedly, the aforementioned conclusions present only a selection of the most pertinent issues and debates in the field of human tissue and biobank research, which naturally leave many questions unresolved. However, our analyses revealed at least an increasing awareness of the ethical and legal challenges that also come to the notice of politicians and law-makers in the countries of the European Union. In this regard it is important to note, that there is neither a "one-size-fits-all" approach at hand, nor a harmonization in all fields needed. While there is no doubt that some harmonization of rules is indispensable in the European arena, e.g. to assure safe cross-border transfers of samples, the particular means of regulation allow for a considerable leeway. In particular, there is no reason to assume that countries featuring particular human tissue or biobank research Acts are *per se* better prepared to protect the donors' rights and interests in their samples, than countries that regulate this field by reference to more general laws and codes of conduct. Whilst this might speak in favor of a context-sensitive regulative approach by taking the countries' particular legal and ethical traditions into account, this does not exclude improvement and "institutional learning". For example, when the Eastern European countries entered the EU in 2004 and 2007 respectively, the transposition of the European *acquis communitaire* led to the systematic introduction of informed consent into the health care system which was formerly not constantly referred to in this context. Another tool for future adaptations consists in the initiative for a pan-European framework, the so-called Biobanking and Biomolecular Resources Research Infrastructure (BBMRI) which has been joined by more than 280 associated organisations (largely biobanks) from over 30 countries. Given that the value of human tissue and biobank research increases the more repositories can be linked and samples and data be transferred across country borders, this initiative is an important step in the promotion of comparable and transparent rules for human tissue and biobank research.

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Human tissue and biobank research is of increasing importance for understanding the causes of widespread diseases and developing effective therapies. However, while the success of biobank research depends on the availability of a large number of samples and the consolidation of collections across country borders is very desirable from the perspective of researchers, the legal and ethical requirements for the procurement, storage and use of human tissue samples are rather heterogeneous across different countries. Moreover, the lack of comprehensive supranational regulation on human tissue and biobanking can be seen as posing a serious threat to transnational biomedical research. Against this background, it was one of the aims of the EU-funded Tiss.EU project ("Evaluation of Legislation and Related Guidelines on the Procurement, Storage and Transfer of Human Tissues and Cells in the European Union – an Evidence-Based Impact Analysis") to analyse the ethical and legal regulation of human tissue and biobank research across the 27 European Member States plus Switzerland. The results of nine international workshops and three conferences are gathered in this volume. While the country reports evaluate the implementation of ethical and legal guidelines at a national level, point out their strengths and deficits, and, where required, create an evidence base for the revision of said legislation, the conference reports address more general ethical and legal issues in this field. The volume is completed by a final presentation of project's results.

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