



THE UNIVERSITY *of* EDINBURGH

This thesis has been submitted in fulfilment of the requirements for a postgraduate degree (e.g. PhD, MPhil, DClinPsychol) at the University of Edinburgh. Please note the following terms and conditions of use:

This work is protected by copyright and other intellectual property rights, which are retained by the thesis author, unless otherwise stated.

A copy can be downloaded for personal non-commercial research or study, without prior permission or charge.

This thesis cannot be reproduced or quoted extensively from without first obtaining permission in writing from the author.

The content must not be changed in any way or sold commercially in any format or medium without the formal permission of the author.

When referring to this work, full bibliographic details including the author, title, awarding institution and date of the thesis must be given.

Emerging Legal Concepts at the Nexus of Law, Technology
and Society: A Case Study in Identity

By Laura J Downey



A Thesis Presented for the Degree of PhD in Law

University of Edinburgh

2017

DECLARATION

I confirm that all work within is composed by me, is my own work and has not been submitted for any other degree or professional qualification.

Laura Downey

ACKNOWLEDGEMENTS

There are many people without whom this thesis would never have been attempted or completed.

First and foremost my thanks must go to my supervisors, Prof Graeme Laurie and Dr Shawn Harmon, whose endless patience and guidance have been invaluable, and whose understanding at times of crisis has been a source of endless gratitude on my part.

Members of the PhD community of the University of Edinburgh Law School, in particular my colleagues occupying the blue/mezzanine office must receive special mention and thanks in solidarity in struggling through together and providing at times much need comic relief.

I must also show my appreciation for the RS and all of us who started our PhD journey together.

My special thanks is saved for Rikesh, for showing unwavering kindness, and to whom the completion of this thesis has depended the most.

Finally I must thank my family. Without their love and support I would never have attempted nor completed this endeavour.

ABSTRACT

The aim of this thesis is to investigate and further the understanding of the interaction between law, technology and society. My original contribution to this understanding lies in an account and analysis of the process of emergence (or potential emergence) of new legal concepts and of how new and developing technologies and social responses influence that process. Specifically, the work focuses on identity, which I argue is a currently emerging legal concept, and the ways in which identity, variously understood, is impacted by new technologies and changes in the social landscape, what those impacts on identity might be, and the relationship of those changes to the representation (or otherwise) of identity in law.

In the literature looking at law and technology and the legal responses to the issues of regulating technology, I critique the conceptualisation of law as “lagging behind” novel advances in technology. By drawing upon work in philosophy of technology, sociology and science and technology studies it is argued that emerging technologies have a modulating effect upon social values and moralities and that equally the modulation of society by technology and the complex dynamics of social change or resistance may also have an impact upon the law itself. In turn developments in law may be part of the ongoing process of the identification, conceptualisation, recognition and contestation over specific social issues and the way in which they should be addressed. Such dynamics and conflicts can lead to the shifting of accountability regimes and the recognition of new values, harms and interests and their own conceptualisation and justification. Studying the emergence of new legal concepts provides a link in to understanding this mutual coproducing relationship between law/regulation, technology and society. My approach to this study seeks to better understand the factors that precipitate formal recognition in law of specific concepts, an aspect of legal development that is not well considered by the existing literature in law and that in Science and Technology Studies (STS). In so doing it contributes a novel conceptualisation of an “emerging legal concept” and a conceptual analysis of identity as an emerging legal concept specifically as currently modulated by novel biotechnologies.

CONTENTS

Declaration	3
Acknowledgements	5
Abstract	7
Contents	9

Chapter 1: Misunderstandings of Legal-Lag and its Relationship to Understandings of the Regulation of New and Emerging Technologies

15

1 Research Context	16
2 Research Problem	21
3 Aim and Original Contribution	23
4 Chapter Outline	24

Chapter 2: The Significance of NEST and Social Change, and the Challenges to Law and Regulation

27

1 Introduction	27
2 Problematising Emerging Technologies For Society	28
2.1 <i>Unpredictability</i>	29
2.2 <i>Ambivalence and Ambiguity</i>	29
2.3 <i>Transformative Potential</i>	30
2.4 <i>Ambiguity, Value Plurality and Transformative Potential: Interactions and Implications</i>	31
2.5 <i>Interim Conclusion</i>	36
3 Technological Determinism, and the Collingridge Dilemma	37
3.1 <i>Technological Determinism and the Collingridge Dilemma</i>	37
3.2 <i>Collective Action, and Identifying and Evaluating Emerging Values and Priorities</i>	39
4 Technomoral Change, and Coproduction	41

4.1	<i>Coproduction and Competing Visions of Reality</i>	42
4.2	<i>Technomoral Change</i>	46
5	Concluding Remarks	52
 Chapter 3: Limits of Law: Strategies to Address NEST and Which Ignore Law		55
1	Introduction	55
2	Regulatory Approaches to NEST and Law and Technology Scholarship	56
2.1	<i>History of Law and Technology Scholarship, Discourse and Regulatory Reactions to NEST</i>	58
3	“Legal Lag”, Regulatory Failure and the Relationship Between Law and Technology	64
3.1	<i>Interactions of Law and Technology</i>	65
3.2	<i>Regulatory Lag, Regulatory Disconnect</i>	69
3.3	<i>New Approaches to Regulation in the Life Sciences</i>	74
3.4	<i>Regulatory “Failure” and Concepts of Law and Regulation</i>	81
4	Concluding Remarks	86
 Chapter 4: Law and Regulation as Part of the Coproduction of the Socio-Technical Reality		89
1	Introduction	89
2	Tracking changing moralities and the emergence of social “problems”	90
2.1	<i>Distinguishing Between “Hard” and “Soft” Impacts</i>	90
2.2	<i>Shifting Accountability</i>	94
2.3	<i>Social Problems and Technomoral Change</i>	96
2.4	<i>Social Problems, Legal Concepts and Coproduction</i>	99
3	Theory of Law and Technology: Structure and Coproducing Dynamics	103
3.1	<i>Law and Technology: Theoretical Approaches</i>	105
3.2	<i>Structure, Agency and Social Interaction: Connecting Law and Regulation to Wider Social Contexts</i>	109
3.3	<i>Values, Strategy and Compromise: Purposive Interpretation and Emerging Concepts</i>	111
4	Concluding Remarks	113

Chapter 5: Conceptualising Emerging Legal Concepts	119
1 Introduction	119
2 Preliminary Issues: Conceptualising Law and the Problem of Methodology	120
2.1 <i>Law as Part of an Ongoing Process of Meaning-Making</i>	120
2.2 <i>Identity as a Concept in Flux</i>	122
2.3 <i>Methodology and Formation of Explanatory Concepts</i>	124
2.3.1 <i>The Approach in this Chapter</i>	126
3 Legal Practice and Legal Scholarship: Demarcating a Domain	128
3.1 <i>Categorising Legal Research</i>	130
3.2 <i>Legal Doctrine, Legal Scholarship and the Authority Paradigm: Law as a Creative Discipline</i>	132
3.3 <i>Diverging Aims and Orientations: The Problem of Reconciling Methodologies with Differing Legal Insights</i>	138
3.4 <i>Intermediate Conclusions</i>	143
4 Conceptualising Law and Emerging Legal Concepts: Methodology and Concept Formation	143
4.1 <i>Reconciling Legal Theory with Social Theory: Using the Interpretative Turn in the Social Sciences</i>	145
4.2 <i>Justifying the Interpretative Methodology: Accounting for Differences in Meaning Between Different Discourses and Understanding Meaning in Practice</i>	148
5 Law as Socially Constructed Ideas About Governance	151
5.1 <i>Challenging a Centred Concept of Law and Essentialist Concepts: Conflict Over Authority</i>	151
5.2 <i>A Conventionalist Approach to Concept Formation</i>	155
5.3 <i>Law as Ideas about Governance and Competing Authority, Legality and Legitimacy</i>	157
5.4 <i>Distinguishing Law from Other Phenomena: Interaction of Legality, Authority and Legitimacy</i>	162
6 Conceptualising “Emerging” Legal Concepts	165
6.1 <i>Emerging Legal Concepts: An Historical Example</i>	167
6.2 <i>Conceptualising “Emerging” Legal Concepts</i>	169
6.3 <i>Factors of Emergence and the Impact of NEST</i>	176

7	Concluding Remarks	184
Chapter 6: Notions of Identity in the Law		187
1	Introduction	187
2	Identifying Identity as a Potentially Emerging Legal Concept	188
	2.1 <i>Explaining the Interaction of Structure, Discourse and Social Perceptions in Emerging Legal Concepts</i>	190
3	Identity: An Overview	193
	3.1 <i>Numerical Identity, Personhood and Essence</i>	194
	3.2 <i>Narrative Identity, Identity in Politics and Social Theory, and Identity as Socially Negotiated</i>	197
	3.3 <i>Preliminary Points</i>	202
4	Identity in Law	202
	4.1 <i>Legal Persons and Identity as Recognised Personhood</i>	203
	4.2 <i>Identification and Registration</i>	206
	4.3 <i>Identity as a Personal or Personality Right and as a Proprietary Right</i>	208
	4.4 <i>Human Rights to Identity, and the Implications of Narrative and Authenticity</i>	214
	4.5 <i>Moving Beyond Identity as Protection of Control and Access to Information</i>	225
5	Identity in UK Medical Jurisprudence	230
	5.1 <i>Identity as Property and Identity as Right in the UK Context</i>	231
	5.2 <i>Genetic Technology, Reproduction, and “New” Harms: Shaped by, and Shaping of Existing Law</i>	236
6	Concluding Remarks	251
Chapter 7: Notions of Identity in the Law and Genetic Technologies		255
1	Introduction	255
2	Mitochondrial Donation Therapy: The Science and the Regulations	258
	2.1 <i>The Techniques: Maternal Spindle Transfer and Pronuclear Transfer</i>	259
	2.2 <i>History of the Passage of the Regulations</i>	262

2.3 <i>Human Fertilisation and Embryology (Mitochondrial Donation)</i>	
<i>Regulations 2015</i>	268
3 Main Arguments and Themes in Debate	269
3.1 <i>Safety Concerns and Rushed Procedure</i>	271
3.2 <i>“Three Parent Babies” and Personal Narrative Identity Concerns</i>	276
3.3 <i>Arguments over Personal Numerical Identity, Cloning and Definitions of “Genetic Modification”</i>	280
4 The Interaction of International Law, the Clinical Trials Directive, “Genetic Identity” and the Government’s Working Definition of “Genetic Modification”	287
4.1 <i>“Semantic Sophistry”: Identity and the Definition of “Genetic Modification”</i>	288
4.2 <i>The Perception of Legitimacy, Authority and Legality: Legal Arguments, Appeals to Consensus and the Tacit Endorsement of “Genetic Identity”</i>	291
4.3 <i>Future Considerations</i>	299
5 Concluding Remarks	301
 Chapter 8: Conclusion: Identity as an Emerging Legal Concept	 303
1. Restatement of Aim	303
2. Summary of Research Problem	303
3. “Emerging Legal Concepts”: Summary of Original Contribution	306
4. Closing Remarks	308
 Bibliography	 311
Table of Cases	325
Table of Legislation	327

Chapter 1

Misunderstandings of Legal-Lag and its Relationship to Understandings of the Regulation of New and Emerging Technologies

Our contemporary society has seen rapid change in technological capability in recent decades. A litany of examples could be cited covering everything from breakthroughs in the biosciences and biomedicine including new genetic therapies, assisted reproduction, stem cell and regenerative therapy, neuro implants and technologies such as smart prosthesis and brain-computer interfaces; to breakthroughs in computing covering artificial intelligence and the increasing pervasive role of data intelligence and social networking in a society of rapidly expanding capacity to document, predict and frame the choices of individuals online. Such developments are the products of what has been generically defined in different ways as converging technologies, nano-bio-info-cogno-convergence (NBIC-Convergence),¹ and new and emerging science and technologies (NEST).² Broadly they are characterised by the fact that they were made possible due to the knowledge derived from the differing scientific and techno-scientific disciplines converging and facilitating breakthroughs in each other.³ Developments in each have facilitated developments in the others resulting in what has been described by some as a rapid revolution in scientific thinking, technological advancement, and social change akin to that seen in the Enlightenment era, and the Industrial Revolution.

It is the unpredictable outcomes of the relationship between technology and society which sparked the present research, in particular the debates surrounding the role of law and regulation in navigating this relationship and indeed of the relationship between technology, society and law itself. The complex management of NEST, and the plurality of opinion and values inherent to debates surrounding new technologies, and the practices they give rise to, implicate law at various differing stages from questions over the permissibility of

¹ See *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, NSF/DOC-sponsored report Edited by Mihail C. Roco and William Sims Bainbridge, National Science Foundation (2001).

² Acronym used by the EU 6th Framework Programme see; http://ec.europa.eu/research/fp6/index_en.cfm?p=8_nest5 . See also page 21.

³ European Commission, High Level Expert Group. (2004). *Foresighting the New Technology Wave: Converging Technologies—Shaping the Future of European Societies* p. 14. It should be noted that the full definition provide by the Expert Group reflects that of the NSF conference and includes the added element that they are converging towards a common goal meaning that their emergence may be dependant to a certain extent upon the intentions of the actors implicated, including policy makers.

development and introduction, to navigating changing relationships and practices as technologies diffuse through society. However law and regulation in general have been accused of “lagging behind” technological advances and failing to deal with or help in shaping the potential future trajectories of technological change.

This thesis argues that conceptualisations of legal lag and failure are based on insufficient understanding and conceptualisation of the relationship between law, technology and broader society. Following insights from science and technology studies outlined in chapter 2, I argue that an understanding of law as part of a coproducing relationship with technology and society can greatly aid critique of the existing law and provide insights in to how better it can be deployed to manage uncertain, potentially transformative and ambiguous technology. The problem is that whilst Science and Technology Studies (STS) have developed understanding of the coproducing relationship between the technology and society, there is a dearth of understanding and research in to law in this area, and most importantly of how changing perspectives, understandings and potential perceptions of value, or harm precipitated by new technologies, can come to be reflected and potentially themselves influenced by law. I aim to contribute a conceptual analysis of the development or emergence of legal concepts as potentially implicated by the emergence of new science and technology. I argue that such an understanding can show how law is part of an ongoing process of social definition and meaning-making. I further argue that law is itself, however incidentally, part of the developing trajectory and shaping of our understanding of a changing socio-technical reality.

1 Research Context

The appeal of new technologies including new biotechnologies, lies in the hype⁴ surrounding them and their potential to contribute to broad or grand challenges facing (Western) society.⁵ In terms of the medical sphere there is much hope that the newly emerging capacities of emerging technologies will contribute to the betterment of care and the provision of highly improved treatments. Particular help is sought in the treatment of an increasingly ageing population. But with such advances more questionable applications and outcomes also emerge, and these hopes are tempered by uncertainty over the trajectory of technology and

⁴ A. Nordmann “‘If’ and ‘then’: A Critique of Speculative Nanoethics” *Nanoethics* (2007) 1:31–46; Nuffield Council on Bioethics, *Emerging Biotechnologies: Technologies, Choice and the Public Good*, 2012 para 2.32.

⁵ See for example the Lund Declaration in 2009 which pledges a commitment of policy and research efforts in Europe to concentrate on directing research to solve some of the major challenges of the world including global warming, shortages of energy, food and water, ageing populations and public health.

the risk of harm to health and security, their potential to disrupt social norms and values, and the plurality of opinion over their ethical acceptability. Our ability to identify genetic diseases outstrips capacity to cure or manage them; instantaneous communication has led to untold privacy erosion, data leakages and theft, and the internet in general enables new forum for criminal activity on the Dark Web. The path of technological development is littered with examples of benefit and correlating anxiety over the potentially harmful applications of new technologies many of which were unanticipated at the time of their earlier emergence. Such anxiety stretches not just to the resulting practices that may be enabled by these new technologies, but to the objects that may be created by them and to the changing perceptions to which they may steer us. Challenges to perceptions about the nature of health and enhancement, of the uses and status placed upon objects occupying positions of ambivalence and novelty in our world schema (such as cell lines, human embryos and “intelligent” technologies) and the anxiety that attaches to such changed perceptions echo in the changed practices of everyday life that may follow the introduction of new technologies. Changing expectations in the protection afforded to privacy in the aftermath of the internet and social media revolution can be seen in such a light with many fears and speculative visions of the future pointing to the harms caused by a culture that ignores the privacy of individuals.⁶

Commentators have also critiqued the hype⁷ attached to these new technologies, and paradoxically the risk, associated with such hype: of inflated hopes and broken promises leading to a breakdown in trust as well as dystopian visions of the future and speculative ethics based upon such imagined futures that may never come to pass and action which may in turn thwart responsible development of new technologies.⁸ As such, managing NEST is complex. As will be demonstrated in chapter 2, NEST are inherently unpredictable in their development and societal impact; ambivalent in nature,⁹ providing as many new dependencies and problems as they do solutions none of which may be universally endorsed;

⁶ See for example I. Szekley “Building our future glass homes e An essay about influencing the future through regulation” (2013) *Computer Law and Security Review* 29, 540-553.

⁷ Nordmann supra n4; Nuffield Council on Bioethics, *Emerging Biotechnologies: Technologies, Choice and the Public Good*, 2012 para 2.32.

⁸ See T. Swierstra and A. Rip “Nanoethics as NEST-Ethics: Patterns of Moral Argumentation About New and Emerging Science and Technology” *Nanoethics* (2007) 1: 3-20 at 16.

⁹ A. Feenberg “The Ambivalence of Technology” *Sociological Perspectives* March 1990 vol. 33 no. 1 35-50; A. Grunwald “Technology Assessment or Ethics of Technology? Reflections on Technological Development between Social Sciences and Philosophy” (1999) *Ethical Perspectives* 6: 2,170; and see also Swierstra and Rip *ibid* at 16.

and with the potential to radically transform the lived human experience.¹⁰ Broadly, these issues can be highlighted as concern for the future and the first question to be satisfied in reviewing how such technologies can be managed (and the first question that requires to be answered in this thesis) is whether our progression in to that future can in fact be actively shaped. However this is bound to a second broad question: if we can actively shape that future, by what priorities or values should that future be guided by or directed towards? This latter question also applies to the navigation of new conflicts in society caused as technology diffuses and changes social practices. This is because, as explained in chapter 2 and developed further in chapter 4, the introduction of new technologies and new scientific understandings has the potential to spark a flux in fundamental moral values and value plurality in general.

Chapter 2 explores the current understandings of the relationship between society and technology as part of attempting to answer these overarching questions. One of the key points stressed is that the two questions – can we shape our future and by what priorities or normative values should we be guided – are inherently intertwined. Discussion in chapter 2 sets out the central presumption of the thesis that law and regulation, technology and broader societal debates are mutually shaping of our reality. Scholarship in science and technology studies (STS) have developed an understanding and body of research looking at the relationship between technology and society, and more contemporary research has utilised an idiom of coproduction as a means of understanding this relationship.¹¹ Insights from STS as well as economic theory posit that there are opportunities to actively influence our progression in to the future and the development and diffusion of technology to a certain extent. In the case of technologies and changing social norms/issues, the ability to actively influence them is greatest at the stage of their first emergence when they are most sensitive to change. This however provokes another challenge coined in technology and innovation studies as the Collingridge dilemma. This sets out that at the point of emergence we have very little knowledge of how new technologies may eventually turn out and the impacts they will have, but that they are most easily directed at this nascent stage such that to wait until later to assess and gather information on their development may be to wait too late when they can no longer be influenced or where extraordinary effort and cost must be expended. If such decisions are to be aided, what is needed is a means of garnering both more empirical

¹⁰ These three challenges are explained in more detail in the Nuffield Council for Bioethics Report *supra* n7 Chapter 3.

¹¹ See S. Jasanoff (ed) *States of Knowledge: The Co-production of Science and Social Order* (2004) Routledge, London and New York; K. Sang-Hyun and S. Jasanoff (eds) *Dreamscapes of Modernity: Socio-technical Imaginaries and the Fabrication of Power* (2015) University of Chicago Press.

information about the way in which current technologies and underlying social conditions progress, and a reliable and coherent understanding as to why and how the future emerges.

Insights from STS scholarship developing the concept of coproduction as an interpretive idiom to aid explanation of the relationship between technology and society point to the complex causal nexus between: the formation of concepts and cognitive understanding of the social and technological; the development of the material technologies themselves; the normative concerns and judgments relating to both the material technologies and concepts used to describe them, and the social practices following their introduction; and the social reaction and development of practices themselves. Within this understanding a more accurate picture of the likelihood of shaping technological trajectories becomes apparent. In particular it shows that our understandings and the concepts we utilise to explain and understand the social and technological will also frame and shape our normative judgments of such technologies and the practices they give rise to which in turn affects the prevalence of new practices and behaviour that will itself affect the future trajectory and development of the technologies themselves.

Swierstra's conceptualisation of technomoral change helps to articulate how the ambivalence of new technologies and their ethical implications are best looked at from a coproducing understanding: fundamental moral principles can be seen to change; this change is not necessarily bad even though it is provocative and contested; and thus to judge changes to morality according to fundamental principles is not necessarily the "right" means of assessing new technologies.¹² In other words, it should not be taken for granted that we can know or that we should stick to fundamental principles in guiding our development in to the future. Swierstra thus advocates a learning approach to contested moralities and ethics provoked by emerging technologies and in particular points to the competitive nature of coexisting moralities within society pertaining to the fact that technomoral change is never an all or nothing occurrence. The moral challenges posed by disruptive technologies may simply be a tipping point in favour of, or against, dominant moralities in favour of alternatives perhaps already articulated by minorities or those previously in a position of lesser power.

¹² See T. Swierstra "Nanotechnology and Technomoral Change" (2013) *Ethics & Politics* 15:1. 200-219; Swierstra "Identifying the normative challenges posed by technology's 'soft' impacts" (2015) *Nord J Appl Ethics* 9:1, 5-20; and Swierstra, D. Stemerding and M. Boenik "Exploring Technomoral Change: The Case of the Obesity Pill" in P. Sollie, M. Düwell (eds.), *Evaluating New Technologies* (2009) The International Library of Ethics, Law and Technology 3.

What Swierstra also posits is that it is the social reaction to the modulation of existing moral principles or values that is unpredictable and it is not clear whether or which perspective or conceptualisation of the social and technological issues will become the most persuasive or pervasive in shaping behaviours or decisions in relation to technologies. Indeed, this is why I claim that the two overarching questions posed in relation to NEST – whether our future can be shaped and by what priorities and values – are inherently intertwined. This is because, new knowledge and technology may potentially prompt changes in moral values or a point of flux and change in predominant views both on the moral or value principles that should govern behaviour and decisions, but also in relation to the conceptualisation and even descriptions of the changed socio-technical reality. As such, answering the question as to how – towards what aims and priorities and guided by which values – NEST should be shaped, should be properly seen as bound up with understanding the dynamics of the development of the socio-technical future since the formation of judgments and values about how we should be guided, will themselves be part of the formation of the socio-technological future development itself.

Management of NEST is complex as stated and argued in depth in chapter 2. The main points highlighted as part of the complexity are:

- Balancing interest in the development of technology to help with many identified issues and problems in society, in particular those related to health, against many of the fears and anxieties over the potential future soft impacts on changing values and practices;
- Navigating value plurality and difference in opinion as to what constitutes an impact that should be protected against, and the values or priorities by which we should live;
- Epistemic deficit of the potential future trajectories of the development of the socio-technical environment;¹³

Many normative arguments have been tabled as to what values we should be guided by and how we should be governed. I do not wish to contribute to such arguments here. My interest lies in the third point highlighted, in adding to understandings of how we develop in to the future, and as will be argued in chapters 3 and 4 and pointed to earlier, the formation of

¹³ “Socio-technical” is here used to refer to the current reality of the social and technological context within which we live at any one time – the constellation of technologies, social norms and practices, values and principles by which we live.

normative arguments about how we should live and be governed are part of these dynamics of change and development in to that same future.

It is my contention that law - as part of broader society - and technology, are mutually influencing: law, technology and societal debates coproduce each other and our reality generally. However, much of the existing law and technology literature, and the common perception of media and society at large, frames and perceives law as constantly “lagging behind” the advance of new technology.¹⁴ The legal lag thesis, and the common account of the failure of regulation in contemporary society, together with accounts of technological determinism could conspire both to deny a role for law in the practical shaping or navigation in to the future, and further of the likelihood that we are able to shape that future at all.

2 Research Problem

In chapter 3 it is argued that the assertion that law lags behind technology does not stand up to scrutiny as it is based upon an inaccurate conceptualisation of the relationship between law and technology and of the broader society in general. It is argued that the success or failure of regulation and the criticism of “legal lag” in general is dependent upon differing perspectives and a clash between both differing understandings and accounts of how NEST and the wider social context (of the socio-technical environment) should be managed – how they are practically navigated – and the constellation of values, interests and general priorities guiding that management. Crucially it will depend on our understanding of the law, its relationship to the socio-technical environment and our expectations of what it should achieve, which is informed by our understanding of its relationship to the socio-technical environment.

Critique of the legal lag thesis in general observes that it tends to reify technology and law as exogenous forces, racing against each other, but this suggests that each is at some measurable stage of development.¹⁵ A more nuanced understanding of the relationship between technology and law has been attempted by some scholars taking in to account the differing points of interaction between law and technology,¹⁶ and coming to a more accurate

¹⁴ For more on this see discussion in chapter 3.

¹⁵ See L. B. Moses “Recurring Dilemmas: Law’s Race to Keep up with Technological Change”(2007) *University of Illinois Journal of Law, Technology and Policy* 7, 239-286 at 243-247.

¹⁶ E. Verges “Scientific and Technological Evolution through the Legal Prism: Visions of a Multi-Faceted Relationship through the Lens of French and EU Law” (2014) *Law, Innovation and Technology* 6:1, 74–93.

description of the technical problems at the nexus between law and technology. Such has been described as regulatory disconnection: where the social and technological targets and environment have changed to the extent that the descriptive reality underpinning the regulatory array becomes mismatched, or where crucially there is a question over the normative implications of a new technology or practice that requires scrutiny of the existing norms of the regulatory array.¹⁷ But law is implicated in managing the day to day conflicts and relationships that themselves may be affected by new technologies even where the technologies and the permissibility of the technologies themselves is not the issue in question. Legal lag and the more nuanced understanding of regulatory disconnect apply equally to such interactions. However, it is argued that even if such interactions are not aimed directly at the development and management of a specific technology itself, the practices and values and relationships that are the subject of such legal interactions form part of the socio-technical environment and as such may influence the diffusion and development of technology anyway.

Responses to so-called failure of regulation in general and to the specific challenges presented by uncertain and disruptive science and technology, have prompted alternative developments of forms of anticipatory,¹⁸ reflexive,¹⁹ and responsive governance.²⁰ Such developments have based themselves both upon a greater understanding of the ability (or inability) of law or traditional command and control type regulation to effect social norms of behaviour or compliance, and also of integrating learning and alternative forms of governance including self-regulation and cooperation, leaving law as only one option or part of an integrated strategy for actively coordinating behaviour. Such developments have addressed many of the issues presented by NEST to varying degrees all of which are welcome and discussed in chapter 2. But in terms of the broader question of understanding the dynamics of our progression in to the future outlined above and elaborated further in chapters 2 and 3, what is not addressed by the more nuanced accounts of regulatory disconnect, or by a reconceptualisation of regulatory failure, or by the new governance

¹⁷ R. Brownsword, and H. Somsen “Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate” (2009) *Law, Innovation and Technology* 1:1, 1-73.

¹⁸ See for example D. H. Guston “Understanding Anticipatory Governance” (2014) *Social Studies of Science* 44:2, 218-242 0(0) 1–25.

¹⁹ See for example; S. H. E. Harmon, G. Laurie and G. Haddow “Governing risk, engaging publics and engendering trust: New horizons for law and social science?” (2013) *Science and Public Policy* 40, 25-33; K. Braun, A. Moore, S. L. Herrmann and S. Könniger “Science governance and the politics of proper talk: governmental bioethics as a new technology of reflexive government” (2010) *Economy and Society* 39: 4.

²⁰ See R. Baldwin and J. Black “Really Responsive Regulation” LSE, Society and Economy Working Papers 15/2007.

frameworks outlined, is the fact that the dynamics of legal development itself may affect our development in to the socio-technical future. The integration of learning mechanisms, and the arguments about which values or harms should be recognised and protected are themselves part of the coproducing relationship of law, technology and society in terms of producing our lived reality. There is in general a dearth of research in to the social dynamics of legal change and its relationship to the potentially rapidly changing socio-technical environment.

A better understanding of this relationship and the differing pathways of development which the law may take in addressing these concerns can also facilitate a better understanding of how the law may change in the future and in response to these new technologies. This in turn can lead to a better understanding of how the law itself in changing and adapting to these technological and societal changes, may also frame and change the technologies and social practices which led to their emergence. Given the typical stance that law and ethics appear to lag behind advances in technology and medicine and a growing recognition that within our globalised society we are in need of anticipating change so that our legal system remains fit for purpose, the need for research into the tripartite mutually shaping relationship between law, technology and society is timely.

3 Aim and Original Contribution

The aim of this thesis is to investigate and further the understanding of the interaction between law, technology and society. My original contribution to this understanding lies in an account and analysis of the process of emergence (or potential emergence) of new legal concepts and of how new and developing technologies and social responses influence that process. Specifically, the work focuses on identity, which I argue is a currently emerging legal concept, and the ways in which identity, variously understood, is impacted by new technologies and changes in the social landscape, what those impacts on identity might be, and the relationship of those changes to the representation (or otherwise) of identity in law. A further part of the research problem and one which requires greater explication, is that there is a lack of research explicitly looking at the dynamics of the development of law as a social process. In chapter 5 this is explained in greater detail, outlining the disparate approaches, methodologies and aims of academic study of law from traditional doctrinal law, through legal theory, socio-legal studies and social and sociological approaches to the study of law. Each body of literature contributes differing perspectives and understanding of law and in particular socio-legal and sociological understandings of law aim to understand the

social nature of law, however they do not adequately seek to understand lawyers perspectives of or the substantive conceptual content of law, or how individual legal concepts may emerge. Legal theory and legal doctrine on the other hand have developed extensive understandings of the content and concepts of law without the requisite methods or understanding of the social dynamics by which such content was produced. Chapter 5 therefore sets out this second research problem and resolves it as part of the original contribution in coming to a novel methodology and conceptual understanding of “emerging legal concepts” and the dynamics of their emergence.

It should be noted that the term “emerging legal concept” has been used in other work to indicate analysis of a nascent and developing concept within law.²¹ However, where this term is used in legal scholarship it is not explained further, and is used as a simple description of the legal concept, right, or principle that is the subject of the analysis and evaluation; it is not invoked itself as an explanatory term in the sense it is being developed here. As is explained in chapter 5, the aim in seeking to form a more coherent understanding of the relationship between law and the socio-technical environment, requires a methodology and conceptual tools that can help better explain the social dynamics of law. My contribution to this is a richer explanatory concept of “emerging legal concepts” which seeks to account for and describe the influence and dynamics of power between ideas formed in academia, in the wider social and political discourse, and their influence and relationship to the development of law. It further seeks to account for the disparate power of different actors and, supporters and detractors of a specific concept – in this case identity – and the influence that emerging technologies – specifically reproductive and genetic therapies – have upon the modulation and development of a concept and its potential inception in law.

4. Chapter Outline

This thesis is divided in to two halves. Chapters 2 to 4 outline the research context and the contours of the research problem. Chapters 5 to 7 develop the central argument and original contribution.

²¹ See for example S. P. Marks “Emerging Human Rights: A New Generation for the 1980s?” (1980-1981) *Rutgers Law Review* 33, 435-452; J. W. Snyder “Silicone Breast Implants: Can Emerging Medical, Legal, and Scientific Concepts Be Reconciled?” (1997) *The Journal of Legal Medicine* 18,133-220; C. Stahn “Responsibility to Protect: Political Rhetoric or Emerging Legal Norm?” (2007) *American Journal of International Law* 101, 99-120.

Chapter 2 outlines the complexity of the management of NEST in more detail arguing that the potential navigation in to the future and an understanding of the dynamics of change can be explained by reference to the coproducing relationship between technology and society. It further argues that the formation and pursuance of particular arguments in relation to such technologies are themselves part of the development in to the future.

Chapter 3 provides a review of the law and technology literature and critiques the legal lag and regulatory failure theses. It further argues that law is but one of many social institutions that plays a part in navigating and influencing conflict and decision-making. It posits that law itself can be seen as part of the dynamics of change and coproduction of the socio-technical reality, that the social dynamics of the development of law and the formation of specific conceptual content of law should also be understood if we are to increase our understanding of how we develop in to the future. On this point however there is a dearth of research.

Chapter 4 brings together the different aspects of the research problem described in chapters 2 and 3 and draws again upon the literature of technomoral change outlined in chapter 2 and social problems literature to further demonstrate that law and recognition in law of new concepts can be seen as part of ongoing meaning-making in society. It highlights factors of interest that have been outlined in the broader law and technology literature that lay out some considerations of the interaction of the existing legal concepts as structuring or framing legal problems and therefore of impacting the kinds of issues that are identified for law and that are likely to be argued for and recognised.

Chapter 5 sets out the main original contribution part of which is the development of a novel methodology. This is required and set out in this chapter because whilst chapters 2 to 4 set out the main research problem, the disparate approaches, aims and methodologies used in legal academia are such that whilst different aspects are required in understanding the emergence of legal concepts, they have clashing methodologies. This is explained more fully in chapter 5. By the end of this chapter I will have set out my novel conceptualisation of “emerging legal concepts” and their relevance to emerging technologies.

Chapters 6 and 7 then set out that a concept of identity is being used as an illustrative example of a currently potentially emerging legal concept. Chapter 6 reviews the intellectual history of identity and examines the dynamics of emergence and factors contributing to emergence, as identified at the end of chapter 5, in the context of the UK and in case law. Chapter 7 continues this examination by looking at the distinct dynamics at work in the development of legislation in an analysis of the passing of the Human Fertilisation and

Embryology (Mitochondrial Donation) Regulations 2015. Chapter 8 provides a brief overview and conclusion to the thesis.

Chapter 2

The Significance of NEST and Social Change, and the Challenges to Law and Regulation

1 Introduction

As stated in chapter 1 in the introduction to the research, chapters 2 to 4 form part 1 of the thesis and outline both the research context and research problem. This chapter sets out part of the research context and motivation for the research as issues relating to new and emerging science and technology (NEST), especially emerging biotechnologies such as genetic and reproductive therapies. It will set out the characteristics of NEST as ambiguous, potentially transformative and uncertain; that fears over NEST pertain to its capacity to shape society and modulate and lead to changing social norms and values, and new harms; that law interacts with technology in a variety of ways but is not always called on to intervene; and that managing NEST is complex and subject to inherent disagreement and conflict, complicated further by moral plurality.

This outline leads in to the discussion of the expectations we have of law and regulation, and its role in the management of NEST which is explored more thoroughly in chapters 3 and 4. Critically however, it points to the capacity for new technology to modulate understandings and even fundamental concepts upon which our understanding of the socio-technical world are based which may also lead to moral or value change. This insight implicates law and regulation in particular because they will be based upon existing understandings of the socio-technical reality, and will recognise and protect certain rights, interests and regulate particular relationships based upon such understanding. The issue of technomoral change not only implies that existing fundamental concepts within the law may be challenged or opened up to scrutiny, but that understandings of, and conceptualisations of new harms, interests, values or relationships may emerge as a result of technomoral change which in turn may implicate potential changes for law. What is unpredictable is how society reacts to such new ideas and whether they become pervasive, entrenched and influence in a material sense, the wider understanding, behaviour and development of society and technological development. This unpredictability and the means by which new ideas and concepts are formed to describe and understand a changing socio-technical environment can be explained through recourse to

STS and in particular that the social and technological are in a relationship of coproduction. The management of NEST is complex, from the day to day navigation of new conflicts or old conflicts performed through new means, to the navigation in to the future and the fears over the kind of values and social underpinning of such future. This complexity is added to by the insight that technomoral change also implicates unpredictable coproduction and flux in understandings of knowledge, of concepts otherwise crucial to our understanding of the socio-technical world, and the values, fundamental principles and recognised harms and interests that punctuate it. What role law plays, our expectations for it, and how it has dealt with such complexity and flux in meaning is the subject of chapter 3.

This chapter provides an overview of the characteristics of NEST as they have been problematised and in doing so it lays down the research context. It aims to introduce the complexity of the interaction of NEST with society, and the further complexity of managing that interaction. In doing so it sets up the following chapter which looks to question the role of the law in such management, and how it has been critiqued. Importantly it outlines that as NEST can affect changes in social practices and values, open fundamental concepts up to scrutiny and challenge fundamental principles, understanding how particular concepts or ideas about the socio-technical reality develop can aid understanding about our development in to the future.

2 Problematising Emerging Technologies For Society

As outlined in chapter 1, our contemporary society has seen rapid change in technological capability in recent decades. The category of NEST is one which catches differing technologies at differing times: the key element is that it encapsulates those *technologies that are in their infancy*, only just being posited or in the early stages of dissemination through society. They are emerging. It is at this point that technologies display the characteristics outlined below. These characteristics have been generally encapsulated by a three pronged challenge as outlined by the Nuffield Council on Bioethics; they are inherently unpredictable, potentially transformative and ambiguous in nature.¹

¹ Nuffield Council on Bioethics, *Emerging Biotechnologies: Technology, Choice and the Public Good* (2012).

2.1 Unpredictability

The unpredictability of socio-technical development derives from a practical lack of knowledge about the potential impacts of these technologies at the point of their emergence. Emerging technologies are at the forefront of scientific knowledge and thus are also subject to knowledge deficits about the potential for risk of harm to health, security and the environment. In addition to impacts such as threats to health and safety, the characteristics of ambiguity and ambivalence, and the socially mediated nature of the acceptability of new technologies and the practices, objects, and values they may endorse as explained below mean that the social impacts and the potential social resistance to certain technologies is unknown. Societal impacts are therefore typified by their high uncertainty and the potential that they shape “the horizon of society in a non-trivial way”.²

2.2 Ambivalence and Ambiguity

Ambiguity and ambivalence is attached to technologies in general and emerging technologies in particular, due to their prompting of new capabilities and practices. Within the meaning of ambivalence, technology is neither inherently good nor bad and is not something for which we can be for or against in a general sense;³ different technologies are used for differently motivated purposes which are subject to disagreement.⁴ Ambiguity is implicated in the properties that lead to such promise of benefits to society that may just as easily lead to severe and unknown harms⁵ or that pursuing one solution to a technical or social problem may simply introduce further problems with that solution over another alternative.⁶ Examples abound of technologies being developed which have ostensibly beneficial applications but which equally can be used for more nefarious purposes. The Internet for example now allows instant communication and dissemination of information and has radically transformed the way we communicate, but it has equally made snooping on

² Ibid para 4.15.

³ A. Feenberg “The Ambivalence of Technology” (1990) *Sociological Perspectives* 33: 1, 35-50.

⁴ Ibid.

⁵ This may have been particularly true of nanotechnologies and nanoparticles where the nanosize/scale matters in improving efficacy i.e. in terms of computational capacity and power in computer microchips or in creating powerful drug delivery systems which are capable of overcoming cellular barriers to provide targeted therapy. But that size may also have toxic effects and unknown unknowns in terms of physiological effect. See on this Clare Shelley-Egan “The Ambivalence of Promising Technology” (2010) *Nanoethics* 4:2, 183–189.

⁶ T. Swierstra and A. Rip “Nanoethics as NEST-Ethics: Patterns of Moral Argumentation About New and Emerging Science and Technology” (2007) *Nanoethics* 1, 3-20 at 16.

personal information and the protection of privacy far more problematic.⁷ Further, the ability, using software such as Tor, to encrypt communications such that they cannot be traced has proven invaluable for the communication of dissent in countries where such actions can be targeted and oppressed, but has also led to the creation of the “Dark Web” a forum for criminal activity. Ambivalence also attaches to objects or practices of scientific research, including the creation and manipulation of certain entities such as human embryos, admixed embryos, and interventions in the human brain which specifically challenge concepts of what it means to be “human” and what is deserving of respect and protection. Most implicated in this ambiguity are the plurality of values and morals that underpin a lack of consensus on the acceptability of practices giving rise to these ambiguous objects. Such plurality also attaches to the potential outcomes of the capacity of technology to change and shape social norms, practices, values and morals themselves such that visions of the future of society and the types of capacities and norms that may be commonplace, may themselves be ambiguous in terms of their desirability.⁸ It is this ambiguity, the debate and plurality of opinion over the direction, the permissibility and ethical acceptability of these developments that feeds in to the characterisation of NEST as problematic and in need of management and regulation.

2.3 Transformative Potential

Transformative potential is described by the Nuffield Council as relating to “the capacity to supplant existing or alternative modes of practice so thoroughly that these become marginalised, obscured or even inaccessible” with the eventual outcomes that a:

“...new paradigm or technological regime...one that simultaneously transforms the criteria by which technologies of its kind are evaluated and, eschewing the goals of problems that were the focus of previous regimes, sets new goals and new problems for technology.”⁹

This transformation in knowledge and practice within the disciplines of science and technology is reflected in the broader social schema and the Nuffield Council further relates

⁷ This may be true both in terms of the standards we individually keep for ourselves on social platforms such as facebook, twitter and others, and in terms of global and state surveillance, much of which has been highlighted in the aftermath of Wikileaks and Edward Snowden.

⁸ Three forms of ambivalence, or ambiguity, have been described by the Nuffield Council on Bioethics as falling in to, or containing three forms of such ambiguity described as ambiguous practices, ambiguous objects and ambiguous visions – for more on these see Nuffield Council on Bioethics (2012) supra n1 para 3.13-3.20.

⁹ Nuffield Council supra n 1 para 3.24

it to the potential to “transform or displace existing social relations, practices and modes of production, or create new capabilities and opportunities that did not previously exist, or may not even have been imagined”.¹⁰ It is not simply that a technology may introduce a completely new form of practice or radically displace existing technologies, it is that they also may introduce new dependencies or problems.¹¹ The steam engine is a canonical example of a transformative technology in terms of the vast technological change it induced, as well as the contingent change in society including population shifts to urban areas.¹² All three characteristics outlined are bound with each other, and so understanding of ambiguity and ambivalence in relation to NEST must be read with the insights of the other two characteristics, and a crucial link between the three is the insight that technology and society are mutually influencing in the sense touched on above and developed further below.

2.4 Ambiguity, Value Plurality and Transformative Potential: Interactions and Implications

As highlighted in chapter one, the appeal of new technologies including new biotechnologies, lies in the hype surrounding them and their potential to help ameliorate many issues identified in society including (but not limited to) caring for and managing a rapidly ageing society, and the threats posed by climate change.¹³ In the medical sphere, there is much promise that novel, emerging biotechnologies will vastly improve treatment and open up possibilities for care and to treat previously untreatable conditions. Examples include advances in genetic therapies promised personalised care, and potential strides in the treatment of cancer. Other advances include assisted reproduction, and promises in relation to stem cell technology and regenerative therapy. Novel neurotechnologies include Braingate, a chip implanted in the brain capable of allowing a paraplegic person to communicate via computer, and smart prosthesis as developed to integrate with the nervous system.¹⁴ All point to radical re-imaginings and hope for the future of treatment and care.

¹⁰ Ibid at para 3.1

¹¹ Ibid at para 3.25

¹² Note also the transformative effect that radical industrialisation and disruptive technologies had upon the legal regimes in place to navigate new liabilities and health and safety, and even property in K. Oliphant “Tort Law, Risk and Technological Innovation in England” (2014) *McGill Law Journal* 59:4, 819.

¹³ See for example the Lund Declaration in 2009 which pledges a commitment of policy and research efforts in Europe to concentrate on directing research to solve some of the major challenges of the world including global warming, shortages of energy, food and water, ageing populations and public health.

¹⁴ Information available at <https://www.braingate.org/>.

However, the implications of ambiguity and ambivalence mean that there is typically no one view of the desirability of a technology. The interactions of these elements also mean that our ability to shape the future development of the socio-technical environment is inseparably intertwined and dependant on the debate over the desirability of new technology and the myriad decisions made at the nexus between technology and diffuse social interactions. This subsection is a partial introduction to these arguments explored and developed in greater detail in the rest of this chapter and in chapter four. In particular this subsection highlights:

- The possibility that certain priorities, values and conceptions come to pervade technological development and marginalise others;
- The disputed nature of “harm” and the need to consider “soft” or diffuse impacts of NEST on society in relation to their management.¹⁵

Problems arise when certain arguments, drivers, or values underpinning the use and development of technologies become more entrenched than others. One of the findings of the Nuffield Council Report on Emerging Biotechnologies was that economic and market concerns overwhelmingly drive the priorities of innovation in the UK which itself is not conducive to the best science and which frequently neglects other areas which should be a priority.¹⁶ In biomedicine, it is often complained that market forces driving the pharmaceutical industry mean that many rare diseases have fallen behind in developments for their treatment, being termed “orphan” diseases because of the lack of activity in those areas. This is an example of the danger of the entrenchment of certain values in guiding the development of technology. A more contested danger however, is where entrenchment of particular social practices, in the wake of technological development, are themselves disputed as harms.

Neglect of certain diseases and health concerns are foreseeable and quantifiable impacts that can be pointed to as a danger of the advance of certain priorities and values (such as commercial and financial gain). Such choices have a concrete practical impact that can be causally attributed to the technology itself or to any decisions linked with resource allocation (and the persons responsible).¹⁷ Health and safety issues (such as malfunction or toxicity in relation to new medicines) may also be more easily causally attributed to the technologies in question and have a material or physical impact on people. These characteristics render them

¹⁵ This distinction is drawn out in chapter 4 also and is introduced here briefly to illustrate further the complexity of managing NEST.

¹⁶ Nuffield Council on Bioethics 2012 *supra* n1 chapter 7.

¹⁷ T. Swierstra “Identifying the Normative Challenges Posed by Technology’s ‘Soft’ Impacts” (2015) *Nord J Appl Ethics* 9:1, 5-20 at 7. This is discussed in greater detail in chapter 4.

more foreseeable and quantifiable in terms of the risk they pose, and in the case of physical impact, more easily identifiable or justifiable as harms.¹⁸

In contrast to such “hard” impacts outlined above, where the harm involved may be more easily identified, “soft” impacts can be characterised as disputed harms with more complex causal relations with technology.¹⁹ Sometimes it is the nature of the techniques themselves and the objects they give rise to (such as the in vitro embryo) - with disagreement over the values or morality of their application or creation – but often it is the practices and social norms that develop as a result of the introduction of particular technologies, that are disputed as social harms. For example digital technology and on-line social life are critiqued by some as leading to (or having already led to) the erosion of privacy.²⁰ Furthermore, technologies developed to overcome what may be seen as *socially constructed disadvantages* - those disadvantages that do not cause the person direct material harm but which are seen by society to have negative social value – may be characterised as harmful. For example, the use of preimplantation genetic diagnosis (PGD) or new mitochondrial replacement therapy²¹ may underline the need to *avoid* genetic disabilities rather than the need to make the world a more conducive place to live with or without such disabilities, thus underpinning a negative view of persons with disability. As Brownsword has argued in relation to the unease felt over the dystopian vision of designer babies, it is the underlying value placed upon human dignity (for example) and of how we value human life and our traditional relations to each other, that is in issue.²²

There are two key points for this discussion: that such impacts are disputed as harm, and that they are not solely attributable to the technology itself. As there is ethical and moral plurality in the world, whether such issues are morally wrong or constitute harms is inherently disputed. For example, many believe that in vitro fertilisation (IVF) or genetic manipulation (in controlled circumstances) does not pose the same ethical opposition that others perceive, or that the dangers of such potential social consequences will not come to pass. That there is no direct harm caused by allowing private actions and decisions on such issues. The potential social consequences and development of practices such as the continued

¹⁸ Ibid.

¹⁹ Ibid.

²⁰ See I. Szlekey “Building Our Future Glass Homes – An Essay About Influencing the Future Through Regulation” (2013) *Computer Law and Security Review* 29, 540-553.

²¹ See Mitochondrial Donation (Human Fertilisation and Embryology) Regulations 2015; James Gallagher “UK Approves Three-Person Babies” BBC news website <http://www.bbc.co.uk/news/health-31594856>.

²² R. Brownsword “Stem Cells and Cloning: Where the Regulatory Consensus Fails” (2014) *New England Law Review* 39, 535 at 545.

use of social media, and its erosion of privacy, may not be a strong consideration of many who make use of such technological platforms. Furthermore these disputed harms - the extent to which sharing information on-line is an erosion of privacy, or that genetic screening and in vitro fertilisation (IVF) undermine human dignity – are partly the result of the behaviour and active engagement of other people. Those supposedly adversely affected by the erosion of privacy or dignity may themselves actively engage in the debated behaviour, or as in the case of IVF and genetic screening, will not themselves be directly physically or materially affected by the procedures undertaken by others. As developed further in chapter 4, the causal pathway between the introduction of the technology or technologies and the contentious practices and value erosion identified, is complex, unpredictable and partially attributable to persons themselves.

The distinction between hard and soft impacts is explained more thoroughly in chapter 4. For now it is important to note that such distinctions themselves are debateable. They are to a certain extent normative labels rooted in the argument that only actions which cause “harm” to the individual and others may justify (state) legal intervention.²³ As such, the soft impacts identified in relation to new technologies are not always taken seriously as an issue requiring accountability or active management. The debated distinction between hard and soft impacts does mean however, that views on what should be seen as a harm, or should be seen to be taken seriously as a concern for intervention, can be challenged and changed.

Linked to fears over the potential for new technologies to promote undeserving values or perspectives (soft or diffuse impacts), is the possibility that living an individual life opting out of such technologies becomes impractical. In spite of the opening up of options and capabilities which technology provides, it may be followed by constraints on choices “because the technology becomes an indispensable part of the material or cultural infrastructure of a society and we must use it in order to participate in that society.”²⁴ An example of such may be the insistence upon electronic submission of job applications and CVs, or the prevalence of professional networking sites as a means of career progression, such that it becomes impracticable to opt out of such technological means in the pursuit of employment.²⁵ This challenges the laissez faire attitude to technology uptake that may be

²³ Swierstra supra n17.

²⁴ J. Chandler “Science Discovers, Genius Invents, Industry Applies, and Man Adapts Himself...” Some thoughts on Human Autonomy, Law and Technology” (2010) *Bulletin of Science, Technology and Society* 30:14 at 15.

²⁵ The structuring of cities and roads with the presupposition of automobile transport was cited as an example by Chandler *ibid* to the extent that cities then became designed to facilitate automobile transportation over other means, such as pedestrian friendly cities.

dependent upon a narrow definition of harm. Competition is cited as a factor which contributes to the limiting of options by technology, for example by introducing options which give an added advantage such as enhancement of certain physical or cognitive abilities, the use of which reinforces competitive values which coerces other actors to use the technology.²⁶ Particularly in this latter case, the argument in defence of the use of doping drugs by cyclist Lance Armstrong was used in the context of a culture of doping and competition at professional level.²⁷

Only certain conceptions of problems and guiding values may come to permeate the decisions conducted in relation to new technologies or indeed the practices and perceptions of society in general. This begs the question as to which values or priorities are being furthered or dominating society and the direction of technology and social practice, and who or what factors influence that trajectory?

Lack of seriousness and attention paid to soft or diffuse impacts may be reflected in the relative dearth of political and legal attention paid to the activities of scientists and doctors until relatively late in the 20th century. However high profile public scandals such as that seen with Bristol and Alderhey, the controversy over genetically modified (GM) foods and crops in Europe more generally, and the novelty of NEST themselves have prompted increased policy consideration exemplified by the conferences and reports of the National Science Foundation (NSF) in America²⁸ and that of the European Commission at the beginning of the 21st century.²⁹ These latter two reports both took in to consideration - the European Commission possibly more so - the need to analyse and accommodate for differing opinion over novel converging technologies in policy responses including the ambiguous, diffuse and “soft” impacts that may not normally be included in or justify state interference. Academic and policy work have advocated for, and regulatory and governance frameworks have integrated, varying forms of public consultation in a move described as the democratisation of science. Such moves may be clearly designed to take in to account many

²⁶ See Chandler *ibid* at 16.

²⁷ See Tom Carey “Cycling doping report: Drug taking remains widespread” The Telegraph Online 9th March 2015 <http://www.telegraph.co.uk/sport/othersports/cycling/11458133/Cycling-doping-report-Drug-taking-remains-widespread.html> and the Report to the President of the Union Cycliste International (UCI), Cycling Independent Reform Commission (CIRC) 2015 available at http://www.uci.ch/mm/Document/News/CleanSport/16/87/99/CIRCReport2015_Neutral.pdf.

²⁸ *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science*, NSF/DOC-sponsored report edited by Mihail C. Roco and William Sims Bainbridge, National Science Foundation (2001).

²⁹ European Commission High Level Expert Group (2004) *Foresighting the New Technology Wave: Converging Technologies – Shaping the Future of European Societies*.

differing views of the good and the harm of new technologies and related practices. These developments are explored further in chapter three.

2.5 Interim Conclusion

From the above characterisation and overview several points can be outlined. The challenges presented by NEST in general relate to implications for health, safety and security; an anxiety over the future and the potential social changes that may include the erosion of perceived fundamental principles (such as privacy), or the failure to deliver on the promise of such technology (especially in relation to biomedicine); and the need to choose/shape the trajectory in to the future and the values underpinning it. This is in addition to the ability of new technology to affect changes to social practices and social values that may result in new interpersonal conflicts, or new platforms on which old conflicts play out. The ability to mediate and arbitrate in situations of novelty is a point explored more fully in relation to the interaction of law and technology in the next chapter.

Whilst regulation and law have been increasingly deployed in the management of NEST, or at least to remedy fears (often following a public scandal) of a particular technology or scientific practice as outlined above, such intervention is a relatively recent occurrence. This is explored in more detail in chapter 3, but I argue that the issue of moral and value plurality and navigating in to the future however, or the fear that such future is outwith our control may be said to underpin much of the unease, lack of trust and calls for transparency that have followed the announcement of certain new technologies and techniques. In the management of NEST, with which I am concerned, the issue of shaping technology and society in general, poses certain questions: Whether such socio-technological trajectories can be actively shaped? If they can be influenced, how is this practically achieved? By what priorities or values should they be shaped? Furthermore, for the purposes of this thesis, it poses further question in relation to what role, or what we expect the interaction of law and regulation to be in the management of NEST. This aspects is addressed in more detail in chapter 3.

The rest of the chapter seeks to provide insights to these questions and in so doing further illustrates the complexity of managing NEST and the development of the socio-technical future, aswell as clarifying the underlying basis of the research and part of the problem to which my research is directed. This is that in order to better influence and manage socio-technological futures, action must be taken when a technology is just emerging but at which point there is epistemic deficit as to its social consequences and future development.. As such, a better understanding of the dynamics of socio-technical development and potentially changing practices and values can aid decision-making. It is to this understanding that my

research is contributing.. The research as a whole looks to examine how the law sits in relation to science, technology and society, and of interrogating its role and what we should expect of law in this capacity and how it fits in with the development of the socio-technological environment. The rest of this chapter seeks to deepen the understanding of the relationship between new and emerging technology and its social shifting potential as part of setting up the justification of this research and the rest of the research problem.

3 Technological Determinism and Collective Action

Following from the previous discussion this next section aims to provide answers to the first two questions outlined above – can technological trajectories be shaped and how can they be shaped. It explains the limitations of active influence over the socio-technical environment as dependent on the point of emergence of particular technologies and as requiring collective action. However it also highlights that due to the plurality of opinion and disagreement over the potential social impacts and ethical acceptability of new technology in the first place, different groups with different priorities and values may co-exist, compete, or collaborate on influencing technology decisions. I set out that although part of managing NEST requires answers to normative questions over who is involved, and how decision-making and action in relation to NEST should be organised, my concern is to contribute to a better understanding of the dynamics of development of the socio-technical environment in general. This requires not only to account for the plurality of activity, values and priorities affecting such development, but the capacity of NEST to change the norms and values of society. In so doing this discussion leads to section 4 which outlines the basis of the coproducing relationship between technology and society and the technomoral change thesis that draws on this understanding.

3.1 Technological Determinism and the Collingridge Dilemma

Technological determinism posits that technology influences society more than society shapes technology.³⁰ There are differing theories as to the predominance of technological determinism,³¹ and to the sensitivity of technology to active shaping. Rip and Swierstra outline examples of the form of argument that technological determinism may take. From

³⁰ Nuffield Council Report *supra* n1 at para 4.16.

³¹ See for example M. R. Smith and L. Marx (eds), *Does Technology Drive History? The Dilemma of Technological Determinism* MIT Press (1994).

transcendent ideas of technology as unfolding regardless of any decision or choice actively made. They argue that this normally becomes competitive reasoning that “if we don’t do it someone else will” which although not completely denying human agency relegates it to that of strategic game playing whilst denying agency to those on the outside of technological decision-making within the general public.³² History shows the many failures of certain technologies to become widespread and socially acceptable, and recent contemporary scandals and adverse public reactions to GM crops for example,³³ further show the ways in which society impacts the progress of some technologies, if not technology in general.

Other forms of determinism relate to theories of path dependence and lock in³⁴ described in depth within economic theories and in relation to technological designs and dependencies.³⁵ Path dependence and lock in are premised broadly on the idea that some technologies once diffused in to society become increasingly difficult to change or shift as society itself adapts to accommodate that particular way of doing things, for example, because the costs, financial and practical, may provide a barrier to changing an entrenched system. There are different conceptualisations of path dependence, but it has been critiqued³⁶ in its ability to explain and account for technological and social development as it remains the case that as difficult as it may be to shift entrenched pathways it is not necessarily impossible, and to a certain extent may be socially constructed.³⁷ However, insights from path dependence theory have shown that technologies are more sensitive to influence at their early emergence.³⁸ It is at the point of emergence that technologies are most sensitive to environmental and social influence in terms of their being accepted or rejected in society and in terms of their acceptance, use and diffusion in the research and design sphere (in laboratories and between designers and the technology industry). Early acceptance or rejection, or modifications to the technology are more likely to have a long term and profound impact on that technologies development and trajectory – including decisions as to design – than will actions and decisions that take place after a technology has become well established.

³² Ibid.

³³ See G. Gaskell “Science policy and society: the British debate over GM agriculture” *Current Opinion in Biotechnology* 2004, 15:241-245, for an insight in to the way in which public and media aversion to GM has affected policy and market dissemination.

³⁴ Rip and Swierstra *supra* n6 at 8.

³⁵ See Nuffield Council, *Emerging Biotechnologies* (2012) *supra* n1 at para1.24-1.26.

³⁶ See for example M. Howlett and J. Rayner “Understanding the Historical Turn in the Policy Sciences: A critique of Stochastic, Narrative, Path Dependency and Process-Sequencing Models of Policy-Making Over Time” (2006) *Policy Sciences* 39, 1–18.

³⁷ See Rip and Swierstra *supra* n6 at 8.

³⁸ See Nuffield Council, *Emerging Biotechnologies* *supra* n1 para 1.24-1.26; see also in a review of economic theories of path dependency, that the trajectory of such paths are more open to influence in their infancy, O. Hatthaway “Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System” (2000-2001) *Iowa Law Review* 86, 601-665 at 611.

Insights above relating to the sensitivity of emerging technology to change however are caveated by a lack of knowledge about the potential impacts of these technologies at the point of their emergence for regulators (or anyone) to predict the social consequences of their emergence. On the other hand failure to intervene until such knowledge is gained will make the technology difficult if impossible to shape or control. This has been most canonically defined as the Collingridge dilemma.³⁹ We are still left then with a need to try to increase our understanding of how such technologies and their interactions with society develop.

The fear that flows from concepts of technological determinism and reflected in media and public reactions seems to be intrinsically linked to a fear over the erosion, or the habituation of society to “dehumanising” relationships with the world through technology, that might have seemed intolerable at certain points in time.”⁴⁰ We cannot, according to Nordmann, relinquish ourselves to the notion that technology will progress without a moment in which we can assess or shape its progression as to do so would be to abandon a fundamental of political philosophy, that we are able to express our values and shape our society.⁴¹ But if this fear of the future is linked irrepressibly to the underlying value we place upon certain relations or rights, such as the value and treatment of human dignity (and what that even entails which is debated) or of protection of privacy, then arguably it is these abstract ideas even as they are practically reflected in society, that are of the main concern rather than simply the specific technologies. As will be shown however, treating fundamental values – those which are traditionally seen as touchstones of society and/or constitutional values such as privacy - as sacrosanct, is not necessarily correct in the face of disruptive technologies.

3.2 Collective Action, and Identifying and Evaluating Emerging Values and Priorities

Rip and Swierstra argue that technologies are not shaped by individual action, rather that collective action is needed to influence their paths.⁴² What collective action entails, and how it is framed is left open. Collective action may be many things from pressure groups and commercial endeavours, to wider regulatory measures and state intervention. Swierstra and Rip explain, however, that in debating the ethics and values that should underpin our understanding of emerging technologies and our social organisation in general – and which

³⁹ See D. Collingridge, *The Social Control of Technology* (1980) London: Pinter.

⁴⁰ Nuffield Council on Bioethics 2012 supra n1 at para 4.16.

⁴¹ A. Nordmann “No Future for Nanotechnology? Historical Development vs Global Expansion” in F. Jotterand (ed) *Emerging Conceptual, Ethical and Policy Issues in Bionanotechnology* (2008) at 54.

⁴² Swierstra and Rip supra n 6 at 8.

may underpin certain collective action - what may be perceived as a consensus seeking exercise is a fiction and all arguments are in competition such that some are inevitably crowded out.⁴³ This introduces the idea of more successful or “winning” arguments in relation to our evaluation of specific technologies. Collective action therefore may form around specific viewpoints and even in opposition to the dominant or currently “winning” argument in relation to new technologies. It also points to the potential of pervasive or more successful viewpoints or conceptualisations of the socio-technical reality – and normative positions on what that socio-technical reality *should* be – to erode what is seen as human dignity, or in relation to the explosion of computing technology, of privacy, and it is this which seems to underpin the unease associated with potential technological futures. What is being debated is the kind of society we wish to be. To this extent the question *can we shape* the trajectory of socio-technical futures segues in to a question of *who frames* our progression in to those futures? This is a question of politics, of organising and justifying a system and means of attributing power for decision-making and justifying those decisions also, rather than simply a finding of morality or the “right” answer.

The Nuffield Council report outlined how industry and economic incentives were the overwhelming drivers of innovation in the UK with potentially negative consequences as described in the previous subsection.⁴⁴ But public scandals such as those following the introduction of GM foods, the organ and tissue retention practices of Bristol and Alderhey Hospitals and even the reaction to the introduction of IVF all touched on at the end of subsection 2.4, at the time prompted changes in regulation.⁴⁵ The erosion of trust in scientists and those involved in decision-making in relation to new technologies has led to a rise in public engagement, consultation and a general pull towards democratised science. This aspect will be explored more fully in chapter 3. In relation to emerging technology what is in issue is the nature of and values underpinning collective action aimed at their promotion, management and limitation, but also, of how, what kind of collective action unfolds and who is involved in that collective action. Importantly, and highlighting the complexity of understanding *how* the sociotechnical environment might develop in the future, differing groups, and ideas about how the socio-technical environment and future should be, will compete, and it is not clear how a “winning” conception is identified. I argue that it may be that differing opinions and groups can co-exist and have differing levels of influence at any one time. Simply because one view or group may have more influence than another at one

⁴³ Ibid at 18-19.

⁴⁴ Nuffield Council on Bioethics (2012) *supra* n1 at para 10.17.

⁴⁵ See discussion in chapter 3.

point does not preclude that group and the view they hold from being challenged and losing influence. There may even be ambiguity as to the dominant or most influential view or group, or a liminal period of transition. I argue below that these interactions and results are coproduced and will develop these points further in section 4.

Much of the fear behind NEST is its capacity to change social norms and practices and the perceived values, but this may simply depend upon whose vision or values are being seen to drive that future. In terms of management of NEST and its future progression, as stated above, this is a political question of organising a justified position on who is involved and how decisions are made. These are normative questions of what we *should do* in terms of organising and justifying a system of decision-making and society in general. These are not questions that I aim to answer in this thesis. What I do aim to contribute to is an understanding of the dynamics of the sociotechnical landscape - the social reaction and interaction with technology – and how it develops as part of addressing the epistemic deficit of the potential future social consequences of emerging technologies at the point at which decisions made in relation to them are most influential. Such an understanding can itself aid the consideration of normative questions as to how to manage a particular technology in the face of a lack of certainty over the future.

The power dynamics of collective action and which values may be influencing the sociotechnical landscape need to be accounted for in any understanding and explanation of the development of the socio-technical landscape and the development of any particular technology. As indicated above, and throughout this chapter, it is the potential change in social practices and values or moralities that sparks anxiety over NEST, and so a greater understanding of how technology mediates such change in social practices, perceptions and values, and the potential causal relations between them is required. Clarity on this issue comes from work on the concept of technomoral change.

4 Technomoral Change, and Coproduction

In outlining technomoral change and introducing coproduction as an interpretative tool to help explain the complex causal relationships involved in the formation and understanding of our socio-technical reality, this section also seeks to lay out the fundamental complexity at the heart of this thesis, and the problem of NEST for society in general. The potential that NEST prompt a point of flux in our understandings of accepted conceptual descriptions of our socio-reality and the values underpinning that understanding, mean that values we

normally draw upon to guide our decision-making are not just disagreed upon or differently weighted as part of moral plurality, they may also be actively scrutinised and subject to flux.

The “soft” impacts outlined in reference to the ambiguous and ambivalent nature of NEST are simplified scenarios of potential change caused by the introduction of new technologies. Swierstra and Rip coin the term technomoral change to refer to the capacity for morals to change in response to new technologies.⁴⁶ Paraphrasing, this phenomenon is characterised by the friction between taken for granted moralities or social norms as to what are appropriate and accepted standards of behaviour, beliefs, attitudes and interaction, and the new or emerging technology in issue which can create new opportunities, pathways or platforms for conceptualising the goodlife. It is the result of the co-shaping of technology and society: that the coevolution that applies between technology and societal practices also applies to technology and morality.⁴⁷ Swierstra has developed this thesis further and an outline is given below. Before turning to this however, I outline the insights from STS literature that has developed an understanding of the coproducing relationship of technology and society. This is with a view to show the social dynamics involved in constructing different perceptions, and thus also of the lived experiences of the socio-technical environment.

4.1 Coproduction and Competing Visions of Reality

Work in coproduction has focussed upon and can be broadly divided in to work looking at;

- “emergence and stabilisation” of new objects and phenomena, of how they are assigned meaning and how they are discussed;
- “framing and resolving controversy” looking at how “one set of ideas gains supremacy over competing, possibly better established ones, or fails to do so”;
- “intelligibility and portability” of techniques and products, looking at standardisation, formation of new communities;
- examining “cultural practices” of science and technology which looks at and questions the “universality” of facts as between different cultures and institutions

⁴⁶ Swierstra and Rip *supra* 6.

⁴⁷ T. Swierstra “Nanotechnology and Technomoral Change” (2013) *Ethics & Politics* 15: 1, 200-219 at 205.

and how differing domains of research develop and retain certain cultural characteristics.⁴⁸

Rabcharisoa and Cullon posit that coproduction can allow us to “translate an intertwined transformation...[of] expanding lists of actors who participate in scientific and technical debates and activities...” which may result in (and therefore coproduction refers to) “the emergence of collective action and the shaping of new identities...” and “...the shaping of objects of shared interest that could not have emerged without this collective action.”⁴⁹ As such coproduction refers to knowledge and collective mobilisation as conjointly produced. Jasanoff argues that the idiom of coproduction allows us to work an encompassing framework that:

“...draws together our scientifically and culturally conditional perceptions of reality, our capacity to create new collectives through technological as well as social means, and the changes in expectation that arise when science and technology interact with individual self-awareness and the sense of being well ruled”⁵⁰

Scholarship within the coproduction idiom points to the intertwining of elements of the cognitive, material, social and normative;⁵¹ of the intertwining of knowledge and ideas with material objects, social relations and normative choices. It posits, importantly for this research, that these elements are mutually influencing such that, material objects such as technology and the objects they give rise to – for example the In Vitro embryo – are given equal consideration in terms of their influence on the socio-technical environment, as are abstract ideas or descriptive concepts (cognitive), social relationships and human agency, and normative judgements. Jasanoff has described how coproduction works across some well-known paths including the formation and adjustment of identities, formation of institutions and discourses that accompany new representations of things, of reality, and technoscientific advances.⁵² In doing so she concludes that the coproduction idiom grants descriptive richness and can answer questions as to why socio-technical objects such as

⁴⁸ S. Jasanoff “The Idiom of Coproduction” in S. Jasanoff (ed) *States of Knowledge: The Coproduction of Science and Social Order* (2004) London and New York: Routledge at 5-6.

⁴⁹ V. Rabcharisoa and M. Callon “Patients and Scientists in French Muscular Dystrophy Research” in Jasanoff *ibid* at 142.

⁵⁰ Jasanoff “The Idiom of Coproduction” *supra* n49 at 6.

⁵¹ *Ibid* at 6.

⁵² *Ibid* at 5.

climate change or endangered species become part of our consciousness and achieve cognitive standing in addition to moral and political standing in our society.⁵³ It can also enable criticism. Referring to points of emergence of new socio-technical objects, Jasanoff refers to the “moment of flux” which is where “processes of coproduction are most influential in setting the stage for future human development.”⁵⁴ It is at this point that cognitive structures, concepts and knowledge can be challenged and thus where existing moralities and values are also challenged, but further once either new, or the existing concepts become stabilised it becomes increasingly difficult to reopen them to scrutiny in the same way.⁵⁵

The coproduction idiom can help explain and understand the complex causal dynamics as between the development or introduction of a new technology or new scientific finding, and the discourse that builds around it, or the concepts used to describe the technology and its potential applications, and the subsequent social reactions and arguments that then build up around it. Brazier has argued that new developments in biomedicine including the use of human tissue as a resource for developing treatments and medicine for others, and the creation of hybrid or ambiguous objects such as admixed or genetically modified embryos, challenge our fundamental categories of understanding.⁵⁶ The distinction between person and thing, or persons and medicine, and the language and concepts used to understand and describe such ambiguous objects is part of the coproducing relationship analysed in STS. Jasanoff has pointed explicitly to “hybrid” objects such as admixed embryos as a topic of study in understanding the relationship of coproduction. As will be stressed especially in relation to the case study of the Human Fertilisation and Embryology (Mitochondria Donation) Regulations 2015 examined in chapter 7, the concepts used to describe new technological techniques, or formed as part of cognitive framing for understanding the impact or implications of new technologies, even ostensibly purely descriptive or neutral concepts can take on or have normative implications. Indeed, part of the development of particular discourses and representations as part of the coproduction understanding, may uncover attempts using language or concepts to down play or to emphasise particular normative standpoints. For example in describing the In Vitro embryo, it may be referred to as a blastocyst or even a pre-embryo at early points in its development, such as before the cut off 14 day rule for research and storage, because such terms have less moral and normative

⁵³ Ibid at 42.

⁵⁴ Ibid at 278.

⁵⁵ Ibid.

⁵⁶ M. Brazier “Human(s) as Medicine(s) in S. MacLean (ed) *First Do No Harm : Law, Ethics and Healthcare* (2006) Ashgate.

connotations as “embryo” and thus may down play the ethical or moral significance of the entity for some people. In relation to the 2015 Regulations it is argued in chapter 7 that use of terms such as “mitochondrial donation” and even the blatant refusal to use the term “genetic modification” to describe the effect of the proposed techniques being advocated in the Regulations, in spite of many arguments against this refusal, I argue could be seen as an attempt to foster or produce a discourse that might reduce the ethical and normative ambiguity of the processes.

Even well understood concepts may be subject to a rethink in the light of new technologies and the findings of scientific research, and even in the absence of new technology concepts that are part of our day to day understanding can be subject to refinement or change. For example the meaning and understanding of “mother” or “parent” can be challenged by the social movement and acceptability of different family formations including step parents, and adoptive parents. With new technology and science however, that change, may potentially happen much faster. The example of a concept in flux and also the example used as a case study of a potentially emerging legal concept is that of identity. Identity is already seen to be a polysemic concept and one given a deeper overview in chapter 6, but aspects of identity that are broadly attributed to its understanding have been directly challenged as a result of new technologies and scientific discoveries. Previously seen to be fixed character traits can now be changed or seen to be subject to fluidity, this has included the physical manifestations of sex or gender which have in the past century been rendered changeable through surgical and hormonal interventions. More specifically for the present context, the understanding and discovery of genes and DNA have altered perceptions of descriptive identity, of how we may track our past and genetic roots. The capacity to then change genetic makeup, even if in the pursuit of treating genetic illness or disability opens up our understanding of what identity should mean. Where previously considered immutable characteristics are suddenly rendered mutable, the concepts used to describe this situation will take on a normative effect. For example, stating that genetic identity is immutable or that human genetic identity is limited to a specific range of genes whilst ostensibly a purely descriptive concept is actually a normative stance on what practices and technologies should be permissible, and on what alterations, if any, can be allowed in relation to the human or simply the individual’s genome. Social context is also key here, since genetic modification, and the ability to change genetics to screen for specific genetic traits is already normatively loaded due to the history of eugenics. In chapter 7 I argue that this is why the definition of “genetic modification” is eschewed by the British Government in the discussion and description of the techniques used to treat embryos with mitochondria dysfunction: to reduce

the normative implications of techniques that they see as less ethically and morally questionable.⁵⁷

Coproduction points to the development of new concepts or the stretching of old ones to cover new scenarios and frame understandings of the new technology and scientific insights in society, but these in turn will be affected by the social response to, or competing arguments or conceptualisations of the technologies and their implications. As outlined by Swierstra and Rip, there are competing arguments, and thus there may also be competing conceptualisations and understandings of the changed sociotechnical reality, and only one or a few will come to dominate hegemonic thinking. As such, the differing conceptualisations settled upon, will both be influenced by and influencing of the social dynamics and potentially even the power dynamics at play in broader debate.

Whilst coproduction points to the complex causal dynamics in arriving at competing, and pointing to in flux dominance of particular perspectives of the sociotechnical reality, it does not point to the moral superiority of any one. That is not the intention of such analysis. Technomoral change however, as developed by Swierstra does point to the potential for justified moral flux in such situations – that principles of moral and ethical reasoning which may be seen as inviolable or unchanging by some, can and should be challenged on such occasions regardless of the social position.

4.2 Technomoral Change

The fact that technology can affect morality is not something that is commonly acknowledged among moral philosophers as the universality of morality is a fundamental tenet of moral theories.⁵⁸ This stance however does not consider that developments in the life sciences, and indeed new experiences mediated through technology can lead to changing knowledge that affects how principles of moral reasoning may be perceived: that they could be based upon flawed logic or understanding.⁵⁹ Crucially, it should be borne in mind that moralities and principles of moral reasoning are plural, and even though the point of moral theories is that they are claimed to be universal, much like conceptions of law - explored in chapter 5 – as there is no agreement or consensus on any one moral theory. Swierstra's analysis of technomoral change therefore, applies ways in which varying views on and principles of morality – which may be conceived of in different ways – can be modulated or

⁵⁷ This discussion is deepened in chapter 7.

⁵⁸ Swierstra (2013) *supra* n48 at 205.

⁵⁹ *Ibid.*

challenged by NEST. Therefore whilst Swierstra clarifies how moralities or principles of morality might be modulated, he is not, and neither am I, claiming that there is any one moral theory that *is* followed, nor taking a stance on what moral principles *should* be followed.

Swierstra looks at the ways in which technology mediates morality through the hermeneutic and existential dimensions.⁶⁰ In the hermeneutic dimension technology can destabilize morality by providing new knowledge about the consequences of our actions, for example advancements in our knowledge about climate change led to new understanding about how our actions impact negatively on the environment.⁶¹ New technologies may mediate our knowledge about life and what is worth protecting, for example whether life begins with the foetus or embryo and their relative moral status.⁶² It may increase our connection to others who are adversely affected and in need of help, thus bringing our potential moral obligations in to prominence, for example through the mediation of television.⁶³ Paradoxically technology may also blind us to the consequences of our actions, for example in the change from hand to hand combat to the impersonality of remote bombing.⁶⁴ Fundamentally, new advances in sciences may shake our entire world views of our place in the universe as with the shift in perspective following Galileo's discovery that the Earth revolved around the sun and the Renaissance that followed.⁶⁵

In the existential dimension, technology and science by extending our capabilities and knowledge about how our actions impact upon others may increase the ambit of our moral duties. If we are capable of helping then we ought to help, whereas incapacity to help may limit our responsibility.⁶⁶ This becomes contentious when viewed from the perspective of changing nature: should those who have been treated badly by nature not have a right and us a duty to ameliorate that treatment when we are able to?⁶⁷ In the context of reproductive technology this can quickly take us to questions about the morality or otherwise of intervening with genetics if we are able to, or more broadly in the context of parenting and the position of pregnant women and our increasing knowledge about how her health impacts upon the foetus, how that knowledge impacts upon her moral duty.⁶⁸ Swierstra concludes on

⁶⁰ Ibid at 208.

⁶¹ Ibid.

⁶² Ibid.

⁶³ Ibid.

⁶⁴ Ibid.

⁶⁵ Ibid at 209.

⁶⁶ Ibid at 210.

⁶⁷ Ibid at 211-210.

⁶⁸ Ibid.

this aspect of his argument by saying that technology does more than increase choice (and as demonstrated in section one it can potentially constrain choice) it also turns “existing, and potentially valuable, ways of dealing with Fate in to something morally problematic”.⁶⁹

Acknowledging that new technologies or advances in science may problematize existing conceptions and moral principles does not explain how certain moralities or values permeate social consciousness more than others or become a hegemony such that most people might not even think to question them. As acknowledged by Swierstra in his example, the contraceptive pill mediated perceptions of women’s reproductive and sexual autonomy, but many held more liberal views long before the introduction of the pill, and years after to the present day many hold conservative opinions on promiscuity and reproductive choices.⁷⁰ Swierstra explains this by describing morality as a force field within which differing moral views and values compete for hegemonic dominance.⁷¹ Within this competition disruptive technologies can provide a potential tipping point.⁷² Moral change does not take place merely within the individual, to individual norms and values, but occurs in an interactive plane of morality as a whole, one with blurred boundaries, contradictions and tension between competing values.⁷³ These competing values can be mediated by establishing hierarchies between them, by ascribing them to particular applications, or through “compromise and trade-offs”.⁷⁴ This is normally referred to as value pluralism but Swierstra argues that this term may obfuscate reality, because normally people may be in agreement about the kinds of values that are important, but disagree as to their relative strength, disagreement and differences that normally only present themselves obviously when tested, for example when forced to make a choice between values.⁷⁵ He concludes that understanding morality as a force field allows us to better understand the interaction between technology and society, that “[b]y mediating our (hermeneutic, existential) relations to the world, technology influences a) the relative force of norms and values, and/or b) the quantity of people they appeal to.”⁷⁶ This is caveated: it is impossible to know exactly how a value is “modulated” by a technology, whether it releases persons from the burden of certain moralities or whether it entrenches them further.⁷⁷

⁶⁹ Ibid at 211.

⁷⁰ Ibid at 213.

⁷¹ Ibid.

⁷² Ibid.

⁷³ Ibid.

⁷⁴ Ibid.

⁷⁵ Ibid.

⁷⁶ Ibid at 214.

⁷⁷ Ibid.

Following from the reasoning above Swierstra argues that this relieves our understanding of the relationship between technology and society (and morality) from the realms of determinism as a debate about whether technology or society dominates our common shaping, and instead views this as a marriage of “co-determination”.⁷⁸ This might be seen as distinct from understandings of coproduction, since coproduction looks to the lived and actually understood social experience of reality including current understandings and value preferences. Swierstra seems to be making a normative argument that even if potential future trajectories of technological and social impacts seem counter to fundamental moral principles, the understanding that such moral principles themselves may be subject to scrutiny points to the conclusion that change does not necessarily mean that technology undermines such principles. Technology can reinforce moral values or make other options more attractive and urgent than others, which does not necessarily mean a process of moral erosion as it may in fact improve on morality. Thus, technology and morality/society are equal in this progression in to the future.⁷⁹ Whether or not this is so, we can view technology and society as equally driving of each other. Swierstra argues that a learning approach of morality should be undertaken, one that does not admit of fundamental principles that allow no room for changing knowledge or experience to guide our underlying logic, but also one which does not slip in to extreme moral relativism.⁸⁰

Ethical controversies occur in those circumstances where new technologies challenge existing moralities, ones which may be most pervasive and the norm in society (or a particular community) which may even have been “invisible”, not readily articulated, taken for granted as part of the fabric of social life, until they are disrupted.⁸¹ At these points of disruption, the technologies have a destabilising effect upon morality which may open up and present opportunity for a rethink of the moralities and values currently in play (and thus an opportunity for a new hegemony to emerge). At these points relations between individuals also are altered and become uncertain because the usual tropes are now challenged. Swierstra argues that at these moments there is a “complicity between promoters and opponents” of the technological innovation because each assess the technology against *current* morality.⁸² Proponents argue that the new technology will achieve the realisation of existing values such as the curing of diseases, or action on the environment for example, whilst opponents will,

⁷⁸ Ibid.

⁷⁹ Ibid.

⁸⁰ Ibid at 214-216.

⁸¹ T. Swierstra ” Identifying the normative challenges posed by technology’s ‘soft’ impacts” (2015) *Nord J Appl Ethics* 9 (1), 5–20 at 16.

⁸² Swierstra (2013) Ibid at 215.

for example, argue the threat to existing values through the erosion of dignity or the treatment of individuals and reproductive material as mere things for use rather than ends in themselves.⁸³ He argues that in general we are normally morally conservative in our approaches to life because values and moralities are normally incredibly bound up with our individual (and collective) identities and as such when they are challenged we are defensive.⁸⁴ In this sense technological innovation is recognised and welcomed but moral innovation, lifting us out of current moralities, is rarely acknowledged. This stance prevents what he calls technomoral learning.⁸⁵

As an example of both technomoral learning and innovation he points to the use and adaptation to organ transplantation where a technological innovation gave rise for the need for a moral one also. The prevailing definitions of death slowed down the progress and use of this treatment as it was clear that it was immoral to use the organs of a patient who was still alive, and yet for the greatest chance of success organs should be removed when all bodily functions have not yet ceased which led in turn to a morally innovative solution in the form of the brain-death definition.⁸⁶ Further, it was, he suggests a technological and further moral innovation that was (and is still) required for organ transplantation to fulfil its promise. This occurred in the form of immune-suppressant drugs, and then the following organ shortage which has led to combined calls for both other technological innovations (such as artificial organs and xenotransplantation) but also moral ones in the form of proposals for changing consent systems to opt-out and even reciprocity or property based systems.⁸⁷

Swierstra's analysis of technomoral change, and in particular his understanding of morality as a forcefield, help to clarify how perspectives on the socio-technical environment, and existing entrenched, or simply individually held values, might themselves be challenged and opened to scrutiny. It also highlights that simply because technology and new knowledge might challenge existing values or principles of moral reasoning, this does not mean that they are illegitimately undermined. Instead, they offer a point at which new thinking and evaluation of an existing value or moral judgment might develop as valid point of departure from existing thinking. This is in addition to the plurality, or different weighting of existing value priorities shared by different persons, groups and communities. Thus, even if a new way of thinking or reasoning about a particular relationship, problem or even entity were to be prompted by a new technology or scientific discovery, it would need to overcome or

⁸³ Ibid.

⁸⁴ Ibid.

⁸⁵ Ibid.

⁸⁶ Ibid.

⁸⁷ Ibid.

persuade those ascribing to the already competing viewpoints. What I argue however, is that the new technology might provide a catalyst for change, and it is this that seems to be envisioned by Swierstra also. However, what Swierstra does not provide is a means of understanding how these competing visions of the socio-technical reality, value priorities or “moral innovations” develop and spread, or a means of understanding why particular views come to dominate, or indeed if any might come to dominate social consciousness.

Causal relations between technology and changes in social norms or moral/value hegemonies are thus not direct but a modulated response with the emerging technology providing a moment for potential catalytic change. This moment is characterised by a mediation of relations of knowledge about the world and between individuals and other stakeholders, and potentially extending the categories of persons who may be considered stakeholders who may be harmed or could be helped in our society. Whether or not new knowledge bases, meanings, or moralities are recognised will be dependent upon social reactions to and recognition of changed circumstances or acceptance of new or changed knowledge. This is the process that Swierstra points to as unpredictable and which I argue can be partially understood through the coproduction idiom outlined above. Swierstra does claim that moral innovation – changes to existing moral values – is less lauded in our social lives, but that moral innovation or changes to morality is not necessarily a bad thing and that in approaching decisions about how to navigate our way in to the future of socio-technical development, moral learning should be integrated in to our decision-making processes. This is one aspect of consideration in answering questions about *how* we should practically shape our socio-technological futures and of the considerations that should be undertaken as part of organising who and how such decision-making is justified: by inscribing learning mechanisms into decision-making processes as part of collective action. I am not making a normative argument about whether learning mechanisms should be inscribed in decision-making processes. As I stated at the end of subsection 3.2, my interest lies in contributing to understanding the dynamics of development of the socio-technical environment which itself is required to aid decisions about its management which such normative questions and arguments pertain to. Whether learning mechanisms are embraced, whether moral innovations are accepted, which values and who has influence over their entrenchment within a new or existing hegemony are questions that require better understanding of social dynamics in such situations. I argue that this is better understood with the input of insights from social problems and sociology literature - which is reviewed in chapter 4 - and further study of the coproducing idiom within STS.

5. Concluding Remarks

As demonstrated NEST pose a complex challenge for their management if responsible development is to continue and potential benefit and even life-saving potentialities are to be realised, whilst navigating competing positions and concerns as to their potential long term social impacts. This chapter has sought to illustrate this inherent complexity especially as regards emerging biotechnologies as deployed in medicine, citing their ambiguity, the challenge of moral plurality and the potential that new technologies and the soft impacts that may be caused by them, begin to affect our future and lived experience in significant ways. At the centre of the analysis is the political imperative that we have a say in the sort of society in which we live, and it is the growing recognition that technology can have a shaping impact on our lives, in ways not everyone agrees with that has led to contemporary public scandals and to the rise of state intervention in technological and scientific regulation. Whilst even everyday interactions may be subject to change as a result of diffusing technology and changing practices and understandings, it is anxiety about the future that seems to permeate discussion in about NEST. Several broad questions were posed in relation to the management of NEST: can they be shaped? According to which values and priorities *are they* being guided? Which leads into the question of whose values or who is setting the values by which they are being guided? With a final question of by which values *should* they be guided?

I have attempted to show that development of technology and the sociotechnical environment can be practically shaped or navigated by collective action and that such action has a better chance of influencing development when a particular technology is in its infancy. However, as explained by the Collingridge dilemma, when a technology is only just emerging there is uncertainty as to its future development. Thus what is needed is a better understanding of the development of socio-technological trajectories in order to make better informed choices about the technologies in question. Collective action, may be practically able to influence socio-technical trajectories, but can exist in many forms of which law and state regulation may be but one. Different groups and forms of collective action, including companies, professions, or lobbyists and even Governments will have differing priorities and may compete for influence in line with the plurality of views relating to NEST. This then relates to the second and third questions posed above, as to which values and whose values are most influencing the socio-technical trajectory, which is in part intertwined with the final normative question as to which values and priorities *should* be guiding the sociotechnical

environment. This is so because the issue of competing value priorities, and debate over what constitutes harm, provokes questions as to how decision-making and who is involved in such decision-making within society is apportioned and organised. This is a normative and political question that I am not attempting to address. Neither do I wish to make a normative argument about the values or priorities that should be governing the management of NEST. My concern is to better understand the dynamics of change and development of the socio-technical environment which in turn may contribute to ameliorating the epistemic deficit about technology and its potential future social impacts at the point of its emergence when decisions and action are most able to influence it.

The point that I have endeavoured to make in this chapter, and relating to the central issue of the thesis of the relationship between law and regulation, technology and society, is that because of this coproducing relationship, how we practically shape socio-technical landscapes and differing opinions about how we *should* shape them are bounded at the point where moralities, values, practices and discourse are provoked. Collective action is how we can practically shape the socio-technical environment according to Rip and Swierstra, but the forms of that collective action and the aims and values underpinning it are inherently tied to the conceptualisation of the issues which are subject to debate and competition with other alternative conceptualisations of the sociotechnical reality. How socio-technical futures are shaped in terms of the practical implementation of shaping, and the differing normative judgments about of how they should be shaped - underpinned by what values and moralities - can then be seen as being tied to contingent knowledge and contingent power dynamics at play in society.

I want to explore how law and regulation fit in to an understanding of the development of this socio-technological future and what this can tell us about the implications for the management of NEST. Given the argument that technology and society exist in a complex causal dynamics of coproduction, I argue that law and regulation are also part of this coproducing relationship. As will be shown in the following chapter however, literature looking directly at the interaction between law and technology and at attempts to deal with the complex issues of NEST does not engage with such insights or literature as are found in STS scholarship. Many different insights and contributions of law and new governance design have added to the suggested practical means of overcoming some of issues of decision-making for NEST, but none look to the relationship of law as part of the ongoing conceptualisation and coproduction of knowledge and shaping of the socio-technological context.

Chapter 3

Limits of Law: Strategies to Address NEST and Which Ignore Law

1. Introduction

In chapter 2 the complexity in the management of NEST was outlined and it was also highlighted that the transformative potential and ambiguity of NEST raised anxieties over whether NEST could deliver on the potential benefits they promised tinged with fear over the potential “soft” impacts in relation to changing practices and the erosion of fundamental values such as dignity and privacy.

Overarching problems were highlighted in relation to the complexity of management for NEST:

- Empirical and epistemic deficit. Inability to adequately prepare for an uncertain future given a lack of empirical and theoretical knowledge of our progression in to that future (includes double-bind situation of the Collingridge dilemma);
- Challenges in accounting for plural views in decision-making and in allocating the costs and benefits fairly among the differing populations

Potential threat of the erosion of fundamental values or principles by changing social practices and technological capabilities

It was also highlighted that if the future socio-technical development is to be actively shaped, it requires collective action, but there may be different kinds of collective action, and indeed organised groups may compete to gain influence and power over that shaping. Law may be one means of collective action but it is only one among many. It is not clear how influential law actually is in shaping such trajectories. nor of what we can expect it to achieve in aiding the management of NEST. This in turn begs the questions:

- What do we *expect* legal intervention to do in terms of guiding and shaping ambiguous, uncertain and radically changing technology and society?
- What are the limits of law and can it have a shaping effect upon technology and society?

These two questions will be answered in the course of this chapter.

This chapter reviews the law and technology literature as it relates to the relationship between law, technology and society and as it seeks to grapple with, and conceptualise, the problems or issues associated with emerging technologies. It traces the development of the law and technology literature and the development of law in general, from its fragmentary, mainly reactionary emphasis to more nuanced critique of the interaction between law and technology, highlighting pervading issues with transparency in decision-making, ensuring legitimacy and trust, and embryonic development of approaches to anticipating future technological challenges.

Central to the academic literature looking to the implications of law for technology is the characterisation of legal lag and diagnosis of regulatory failure. Legal lag, suggesting that law fails to keep up with the fast moving progress of technology, and regulatory failure - referring to regulation in general not simply regulation targeting technology - as failing to achieve its aims and effect change to the social environment. Both these criticisms place in to doubt the role or effectiveness of law in managing, and, in particular, in shaping the future socio-technical environment. The alternative governance literature and design in some respects seeks to shape behaviour in a way that law or top down regulation is argued to fail to do, in addition to addressing issues of transparency and democratisation of the values considered in decision-making. Both these theses have undergone criticism and a reconceptualisation in some quarters, but these critiques do not speak to each other nor cross pollinate leaving the continuation of the legal lag thesis - in the form of regulatory disconnect - as inherently positivist in nature failing to take into consideration more social understandings of the interactions between stakeholders and regulations developed within regulatory theory. Ultimately, I will argue that more integration of interdisciplinary approaches to this study of the interaction between technology and law is required to provide a more accurate understanding of the dynamics at play. This can be partly addressed by more thoroughgoing dialogue between these literatures and STS, in particular the work in coproduction highlighted in the previous chapter. It looks also to alternative governance methods and literature that have posed non-legal or mixed governance responses to some of the pervading issues of managing NEST.

2 Regulatory Approaches to NEST and Law and Technology Scholarship

To the issues highlighted in the previous chapter and above, as outlined in the proceeding analysis, can be added challenges when a technology is emerging and is beginning to diffuse in to society, in governing new behaviours, practices, relationships and conflicts which may

not necessarily be covered by existing norms or regulatory systems. Law is implicated where existing conflicts are already mediated by law – it forms part of the context and environment within which social and technological interaction occurs – and increasingly in recent years has been called on to target and regulate specific scientific and research practices. Law and technology scholarship, and contemporary approaches to regulation pertaining to emerging technologies have struggled with these challenges.

This chapter provides some insights critical to these issues by reviewing the law and technology literature and contemporary approaches to regulation and specifically regulating for new and emerging technologies. For the most part legal literature looking at the interface between law and technology has characterised the relationship as one of law as a tool to shape technology and technology as a reified object to be controlled/shaped. This growing literature has developed over time from one looking at law and (new) technology in isolation from other concerns and in a fragmented approach, to one drawing upon multiple disciplines, focussing on more holistic views of the interaction between regulation, technology and society, and in developing both new regulatory approaches and institutional arrangements better able to respond to novel situations.

Regulatory and legal lag, common terms for problematising law and regulation, are critiqued and reconceptualised in the literature, according to Brownsword, as regulatory disconnect which accords more nuanced understanding of the issues of regulating for a changing socio-technical environment.¹ I critique this as being positivist in nature with further investigation needed to address the issue of how and why certain value positions in law and regulation come to have a shaping influence and what this shaping influence actually is. The wider relationship between law and regulation, and society and further efforts to account for regulatory failure, re-diagnosis of this as such, and contemporary responses to the problems of compliance, legitimacy and trust in regulatory theory are drawn together to show, in addition, how these perspectives inform a better understanding of the social dynamics of legal and regulatory decision-making.

Finally this discussion will lead to the argument that more is needed in terms of understanding of the casual connections and dynamics as between discrete regulatory and legal developments and the wider socio-technical environment: that how we regulate for new technologies can only be answered if an understanding of how law, technology and society develop together which calls for other disciplinary and theoretical input. This leads to in to

¹ R. Brownsword and H. Somsen “Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate” (2009) *Law, Innovation and Technology*, 1:1, 1-73.

chapter 4, where it is argued that a better concept of law, and the input of social problems literature and the idiom of coproduction amongst other insights from STS literature is required as part of this understanding.

Ultimately I argue that the theses of regulatory failure and legal lag as critiqued in the following analysis do not account for the relationship between law and the already outlined mutually influencing relationship between technology and society. How we evaluate law and how we criticise it is dependent upon our understanding of it and its relationship to the broader sociotechnical environment, and critiques of failure and lag may be dependent upon differing perspectives that are subject to disagreement. This section first provides an overview of the history of the development of law and technology scholarship.

2.1 History of Law and Technology Scholarship, Discourse and Regulatory Reactions to NEST

Technology has been around as a subject for philosophy and sociology longer than it has been for law, but there is now a wealth of academic literature looking at the interface of law and technology.² Tranter plots the typical structure of the law and technology enterprise through what he terms generations of legal literature following the introduction of particularly prominent technologies or technological events.³ Butenko and Larouche have described this literature as focussing on technology as the target of regulation or as a form of regulation itself.⁴ Moses has concluded that scholarship relating to technology as regulation has on the whole been more successful in answering crucial questions for the discipline than the latter project of analysing the regulation of technology.⁵ Definitions of regulation are normally well discussed in such literature whilst definitions of technology are rarely given, and implicitly seen as an exogenous phenomena acting on society that requires to be

² Examples of journals dedicated this topic include but are not limited to; Journal of International Biotechnology Law; Journal of Medicine and Law; Law, Innovation and Technology; Medico-Legal Journal; Medicine, Science and Law; SCRIPTed-A Journal of Law, Technology and Society; Yale Journal of Law and Technology; and for a comprehensive list see Kieran Tranter “The Law and Technology Enterprise: Uncovering the Template to Legal Scholarship on Technology” (2011) *Law, Innovation and Technology*, 3:1, 31-83.

³ Kieran Tranter “The Law and Technology Enterprise: Uncovering the Template to Legal Scholarship on Technology” (2011) *Law, Innovation and Technology*, 3:1, 31-83.

⁴ A. Butenko and P. Larouche “Regulation for innovativeness or regulation of innovation?” (2015) *Law, Innovation and Technology*, 7:1, 52-82 at 55.

⁵ L. B. Moses “How to Think about Law, Regulation and Technology: Problems with ‘Technology’ as a Regulatory Target” (2013) *Law, Innovation and Technology* 5:1, 1-20.

controlled.⁶ Twinned to this last insight, law and regulation itself is framed as being slow to keep up with the pace of change in technology, implicitly characterised in the law and technology literature (according to Larouche and Butenko) as a means of shaping and controlling technology (and therefore failing in this aim according to the aforementioned criticism).

Tranter describes early literature as typically following the introduction and coverage of a new technology in the media and cited problematic technology, the inadequacy of current law, and calls for new law.⁷ Such literature was inevitably reactionary in nature, following the trend of seeing new technology as a kind of crisis point meriting legal attention. Law was expressed as a way of achieving public policy goals, and the purpose of legal writing was to facilitate this function through exposing the gaps within existing regimes, describing new laws, and assessing the effectiveness of new laws according to public policy goals.⁸ The basis of such scholarship was overtly positivist in nature.⁹ Following the birth of Louise Brown, such scholarship still retained its positivist roots¹⁰ but the role of law in maintaining and reforming concepts such as “mother” and “parenthood” was also explored.¹¹ Normally focussing on one technology, or one aspect of law, or rule at a time, the actual response of regulatory authorities, of the law in general, and of legal scholarship for many years remained fragmented and open to criticism as “lagging behind” the technologies it sought to manage.

With the advent of IVF, ethical considerations and the rise of bioethics diversified the law and technology enterprise by introducing interdisciplinary approaches. New methods and insights included those taken from sociology, regulatory theory, history, technology studies and social research.¹² The Warnock Committee tasked with the challenge of exploring the ethical and legal concerns of IVF and their recommendations to Parliament marked the point at which bioethics within the legal and political system in the UK took on a greater

⁶ Butenko and Larouche *supra* n4 and Moses *ibid*.

⁷ Tranter *supra* n 3.

⁸ *Ibid* at 44. Note that this early law and technology scholarship described by Tranter was centred around “space law” or more precisely developed in response to potentially novel situations envisioned surrounding the launch of Sputnik and the practical legal situations of, for example, whether sovereign airspace was interfered with.

⁹ *Ibid*.

¹⁰ Positivist in this sense relates to traditional black letter legal scholarship, an analytical perspective that simply observes the law and seeks to analyse it by reference to “objective” concepts already explicit within the law and the scenarios to which it is applied. It does not necessarily go further in analysing the relationship between law and society and technology.

¹¹ Tranter *ibid*.

¹² *Ibid*.

role.¹³ The notion of a regulatory past was introduced in the context of novel technologies such that it became explicit that the changes were experienced against the backdrop of existing regulation that also had an effect upon the new technology in question and the changed socio-technical context.¹⁴ These diversifying approaches in the literature went beyond the positivist nature of the early law and technology enterprise. Tranter, however, argues that the new interdisciplinary methodologies and analyses did not interrogate the decisions made as to the goals aimed for, or posit values by which regulation should be structured.¹⁵ He cites possible exceptions in the form of Roger Brownsword's work on viewing the interface between law and technology through the lens of human rights.¹⁶

I challenge whether the law and technology enterprise does indeed ignore the normative and value content, and impact of the law in relation to new technologies (or indeed in general). Much legal scholarship is inherently intertwined with, and evaluated against, fundamental principles and values that are seen as cornerstones to the rule of law such as dignity, liberty, and also democracy.¹⁷ Butenko and Larouche in fact draw together broad insights from the law and technology enterprise together with law and economics scholarship specifically because they see the former scholarship as providing normative arguments and consideration of the wider social impact of new technologies.¹⁸ Others have engaged in the need to input value considerations into regulation in relation to (bio)technologies,¹⁹ and still others have pointed to the increased influence and importance of bioethics within law.²⁰

Tranter also fails to cite literature relating to approaches in reflexive and anticipatory governance which aim to integrate mechanisms in regulatory settings to regularly learn from evolving socio-technical environments,²¹ or to the embryonic literature relating to legal

¹³ See D. Wilson "Creating the 'ethics industry': Mary Warnock, in vitro fertilization and the history of bioethics in Britain" (2011) *BioSocieties* 6:2, 121–141.

¹⁴ Tranter *supra* n3.

¹⁵ *Ibid.*

¹⁶ *Ibid.* See also R. Brownsword, *Rights, Regulation and the Technological Revolution* (Oxford University Press, 2008).

¹⁷ See N. MacCormack "The Ideal and the Actual of Law and Society" in J. Tasioulas (ed) *Law, Values and Social Practices*, Dartmouth 1997.

¹⁸ Butenko and Larouche *supra* n3.

¹⁹ S. Harmon "Ethical Rhetoric: Genomics and the Moral Content of UNESCO's Universal Declarations" (2008) 34(11) *Journal of Medical Ethics* e24.

²⁰ R. E. Ashcroft "Could human rights supersede bioethics?" *Human Rights Law Review* 2010; 10: 639-660.

²¹ For examples of literature relating to reflexive governance in the technology setting see for example; S. Harmon, G. Laurie and G. Haddow "Governing risk, engaging publics and engendering trust: New horizons for law and social science?" (2013) *Science and Public Policy* 40, 25-33; G. Laurie "Reflexive governance in biobanking: on the value of policy led approaches and the need to recognise the limits of law" (2001) *Hum Genet* 130, 347–356; B. Wender, R. W. Foley, D. H. Guston, T. Seager and A. Wiek "Anticipatory Governance and Anticipatory Life Cycle Assessment of Single Wall

foresighting.²² These often draw upon participatory mechanisms to explore normative and value positions in relation to new technologies and the direction of research.²³ Part of the impetus of this recent literature and of regulatory interventions in scientific practices and technologies is to address the problem of the breakdown of trust between the public and those implicated in these practices including the regulators.²⁴ Examples include the aftermath of the introduction of genetically modified crops and food to Europe,²⁵ as well as the tissue retention scandal at Bristol and Alder Hey Hospitals in the UK. Discourses that were triggered by, and arguably sometimes triggering of social controversies in relation to new scientific and technological development, problematised not just the technologies themselves and the risks, uncertainties and ethical dilemmas they gave rise to, but also the existing regulatory regimes.²⁶ These problematisations challenged fundamental assumptions underpinning the governance framework: “science’s ability to govern itself responsibly without intervention by the state”; reliance upon an “elitist model” of science policy that relied upon expert advice to the exclusion of non-state and non-scientific actors; and importantly “in the case of new reproductive medicine, traditional morality as a foundation of state regulation.”²⁷ These problematisations and the controversies to which they referred correlated with, and were perhaps instrumental to the changes in approaches to governance and state-science-society relations that took place over the latter decades of the 20th

Carbon Nanotube Anode Lithium ion Batteries” (Winter 2012-2013) *Nanotechnology Law & Business* 9, 201; N. Brown and S. Beynon-Jones “Reflex regulation”: An anatomy of promissory science governance” (May 2012) *Health, Risk & Society* 14: 3, 223–240.

²² See G. Laurie, S. Harmon and F. Arzuaga “Foresighting Futures: Law, New Technologies and the Challenges of Regulating for Uncertainty” (2012) *Law, Innovation and Technology* 4:1, 1-33; see for legal foresighting in general not limited to technology; Sam Muller, Stavros Zouridis, Morly Frishman and Laura Kistemaker (eds) *The law of the future and the future of law* (2011) Torkel Opsahl Academic EPublisher (TOAEP) and further, although not related to more reflexive and normative focus; Norberto Nuno Gomes de Andrade “The application of future-oriented technology analysis (FTA) to law: the cases of legal research, legislative drafting and law enforcement” (2012) *foresight* 14: 4, 336-351.

²³ Ibid. See also in relation to the inclusion of democratic and participatory mechanisms; S. Jassanoff “Technologies of Humility: Citizen Participation in Governing Science” (2003) *Minerva* 41, 223–244; D. Avard, L. Bucci, M. Burgess, J. Kaye and C. Heeney “Public Health Genomics (PHG) and Public Participation: Points to Consider” (2007) *Journal of Public Deliberation* 5:1, Article 7; T. Papaioannou “Democratic governance of genomics: the case of UK Biobank” (June 2012) *New Genetics and Society* 31: 2, 111–133.

²⁴ See M. Levitt and S. Weldon “A well placed trust?: Public perceptions of the governance of DNA databases”(2005) *Critical Public Health* 15:4, 311–321.

²⁵ G. Gaskell “Science Policy and Society: The British Debate over GM Agriculture”(2004) *Current Opinion in Biotechnology* 15, 241-245.

²⁶ K. Braun, A. Moore, S. L. Herrmann and S. Könniger “Science governance and the politics of proper talk: governmental bioethics as a new technology of reflexive government” (2010) *Economy and Society* 39: 4, 510-533.

²⁷ Ibid at 512.

century.²⁸ Greater demands are now made of regulatory systems aimed at fostering scientific progress, promoting wellbeing and human flourishing, and of engaging public trust and support for such activities.²⁹ In particular trust in scientists, industry and government has eroded.³⁰ New governance mechanisms were put forward to address some of these concerns in different areas. These new governance frameworks however are not simply designs for law but often include discretionary guidelines and private or self-regulation in addition to or as opposed to concrete legal regulation. These new governance ideas are explored later in this chapter. It is important to note now however that their development is a result not merely as part of attempts to resolve problematisations outlined above. They are also a response to and take account of the perception that law fails to keep up with the pace of socio-technical change. They are also part of the generic critique of regulatory failure explored below.

In summary, in the past, law and technology literature problematised new technologies *for the law* following a technical analysis of the application of the existing regulatory regime to the changed circumstances. As such it was usually reactionary, and fragmented in approach. It has proceeded still on the presupposition that law (and regulation) is a shaping force and should be used as such over these new technologies. Equally, however, concerns are focussed upon the gaps and failure to account for potentially problematic behaviour enabled by new technology but not yet covered by law and regulation. Taken together, it may be surmised that this has led to the general consensus that law lags behind science and technology. It also raises yet again a perceived need for greater anticipation of the potential changes to the socio-technical environment that may implicate law in order that law and regulation might be better placed to respond to such changes without the charge of regulatory lag.

Tranter's central criticism of the historical literature relating to law and technology is the conceptualisation of the relationship between law and regulation, and technology. He characterises both the law and technology enterprise, and the broader contemporary

²⁸ Ibid.

²⁹ Harmon, Laurie, and Haddow (2013) *supra* n22.

³⁰ M. Levitt and S. Weldon "A well placed trust?: Public perceptions of the governance of DNA databases" (December 2005) *Critical Public Health* 15:4, 311–321 at 311. See more specifically Gaskell, G., Allum, N., & Stares, S. (2003). Europeans and Biotechnology in 2002: Eurobarometer 58.0. A report to the EC Directorate General for research from the project 'Life sciences in European Society' QL67-CT-1999-00286, 2nd edition 21 March 2003 at para 1.6; see also Audit Commission (2003). Trust in public institutions new findings: National qualitative survey (London, MORI Social Research Institute) p 15 in particular. But note that trust in healthcare workers and academia does remain high; See Gaskell et al *ibid* at para 1.6; See also Special Eurobarometer 341/ Wave 73.1 – TNS Opinion & Social, Biotechnology Report (2010) para 3.1. See also in relation to the UK in particular House of Lords Select Committee on Science and Technology. *Science and society*. London: Stationery Office, 2000, at chapter 1.

approaches to regulation and novel new technologies as presupposing that technology is inherently a problem to be solved, or put another way (and borrowing from Butenko and Larouche) as an exogenous phenomena acting upon society, and that law is the natural tool by which to control it. Tranter does not specify fully why this framing is problematic. The implicit message is that adopting instrumentalist thinking is not adequate to deal with instrumentality itself³¹ and misunderstands the relationship between law, technology and society, and potentially the nature of law and technology themselves. He cites Tribe with approval, that technology can be considered instead “as an occupation of human reasoning and being” and that law can be considered not as something external to this understanding of technology but as a “manifestation of it” and thus the focus is upon the present understandings of our world, not the future.³² In this sense, the focus on the present, rather than the future, acknowledges that technology and law as a manifestation of human reasoning, and therefore also of knowledge and ideas, will be contingent to the social, epistemic and environmental conditions of the time. The focus on the present is one also shared by Nordmann in avoiding what he argues to be an unhelpful preoccupation with speculative ethics: an exercise in imagining far off potential futures and arguing about the ethics of such a future.³³ But Tranter’s case seems to be aimed at a better understanding of law and technology one that should not carry this instrumentalist baggage. Concepts that seek to help in understanding the nature of law and technology, and their relationship to wider social environs, need to be able to account for this contingency and the social processes that precipitate it.

The instrumentalism that Tranter critiques is also attacked by Tamanaha in his critique of theories of legal pluralism and the essentialist concepts of law that such theoretical perspectives are based upon.³⁴ This is developed more fully in the following chapter, but for now it is enough to point out that to essentialise law purely to instrumentality does damage to our understanding of it and its relationship to the wider social environment and the contingency of the views that underpin it. I argue that a purely instrumental view of law not only may not be based upon an in depth understanding of the social interactions and relationship of law with society, but such a conceptualisation itself is normally part of a normative judgment: that law should be instrumental to a certain purpose normally one that

³¹ Ibid.

³² Ibid.

³³ A. Nordmann “If and Then: A Critique of Speculative NanoEthics” (2007) *Nanoethics* 1, 31–46.

³⁴ B. Tamanaha “The Tension Between Legal Instrumentalism and the Rule of Law” (2005-2006) *Syracuse Journal of International Law and Communication* 33, 131.

is specified by the person critiquing the law in the first place. Whilst law should be evaluated and such evaluation makes normative judgments, such normative judgments do not necessarily add to our understanding of how and why law is the way it is and the dynamics of its interaction with the wider social environment. It is this relationship that is the focus of my thesis.

Efforts to overcome fragmentation and to suggest theories of law and technology have been added to by the already mentioned new governance approaches. These are explored in more detail in the next section, and the various ways in which they attempt to meet some of the challenges outlined in relation to NEST are highlighted. They do offer some insight in to the social dynamics underpinning regulation (not simply law) in general, as part of their theoretical and normative arguments about how governance should be designed. Ultimately however, I argue that, at least in terms of the law and technology literature with its mainly positivist slant, that the relationship between law and technology has still not been addressed in such a way that will give rise to a better understanding of the causal interactions and pathways that have an impact on both the law and wider socio-technical reality. To this end, the following section critiques some specific contemporary literature in the law and technology enterprise, and the approaches to regulation and suggestions in the literature that relate to the problems highlighted above.

3 “Legal Lag”, Regulatory Failure and the Relationship Between Law and Technology

Whilst regulatory failure is not a criticism limited to endeavours to regulate for new technologies, part of such potential diagnosis relates to the critique that law fails to keep up with the pace of technological change. That law lags behind technology is often stated, but as will be argued, this diagnosis is simplistic and does not provide an accurate assessment of the many ways in which law interacts with the socio-technical environment. As such, this section looks to analyses that have critiqued and developed the understanding of the interaction between law and technology as well as the literature looking to new governance as a means of overcoming both the issues of regulatory failure and legal lag (or regulatory reconnection as will be explained) as well as the issues of legitimacy, transparency, trust and navigation of value plurality that have been highlighted as central to the problematisation of NEST for law and society.

3.1 Interactions of Law and Technology

Moses has critiqued the past approaches of the law and technology enterprise. Citing one of the first symposia called to address the burgeoning legacy of this literature, she has maintained that endeavours in studying technology *as* regulation had far surpassed the insights gained from the literature that focussed upon technology as the target of regulation.³⁵ Her critique centres upon what she argues is the weakness of “technology” as both a target for regulation, and of “regulation of technology” as a target worthy of study in terms of the insights it may supply and its capacity to link and unite studies as a discipline.³⁶ Technology in this literature, she argues, is rarely defined, and rarely defined well.³⁷ She argues instead that this endeavour would be furthered more successfully if it concentrated upon socio-technological *change*, rather than broadly upon technology. Change in the socio-technical context that bring about new capacities and practices rather than simply representing a continuation or improvement of existing capacities,³⁸ raise novel challenges that could implicate the law and provide a link between the differing research endeavours that speak to these challenges.³⁹ In this instance “change” to the socio-technical environment is limited to those changes brought about by *truly novel situations* caused by technology, such as the creation of IVF embryos. As such, it would seem that it is the novelty of situations brought about by emerging technologies that is deemed to be distinct for regulation in this context.

The novelty of situations created by the introduction of new technologies has led to the common criticism of law and regulation that it fails to keep up with the progress of technology.⁴⁰ Bernstein attributes this to the reliance of common law on precedent and analogy to effect gradual change, and points to the fragmented manner in which technological challenges are evaluated.⁴¹ Moses challenges the metaphor of laws being in a race with technology and points to the undertone that such a metaphor presents of law and technology, that both are reified, that they are each “at a measurable stage of sophistication or progress” without further explaining why they should be treated thus and, why the metaphor is adequate.⁴² Whilst the description that law often lags behind technology, in

³⁵ L. B. Moses “How to Think about Law, Regulation and Technology: Problems with ‘Technology’ as a Regulatory Target” (2013) *Law, Innovation and Technology*, 5:1, 1-20 at 3.

³⁶ Ibid.

³⁷ Ibid.

³⁸ Ibid, and see also Moses “Recurring Dilemmas: Law’s Race to Keep up with Technological Change” (2007) *University of Illinois Journal of Law, Technology and Policy* (2007) at 243-247.

³⁹ Moses (2013) *supra* n35 at 10.

⁴⁰ G. Bernstein “Accommodating Technological Innovation: Identity, Genetic Testing and the Internet” (2004) *Vanderbilt Law Review* 57:3,963 at 964; Moses “Recurring Dilemmas” *supra* n38.

⁴¹ Bernstein *ibid* at 965.

⁴² Moses “Recurring Dilemmas” *supra* n38 at 242.

many cases may be an argument that is justified by reference to legitimate reasons, I contend that many of these reasons are often a normative judgment and disagreement with the status quo. The description itself is not without value or appropriate ascription to certain contexts, but it is mostly used to denote critique of the law without expanding upon the dynamics and relationship of the law with the socio-technical environment. In most cases however, understanding of such dynamics is not the aim of the research in question, because, as set out in the preceding subsection, law and technology literature has tended to be positivist in nature and a means of critiquing law in its practical application. Even within the parameters of such an aim however, Moses and others have critiqued the bare description of legal lag as inadequate in revealing the interaction of law with technology in explaining how and why it might fail to regulate particular situations. An exception may be Verges analysis of the interaction between law and technology who reveals the points of interface between law and technology, and who implicitly echoes some of the insights outlined by a coproducing understanding of this relationship outlined in chapter 2.

Despite the regular critique of law lagging behind technology (and scientific) development, there is a twin critique, voiced by many scientists that law and regulation act as a hindrance to valuable research.⁴³ Verges identifies this oft-represented relationship as a binary one of freedom of innovation and research on the one hand, and the need for trust and safety in such endeavours on the other.⁴⁴ He also points to the work of Carver whose thesis relating to the points at which law and science/technology interact predates the more contemporary attempts at more nuanced understanding of the interface between law and technology, and whose work Verges builds upon to discuss the evolution of the relationship between law and technology.⁴⁵ Carver's identified five types of relationship between law and science/technology: (1) law's reliance on scientific expertise to make decisions (i.e. in cases); (2) the need for re-evaluation of legal doctrines and policy in the light of scientific advance; (3) legal intervention in light of new risk; (4) law as a means of distributing resources, outlining scientific policy and potentially facilitating differing research endeavours; (5) and scientific developments that implicate international relations and therefore law, such as the development of nuclear power.⁴⁶ Verges points to the plurality of links between law and technology inherent in this analysis and outlines three aspects of these links as a means of summarising the relationship between law, science and technology: law

⁴³ E. Verges "Scientific and Technological Evolution through the Legal Prism: Visions of a Multi-Faceted Relationship through the Lens of French and EU Law" (2014) 6(1) LIT 74–93 at 76.

⁴⁴ Ibid.

⁴⁵ Ibid.

⁴⁶ Ibid.

as a way to manage scientific and technological development; law as a means of facilitating technological development; and the influence of science and technology on law.⁴⁷

In detailing the different elements of these three links, Verges teases out different ways in which law turns its attention to technology and how these approaches have changed over time. In management of technology law is tasked with managing risk and uncertainty (normally through constraint on technology) and also of repairing or recompensing damage caused by technology (normally through liability).⁴⁸ Management as constraint takes different forms such as prohibition on activities,⁴⁹ authorisation regimes such as licensing (as with medicines and research using human tissue and embryos),⁵⁰ and mandatory declarations which require information pertaining to products on the market and associated risks, the idea being management through transparency of information.⁵¹ Management through liability refers to the nuances of the liability regimes in differing jurisdictions and can relate to fault-based and strict liability regimes.

As an incentive mechanism, Verges argues that law recognises and protects science and innovation as a “concrete thing and as an abstract value”.⁵² It does so by protecting the economic value of knowledge through intellectual property for example, and by acting as an instrument of policy oriented innovation, for example through the creation of funding bodies and research councils, or other institutions created to produce policy and research priorities.⁵³

In discussing the influence of technology upon the law Verges begins to touch upon a coproducing understanding of technology, science, society, and law, although this is not explicit. He highlights points where there is direct influence of scientific understanding interacting with the legal system such as the use of experts in evidence at trial or in the case of establishing, for example, medical negligence.⁵⁴ Further he looks to the use of scientific understanding in the construction of rules, a prime example, according to Verges is that of a case in France where scientific reasoning helped in the establishment of “viability” of the foetus in deciding manslaughter cases.⁵⁵ To this I would add scientific evidence taken in the construction of legislation that is directly targeting practices surrounding specific

⁴⁷ Ibid at 77.

⁴⁸ Ibid.

⁴⁹ Ibid.

⁵⁰ Ibid at 78-79.

⁵¹ Ibid at 80.

⁵² Ibid at 85.

⁵³ Ibid at 86-87. Verges uses examples within French law of law acting as a policy oriented innovation, such as the creation of research organisations public institutions dedicated to incentivise research.

⁵⁴ Ibid at 88.

⁵⁵ Ibid at 89.

technologies, although it may be that this is more readily captured within the rubric of management of technology in Verges schema. Other examples include the role of scientific uncertainty in the consideration of establishing causal negligence with varying response by judges (and consequent development of principles);⁵⁶ the distortion of scientific and juridical truths, by which it is meant that probabilistic analyses of experts (as to whether or not for example a drug caused the disputed harm) are used in such a way to acquit defendants within a degree of uncertainty that is acceptable for science but falls short of the burden of proof required by law.⁵⁷

This brief summary is informative if not exhaustive of the potential areas in which law, science and technology interact, but specifically Verges draws some interesting conclusions from the scoping of the points of interaction, and from a brief analysis of the ways in which management of technology has evolved in the recent past. He points to the evident complexity of the relationship between law, science and technology, a complexity that is more troubling than the plurality of links he points to at the beginning of his analysis since it reveals ambivalence in the relationship manifesting in, for example; the ambiguous relationship between expert evidence and knowledge and the role of the judge; or the clash between state legislative pronouncements and decisions by judges (for example that a cell created by somatic cell nuclear transfer falls under the definition of embryo, to be challenged in court and pronounced different).⁵⁸ Such complexity has also brought positive outcomes. For example, he argues that evolution of principles such as the precautionary principle and even pre-emptive action have now proven the law capable of anticipating innovation, although this assertion might also be challenged on the basis of being an unwelcome fetter of scientific and technological innovation in some quarters.⁵⁹

To Verges synopsis I would add further indirect points of interaction between technology and law inferred by Bernstein's analysis examined below. Bernstein makes an in-depth study of the potential impact of socio-legal values on the diffusion and use of artificial insemination and subsequent development of cryopreservation techniques for sperm in the USA.⁶⁰ In her study it is the norms and laws governing such aspects of life as paternity and related testamentary rules, and other related phenomena such as rules governing alimony and custody in the event of divorce and separation, that failed to meet the changed socio-

⁵⁶ Ibid at 90.

⁵⁷ Ibid at 91.

⁵⁸ Ibid at 92.

⁵⁹ Ibid.

⁶⁰ G. Bernstein "The Socio-legal Acceptance of New Technologies: A Close Look at Artificial Insemination" (2002) *Wash. L. Rev* 1035.

technical reality of the situations at hand and in doing so also created an ambivalent atmosphere in relation to the uptake of the technology.⁶¹ The implications of differing technologies will to a certain extent vary, and assisted reproduction by definition impacts upon norms and legal institutions governing family, but it does still serve to highlight the diversity of doctrines and regulatory arrays that may be implicated by a new technology beyond those directly aimed at their management and control. As such it also points to the wide array of issues that may be subject to change as a result of the introduction and diffusion of new technology and links with the insight set out in chapter 2 that wider social values and relations are impacted by new technology than just questions over whether a new technology should be directly targeted for regulation and intervention. It also points to many different areas that law and regulation need to adjust and reevaluate in light of changing socio-technical environments, and to a certain extent takes forward and questions the concept of legal lag: that the relationship between law and technology and the socio-technological environment in general is more ambiguous than the straightforward description of legal lag would imply. This is questioned further in the next section.

3.2 Regulatory Lag, Regulatory Disconnect

Brownsword's thesis of regulatory connection takes forward an analysis of the interface between law, regulation and technology as a counterpoint to the regulatory lag thesis. He explains the issues as that of "regulatory disconnection"⁶²: a mismatch between current laws and the regulatory approaches that are designed for a socio-technical landscape of the past now changed by the new development.⁶³ A chief example cited by Brownsword and Somsen is in relation to the Human Fertilisation and Embryology Act 1990 in becoming rapidly disconnected from its technological target (embryology).⁶⁴ Regulatory connection exists across three phases of the regulatory cycle; initial connection where the regulation is first conceived (in relation to a technological target); maintaining/keeping connection; re-connection where it becomes clear that the regulation has subsequently failed to cover the changing context.⁶⁵ Variables that help in assessing the connection issues are the extent of the regulatory array already in place when a connection issue arises, and the development

⁶¹ Ibid.

⁶² See Moses (2013) *supra* n35.

⁶³ R. Brownsword, *Rights, Regulation and the Technological Revolution* (Oxford University Press, 2008) at 166.

⁶⁴ R. Brownsword and H. Somsen "Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate" (2009) *Law, Innovation and Technology*, 1:1, 1-73 at 26.

⁶⁵ Ibid.

point at which the technology in question is at (whether it is something completely new and novel, or something fairly familiar).⁶⁶ In terms of the regulatory array, Brownsword and Somesen conceive of regulation as having two key aims: to minimise negative effects of technology and to maximise positive effects.⁶⁷ They also characterise it as having broadly three divisions:

- segments of regulation to minimise negative effects including compensation, health and safety guidance and authorisation processes;
- segments dedicated to facilitating development (where technology may be deemed to be risk free, or otherwise if such risk has been accounted for in segment 1), patent law, and ensuring effective diffusion and fair access;
- segment three, described as the constitutive element, to ensure the community values and human rights are secured by the provision of overarching principles across the regulatory array.⁶⁸

The point of development of a technology can also have a bearing upon regulatory disconnect with the further along a technology is from its introduction, through permeation and perhaps diffusion into society, the more there may be need for a dedicated regulatory regime.

There are, of course, differing ways to describe this problem of lag, or pacing, or regulatory disconnection, and not all of them will match up.⁶⁹ But many are framed as highly technical issues with the application of various rules and interpretations of the existing regulatory regimes that new technologies emerge contingently with. Moses continues her analysis of the challenge of new technology to regulation by outlining four categories of dilemma that new technologies may pose for law. These are as follows:⁷⁰

- The need for special laws for example to prohibit or regulate certain applications of a new technology, or to facilitate and encourage certain activity;
- Uncertainty; where new technologies give rise to new forms of conduct it may be unclear whether existing rules apply to such conduct or not;

⁶⁶ Ibid.

⁶⁷ Ibid.

⁶⁸ Ibid.

⁶⁹ Moses 2013 *supra* n35 at 7.

⁷⁰ Moses *supra* n38 at 248.

- Over-inclusiveness and under-inclusiveness; where existing legal rules have not been formulated with the new technologies in mind and as a result may over or under-include certain practices inappropriately;
- Obsolescence; this applies where, perhaps as a result of the introduction of a new technology, the underlying justification of an existing rule or law no longer exists.

Specific examples of this last point are not provided by the author but ways in which technologies may potentially lead to obsolescence are divided in to two forms:⁷¹

- Conduct targeted by the rule may have been replaced by new forms of conduct – an example given is of teleporters replacing cars as primary mode of transport;
- Where the invention and diffusion of a technology may change the underlying facts of some legal rules, such as if, for example, cars were developed to bounce harmlessly off other objects.

These challenges may be those that are considered at the various stages of regulatory connection outlined above but they also apply to more than just the regulation that is directed at a technological target. Brownsword's analysis is directed primarily at regulation that has been specifically targeted at a technology, whereas Moses outline of the specific challenges for the law may be applied across the legal spectrum in the light of a change to the socio-technical landscape. As such they form a broad approach to the socio-legal sphere including those rules and principles that may indirectly interact with technology as touched on in reference to Verges above and by Bernstein in her briefly mentioned investigation in to the interaction between artificial insemination and the law in America.

Both Moses' and Brownsword's contributions have a practical character, describing the technical issues in the application of the existing law to the changed circumstances, but they also touch upon, even if they do not elaborate upon, the potential normative decisions that must be made. This is seen most explicitly when considering decisions as to whether new regulation will be needed to prohibit, or otherwise, new technology, and in deciding whether any new practices should be caught within existing legal norms. An example of the latter can be found in relation to the status and rights held over human tissue which in the genetic age has taken on value both for research and as a potential resource in the treatment of others, but which has occupied a legal grey area where it is unclear and contested as to whether they

⁷¹ Ibid listed at 265.

are properly the subject of property rights or protected as part of the person, or some other array of rights and conditions.⁷²

Another way in which Brownsword applies his regulatory disconnect analysis, touching upon the distinction between the first and second, as opposed to the third segment of the regulatory array outlined above, is as between descriptive disconnect and normative disconnect.⁷³ Descriptive disconnection will relate to scenarios where the “descriptions employed by the regulation no longer correspond to the technology or to the various technology-related practices that are intended targets for the regulation.”⁷⁴ Normative disconnection will occur where a mismatch with the values underpinning the regulatory array do not correspond to the practices and development of the technology as it currently appears or because “...a new technology raises questions of principle or policy that are not clearly settled by the regulatory scheme.”⁷⁵ This normative disconnect is moral in nature and touches upon Tranter’s concern with the engagement of values within the law and technology literature above.

Brownsword’s concerns with normative disconnect and with the values that are implicated in making decisions in regard to reconnecting regulation to its technological “target”, and Moses’ points of deciding whether new technologies should be prohibited and whether practices should be regulated within existing frameworks indirectly touch upon the issue of the interaction between the technology in question, the existing regulation and the wider socio-technical environment. If there is a mismatch between the norms of the existing regulation and the practices modulated by the technology in question there must then be a common moral ground (at least officially within the existing regulatory array) that is challenged by the technology and which opens up debate about the acceptability of the new technology and the associated practices, and of the self-evident “rightness” of the existing regulatory norm. This accords with the specific challenges of NEST outlined earlier, that they challenge existing social norms, and rob moral routines of their self-evident nature. They open up existing epistemologies of our world, and therefore potentially can herald the beginning of changes in how we view the practices in issue, the perspectives that are challenged, and the concepts that structured those views in the first place.

⁷² See for example R. Hardcastle, *Law and the Human Body: Property Rights and Ownership* (2007); S. Harmon and G. Laurie “Yearworth v North Bristol NHS Trust; Property, Principles and Paradigms” (2010) *Cambridge Law Journal* 69:3, 476. See further on this discussion subsection 5.2 in chapter 6.

⁷³ R. Brownsword, *Rights, Regulation and the Technological Revolution* (Oxford University Press, 2008) at 166.

⁷⁴ *Ibid.*

⁷⁵ *Ibid.*

Partly the issue highlighted as a problem for the management of NEST in general is not simply the navigation of changing moral or social values and practices, but the unpredictable progression in to the future precipitated by potentially transformative technologies. It is not the aim necessarily of Brownsword and Moses to contribute to understanding such issues, but law and regulation, as part of society in general, is a part of that socio-technical progression and as such a factor of consideration in the potential ways in which that future could unfold. It is this point that forms one of the crucial lines of concern for my thesis as under-researched, and a critical justification for the central investigation in to emerging legal concepts. Not only do NEST prompt technomoral change and unpredictable social reactions, their “soft” impacts discussed in chapter 2 may be seen as new harms, or the values and interests that they implicate seen as problematic issues that themselves may be accounted for in moments or activities of regulatory reconnection to be explored below. What Moses’ and Brownsword’s analyses offer is a means to take forward and develop a better understanding and technical diagnosis of the immediate problems facing regulators. In this vein they have advocated an approach for regulators and for law and technology scholarship in particular in terms of the questions to ask in analysis of a new technologies implications in the socio-legal sphere. More pertinently for the present thesis they provide clarity as to the technical and conceptual mechanics in issue in determining what is going on at the interface between law and technology.

In addition to the issues of regulatory reconnection described above, it was stated in chapter 2 that part of the problematisation of the existing regulatory and legal reactions to new technologies and practices was the erosion of trust by the public in scientific researchers and decision-makers in general in relation to the progression of new technologies. Navigating regulatory reconnection, increasing transparency and trust in decision-making relating to NEST and addressing the concerns raised in chapter 2 in relation to moral and value plurality and the epistemic deficit in relation to the future of the socio-technical environment have all, however, been addressed in the literature looking to new governance in contrast to a reliance upon law and legal regulation. A brief overview of this literature is provided in the next section.

In terms of the justification of my research, I had related the need for greater understanding of the development of the socio-technical environment as aiding decision-making and management of NEST. New governance, and the technical issues highlighted by regulatory reconnect might negate some of this justification if it were concluded that such designs and

measures had been largely successful in meeting the challenges outlined. The following section then seeks to establish how successful new governance has been in this endeavour.

The development of new governance however is not limited to the need to respond to the complexity of management of NEST or science and technology development in general. New governance designs and theory have developed in part in the light of perceptions of regulatory failure. Claims of regulatory failure can be broadly divided in to two approaches; those based upon effectiveness – that regulation is not “working” or achieving what it set out to; and value based critiques – that regulation is not directed at the appropriate goals or pursued in accordance with the appropriate principles or values.⁷⁶ However, development of new governance itself poses a challenge to the concepts and understanding of law and regulation, and explaining new governance as part of regulation has led also to a reconceptualisation or diagnosis of what regulatory failure is. The work of Black and her reconceptualisation of regulation and of regulatory failure treats success or failure as a relative thing; that many different yard sticks for success may be used in the regulatory context, and that differing stakeholders will have differing opinions and motivations for the regulatory and governance choices made and that results are more the product of compromise.⁷⁷ The challenges of new governance to conceptual understandings of law, and the insights provided by the reconceptualised regulatory failure diagnosis are returned to at the end of the chapter. What I argue in the following subsections, is that all forms of governance have limitations in terms of what they can achieve in management and shaping of society and the socio-technical landscape in general, and in achieving their defined aims in particular.

3.3 New Approaches to Regulation in the Life Sciences

As outlined in chapter 2, at the beginning of this chapter and above, the challenges of NEST include not just issues over their potential future trajectory and regulatory reconnection, but also falling trust in regulatory institutions, medical professions and researchers. Such issues contribute to the normative and political questions posed in relation to NEST (and society) in general: which values should guide technological development and to what aims, and who and how should such decisions be apportioned and organised? I have already stated that I am not concerned with contributing to these questions, but new governance does aim in part to

⁷⁶ J. Black “Critical Reflections on Regulation” 27 *Austl. J. Leg. Phil.* 1, 2002 at 29.

⁷⁷ J. Black in relation to decentred regulation (which can be argued to be an umbrella term that also covers reflexive governance) “Critical Reflections on Regulation” (2002) *Austl. J. Leg. Phil.* 27:1.

deal with such normative questions by theorising and suggesting mechanisms and processes of decision-making. As I will show, these suggestions will always be subject to disagreement, as will the values and decision outcomes they generate. I will also argue, between this subsection and the next, that understanding the social dynamics at play within such decision-making processes is desirable in relation both to increasing the reflexivity and transparency of governance structures in general (an element that new governance designs themselves strive for) and as part of understanding the dynamics of development of the socio-technical landscape. The following then gives a brief overview of new governance literature.

New governance is a term used to describe a variety of different governance mechanisms and theoretical approaches including anticipatory governance, and foresighting, which have included mechanisms such as participatory governance described below. Other terms such as reflexive or responsive governance have also been used to capture the intention to increase the capacity of governance and regulatory design to learn and re-evaluate rapidly in the face of new challenges in the target regulatory environment. The core element of responsive and reflexive governance is the integration of a reflexive dimension: a mode of learning within governance networks that is seen as essential in organising collective action to arrive at the best outcome possible.⁷⁸ This includes designing in capabilities to revisit issues and flexibility to rapidly respond to new information or needs. It is also aimed at thinking reflexively about the current regulatory and governance arrays themselves in questioning and scrutinising their existing value and epistemic positions. This flexibility comes from the hybrid use of legal but also self-regulatory or “soft law” mechanisms such as ethics committees and the use of licensing bodies with discretion to make decisions in relation to the research and practices condoned. In this way such research practices are still managed and governed, but particular positions are not ossified in legal instruments, and can be revisited and changed in light of new information. This also speaks directly to trying to overcome issues of regulatory disconnection by designing governance systems capable of more rapid response to changes in the socio-technical environment.

Anticipatory governance aimed at navigating and facilitating responsible research and development, attempts to address the issue of a lack of epistemic insight in to the potential future development of NEST, and builds in capacities and methodologies to uncover potential technological trajectories and development as part of strategic thinking.⁷⁹ Such

⁷⁸ J. Lenoble and M. Maesschalck “Renewing the theory of public interest: the quest for a reflexive and learning-based approach to governance” in O. De Schutter and J. Lenoble (eds) *Redefining the Public Interest in a Pluralistic World*, at 5.

⁷⁹ D. H. Guston “Understanding ‘anticipatory governance’” *Social Studies of Science* 0(0) 1– 25.

designs are said to weave together insights from technology foresight, which themselves draw on methodologies of environmental scanning, emerging issues analysis, Delphi studies or think pieces aimed at envisioning the future, and public participation to engage democratic envisioning of the future we collectively want.⁸⁰ They draw on four design elements; (1) foresight and explicit recognition of underlying values and norms including positive and negative envisioned scenarios; (2) integration between social and natural scientists in discussing problems; (3) engagement between scientists, artists, the public and through workshops and conferences, in order to inform of new developments and to acknowledge the values upon which they are being made; (4) ensemble which refers to the bringing together of all these elements with an eye to planning for the future.⁸¹ Such designs are aimed at more democratic decision-making in relation to strategic choices affecting technological trajectories in to the future, and also at increasing understanding of the potential trajectories that futures may take. It is not clear however how close to such ideals governance arrays currently are. Part of such democratic decision-making and the design for reflexive and responsive governance is the inclusion of participatory mechanisms in initial and in on-going conversations about specific or general emerging technologies. Brownsword and Somsen emphasise the need for robust dialogue at the outset of an emerging technology (one at the introduction phase of its emergence) and flexible governance at this beginning stage.⁸² Moses' first bullet point of dilemmas faced in regard to socio-technical change relates to deciding whether to introduce specific laws where a new technology may be risky, or ethically contentious and points to the differing ways in which such decisions can be made. She specifically refers to the use of participatory methods to engage public opinion whilst also pointing out that such opinions may be dismissed subject to further justification.⁸³

Participatory mechanisms such as public consultations and citizens juries are also intended as a means of engendering trust and potentially of addressing value plurality among the population in relation to the developments of particular scientific and technological developments and have been drawn upon in the context of biobanks. Biobank governance has received much academic and practitioner attention, but in terms of the use of genetic material and data for research there is some indication that quite apart from the law being

⁸⁰ Ibid.

⁸¹ B. A. Wender, R. W. Foley, D. H. Guston, T. P. Seager and A. Wiek "Anticipatory Governance and Anticipatory Life Cycle Assessment of Single Wall Carbon Nanotube Anode Lithium ion Batteries" 9 *Nanotech. L. & Bus.* 201 2012-2013 at 202-203.

⁸² R. Brownsword and H. Somsen "Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate" (2009) *Law, Innovation and Technology*, 1:1, 1-73 citing Mandel.

⁸³ Moses *supra* n38 at 346.

unable by itself to generate trust, there may be scant governance mechanisms, even when adequately transparent, that can engender trust that such information will not be misused.⁸⁴ What may happen is an uneasy compromise between the recognition that research is in fact valuable with the acceptance of mistrust in the management of the enterprise.

Public consultations including the use of focus groups and wider calls for evidence and survey distribution, together with expert evidence and governmental bioethics have been drawn on in the passing and drafting of successive iterations and regulations derived from the Human Fertilisation and Embryology Act 1990/2008.⁸⁵ The passing of the Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015 was preceded by public consultations both from the Government⁸⁶ in relation to the proposal to license Mitochondria donation and from the Human Fertilisation and Embryology Authority (HFEA),⁸⁷ a report on the science and ethics of the proposals from the HFEA and the Nuffield Council on Bioethics.⁸⁸

The use of ethics committees and governmental bioethics can be seen as part of reflexive governance that integrates non-scientific and non-state actors and opinions thus creating fluidity in discussions and a move away from dichotomies of fact/value, expert/lay person, and right/wrong, and instead opening them up for nuanced discussion.⁸⁹ Public participation and reflexive governance in biomedicine and biotechnology may speak to concerns raised in the literature in relation to wider value engagement, navigation of conflicts in relation to such values, fostering of trust and knowledge within the community and issues of legitimacy in reaching such decisions, but it is far from clear whether these aims are met. There is a dearth of evaluative research in to public participation and issues of design, including challenges that some questions and focus groups may be biased, or intentionally led to certain conclusions.⁹⁰ Furthermore there is little by way of evidence on how and whether such exercises actually influence decision and governance outcomes, and they have been

⁸⁴ A. K. Hawkins and K. O'Doherty "Biobank governance: a lesson in trust" (2010) *New Genetics and Society* 29:3,311-327.

⁸⁵ See subsection 2.2 in chapter 6.

⁸⁶ See Department of Health, Mitochondrial Donation: A consultation on draft regulations to permit the use of new treatment techniques to prevent the transmission of a serious mitochondrial disease from mother to child, February 2014.

⁸⁷ Mitochondrial Replacement Consultation: Advice to Government, Human Fertilisation and Embryology Authority, March 2013.

⁸⁸ Nuffield Council on Bioethics, *Novel Techniques for the Prevention of Mitochondrial DNA Disorders: An Ethical Review* (2012).

⁸⁹ Braun et al supra n26 at 512.

⁹⁰ Avard et al supra n 23 at 6.

critiqued in the past for being merely legitimating devices: exercises designed to support the legitimacy of decisions already arrived at by Government.⁹¹

In reference to the HFEA 1990/2008 and the 2015 Regulations, the activities of the HFEA and the public consultation they themselves carried out, were criticised on the basis that the questions asked were seen by some to be designed to bring participants to a specific conclusion, whilst the responses to the public wide call for opinion were ambivalent in terms of the support for the new techniques and far from representing “strong support” for the proposed changes.⁹² However, whether and how such aspects of governance should influence final solutions is a matter of normative debate itself. In the case of biomedicine and specifically in relation to assisted fertilisation, the decisions will impact greatly upon individuals in life changing ways with the potential that such decisions could be brought about by the views of those whose lives and life chances will be untouched by their choices. Gathering wider opinion and opening up debate does not necessarily mean that these wider opinions should hold the day. Justifying the legitimacy or otherwise of such opinions may be seen by those collating surveys as integral to understanding their results.⁹³

The dilemma of reaching legitimate decisions in biomedicine is argued to be met by governmental bioethics in general as a case of processualising such debate as part of on-going dialogue between the public at large and government.⁹⁴ This refers to the idea of the *process* of decision-making as that which both confers and ensures that decisions are legitimate. With governmental bioethics there is an integration of this dialogue in to decision-making and with advice given in the form of information about the debate and about the values and conflicts that have been unearthed through it, but without coming to any substantive truths and without challenging the underlying assumption that technological and scientific innovation is a good thing.⁹⁵ This is a move away from substantive legitimation with the *process* itself being that which is seen to justify and legitimate the outcome and decisions made.⁹⁶ Correct processes have been cited as important for persons in establishing whether an outcome is legitimate or not but it is not the only and in some circumstances

⁹¹ Ibid.

⁹² See M. Darnovsky “A Slippery Slope to Human Germline Modification” (2013) *Nature* 499, 127. and P. Thompson “Reproductive Therapy: HFEA Responds on Germline Therapy” (2013) *Nature* 500.

⁹³ Research undertaken by Braun et al supra n26 p526 cited comments from a member of the HFEA to the effect that they look beyond the comments of responders to interpret whether they are made from a position of legitimately held belief or perhaps from a place of ignorance or even prejudice.

⁹⁴ Braun et al ibid at 517.

⁹⁵ Ibid at 527.

⁹⁶ Ibid.

certainly not the best means of establishing it. Legitimacy may depend upon different factors including whether a decision conforms with a deeply held value.

With little consensus on ethically controversial technology, it may be that processual legitimacy is the best that can be achieved. As argued above, whether participatory governance and the opinions highlighted in them should influence final decision-making is a normative question. The processualisation of bioethics and governance is itself a normative and political argument about how such decision-making should be managed as much as it may be a response to falling trust and transparency in Government, biomedical researchers and professionals in general. My interest lies in understanding how successful new governance has been in addressing the issues for NEST as outlined in chapter 2 and as they relate to regulatory disconnect. However there still remains little research on the outcome of such learning mechanisms and which values or conceptualisations may be rendered influential – how in actual fact decisions are reached within the parameters of these governance designs. This is particularly true in the light of the dearth of evaluative literature or research in to and understanding of how such reflexive and responsive governance mechanisms may themselves impact on law. There is therefore still a lack in understanding of how final decisions are made and crucially of which perspectives and what values and interests are furthered and the social dynamics of how they come to be. This could be seen as part of the issue of disparagement of such mechanisms as “legitimacy tools” in failing to engage or illuminate how and why decisions are in reality reached and the priorities and perspectives they reflect. As such it is unclear to what extent these measures actually meet the challenge of navigating value plurality or engaging trust or transparency in decision-making that have been outlined as issues for the management of NEST.

Having made this point, the nature of value plurality is that disagreement will almost always exist. This goes to the heart of the problematisation of value plurality or ambivalence and ambiguity of NEST in general, and it is this disagreement that forms the context to discourses surrounding the problematisation of regulatory regimes in relation to science and medicine. As such, the claim that law or regulation lags behind technological change may in some cases be seen more as a statement of disagreement as to the aims or values underpinning the regulatory and governance design where what is seen is a conflict over the values and practices arising because of the technology. The plurality of views on the values that should govern technology decisions, and new conflicts precipitated by them within the context of existing law and regulation, mean that they will always be subject to normative disagreement. The same is true of the different processes and arrangements suggested as to

how and who should be involved in such decisions. These are inherent limitations of any governance, legal system, or management in general of NEST. Whilst I am not intending to contribute to such normative debates, my interest in understanding the dynamics of how the socio-technical environment develops into the future is still pertinent to aiding such decision-making.

The discussion above points to the specific contributions of new governance design within biomedical and biotechnology spheres as aimed at practical and processual means of navigating some of the issues highlighted in relation to NEST, specifically those of trust, legitimacy and navigation of moral plurality. This literature and the theory upon which such governance design is based does not extend to *understanding* the potential changes in social practices that will nevertheless implicate potential issues with law as new technologies diffuse through society. Furthermore, it does not look to the role of law and governance and their impact on the future development of specific perspectives, values, interests and priorities that may come to “win” or pervade the socio-technical landscape. Having said this the following section looks mainly to Blacks analysis of regulatory failure and the conceptual challenges provoked by new governance designs and implementations to understandings and evaluation of law and regulation in general. This analysis outlines the more complex position of regulation as part of the wider dynamics of social power.

I argue that the more nuanced insights of this analysis sheds light on the complexity of the interaction of law with the socio-technical environment and also points to the limitations of both law and new governance. Such new governance and literature have provided a valuable contribution in terms of the practical means in which to deal with many of the issues of NEST, and the analysis of regulatory disconnect and the reconceptualised understanding of regulatory failure outlined below contribute to understanding the interaction between law and regulation with the sociotechnical environment. However, I ultimately argue that there is a dearth of understanding of the place of law as part of the coproduction and pervasion of ideas, conceptualisations and recognition of new values or harms or interests implicated or modulated by new and emerging science and technology. It is this dearth of understanding to which my research aims to contribute.

3.4 Regulatory “Failure” and Concepts of Law and Regulation

Decentred regulation is referred to by Black as an analytical concept and regulatory technique/approach set up in contrast to, sometimes subsuming, and in part a reaction to, the failings of a centred or command and control type of regulation.⁹⁷ The concept of the centred understanding views the regulator as the state (and the state only), with simple cause-effect relations and linear progression from policy to implementation.⁹⁸ In other words it presupposes regulation as law in the form of legislation and adjudication in courts. Following from this its failings are identified as including instrument failure, where the instruments used (laws backed by sanctions) are seen as inappropriate; of information and knowledge deficits on the part of governments to be able to understand the problems they are faced with and to design regulatory solutions fit for purpose; failure to properly implement regulation; lack of motivation to comply with the regulation on the part of regulatees, and lack of motivation of those charged with regulating to implement regulation.⁹⁹

The command and control type itself is a caricature of the relationship between any state and society. I argue¹⁰⁰ that this conception is a broad understanding of what lawyers might see as valid law in a specifically Western-centric sense. Furthermore I argue that such diagnoses and debates surrounding regulatory failure stem from the instrumental use of regulation to achieve societal aims and solve social problems, efforts which have been argued to have been unsuccessful.¹⁰¹ The instrumental underpinnings of law and its relationship with technology was critiqued by Tranter above, and I have already stated that such instrumental leanings are not adequate in understanding the nature or relationship of law and technology, because in part such an understanding will be based upon normative judgment as to the function of law in society and as to what it should be aimed at achieving. That the centred conception of regulation may be more a caricature than an adequate explanatory concept of regulation, also points to a misunderstanding and inadequate portrayal of the relationship between law, society, and, in the case of the management of NEST, of technology also.

Black’s decentred understanding of regulation is used to describe governance regimes, asserting that governments do not, and sometimes prescribing that they should not, monopolise regulation and that regulation is carried out “within and between other social

⁹⁷ J. Black “Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a Post-Regulatory World” (2001) *Current Legal Problems*, 54 1., 103-146 at 105.

⁹⁸ Black (2002) *supra* n 73 at 3.

⁹⁹ *Ibid.*

¹⁰⁰ This argument is expanded on in subsection 5.1 in chapter 5.

¹⁰¹ G. Teubner “Substantive and Reflexive Elements in Modern Law” (1983) *Law and Society Review* 17: 2.

actors, for example large organizations, collective associations, technical committees, professions...”¹⁰² Decentring has been used to describe the fragmentation and specialisation within government in carrying out different tasks; of the observation that government is constrained in its actions by pressure and control from other social forces (thus is situated within debates over global governance).¹⁰³ Black continues that her own definition of regulation is simply any activity that is *intended* to direct/control others behaviour and thus subsumes these extra-legal manifestations.¹⁰⁴ She adopts such a concept as a more effective means of explaining and identifying “control, power and ordering in unexpected places”.¹⁰⁵ Concepts, she details, have been argued to be more important for “what they can do than what they mean.”¹⁰⁶ Going further:

“They provide a cognitive frame, an institutionalized set of meanings that channels thought and action in particular directions. Their value lies in the way they are able to provide a purchase for critical thought upon contemporary problems.”¹⁰⁷

In short, concepts are valuable dependent upon their explanatory force.

Within the confines of Black’s thesis, this conception of regulation has explanatory merit, but it is not a concept of law. How law is conceptualised and how legal concepts are conceptualised may be distinct from this broader view of regulation. This does not detract from the insights in to regulatory failure as outlined in her analysis, but it does have a bearing on the justification and scope of my own research. How law is conceptualised has a bearing not just upon what is included within such a concept and therefore upon the scope and sources of analysis, but equally what is included within the concept and whether it stretches to include, for example, aspects of private regulation may impact upon our evaluation of how effective it is. On this point if we take it that aspects of private regulation, or of “soft” law are part of the subject of law then this might prompt us to speculate that actually law in general is more effective at shaping behaviour (or not) than if they were excluded from such an explanatory concept. Conceptualising law and legal concepts is explored in the next chapter but it should be pointed out that within Black’s concept of regulation she by necessity includes what we might commonly think of as a lawyers

¹⁰² Black “Decentring” supra n 90 at 103.

¹⁰³ Ibid at 104.

¹⁰⁴ Black *ibid* at 143.

¹⁰⁵ Ibid at 142.

¹⁰⁶ Ibid at 140.

¹⁰⁷ Ibid.

conception of law and thus her discussion of regulatory failure is still relevant to the present discussion.

On the basis of her concept of decentred regulation, she has posited a multifactorial account of regulatory failure citing the autonomy of actors, fragmented knowledge creation (in terms of the inability to have in depth knowledge on all topics for regulation and of the inability to see how a regulation will impact in to the future), fragmentation of power (between actors in micro-level and macro-level decision-making), complexity of interactions and interdependencies among others.¹⁰⁸ Diagnosing regulatory failure is then based upon the “complexity, and diversity of economic and social life, and in the inherent ungovernability of social actors, systems and networks”.¹⁰⁹ In other words there are limits to what regulation can achieve and of even how well a reflexive governance framework can perform in relation to complex relations and holistic information and the actions and motivations of different people and groups. This extends to law as well. What it also points to is the complexity of differing parties to regulation and governance and the power dynamics between them as part of the context to take in to account in evaluating and understanding a particular piece of regulation (including law). As will become more prominent in my own analysis, competition over authority to regulate and perceived authority to regulate, will have an impact upon the power or otherwise of collective action to shape the socio-technical reality in any meaningful way.

Part of the diagnosis of failure as relating to failure to achieve goals can be attributed to the inability to effect behaviour of those to be governed by the regulation. Empirical evidence has pointed to the lack of ability for legal norms to effect changes in behaviour, with many social norms and other means of control and shaping having a greater effect.¹¹⁰ Black’s analysis above may also point to the competition between differing regulatory or governance regimes and parties, as well as ineffective enforcement as contributing to the lack of effect of legal norms in influencing behaviour. This aspect conforms with the view of law as a form of or as coordinating collective action, as being but one of many different kinds of collective action which coalesce around differing value priorities and compete for influence. Such competition is also the subject observed within “regulatory space” analyses which highlight conflict and competition over power and authority to regulate certain issues, and has been

¹⁰⁸ J. Black “Decentring Regulation” supra n90 at 107-111.

¹⁰⁹ Ibid at 111.

¹¹⁰ See A. Posner, *Law and Social Norms* Harvard University Press (2000) at 4.

specifically applied to the biomedical context.¹¹¹ That law, different regulatory bodies, private organisations and even lobbyists and groups with vested but conflicting interests, will compete for influence over biomedical development implies that each may have a disparate impact. No one group or action may have a deciding impact on the socio-technical environment, but may each contribute to the overall landscape and in so doing are part of the convoluted causal dynamics within coproduction. Furthermore, whilst imposed legal norms fail to affect behaviour as much as existing entrenched social norms, this is not to say that this negates the value of those legal norms. Appiah points to the imposition of sanctions and norms against racial discrimination as required to set a standard and as part of the State's duty to its citizens¹¹². In addition the expressive function of law points to the value inherent in cases of setting examples for the appropriate behaviour in society. This in turn however has also been criticised in that statements of principles and human rights, and the international human rights array in general has failed to impact upon human rights abuses.¹¹³

Even if not directly aimed at influencing behaviour or technology, Law is ever present in society and can lead to the framing and architecture of social events and conflicts, even if unpredictably or indirectly. In reviewing the work of Klarman¹¹⁴ and countering an argument that "social context, not judicial action drives social change" (this being made in the context of race relations and following the important case of *Brown v Board of Education*¹¹⁵ in America as part of the de-segregation of Southern schools), Mary Dudziak argues that "causality is dialectic, not linear: that law and social context are mutually constituting."¹¹⁶ In creating her argument she points to the social contexts that Klarman had argued were driving of social change and that law was not, and shows instead how these contexts were often framed and designed by law. For example she points to the movement of African-Americans to urban ghettos, which clashed with the desegregation movement, which Klarman points to as a force outwith the law, but which Dudziak clarified as being very

¹¹¹ See L. Hancher and M. Moran "Organizing Regulatory Space" in R. Baldwin, C. Scott and C. Hood (eds) *A Reader on Regulation* (1998); and J. Kaye and S. Gibbons "Mapping the Regulatory Space for Genetic Databases and Biobanks in England and Wales" (2008) *Medical Law International* 9, 111-130.

¹¹² K. A. Appiah, *The State and the Shaping of Identity*, The Tanner Lectures on Human Values Delivered at Clare Hall, Cambridge 30th May and 1st April 2001 at 290-291.

¹¹³ See for a non-academic critique, E. Posner in "The Case Against Human Rights" in the Guardian Newspaper online 4th December 2014 available at <http://www.theguardian.com/news/2014/dec/04/-sp-case-against-human-rights> accessed 03/03/2016).

¹¹⁴ Her review covered M. J. Klarman, *From Jim Crow to Civil Rights: The Supreme Court and the Struggle for Racial Equality*, Oxford 2004.

¹¹⁵ *Brown v Board of Education of Topeka* 347, US 483 (1954).

¹¹⁶ M. L. Dudziak "The Court and Social Contest in Civil Rights History" *The University of Chicago Law Review*; Winter 2005; 72, 1;429 at 444.

much the result of the conditions set by the law. Klarmann characterises the urban context as the setting within which law operates, and which was the most influential driving force behind the social clashes, protests and eventual change, whereas in actual fact the law was instrumental in bringing about the urban context. In this way they are mutually constituting.¹¹⁷ In this respect the enforcement and implications of law may have a modulating effect upon social behaviour much as technology does: it may be complied with or it may spark resistance and other forms of avoidance behaviour and practices.¹¹⁸ As such, law does impact and influence behaviour and thus may influence social practices, but it may do so in similarly unpredictable ways.

If legal norms are not followed it does not necessarily mean that they are not valuable or that they have no impact on the socio-technical landscape. New governance may also be limited in this respect, but development of regulatory design and improvements in enforcement mechanisms may have a greater impact in effecting the specified desired change. Insights that flow from Black's decentred regulation is that such failure may be a matter of disputed opinion, and indeed may not be so much failure as simply the limitations of any system of governance in effecting change in circumstances of disagreement and conflict. Certain social practices and norms may be harmful and thus in need of changing even if the proclamation and enforcement of law is unable by itself to change such social attitudes, including, for example, racism. By the same token, however, laws may also be problematic and simply because they are law does not guarantee their morality or legitimacy. Again this is a normative matter and one of disagreement, but it also points to the need for symmetrical consideration of the social impact on changes in law that is part of the coproducing analysis outlined in chapter 2 and which is not taken in to account in critique or description of law "failing" to effect social change. Seeing law and regulation only in terms of an underlying instrumentality in their nature may point more restrictively to their failure, but understanding law and regulation as part of an ongoing process of coproduction implies that such evaluations are not helpful in understanding the dynamics of socio-technical development or of the causal relations between law and the socio-technical environment.

¹¹⁷ Ibid at 447.

¹¹⁸ See also D. Kahan "Gentle Nudges vs Hard Shoves: Solving the Sticky Norms Problem" (2000) *The University of Chicago Law Review* 67:3, 607-645.

4. Concluding Remarks

At the end of chapter 2 and the beginning of this chapter, I identified that law could be a form of collective action deployed as part of managing NEST. I posed two questions that I have endeavoured to answer: what do we expect legal intervention to do in terms of guiding and shaping ambiguous, uncertain and potentially radically changing technology and society? What are its limits in terms of shaping and managing NEST? The review of both the law and technology literature, including the contribution made by the reconceived regulatory disconnect thesis, and the advances made in new governance highlight that there is a limit to the effectiveness of law in meeting the challenges presented by NEST. However these limitations are inherent limits of any governance system or form of collective action.

The regulatory disconnect thesis has provided a better analysis of the interface between law and regulation with technology and the diagnosis of technical mismatch between the existing regulation and the new socio-technical reality. New governance literature and design have through the integration of both traditional and “soft” law mechanisms, developed more flexibility and capacity for governance to rapidly reconnect to the changed socio-technical environment. Furthermore they have through the development of participatory governance and integration of bioethics among other learning elements, sought to open up the process of decision-making and in doing so to also engage and increase trust and legitimacy in the decision-making process. However, there is a limit to the extent to which such mechanisms can increase trust, and a lack of evaluative evidence as to the extent to which the results of participatory governance do actually influence the final decisions made, with such processes being criticised as designed to lend legitimacy to a decision already made. On the other hand simply because a majority of persons express a certain opinion does not necessarily make their opinion a justifiable stance to take in relation to the technology or social practice in question. The nature of value plurality is such that decisions will never appeal to everyone and consensus is impracticable. As such the process of decision-making and its legitimacy may be the best that could be expected of governance and legal decisions in some circumstances.

Throughout the review of the law and technology literature, I have sought to stress that while the development of the regulatory disconnect thesis has increased understanding of the interface between law and technology, and is an improvement upon the legal lag thesis, such developments are not aimed at understanding the social dynamics of the relationship between law and the sociotechnical environment. The legal lag thesis lacks nuanced understanding and analysis as a description, and in many cases may be an expression of

normative disagreement as to the law and technology in question. Whilst the regulatory disconnect thesis provides better understanding of the interaction between law and technology, it is developed as a positivist analysis of a technical problem with the law and providing means of overcoming that problem (reconnection). It still presupposes an instrumental understanding of law, as does the literature relating to new governance. Given the lack of consensus both in relation to the means by which new technology should be managed – hence the competition and conflict between different forms of collective action, or even regulation and governance – and as to the value and normative content of law itself, any instrumental understandings of law may trigger arguments that it has failed or lags behind. It presupposes a normative judgment as to what the aims and value content of the law should be, which is subject to disagreement. There will always be conflicting expectations of what law, governance or management of NEST should achieve, and only some may ever be fulfilled regardless of the efficacy of a particular system.

Drawing on insights from Black's reconceptualised decentred understanding of regulation I have argued that as law is but one means of implementing collective action and may be in competition with other forms of action, that its influence may always be contingent on the disparate influences and power dynamics between these actions. It is also part of my argument that whilst law may not influence change in social practices or values this does not necessarily mean that the law itself is not valuable or has "failed". I argue further in chapter 5 that the position of law in implementing certain standards but being unable to affect change to social behaviour may sometimes be the best that can be hoped for in certain situations. It is also however, not guaranteed that law is the right or legitimate position. Law may not always affect behaviour or the landscape of the socio-technical environment in the ways intended, but as contended in the previous subsection, it forms part of the ongoing coproduction of the socio-technical reality which may have unintended and uncertain effects.

Understanding that law is part of coproducing our reality can aid understandings of how our socio-technical future might develop. The law and technology literature and even the new governance literature have provided technical insights and analysis that aid criticism of the law and governance structures. They do not - because this is not their aim - contribute to understanding that the development of normative arguments within decision-making processes, and through legal decision-making may be part of a symmetrical relationship of influence. My contribution lies in understanding the dynamics of development of the socio-technical landscape itself, which is justified as aiding normative decision-making. The development of law, and of the conceptual and value content of law in legal decision-making

in relation to new technology and new conflicts, and the processes inscribed in new governance such as public participation and consultation, in such an understanding are themselves factors influencing and themselves products and points of coproduction. Understanding the coproduction of the conceptual content, and values that come to develop within legal decision-making itself can therefore aid understanding of the development of the socio-technical landscape. The existing literature does not aim to provide an understanding of such development or relationship, and so it is this to which my research contributes. Chapter 4 develops this point and highlights further the gap in the literature to which I aim to contribute.

Chapter 4

Law and Regulation as Part of the Coproduction of the Socio-Technical Reality

1. Introduction

Chapters 2 and 3 have sought to outline both the complexity in managing NEST, and the ways in which law has attempted to deal with specific issues identified. By the end of chapter 2 I detailed that how we shape or influence the future of the socio-technical landscape is dependent upon collective action of which law may be but one aspect, and that such action is most effective early in technological emergence at a point of epistemic deficit about its future social implications. I also argued that looking at the dynamics of the interaction between technology and society can aid understandings of how the socio-technical environment may develop in the future which in turn can aid decision-making in relation to NEST. I further contended that looking at the dynamics of technomoral change and using the idiom of coproduction helps to clarify that such change is not necessarily bad. Further, that the development of new practices, the modulation of the concepts used to describe and understand the socio-technical reality, differing normative judgments made in relation to such change, and the development of the technology itself, is mutually influencing or coproducing. As such, competing arguments and values or priorities, and the collective action (including law) endorsing these different priorities or values, are themselves coproduced and understanding how they are so coproduced should be accounted for as part of understanding the dynamics of the development of the socio-technical landscape and to aid decision-making. In chapter 3 I outlined that law and regulation have been critiqued as “lagging behind” or failing in the management of new and potentially disruptive technology. However, having overviewed the law and technology literature and the contemporary attempts to design and build on new governance system, I concluded that the future development of the law itself as part of the development into the future socio-technical reality, had not been contemplated.

This chapter now seeks to consolidate some of the ideas outlined in chapter 2 and 3 with a view to clarifying the gap in the literature and knowledge that I seek to contribute to and to outline the contours of the research problem. I begin by revisiting the work of Swierstra and

technomoral change and the insights from coproduction outlined in chapter 2 advancing some further points that were made in that literature that have implications for my argument that law is part of the coproduction of the socio-technical reality. I then move to outline some of the broader theories or analyses from the law and technology literature that whilst not directly speaking to an understanding of coproduction do touch upon some aspects of the development and shaping of law as a result of changing technologies.

I will argue here that law is but one social institution in competition with, sometimes complementing, sometimes conflicting and mostly coexisting with other social institutions and the broader communities at large as part of the ongoing meaning-making and influence over the socio-technical reality. I also argue that in linking the insights from technomoral change, with insights from social problems literature as well as the coproduction idiom, emerging ideas or conceptualisations of soft impacts, interests or values implicated by new technology can emerge and begin to influence public debate. Such conceptualisations can potentially come to be recognised in law. Understanding that rise and emergence and the potential recognition in law is my challenge in the rest of the thesis.

2. Tracking changing moralities and the emergence of social “problems”

Swierstra’s conceptualisation of technomoral change helps to articulate how the ambivalence of new technologies and their ethical implications are best looked at from a coproducing understanding: fundamental moral principles can be seen to change; this change is not necessarily bad even though it is provocative and contested; and thus to judge changes to morality according to fundamental principles is not necessarily the “right” means of assessing new technologies.¹ That moral norms are normally only identifiable when they are challenged and thus opened to the opportunity for active debate means that it is at these points there may be chance for “moral innovation” according to Swierstra. In other words, it should not be taken for granted that we can know or that we should stick to principles of moral reasoning if it can be shown that they are based on flawed reasoning or that such reasoning is undermined by the new circumstances brought about by the introduction of the technology. Swierstra points to the competitive nature of coexisting moralities within society pertaining to the fact that technomoral change is never an all or nothing occurrence: that the

¹ See T. Swierstra “Nanotechnology and Technomoral Change” (2013) *Ethics & Politics* 15:1, 200-219; T. Swierstra “Identifying the normative challenges posed by technology’s ‘soft’ impacts” (2015) *Nord J Appl Ethics* 9:1, 5–20; and Swierstra, D. Stemerding and M. Boenik “Exploring Techno-Moral Change: The Case of the Obesity Pill” in P. Sollie, M. Düwell (eds.), *Evaluating New Technologies* (2009) The International Library of Ethics, Law and Technology 3.

moral challenges posed by disruptive technologies may simply be a tipping point in favour of, or against, dominant moralities in favour of alternatives perhaps already articulated by minorities or those previously in a position of lesser power.

This insight is further articulated in STS in the coproduction idiom by Jasanoff who also argues that the life sciences in generating knowledge about and challenging underpinning understandings about life and what it means to be human lead to (bio)constitutional moments that present opportunities in which fundamental principles of law are challenged.² She argues that the coproducing nature of technology, science, society and law means that the traditional means of judging new technologies by fundamental constitutional principles is flawed, and that new constitutional “rights” can and do emerge at the point of disruption.³ It is not necessarily then a *fait accompli* that new and emerging technologies undermine fundamental principles. It is a modulated process with disagreement as to whether and how, at the moment of disruption, the predominant moral principles and values that have been used to direct decision-making and behaviour should change or guide different actions. Changes to such moral principles, and changes to fundamental legal or constitutional principles, however, are not the same thing. Not all fundamental moral principles are recognised in law, indeed many soft impacts outlined and implicated by new technology in chapter 2 will not be recognised. As stated throughout chapters 2 and 3 law and regulation were not always called upon to deal with new technologies and practices of scientists and interventions are actually relatively recent.

Rip and Swierstra have pointed to the debate and competition as between differing argumentative patterns within the ethics of NEST.⁴ This implied that there will be “winning” or more predominant values that may exert a greater shaping effect on the socio-technical development. I extended this insight in chapter 2 to the forms of collective action that may develop as an attempt, and as the most likely means of actively shaping the socio-technical environment. Law and regulation may be but one means or type of collective action, or means of coordinating collective action, and differing kinds of collective action, including other forms of private regulation, international law or private enterprises, may all be competing for influence over a particular technology or aspect of the socio-technical environment. Paired with the understanding above that law and regulation were not always

² S. Jasanoff (ed) *Reframing Rights: Bioconstitutionalism in the Genetic Age*, (2011) MIT Press Scholarship at 3.

³ Ibid at 3-4.

active in governing science and technology points to the need in understanding how particular values or issues and fears become the focus of collective action in the first place.

Swierstra provides another lens for understanding the shift that may occur between recognising, reinforcing and being influenced by values. This analysis can further help in understanding how particular value or issues might come to influence or become a focal point for collective action. He makes a fine distinction between “hard” impacts and “soft” impacts which are those usually attributed to changing moralities and/or values.⁵ This distinction is used as a means of delineating the subject of technomoral change as that of soft impacts and it is this distinction that was touched on in the discussion in section 2.4 in chapter 2. For my purposes this distinction and the comments made in relation to it are central to understanding the shift that may take place in recognising and attributing influence to emerging moral arguments or conceptualisations of issues and values and their potential recognition and implementation in law.

2.1 Distinguishing Between “Hard” and “Soft” Impacts

Hard impacts are those hazards that can be easily ascribed potentials as risks. They are thus those quantified both in terms of the chance they might occur and in outlining exactly what the undesirable outcome will be.⁶ The undesirable outcome must be described in terms such that quantification can be readily achieved and this was done, according to Swierstra, on the basis of the harm principle outlined by John Stuart Mill.⁷ Only where “clear and objective harm” occurs can a state intervene and hold private parties accountable.⁸ Values that are traditionally clear and objective in terms of harms done are health, safety and more recently environment.⁹ Such harm would need to show direct causal connection to technology. Therefore hard impacts are normally quantifiable, display “clear and non-controversial harm”, and can be attributed to technological innovation through direct causation. These three characteristics turn “unmanageable hazards into manageable risks”¹⁰ and at the same time create a regime of accountability.¹¹ Soft impacts are by contrast “*qualitative* rather than quantative; the core values at stake are *unclear or contested* rather than clear instances of

⁵ Swierstra (2015) supra n1.

⁶ Ibid at 7.

⁷ Ibid and see also J. S. Mill, *On Liberty*, (1859) Cambridge University Press, chapter 4.

⁸ Swierstra supra n1.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid.

harm; and the results are *co-produced by the user* rather than being caused solely by the technology.¹² They are thus normally seen to be outside of accountability regimes.

Swierstra makes explicit that the distinction between hard and soft impacts is itself a political, rhetorical device, one that is used by those with a stake in such a distinction, such as policy makers, regulators and technological actors/stakeholders, as a practical and potentially strategic means of marking out impacts for which they will or will not accept accountability.¹³ What is accepted as a hard impact will be a matter of argument between those following the status quo of accountability regimes and those hoping to have their interests more firmly on the public agenda.¹⁴ Further the hard-soft distinction is one that may be viewed on a gradual scale, that the line is drawn differently across time and place, and that impacts may fall down on different sides of this scale across the three criteria listed above.¹⁵ What is considered to be an identifiable harm has changed in many circumstances. Again this points to changes over spatial and temporal contexts and implies coevolution with the accountability regimes.¹⁶

Swierstra relates that most (Western) societies are traditionally built upon a pragmatic distinction between the right and the good, or between a thin concept of binding morality (probably more likely to be enshrined in law) and a thick substantive personal morality for which there should be no state intervention.¹⁷ This can be framed from the position of the liberal paradox or dilemma: safeguarding security or preventing harm and safeguarding freedom where the former may have to impinge on the latter. The distinction is pragmatic in the sense that following from lessons in our history, such as religious wars where the erosion of liberty and the persecution of those in disagreement with the status quo of morality could be considered heinous, this distinction allowed for a better and more just balance in the practices and expression of morality and views of the good.¹⁸ This distinction and the scale on which it should be measured can also be read in light of contemporary examples where that balance and the line drawn between thin and binding morality or private morality can be seen in the examples of two concepts of liberty, one positive and one negative, where

¹² Ibid.

¹³ Ibid.

¹⁴ Ibid.

¹⁵ Ibid.

¹⁶ Ibid.

¹⁷ Ibid at 8.

¹⁸ Ibid.

negative freedom is seen as better indicated to prevent against abuses of power and unwanted and harmful intervention in the lives of others.¹⁹

For Swierstra, in our technologically advanced and advancing society, the neglect of soft impacts can no longer be tenable and he calls for a way to bring them in to public debate and potential action.²⁰ This is broadly in tune with those who argue that mechanisms of law or the implementation of human rights as a means for guiding and demarcating responsibility and accountability for technological impacts are inappropriate as a mechanism for guiding technological development.²¹ This is because they are built on the libertarian tradition of negative liberty and fall short of providing the thick, substantive morality or ethics by which to navigate technological dilemmas.²²

The question of coevolution of accountability regimes, of the shifting nature of the line drawn to demarcate harms, and in general the debated nature of that line, forms the basis of observations and analysis that can be made about the changing texture of the socio-technical environment and collective action. It is to this that I now turn.

2.2 Shifting Accountability

Swierstra and Rip have claimed that active shaping of socio-technological trajectories must take place at the collective rather than individual level. As highlighted already, collective action might take many forms and could include versions of private or self-regulation in terms of guiding behaviour. Such self-regulation and collective action was demonstrated by scientists at Asilomar in 1976 when discussing and imposing a moratorium on genetic research when it became apparent that the science was potentially transformative in terms of its challenge to existing knowledge and capacities, with uncertain implications.²³ Collective action may also take the form of private companies and corporations in acting towards their own specified goals, or of states and international communities in regulating and governing within the terms of a stated aim and in accordance with their own values and rules. What might be traditionally viewed as private forms of collective action, those bodies not affiliated

¹⁹ See I. Berlin, *Two Concepts of Liberty: An Inaugural Delivered Before the University of Oxford*, 31st October 1958, Oxford: Clarendon Press.

²⁰ Swierstra (2015) *supra* n 1 at 8-10.

²¹ C. Pelluchon "Toward a New Philosophical Anthropology: The Limits of Human Rights in Bioethics" (Winter 2008) *Perspectives on Political Science*, 3: 1, 31-40.

²² *Ibid.*

²³ See P. Berg "Meetings that changed the world: Asilomar 1975: DNA modification secured" (18 September 2008) *Nature* 455, 290-291.

with Government or international political institutions or conventions, may still then recognise an issue of ethical or moral import and organise behind and adopt a particular position in relation to a specific issue that might be treated as “soft” in the above analysis. They may have their own accountability regimes such as private regulation. Events like Asilomar are themselves actions or moments in which a profession took initiative in holding themselves accountable and raising an issue within their own work as potentially problematic. But the traditional division of the public and private sphere, and the debate over what constitutes harm is normally what justifies what is recognised as implicating the intervention of the state and law. I have argued already in chapter 3, from the insights gained in the reconceptualisation of regulatory failure and covered within a decentred understanding of regulation, that law exists as but one of many ways in which governance and regulation is effected and may often compete or conflict in authority (and real power over peoples actions).

Issues involving morality and aspects or issues seen as soft impacts are not all issues of law, but whether they are issues of law may be as much a result of the social development and coproducing nature outlined in chapter 2, as it is the result of technomoral change and the shifting accountability regimes outlined above. If what counts as harm is subject to change following the dynamics of technomoral change explored in chapter 2, then issues in which state and law intervene can also change and may themselves have an impact and influence upon the emerging socio-technical environment. In the aftermath of public scandals mentioned above in relation to Bristol and Alderhey, GM food, the advent of IVF and genetic therapies in general, public participatory mechanisms and the democratisation of science have endeavoured to include public and lay perspectives in to the governance and regulatory process. They could be viewed as one means by which soft impacts are taken seriously. These developments in themselves can be seen as part of the anticipatory and even learning approach to technological development advocated by Swierstra and described in chapter 2 subsection 4.2. They can also however be viewed through the lens of socio-technical development themselves.

Jasanoff describes development and changes in the life sciences as constituting potentially (bio)constitutional moments, where new knowledge about life, what it means to be human and our capacity to effect change implicate potential changes in the relationship between the state and its citizens, its duties towards them and the rights they might claim.²⁴ This is consistent with the technomoral change thesis. As with technomoral change, whether

²⁴ Jasanoff *supra* n2.

changes or widening of duties and rights are recognised in law may be as much to do with competition between different understandings and framings of the impact at hand, whether it is seen as a harm, a harm attributable to a technology, or a harm that requires action at all and is not merely a part of private morality. This implicates the same processes of modulation as seen in technomoral change, competition within the force field of morality and potential to gain hegemony. But it also implicates the coproducing effect on accountability regimes and the distinction between what is considered private and outside the sphere of state intervention. In the same way that soft impacts have become contemplated within public participation, new legal rights may become legitimate causes of concern when enough social pressure or support of an alternative view of the relationship between technology, scientists and society achieves power and influence over key decision-makers. In such circumstances it may be that the negotiation, competition or shifting of the line between hard and soft impacts results in such action, or it may be instead that the distinction is eschewed entirely.

What is left open by Swierstra is an empirical understanding of how these shifts in accountability, of what is recognised as an issue requiring state or legal intervention come to be. In relation to marshalling collective action, and of studying how new moralities or concepts come to rise in to consciousness, insights from social problems theory are helpful. Within this literature the rise of certain moralities or views of what constitutes a problem for intervention, or by which parties can be held accountable, is a social process of recognition and framing. In this literature public participation such as those touched on above can be seen as an element of the solution of potential collective action as in part a result of a shift in our views of accountability. Together with insights from STS idiom of coproduction, these insights point to the need to recognise that answers to the questions about how to practically shape socio-technical futures and how we should so shape them normatively speaking, are coproduced themselves.

2.3 Social Problems and Technomoral Change

Much sociological theory identifies objective conditions in society that cause problems and which usually point to structural factors and practical conditions that have “deviant” effects.²⁵ Blumer’s thesis is that these theories were useless in identifying social problems other than those that had already been identified, and that actually a useful conceptualisation

²⁵ H. Blumer “Social Problems as Collective Behaviour” (Winter 1971) *Social Problems* 18: 3, 298-306 at 299-300.

of social problems was that they are the result of a collective definition or recognition of society.²⁶ In other words, objective conditions could be in existence for years, but they may not be identified as such until they have been socially recognised. Such a conceptualisation takes in to account that, “[a] social problem is always a focal point for the operation of divergent and conflicting interests, intentions, and objectives. It is the interplay of these interests and objectives that constitutes the way in which a society deals with any one of its social problems.”²⁷ Thus;

“The process of collective definition is responsible for the emergence of social problems, for the way in which they are seen, for the way in which they are approached and considered, for the kind of official remedial plan that is laid out, and for the transformation of the remedial plan in its application. In short, the process of collective definition determines the career and fate of social problems, from the initial point of their appearance to whatever may be the terminal point in their course.”²⁸

He goes on to formalise this social process as one of stages: emergence of the problem; legitimisation of the problem; mobilization of action; formation of an official plan of action and; implementation of the plan of action.²⁹ In relation to emergence the acknowledgement is that there may be members of a given society who perceive the problem but who may be impotent to awaken further recognition, thus introducing the element of power, but equally where persons are able to ensure that these problems are heard they may change perceptions and simultaneously become part of the process of conceptualising the social problem.³⁰ In this we see parallels with Swierstra’s explanation of technomoral change and the unpredictable effects of modulating moralities due to the complexity of social reactions and processes. The nature and role of power is elaborated by looking at the influence of action groups, the media, political figures, the role of corporations and other organisations and of the impotence and powerlessness of other groups to get their perceptions and experiences of the problems across.³¹ Not all problems in society will go on to be recognised as social problems but it is this social recognition that “gives birth” to social problems as we typically will understand them.³²

²⁶ Ibid at 298.

²⁷ Ibid at 301.

²⁸ Ibid.

²⁹ Ibid.

³⁰ Ibid 302.

³¹ Ibid.

³² Ibid.

Legitimising social problems may prevent social recognition from fading (and thus returning the problem to obscurity and ignorance), and comes with being discussed and treated seriously in public fora, in the media, in parliament.³³ Social problems recognised by a growing group in society can still be ignored by these fora, castigated as the natural state of things or as insignificant in consideration, and by this token may fail at this stage.³⁴ We can see how this adds to understanding how certain moralities may gain hegemony and of the active application of political distinction between hard and soft impacts and the potential for accountability. The insights from social problems literature can extend this understanding by elucidating how certain issues in society gain traction as being seen as problematic, in need of action and intervention beyond private moralities, and by beginning to point to how new approaches in law and regulation may be implicated in social processes of technomoral change.

Mobilization of action entails the process by which the problem - having gained legitimacy - is discussed.³⁵ It includes the consideration of the interaction of arguments for and against a certain conceptualisation of a problem, and the strategies employed by those on opposing sides or with diverse vested interests in framing the problem and having an impact both on how the problem may be framed and thus on the ways in which it may be tackled.³⁶ Such mobilization may take place within the auspices of government perhaps, within Parliament and legislative chambers, and be subject to compromise and power play and vested interests.³⁷ The official plan enacted therefore becomes the official definition of the problem. This definition process can tell us a lot about the eventual fate of a social problem and point to potential factors that may lead to the failure of such action, or the trajectory of the problem in general.³⁸ Implementation of the official plan is yet another stage of amending the official definition of the problem as inevitably the official plan is twisted.

Various other studies have developed and critiqued this thesis over time. Spector and Kitsuse amongst others, have centred attention upon this process of social definition as forming part of a sequential natural history, similar to that originally posited by Blumer, with certain phases of the process identifiable as outlined above.³⁹ Others claim a more overlapping nature of the differing stages of definition, with simultaneous and “continually

³³ Ibid.

³⁴ Ibid 303.

³⁵ Ibid.

³⁶ Ibid.

³⁷ Ibid.

³⁸ Ibid.

³⁹ M. Spector and J. I. Kitsuse “Social Problems: A Reformulation” (1973-1974) *Soc. Probs.* 21, 145.

ricocheting interaction”.⁴⁰ Further critique highlights that viewing the social process as one of stages misleads to the assumption that such progression through a timeline of emergence can provide predictive intelligence over the eventual fate and interactions of the social problem and the action taken towards it in society.⁴¹ The process instead can be seen as open ended with problems gaining traction then fading, then resurfacing perhaps in a different guise.

This is not meant to provide an extensive overview of this literature, but there are insights that are pertinent to the current research problem. The main points of the original thesis of the social problems literature is the selectivity of society in recognising and taking action to remedy problems and the complexity of the collective process of definition that is the filter through which problems are recognised, dismissed, validated and potentially targeted. Not every perspective will prevail. The social problems thesis does not directly pertain to insights into changing morality per se, but it does go to the heart of understanding how certain positions or moralities may become “officially” recognised or part of law.

2.4 Social Problems, Legal Concepts and Coproduction

Whether soft impacts are taken seriously is dependent upon social processes of definition, legitimation and action, which will also take in to account practical aspects of what that action will entail. The limited carrying capacity of public forum (and of society in general) to accommodate different problems and differing conceptualisations of problems, means that certain conceptualisations have a better chance of recognition than others. This implies that there may be an element of strategy involved in conceptualisation and simplification in terms of creating and framing issues that are more easily grasped and taken forward as part of a wider social movement.

These insights relate not just to the potential disruption and establishment of a new hegemony of moral practice, but also to the ways in which that process is implicated in establishing new public policy agendas, aims of researchers, governance and state intervention: of whether, what form, to what end, and underpinned by which values collective action might take. Crucially, law and regulation can be part of the collective action and solution to the problems imbued in NEST and whether or not they come to be implicated will depend upon social framing of what is seen as a harm and whether that harm might be

⁴⁰ See J. W. Schneider “Social Problems Theory: The Constructionist View” (1985) *Ann. Rev. Sociol.* 11, 209-29 citing Wiener at 225.

⁴¹ *Ibid* still citing Wiener.

taken as one for which the state is or should hold others accountable. We have then an understanding that certain values may come to characterise problems and frame individual moralities or values when a new technology emerges, which may in turn cause a rethink of our rights and the States duties towards us in line with Jasanoff's conceptualisation of (bio)constitutional moments. Jasanoff's constitutional moments thesis corresponds with Swiertra's assertion that not all moral or value change in the aftermath of a disruptive moment caused by an emerging technology is a bad thing. Jasanoff directly questions the logic that constitutional rights as they are normally conceived as fundamental, should be incapable of re-evaluation and directly attributes the need for their re-evaluation to the changing knowledge and experience that disruptive (bio)technology brings about.⁴² Whether such new rights or conceptualisations of duties are recognised or legitimated within the foregoing processes is unpredictable in a similar sense that it is unpredictable as to how a new technology may modulate moralities and whether a corresponding shift in accountability is also recognised and accepted.

The social problems literature points to critical insights and to particular lines of inquiry such as emergence, recognition/legitimation, mobilization and action taken of problems as part of the overall understanding about the rise of issues in our society and the entrenchment of certain approaches to those issues including legal ones. However, these insights are broad and not necessarily suited, without more micro-level analysis, to understanding how a particular value or principle – potentially modulated by emerging technology – comes to entrench or permeate law. Jasanoff's work on reframing rights and the capacity of life sciences to present bioconstitutional moments, brings to the fore the notion that existing rights can change or be challenged by new technologies. Insights from social problems theory and Jasanoff, coupled with the implications of technomoral change imply however, that new concepts within law might also emerge or be constructed as either part of legitimating or mobilising a legal response to an identified social problem, or as part bioconstitutional moments in which new relationships, claims and expected responsibilities may arise.

Social problems literature infers that concepts in law, be they the protection of interests, values, fundamental principles or more concrete rights and paradigms set in case law and statute, are neither the end state of a concept or issue, and neither are they the beginning of this emergence. Indeed the articulation of a problem for law may be seen to be part of the ongoing process of articulating social problems in general and of recognising new relations

⁴² Jasanoff *supra* n2 at 9.

or duties between private individuals, and between the state and individuals. The interactions between science, technology, society, and law and regulation result in more than coproduced movements for collective action, but also of resulting potentially in the recognition, or the competition and beginning process of defining certain new concepts or rights in law, duties of the state, or values by which to hold private parties accountable.

Such individualised concepts may require collective action and social definition in order to become influential, but they can also be seen as part of Swierstra's conceptualisation of the modulation in technomoral change which does not necessarily require concentrated social action in the way that social problems theory posits. The rise of legal concepts or constitutional claims may be seen at times (but not always) as a part of the broader force field of morality (or something akin to such a force field) where technologies may provide a tipping point such that new moralities or concepts of rights and duties can arise and be recognised and begin to establish influence. However, such emerging concepts may still be seen as part of the weighting and competition that we see among values that exist in tension with each other. In this way their recognition may not always have to be the result of active campaigning but may be the result of passive acceptance or social formation.

Jasanoff emphasises that new rights or duties do not need necessarily to be enshrined in law in order for us to analyse and claim their existence.⁴³ In this sense she both avoids the thorny issue of difference between concepts of constitutional rights of different jurisdictions, such as written and unwritten constitutions, whilst at the same time acknowledging that actors involved in practices within the biomedical research environment, those engaged in regulatory practices and within the broader society in general, bring them in to being through their behaviour and practice. This argument may bypass difficulties in accounting for differences in constitutional concepts between jurisdictions,⁴⁴ but within legal scholarship could be criticised as attributing legality to too many phenomena, an issue that will be returned to in chapter 5. What this claim does invoke is the potential to view emerging concepts before they become strictly legal. It helps to view emerging legal concepts, or formulations of rights, duties and principles as having an influential if uncertain life before becoming enshrined in law. It also makes clear, together with Swierstra's analysis as to the distinction between hard and soft impacts, and the coevolution, or negotiation of accountability in reference to such soft impacts, that concepts that may emerge to be recognised as legal concepts exist within public fora and within the broader societal schema

⁴³ Ibid at 10.

⁴⁴ Ibid.

before being so recognised. New legal concepts can potentially only be identified as emerging in hindsight after they have been recognised in law. Before such a point the outcome of emerging and growing recognition and use of concepts, values and arguments (such as for example the values of sustainability within environmental policy) is uncertain and there may be many concepts in use that could be potential legal concepts without ever managing to be enshrined as such. This point is the critical investigation of my thesis.

What is missing is an analysis and conceptual language to help explain the potential emergence and dynamics of emergence of legal concepts. Such an analysis and explanation would need to take account of the insights provided by coproduction and social problems theory. It would also need to be able to provide explanatory concepts that are able to make and justify the distinctions and the link between concepts, arguments, and “rights” as described by Jasanoff, and when or whether they are considered “legal”. It would also need to bridge and be able to accommodate insights from the differing disciplines and literature outlined above. Furthermore, and what is not necessarily taken in to account by STS or social problems, it would need to take in to account the dynamics of development within legal forum, and interaction with existing legal concepts and the regulatory array. It is here that my original contribution lies. This is developed further in chapter 5 where I lay out my conception of “emerging legal concepts”, but I also seek to demonstrate as an example, that identity might be seen as such an emerging legal concept.

Jasanoff, in introducing the potential for biotechnologies to prompt (bio)constitutional moments specifically argued that treating constitutional rights as fundamentally unchangeable and as the constant frame of reference through which to assess socio-technical advances, prompts the view of legal lag, of law failing to manage technological change in order to prevent changes to fundamental values.⁴⁵ Legal lag is dealt with in depth in the previous chapter. Here it again points to a potential danger in addressing the relationship between law and technology and society from the perspective of fundamental legal values as unchanging and in need of protection: it obfuscates the reality that change is not necessarily bad and that multiple views of the good exist, and also may simply express the view of an historically dominant opinion which disagrees with the change. In pointing to the potential to recognise new variations on or recognition of new rights in a constitutional sense (even if not in a strictly legal one) there is the recognition that broader concepts of social relations and duties can arise. On this Jasanoff specifically points to changing understandings of human identity, what it means to be human and who or what is ascribed rights and protections, and

⁴⁵ Ibid.

who or what can be harmed, as being challenged by emerging biotechnologies.⁴⁶ This challenge to identity is relevant not just because ideas about identity underpin constitutional rights and fundamental principles,⁴⁷ but also, as I will argue, because identity as a concept underpins conceptions of harm and who or what can be harmed, of the legal subject,⁴⁸ and crucially may be part of an emerging conceptualisation of value or “problem” perspective prompted by emerging biotechnology.

I argue that identity as a problem for society is itself still in process of definition and that it may be both a target of regulation and collective action, and itself articulated as a concept in law and regulation as part of the collective plan in response to this problem. By this what is meant is that it could be both a problem for society whilst simultaneously, framed and defined as a principle, a fundamental right or interest, or rule in law and regulation in response to the problems to identity that may be caused (or said to be caused) by emerging technologies. Individual and collective identity, as a manifestation of current and future ambivalence, may be in the process of being conceptualised as a social problem, one that is being collectively defined, which, as part of this definition process may be debated in public, legislative and legal fora, which may at this point be either successful or unsuccessful in the short to medium term, but which is still in a process of flux. Further, it raises the notion of a process of emergence, as a concept for law and regulation that begins much earlier than any articulation in case or statute.

Before moving to outline my approach and own conceptualisation of what is meant by an “emerging legal concept” which is the subject of chapter 5 and my substantive original contribution, it is first incumbent to go back to the law and technology literature and some of the broader approaches to the relationship between law and technology that have been developed. This is to demonstrate not only where exactly the gap in understanding that I wish to contribute to lies, but also to introduce further factors that should be taken in to account when contemplating the dynamics of emerging legal concepts such as identity. It also discusses Bernstein’s work who has posited that identity interests or values should be recognised legal concepts where they currently are not explicitly addressed.

⁴⁶ Ibid.

⁴⁷ Ibid.

⁴⁸ See on this N. Naffine “Who are Law’s Persons? From Cheshire Cats to Responsible Subjects” (2003) *Mod. L. Rev* 66, 346.

3. Theory of Law and Technology: Structure and Coproducing Dynamics

This section looks to the broader approaches of theory of law and technology developed mainly within common law research aimed at approaches of scholars and legal practitioners in general to deal with the issue of legal lag in relation to new technology. Part of Moses' own critique of the discipline as outlined in chapter 3, is the fragmented approach that has been adopted by the scholars, and advocates that such endeavours abandon specific technologies as targets for regulation in favour of looking to the broader socio-technical environment instead.⁴⁹ Thus Moses' own analysis is an articulation of the questions that could be asked across the legal spectrum as part of a broad approach. Her reasoning for a specific body of research in to law and technology centres upon the factor of novelty in terms of the capacity for new technologies to present truly novel situations and disruptions to accepted practices. Moses' justification for developing broader theory and of the discipline of law and technology in general lies in finding the hook or the special element of law and technology the study of which can tell us something useful about the legal system, and in this she points to the issue of disruptive novelty.⁵⁰ The approaches to a rapidly changing technology are the main focus and include questions as to regulatory design, law reform, and creation of institutions that act as scanning probes in the anticipation of change.⁵¹ How these questions are approached, and the determination of the questions that are asked, can frame the end conclusions.⁵²

This section looks at other scholars who have also sought to develop broader theoretical approaches to law and technology with the aim of better understanding the interaction between law and technology. I am not concerned with their normative arguments as to how law – namely common law – should be interpreted with respect to technology, but I am concerned with the insights of such scholars as to the factors and dynamics they describe within legal practice that may influence the development of law in general. In reviewing this work I am identifying the insights that it can provide for understanding the social dynamics and development of law and potentially emerging legal concepts, but also to illustrate where there is a dearth of understanding and what I contribute to such work. For the purposes of this thesis, what these broader approaches point to is not simply a way in which legal

⁴⁹ See again L.B. Moses "Recurring Dilemmas: Law's Race to Keep up with Technological Change" *University of Illinois Journal of Law, Technology and Policy* 7, 239-286.

⁵⁰ She is joined on this point by Bernstein who also looks to the issue of regulatory connection as the useful point in the study of law and technology. See G. Bernstein "Toward a General Theory of Law and Technology: Introduction" (2007) *Minn. J.L. Sci. & Tech.* 8, 441.

⁵¹ L. B. Moses "How to Think about Law, Regulation and Technology: Problems with "Technology" as Regulatory Target" (2013) 5(1) LIT 1–20 at 14.

⁵² Ibid.

practitioners and decision-makers should approach the issue of disruptive new technologies, but of a turn towards drawing upon insights, even if implicitly, of coproduction. They also, as argued later in the section, highlight the unique dynamics of structure and agency within the legal system itself in modulating or coproducing the kinds of arguments that can be made, and of the limitations or framings of the spectrum of concepts that can be recognised.

3.1 Law and Technology: Theoretical Approaches

Mandel suggests that using pre-existing legal categories and analogising an older technology to the function of the new technology is not a workable approach, instead advocating that a focus on the rationale of the categorisation system should be used to determine whether the analogy is relevant.⁵³ Cockfield and Pridmore make the point that in applying traditional doctrinal categories and applying the letter of the law to new scenarios or trying by increments to extend existing categories to new situations may have the effect, within the new socio-technical reality, of undermining substantive individual and societal interests traditionally protected by law.⁵⁴ Instead they argue for greater scrutiny and appreciation for the interplay between law and technology more explicitly. In doing so they suggest an approach that in applying traditional doctrine, consideration should be taken of whether the technological change threatens traditional interests that the law normally seeks to protect, and if so, then a more contextual approach to legal analysis should be adopted, one that is more flexible and less deferential to traditional doctrinal categories.⁵⁵

They argue that much law and technology scholarship presupposes an instrumental view of technology, and thus often fails to account for the ways in which technology “may undermine and augment individual or broader societal interests”.⁵⁶ This may be less true now than it was in 2007, but in countering the charge of determinism and walking a path between instrumentality and substantive perspectives on technology and society, they argue that law and technology theory must balance the potential for technology to structure and restrict certain behaviour (and I would argue to facilitate other practices and types of behaviour) with a healthy respect (and potentially faith) for human agency.⁵⁷ They argue that unlike other academic disciplines, law and technology scholarship has failed to attempt to construct

⁵³ G. N. Mandel “History Lessons for a General Theory of Law and Technology” (2007) *Minn. J.L. Sci. & Tech.* 8, 551.

⁵⁴ A. Cockfield and J. Pridmore “A Synthetic Theory of Law and Technology” (2007) *Minn. J.L. Sci. & Tech.* 8, 475.

⁵⁵ *Ibid.*

⁵⁶ *Ibid* at 497.

⁵⁷ *Ibid* at 495.

a general theory of technology that could aid legal scholarship, although they do point to the work of Bernstein and Moses as forwarding a broader perspective.⁵⁸ Cockfield and Pridmore's synthetic theory, they reiterate, is more closely aligned to a liberal political philosophy and insights of STS that see the interactions between technology and society as non-linear and complex. In short it simply requires that a consideration is made of the potential substantive ways in which technology may undermine substantive rights and legal interests of individuals and society apart from the technologies intended uses.

Bernstein in her contribution looks more to the differentiation between two different technologies – genetic testing and the Internet – and their relation to privacy via their diffusion characteristics.⁵⁹ Her aim was to demonstrate that analysis of such diffusion characteristics can provide fertile information for policy-makers to develop guidelines based on the commonalities and differences between them.⁶⁰ She examined both the diffusion characteristics of Internet usage and development, along with Genetic testing to highlight the distinctions between the two and their paradoxical relationship with the threat of privacy erosion. She identified that despite the relatively little empirical evidence of the threat of privacy erosion in the case of genetic testing, individuals have been inhibited in its uptake; whereas despite the very real and rising threat to privacy on the Internet this has not affected the exponential uptake of the technology. There are some flaws in this analysis including the lack of engagement with other factors that affect the diffusion including monetary costs, or the personal preferences of individuals in making potentially life changing decisions in relation to their health, as well as the pervasive need to use the Internet for a vast variety of tasks that simply do not come in to the equation with genetic testing. The analysis helps to highlight potential factors that lead to what she calls the privacy-diffusion paradox and an understanding of the role of diffusion characteristics that can inform policy making to attempt to counter the harmful effects of such relationships. In this instance, she argues it could be used to counter the rise in use of technology now beyond the realms of adequate privacy protection, or to defuse concerns over privacy for genetic testing such that those who need it are more likely to access it.

Key to her observations is the critical-mass point that the Internet reached and its decentralised nature (that many could contribute to its development as opposed to diffusing

⁵⁸ Ibid .

⁵⁹ G. Bernstein "The Role of Diffusion Characteristics in Formulating a General Theory of Law and Technology" (2007) *Minn. J. L. Sci and Tech* 8:2 623-644.

⁶⁰ Ibid at 623.

from a centre of experts).⁶¹ This was in contrast to the untriable characteristics⁶² of genetic testing (where individuals cannot necessarily test the waters and gain experience before committing to its effects), and the centralised control of those able to develop and administer the technology, which contributed to their opposing diffusion patterns.⁶³ She does not, however, engage deeply with the wide variety of STS literature that have dealt with technology diffusion and which may have provided further insight.

Pridmore, Cockfield, and Bernstein all engage to a greater or lesser extent with the complexity of interaction between law and technology, and both have their own suggestions as to the approach of legal scholarship and practitioners when faced with novel technology. Bernstein has contributed a valuable insight as to the differing diffusion characteristics of certain technologies with implications for the ease of regulation and for the importance of timing in terms of technologies displaying greater network effects as in the case of the Internet. Both urge the need to look beyond the targeted behaviour and regulation to the potential of technologies to undermine substantive interests protected by law. In so doing Cockfield argues that more liberal approaches to the interpretation and the application of legal doctrines may be required so that interpretation and application of the letter of law do not undermine fundamental interests or values (the two terms seem to be used interchangeably). In so doing, changes to or flexible interpretation of particular principles, concepts and interests may result in a transformation in the law itself where the new interpretation (in case law) at some point will need to be resolved with the existing interpretations and body of jurisprudence and may result in the extension of interpretations to more and different phenomena not linked to the original technology.⁶⁴ This most closely aligns with the coproducing relationship specified in STS as between technology and wider society whilst extending its insights, at least preliminarily to law in its interactions with technology and society.

Common to all of these contributions, however, is the implicit presupposition of “interests” or values protected by law that appear within their analysis to be unchanging. From the perspective of Bernstein, privacy is the interest that is in issue with the technologies judged against their impact upon privacy. Cockfield, in applying his theory as a general rule does not focus upon any one “interest traditionally protected by law” but the point of the theory is to highlight a flexible approach to the application of rules where the erosion of fundamental

⁶¹ Ibid.

⁶² Bernstein explains that the triability of a technology is based upon the opportunities a user has to test and experiment with the technology on a limited basis.

⁶³ Ibid.

⁶⁴ A. J. Cockfield “Towards a Law and Technology Theory” (2003-2004) *Man. L.J.*30, 383 at 412.

interests may result. As such those interests and/or values not only appear to be thought of as interpreted out of the body of law, but also as fundamentals against which the application of existing doctrinal rules and categories to the post-emerging technology situation are judged. It is not clear, however, why they should be unchanging, and it is in fact this perception of fundamental interests or rights, as seen from the coproducing lens of STS and in particular within Jasanoff's bioconstitutional moments, that are criticised as inscribing the legal lag thesis: of law failing to keep up with and thus protect fundamental or constitutional rights. If we acknowledge that emerging technologies, particularly in the biosciences, have the potential to modulate morals and social practices and also to disrupt common epistemologies about the world and our place in it, then they also may disrupt or render (less) justifiable existing conceptions of fundamental rights and interests. This implies that even entrenched or robust concepts in law, those we might typically refer to as constitutional or fundamental, can be challenged, or that they can be approached in the flexible and contextual manner outlined and advocated by Cockfield. In such a scenario even enduring legal concepts and interests will change over time subject to complex interactions. Potentially, and as argued in this work, new conceptions of fundamental rights or concepts in law might emerge.

What can also be taken from the outline above is the interaction between structure and agency, in the development of concepts in law and their interpretation. As highlighted above, Cockfield and Mandel talk about assessing when and when not to be flexible in relation to the interpretation and application of laws in light of the changed socio-technical circumstances. They are still constrained by the existing legal categories and the limits of their interpretation. This is an important aspect of law that needs to be stressed here because it sets out the context within which potentially new or emerging legal concepts may permeate. As will be argued in chapter 5, the existing structure and understanding of legal concepts and conditions or rules of interpretation and precedent – the authority of law – is a factor that will influence the recognition of particular ideas or concepts as indeed legal. Whilst the law and technology literature are not aimed at understanding the social dynamics of legal change, or of the dynamics and coproduction involved in the development, emergence and potential recognition of new legal concepts, they have provided incidental insight of some of the factors that might affect such a dynamic. This is an aspect that cannot be pointed to strictly from the insights of STS coproduction or technomoral change outlined in chapter 2 and at the beginning of this chapter. Both literatures have distinct aims in their research endeavours, providing insights that compliment each other without always speaking to each other. What is lacking is a coherent means of bringing these differing insights together in an understanding of the relationship between the law and the wider socio-

technical environment. Bernstein contributes further insight as between the interaction of law and the wider socio-technical environment, and in so doing also makes a normative argument in favour of recognising a legal right to identity. It is to this I now turn.

3.2 Structure, Agency and Social Interaction: Connecting Law and Regulation to Wider Social Contexts

Bernstein has also looked to the interaction between socio-legal norms and their effect upon the diffusion and therefore development of assisted reproduction technologies in America.⁶⁵ Her analysis points to entrenched social norms surrounding the nuclear family and sexual relationships within marriage, and their expression within the legal framework of legitimacy, divorce and marriage laws as posing a barrier to their uptake.⁶⁶ She also points to the changes in the language and issues raised in court cases. Once the technology itself has been deemed unproblematic (in perhaps a slightly artificial separation between the technology and the practices it gives rise to)⁶⁷ it is the practices that it facilitates that become an issue.⁶⁸ Once socio-legal and social norms begin to change, through challenges and through increased use of such technology, other frontiers of the socio-legal norms are challenged, so for example the acceptance of the technology for married couples then becomes a site for the claim that they should be available for same sex couples and single women (and men, although this is not mentioned).⁶⁹ She points to the social stigma surrounding artificial insemination and donor conception as delaying both the diffusion and active development of the cryopreservation techniques used in freezing sperm.⁷⁰ It was only after the practice of artificial insemination and issues pertaining to legitimacy, and paternity issues in divorce and marriage cases were clarified, and the courts acceptance of such practices as being valid, that progress in that area (in America) could continue.⁷¹ In turn, this paved the way for challenges in the court to recognise the rights of same sex couples to access similar services, where the rhetoric and arguments in the court became less to do with norms of family life

⁶⁵ G. Bernstein "The Socio-legal Acceptance of New Technologies: A Close Look at Artificial Insemination" (2002) *Wash. L. Rev.* 77, 1035.

⁶⁶ *Ibid.*

⁶⁷ In this she is referring to the novelty of the technology of artificial insemination as something in and of itself that was novel and therefore contested.

⁶⁸ *Ibid.*

⁶⁹ *Ibid.*

⁷⁰ *Ibid.*

⁷¹ *Ibid.*

and their adjustment and even entrenchment by the rise in assisted insemination (AI) between married couples, and instead of more liberal “rights” to reproductive services.⁷²

Her emphasis on analysing the tropes and the mismatch between the values embedded in the technology of AI and the values embedded in the socio-legal environment brings to the fore the need to consider the importance of taken for granted cognitive and value frames. Much of the norms of family may have become less credited, but widespread as such norms and values were, other similarly embedded and taken for granted value positions can situate our current knowledge and viewpoints in relation to new technologies, ones which may in time come to be challenged and changed. In the meantime however, it may be the case that struggle and reconceptualisation of the issues needs to take place in order for a changed perspective and recognition of access to and use of a technology to continue.

Bernstein’s work also emphasises the structural effects that both the social norms and the entrenched socio-legal norms have on the development of the legal response itself. It follows the pattern of existing normative tropes and progresses by degrees only in terms of the narrative between cases dealing with the various aspects of AI. Legal norms, such as legitimacy laws, structure how the courts respond to the issue of paternity in such cases, yet the situation itself and the intention of the parties is at odds with the values and presuppositions of this framework. Existing legal norms frame the judgements, and only by degree and by the changing attitudes of the judges themselves does progress seem to be made.

Bernstein develops this structural undertone in her analysis of identity interests implicated by the explosion of Internet usage and of genetic testing.⁷³ Her analysis of identity interests relates to the disconnect between the right to privacy, which she argues is usually called upon to protect identity interests, and identity interests as they are newly implicated by these technologies.⁷⁴ This disconnect is one she attributes to the structure of the doctrinal categories and the content of these categories and principles of privacy, arguing that the conflicts and actions brought to bear by these new technologies lie outwith traditional interpretations of these rules.⁷⁵ It can be equally ascertained that such technical structural disconnects might correspond with Moses’ dilemma of uncertainty in the face of the new

⁷² Ibid.

⁷³ G. Bernstein “Accommodating Technological Innovation: Identity, Genetic Testing and the Internet” (2004) 57 *Vand. L. Rev.* 965.

⁷⁴ Ibid.

⁷⁵ Ibid at 1030.

practices attributed to the technological advance or perhaps of over or under-inclusiveness.⁷⁶ They may also be examples of situations where according to Pridmore and Cockfield, application of the letter of the law would fail to protect traditionally protected legal interests in light of the contextual situation catalysed by the new technology, as outlined above. Flexibility in interpretation then seems to be implicated according to these approaches. Bernstein points to two options when assessing the response to such a quandary as either a recognition of an independent identity interest, or the re-structuring (read purposive interpretation) of the existing doctrinal tools.⁷⁷

We can reasonably read a similar approach to that advocated by Cockfield above, and both Cockfield and Bernstein emphasise the limits, and the structural constraints, of the existing doctrinal categories on interpreting and applying law. A point made more explicitly by Bernstein is the potential for colonisation of existing doctrinal categories, over new scenarios and interests which may form part of the transformative effect upon the law that Cockfield touches on above. What is not expressed is the potential capacity that in flexibly interpreting existing legal categories and concepts, those same concepts may begin to subtly change in their accepted meaning.⁷⁸ This might point to a potential coproducing relationship between the existing cognitive understandings and arguments of the existing legal concepts, and the normative arguments in favour of a particular outcome. In other words, the existing legal concepts and categories frame the parameters within which normative arguments and representations can be made, but they also themselves set out the technical conditions that frame the legal “problem”: they are part of the coproduction of what may be considered a “problem” within legal literature.

3.3 Values, Strategy and Compromise: Purposive Interpretation and Emerging Concepts

There a few points that are implicit in the above overview of the law and technology literature both in this chapter and as developed in chapter 3 subsection 3.2 in relation to regulatory disconnect. The most prominent is that value-based regulatory disconnect raises the potential for existing principles, categories and norms within the existing regulatory array (which may include both statutes and case law) to be purposively interpreted to include new

⁷⁶ Moses supra n49.

⁷⁷ Bernstein supra n73 at 1030.

⁷⁸ This point in general has been better interrogated within sociology of law. For an overview of the literature looking at the formation and changing meaning of concepts in general and in law see S. Larsson (2011). *Metaphors and Norms - Understanding Copyright Law in a Digital Society* Lund University (PhD).

interests and/or values implicated by new technologies. It also implies that this might be done to the detriment of a broader debate of the underlying resolution of these value conflicts and/or of the analysis of the substantive content of such values.

Bernstein's analysis shows that this purposive interpretation, and subsequent development of the law, can occur overtly or covertly depending upon whether it is occurring within the forum of Parliament as part of legislative drafting, or within the incremental interpretation of case law. The underlying values of individuals (such as judges or Members of Parliament), and the priorities and ideologies implicit but pervasive within certain regulatory settings may influence decision-making. These underlying and implicit biases, coupled with the flexibility of the structure and conceptual content of the regulatory array may be manipulated by those involved in the decision-making such that the pathways that may be technically more robust or cohesive with the spirit of the existing regulatory array are circumvented to achieve the desired result. This implies that law-making, or the resolution of decision-making in such areas of contention, can be covert thus subverting conversations about the values actually in issue in these circumstances, behind technical issues of descriptive regulatory disconnect which can be "resolved" through the widening or reinterpretation of existing legal categories or arguments. This points to the possibility that although legal concepts may be created and justified by reference to one set of values or underlying ideologies and interests, they can be used strategically to provide remedies for harmed interests or values completely distinct from those originally envisaged. This may mean that such concepts used in certain contexts mask the real values in conflict and the interests being furthered.

It has long been the argument of critical legal scholars and legal realists that there is an indeterminacy to law that, contrary to positivists, the reasoning of judges does not follow a neutral application of rules to the circumstances of the case, that uncertainty is inherent in interpretations of the rules and that personal feelings and convictions can sway that application.⁷⁹ As such the competition between different concepts themselves, their definition and proper application involves complex social dynamics in addition to the already complex social dynamics of conceptualising potential interest claims or injustices in the wider social environment. This insight introduces also the point that the acceptance of a concept in law is determined not only by its degree of successful normative justification and specificity, but by the willingness of judges to see a certain outcome come to fruition, or their capacity to be taken by arguments on the day. Such factors may be difficult to

⁷⁹ M. Galanter "Why the 'Haves' Come Out Ahead: Speculations on the Limits of Legal Change" (1974-1975) *Law & Soc Rev.* 9, 95.

illuminate without closer empirical study, but this thinking introduces the idea that not all concepts claimed in law are the best possible concepts that adequately frame the injustices, interests, values or conflict at hand, but may be ones that have become accepted over time and are dependent upon complex social interaction and the agency of individuals involved in these conflicts. Bernstein, Moses, and Brownsword do not engage with this aspect explicitly in their research in relation to the reconnection of regulation/law to changes in the socio-technical environment. Neither does Cockfield. I argue that in taking this scholarship forward understanding how and why law and regulation may develop in the way that it does crucially requires this engagement.

4 Concluding Remarks

Whilst STS have expended much energy in studying, analysing and providing conceptual accounts of the relationship between science, technology and wider society, there has been little attention paid to the similar relationship with law and regulation. It is this relationship with which I am concerned. I have endeavoured thus far to emphasise that such an understanding is required and justified as part of aiding the management of NEST in general. As was outlined and argued in chapter 2, the management of NEST, of ensuring responsible innovation and navigation in to the future in the light of the potential benefits and competing concerns over the implications of new technology, is complex. Central to this complexity is the ambiguity and plurality of opinion as to the ethical acceptability of certain technologies, and their “soft” impacts that are unpredictable to anticipate. This value plurality is complicated further by the capacity of new technology to call in to question the rationale and logic of previously perceived fundamental moral principles, leading to the potential that the “right” or justifiable moral positions may require moral innovation that many may find uncomfortable or repugnant. There is therefore plurality of opinion not only as to existing ethical and value positions in relation to new technology and the different weighting or prioritisation given to these different values or principles, but also the potential for the existing moral and value debates to be modulated and thus themselves subject to change. The social response to such modulation is what is unpredictable.

The need to actively manage and influence NEST and the future of the socio-technical environment is expressed in the anxiety and hope for such technologies. In liberal democracies it is incumbent that we – collectively - are able to choose the sort of society we live in or the direction it should take. Harsh distinctions between the expectations and values of some groups and persons in the public, with the visions and practices of scientists and

designers have in the past led to highly publicised scandals, of which Dolly the cloned sheep, organ retention at Bristol and Alderhey hospitals, and GM food are but well cited examples. But as argued in relation to the different forms of new governance and especially participatory mechanisms of governance, there is little research in to or evaluation of how public opinion is incorporated or how influential it is in framing and shaping decisions or progression of science and technology. More importantly however, it is far from clear that a majority opinion on such matters *should* influence decisions and trajectories, since it is not a foregone conclusion that the reasons and desires of a majority is ethically justified. In relation to NEST and particularly for biomedicine, the prevention of certain technologies may have a profound impact on a substantial minority of persons who may benefit from ethically contentious but nevertheless life-saving or life altering treatment advances. Prevention of such technology and development might then come down to the potentially ill-informed views of a majority that will not be directly affected by the technology in first place. Examples from history abound of instances where the predominant positions in society were ethically and morally on the wrong side of history – slavery but one dramatic example. It is the dilemma of liberal democracies in treading the line between majoritarian rule and the protection of minorities. Such a dilemma permeates all aspects and decisions of society, but is brought in to sharp relief in the instance of potentially transformative technology. This is because they themselves may prompt periods of rapid change and social flux in which such decisions are not only muddled by the complexity of the multiple differing view-points, but such view-points themselves and even the concepts used to understand the social and technological context and form those view-points, will be subject to flux.

I set out in chapter 2, broad questions that could be asked in relation to the management of NEST: whether we can actively shape our future socio-technical environment? How can we practically influence that future? Which priorities and values should shape it? I argued that such futures can be shaped by collective action and at a point of early emergence of the technology at a time of epistemic deficit as to its future social implications. As such increasing understanding of the development of the socio-technical environment could contribute to ameliorating this epistemic deficit. It is this question to which my research is contributing.

It is not my aim to make a normative claim about how NEST or emerging biomedical innovations *should* be managed, or about the values, interests, priorities or fundamental principles that *should* guide them. As I argued in chapter 2, normative questions as to which

values should guide the development of the socio-technical future segue in to political questions about who gets to decide or be involved in decisions, and how such decisions are justified. This is both a normative and practical question as to how such decision-making and society in general is organised. I am not contributing to such questions or the practical designs of governance structures that seek to broaden the differing perspectives taken in to account in decision-making in relation to NEST as discussed in chapter 3. Having made this point, however, I argue that the decisions that are made, and the interventions taken as to the values and priorities that should guide the socio-technical development are themselves coproduced. This means that understanding the dynamics of how those decisions are made, how different values and conceptualisations develop, and how influential they become is part of what needs to be considered in an understanding of the development of the socio-technical environment.

The literature on coproduction highlights the complex causal dynamics and mutual influence of the material, cognitive, normative and social in the coproduction of our sociotechnical reality. New concepts used to help understand changing technology and to describe new perspectives on social practice, changed social practices, or even to capture new subjectively felt harms or impacts, are dependent on, and themselves influencing of the normative judgements made in relation to these new techniques, subsequent practices and impacts. These in turn will affect and be affected by the social reaction and acceptance of such concepts and judgments. Insights raised by Swierstra in developing his thesis of technomoral change points to the spectrum or “force-field” of morality whereby many different conceptualisations of moral values will co-exist but compete for hegemony, can be extended to help explain differing competing concepts used to describe the technology or the experiences or potential harms felt as a result of technology. They may be competing visions of reality. But as implied in relation to technomoral change they are also competing for influence and power, and even in relation to arguments and perspectives that come to frame official decisions in relation to new technologies, there will be winning and losing perspectives. Therefore, the development of new or potentially pervasive conceptions of the good, perspectives on emerging technologies and of their soft impacts are inherently intertwined with the development and trajectory of the technology itself. The formation of pervasive or influential values or perspectives on technology, which themselves may be used or justified in relation to framing or governing technology and practices, are simply part of a coproducing process of the socio-technical reality. Understanding how and by what dynamic particular conceptualisations of technology and its impacts are formed, and the social interactions that may make them more or less likely to influence understandings and

pervasive judgements in relation to new technology and the new practices, relationships, or recognition of harm, can aid in rendering such decision-making processes transparent whilst also increasing the reflexive understandings of the decision-making processes themselves.

In looking to develop that understanding in this chapter, I have drawn on social problems literature which has helped to establish that the development of law is part of an ongoing conceptualisation of particular social issues. Insights that the distinction between hard and soft impacts is as much a political rhetorical device to justify and demarcate what the state in particular will take responsibility for points to the concerted action of individuals and groups to push for a particular conceptualisation in order to argue that it constitutes a problem for which persons should be held accountable. Whilst recognition and description in law may render a particular conception of a problem, world view, or particular status, relationship or right, more legitimate, it is not the end point of this ongoing social process. Neither will it necessarily represent a social hegemony or the most pervasive view of the good in society as a whole, since insights from chapter 3 point to law's place as but one of many social institutions that may compete, coexist and sometimes complement each other in regulating social behaviour and views. Law is but one element that may affect the socio-technical environment, and as discussed in chapter 3 subsection 3.4, whilst law may fail to effect behaviour as intended it does still have unintended effects on behaviour, and can itself frame the environment and constraints within which people act. Therefore understanding how law, and the values and concepts within law develop is required in developing understandings of the development of the socio-technical environment.

What has been made apparent in chapter 3, however, is a dearth in understanding the social interactions of law and the creation of law and its potential development in to the future. I concluded at the end of chapter 3, that the critique of legal lag and the implicit theoretical emphasis on the instrumentality of law is in many cases a normative judgment of the existing regulatory schema. Regulatory disconnect provides a better technical diagnosis of the problems encountered at the interface between law and technology, but is not aimed at understanding how the law itself may develop or the social dynamics of that development. The development of theory and design of new governance which may involve forms of regulation and activity in addition to, or instead of formal law, have provided some practical solutions to the problems in managing NEST. None of this literature looks at how law itself might develop into the future. This is because the proposed arguments about what law *should* be in the literature or of what governance designs *should* be implemented, are not aimed at understanding themselves as part of the coproduction of the socio-technical environment.

In contribution to understanding the interaction between law, technology and society, I argue that an explanation of the causal dynamics of emerging legal concepts and their link to emerging technologies is required. In the preceding sections I outlined that a conceptual language and explanation needs to reconcile the insights of coproduction with those of the law and technology literature. Missing from the law and technology literature is an engagement with the causal link between the wider sociotechnical environment and the development of concepts and arguments in law. Missing from the STS and coproduction literature is an engagement with the unique dynamics and factors of the law and legal practice itself as part of the development of concepts and values. Identity is one such concept that may be in the process of flux. Understanding and studying such concepts at this point in their emergence can provide a useful case study for exploring not just how “soft” impacts are framed and gain traction as issues for consideration, but also as a potential contribution to understanding coproduction of legal concepts with the broader socio-technical landscape and its impact upon that future progression. The insights raised above in relation to the interaction of structure of the existing substantive concepts in law points to the potential for such concepts to themselves modulate the socio-technical environment thus framing the potential concepts or interests that can be argued for as part of legal developments.

This marks the end of part 1 of the thesis and outline of the research context and problem. In the following chapter I set out the methodology required to form a conceptual analysis and theory of emerging concepts that will also take in to account the influence of the social, of structure and agency highlighted in this chapter as pertinent to the development and stretching of legal concepts. Part of this involves the conceptualisation of what is actually meant by an “emerging legal concept” and how it is able to also explain its links to and influence of and by the dynamics of wider social interaction. In chapters 6 and 7 I then move to my own case study of an emerging legal concept which I take as identity. Identity is referred to as specific indicators point to its rising influence in debates and its modulation by emerging technologies, specifically biotechnologies including genetic therapy and assisted reproduction.

Chapter 5

Conceptualising Emerging Legal Concepts

1. Introduction

It is the aim of this thesis to add to understandings about how technology and science, law and regulation, and broader society mutually coproduce and reinforce each other. This will be done by looking at the development and potential emergence of substantive concepts in law and how they are impacted by emerging technologies. What is critical to their influence? What values are being furthered in the process? Who is able to influence that progress? How is this process impacted on by emerging technologies themselves? This is not to suggest that there is only one process by which this happens, nor that there are set or finite parameters in play. Rather, it is a search to explore and explain some of the drivers and influencing factors in the complex social dynamics by which novel legal concepts take shape and come to have influence in, and on, society itself. Such an understanding needs also to encompass the link between legal concepts or emerging legal concepts and their counterpoints in broader social debates. As argued in the previous chapters, if law is seen as part of the complex social dynamics, competition and conflict between differing perceptions of the socio-technical reality, of views of the good life, or simply of different social issues, interests or harms, then the concept of law and of emerging legal concepts needs to be able to help account for its links to this broader social dynamic.

This chapter will explain the methodology I will employ in my own case study of identity in law, and explain how a concept in law can be described as emerging. This will set up the next chapter where a discussion of how and where identity can be said to be emerging will be made. It should be noted that whilst legal theory and social theory are discussed and employed in coming to my own concepts for application in analysis, the following is not an attempt to contribute to such theories. What it does do is outline an original approach to, and conceptualisation of law and legal concepts in constructing my own account of the potential pathways to change and influence.

2. Preliminary Issues: Conceptualising Law and the Problem of Methodology

The preceding chapters highlighted both the research context and part of the research problem. NEST, and for the purposes of my own research, mainly emerging biotechnology in biomedicine, many of which are contentious with little or no consensus on their ethical acceptability, and with the uncertainty as to their future development and their transformative potential. This section provides an overview of what this chapter aims to accomplish, central to which is an original conceptualisation of what is meant by an “emerging” legal concept and the appropriate methodology for study. This section ties this contribution to the insights highlighted from part 1 (chapters 2-4) of the work.

2.1 Law as Part of an Ongoing Process of Meaning-Making

New and emerging science and technology have the capacity to modulate moralities, and also to modulate the descriptive concepts and even the symbolic order that we rely upon to make sense of, and understand our reality. The social reaction to such modulation is often unpredictable. It can lead to the entrenchment of the status quo, or for marginalised views and conceptualisations to gain influence and to potentially become dominant. It was highlighted in chapter 2 subsection 4.2 that fundamental moral principles, and constitutional principles can be problematised and challenged, and that changes or re-negotiation of such principles is not necessarily a bad thing. That the soft impacts of new technologies can become reconceptualised as harms requiring intervention and prevention, and that whether or not they are successfully recognised implicates conflict and competition over conceptualisation, identification of the interests at stake, the potential legitimating arguments that justify their protection, and complex social dynamics touched on in social problems research. Central to the debate and ongoing characterisation of the socio-technical reality and specific technologies in particular, is the question of how and by what values and principles should we be guided or are we being guided? I argue that there may be no one right answer to these questions in many cases - particularly in regards to biomedical advances - that central to the problem of biomedicine in general is the ethical and value plurality and disagreement prevalent and characterised as ambivalence and ambiguity in chapter 2.

Rip and Swierstra argue that what is ongoing is a debate or competition of ethical arguments and conceptualisations in relation to new technologies, and the result is not a consensus model of decision-making but one in which there are more or less successful competing

visions of our reality and the values and aims by which we should be guided.¹ The dilemma of liberal democracies is that majority rule cannot always succeed where, if such was to occur, harm to others, or minorities would result. Understanding the dynamics and factors pertaining to success or failure of a particular idea or conceptualisation is what I wish to examine.

Law is situated as only part of this ongoing process. I argued that law is only one way in which collective action, or coordinated behaviour is implemented, and as a means of legitimising the conceptualisation and framing of a problem or issue for society, and an action plan for tackling it. In chapter 3 subsection 3.4 it was also emphasised that the concepts and norms of law do not always elicit compliance, are subject to disagreement themselves, including opinions that the law, or particular legal norms are not legitimate. Indeed, in relation to this last point compliance more clearly results where legal norms are close to the norms of the community in general, but equally, as asserted by Appiah (and in general by the criminal law) the norms of a community may be harmful or should be subject to change necessitating legal intervention that may nevertheless face widespread non-compliance. Just as non-compliance and disagreement with legal norms may not necessarily be a sign that the law is wrong, so too must it be conceded, particularly in the light of the capacity for new technology and scientific understanding to challenge the rationale of fundamental principles, that the law cannot always be considered as justified or “right”. What law may in fact represent is a “winning” conception of what behaviour is acceptable, and the rights, powers, liabilities and responsibilities that flow from these conceptions. It does not also follow, as argued above, that this is necessarily the best or the “right” conception or state of affairs. As will be shown in this chapter, it also does not necessarily mean that it is the most dominant or pervasive view in society.

Law is but one of many institutions concerned with the governance of society, and the state and its institutions is but one of many social institutions that bring about coordinated action. Examples of notably informal social coordinators and incentives are the social norms and values themselves. Law exists as one of many institutions or fora in which different conceptualisations and arguments about the socio-technical reality and how it should be governed compete. However, simply because a concept or idea is successful in law – and by “successful” I mean prevalent and influential in decision-making in legal debate – it does not mean it has become persuasive or influential either in other formal social institutions or in

¹ T. Swierstra and A. Rip “Nanoethics as NEST-Ethics: Patterns of Moral Argumentation About New and Emerging Science and Technology” (2007) *Nanoethics* 1, 3-20 at 18.

the public in general. Emphasised in this thesis is the idea that law is only one aspect of social life and its influence on behaviour and the shaping of social life will be dependent upon multiple factors. Within this chapter, this insight is taken further such that law and individual legal concepts may be in competition, occasionally complementary, or in tension with these other social influencers, but that the authority and legitimacy of law and specific legal concepts as compared with other alternative conceptualisations – perhaps not recognised within law – will be a matter of perspective.

It is outwith the scope of this thesis to pursue a study and understanding of how specific conceptualisations can be considered to become hegemonic within society in general; I explore them only as they pertain to law as a part of this overall understanding. It is the emergence or coproduction of new concepts and ideas about how new technologies should be governed, and the resulting impacts that diffuse through society as a result of them, as well as their potential recognition and development in law, with which I am concerned here.

2.2 Identity as a Concept in Flux

I have stated from the outset that my focus is upon identity as a potentially emerging legal concept. Health technologies such as genetic therapies allowing for manipulation of genes, reproductive therapies as a means of artificially creating life, stem cell technology and regenerative medicine utilising therapeutic cloning and human tissue as medicine, medical implants and smart devices blurring the line between human and machine, all challenge our perception of what it means to be human and how far we can intervene in the body. They challenge our “symbolic order” or our means of categorising and differentiating the identities of differing entities such as human and non-human which historically have been ascribed moral status or protection on the basis of their identification. As a descriptive concept encompassing our general understanding of ourselves, even potentially as an objective fact of what identity consists, new technologies have modulated that understanding and created the potential capacity to change previously perceived immutable characteristics or relationships, such as genetic composition, or family relations created through various routes of assisted reproduction. Furthermore, identity has been drawn upon in legal literature as a specific conceptualisation of interests or status that are implicated, or potentially harmed by new technologies and the practices growing up around their diffusion with Bernstein

specifically citing identity interests as justification for positive rights to identity.² As such, between a small number of legal academics, the concept of identity is being drawn upon more explicitly to begin to categorise or name interests, or potentially values or principles, that they believe are not only implicated by the changes in the socio-technical environment.³

Jasanoff uses identity as an example of a concept whose meaning and conceptualisation is based upon much out-dated understanding within constitutional law – even if such understanding is implicit.⁴ Identity has in fact been drawn upon within law – already having been pronounced in various international and supranational instruments⁵ – and used to describe the ethical issues in relation to high profile new technologies including mitochondria replacement therapy.⁶ This is part of my case study explored in chapter six. It is also a right interpreted out of Article 8 Right to Respect for Private and Family Life of the European Convention on Human Rights (ECHR),⁷ which is binding on the UK and has been cited in a case of paternal identity in relation to sperm donation in *Rose and another v Secretary of State for Health*.⁸ It is not, however, clear that identity is used uniformly between differing legal instruments where it is explicitly invoked, nor between different

² G. Bernstein “Accommodating Technological Innovation: Identity, Genetic Testing and the Internet” (2004) *Vanderbilt Law Review* 57, 965.

³ See Bernstein *ibid*, and also N. de Andrade, “Right to Personal Identity: The Challenges of Ambient Intelligence and the Need for a New Legal Conceptualisation” in S. Gurtwith et al (eds), *Computers, Privacy and Data Protection: an Element of Choice* (2011; Springer Netherlands); and Andrade “Human Genetic Manipulation and the Right to Identity: The Contradictions in Human Rights Law in Regulating the Human Genome” (2010) *SCRIPTed* 7:3.

⁴ S. Jasanoff “Introduction: Rewriting Life, Reframing Rights” in S. Jasanoff (ed) *Reframing Rights: Bioconstitutionalism in the Genetic Age*, (2011; MIT Press Scholarship Online: August 2013) at 10

⁵ Council of Europe’s Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine Oviedo, 4.IV.1997 (Oviedo Convention) Article 1; UNESCO International Declaration on Biological Human Data (2003) Article 3; UN Convention on the Rights of the Child (1989) Article 7 Right to Registration and Article 8 Right to respect for Identity; Prohibition on clinical trials that may alter “germ-line genetic identity” is also enshrined in Article 9(6) of Directive 2001/20/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (Clinical Trials Directive) which also makes it in to the Clinical Trials Regulations (2014) Article 90.

⁶ See for example A. Wrigley, S. Wilkinson and J. Appleby “Mitochondrial Replacement: Ethics and Identity” (2015) *Bioethics* 29:9, 631-638. See also the considerations Nuffield Council for Bioethics, *Novel Techniques for the Prevention of Mitochondrial DNA Disorder: An Ethical Review* (2012) chapter 4.

⁷ See for more extensive discussion J. Marshall, *Personal Freedom through Human Rights Law? Autonomy, Identity and Integrity under the European Convention on Human Rights*, International Studies in Human Rights Volume 98 (2009) Kojinklijke Brill NV, Leiden; J. Marshall “Giving birth but Refusing Motherhood: Inauthentic Choice or Self-Determining Identity?” (2008) *International Journal of Law in Context* 4, 169-185; J. Marshall “Concealed Births, Adoption and Human Rights Law: Being Wary of Seeking to Open Windows into People’s Souls” (2012) *The Cambridge Law Journal* 71, 325-354.

⁸ [2002] EWHC 1593 (Admin).

debates or fields of law. It is also not an explicit legal concept in law in Scotland nor in England and Wales; neither is it discussed with the same familiarity or extent as concepts that are well established in these jurisdictions, being better developed in terms of its academic discussion in disciplines such as philosophy, bioethics, politics and sociology.

One of the issues with identity itself is that it is a polysemic and abstract concept. It is used to describe and encompass many different elements including interests that individuals may have, their perceptions of themselves, their status, and may be formed as a description of for example, human or biological identity (or more accurately – composition). The concept of identity and its development and appearance within law and in differing discourses will be explored at length in the following chapter. It is used in debate to frame differing interests and values that are in contention in relation to new technologies,⁹ and it is drawn upon recurrently in international law and legal commentary.¹⁰ As will be demonstrated in chapters 6 and 7, identity is drawn upon in public debate in relation to fertility treatments and genetic therapies and received a spike in usage in relation to the recently passed Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015. As such, my contention is that, despite its preclusion as an explicitly recognised legal concept within the UK, the combined factors outlined above and developed more extensively in chapters 6 and 7 mark it as a potentially emerging legal concept.

I am not interested in normative arguments positing that a concept of identity should guide future legal interventions. My interest lies in tracking these moments of flux, of understanding how new technologies and science impact on knowledge and perspectives on identity in general and how that impacts upon the debates around the acceptability or otherwise of such technologies and their relative impact.

2.3 Methodology and Formation of Explanatory Concepts

This chapter aims to do the work of two elements for the thesis. The first is to set out the methodology that requires the construction of explanatory concepts such as “law”, “emerging legal concept”, and “society” as set out in the introduction. It also introduces and justifies the use of the interpretative methodology as most suited to do the work of tracking

⁹ See for example, C. Gavaghan “A Whole New... You? ‘Personal Identity’, Emerging Technologies and the Law” (2010) *IDIS* 3, 423–434.

¹⁰ See again cited examples *supra* n8, and further, S. Besson “Enforcing the Child’s Right to Know Her Origins: Contrasting Approaches Under the Convention on the Rights of the Child and the European Convention on Human Rights” (2007) *International Journal of Law, Policy and the Family* 21, 137–159; and N.N. G. de Andrade *supra* n4.

emerging legal concepts and also of helping to form the explanatory concepts in the first place. The second element however, while forming an inseparable part of the methodology itself, is also a substantive component of the thesis and part of my claimed original contribution.

My concern lies in understanding the development of individual concepts as they pertain to changes in the broader socio-technical environment and the complex social dynamics behind their conceptualisation and emergence as law. As such this chapter both sets out the methodological approach alongside this aspect of my original contribution, as the methodology can only be so set out by reference to the substantive analysis and development of a concept of “emerging legal concepts” and vice versa.

Insights from techno-moral change point to the debated distinction between hard and soft impacts, and between public and private spheres as a means of demarcating recognised harms and corresponding duties and liabilities of states, as part of the coproduction of accountability regimes. This implicates the importance of such distinctions, and their debate, in understanding the dynamics of legal change. Jasanoff argues in relation to biotechnologies that new rights can emerge in response to new technologies and practices, and that their emergence does not necessarily have to coincide with formal recognition (as law).¹¹ She argues that “rights” can exist if those who are party to the regulatory process or part of the research and development environment of science and technology, believe they do and act accordingly.¹² In using this understanding she strengthens her argument that actors involved in the research environment may bring these rights in to existence through their own behaviour. As highlighted in the foregoing chapter, concepts of law are challenged by the rise of new governance and forms of “soft” law and regulation. New governance in this sense refers to the hybrid designs of governance that both acknowledge the limitations of formal or “top down” law and regulation, and as such incorporates participatory mechanisms, public consultation and other forms of information gathering and sharing with formal and forms of “soft” law and private regulation. Within Jasanoff’s account, such regulations and practice may themselves be sites of the generation of new rights, even where they are not formally recognised as “legal” in a traditional sense (of flowing from specific legal sources, since the very challenge of these differing forms of regulation is that their legal status is contested or unanimously taken as private or non-legal). This begs the question as to when rights become “legal” and, indeed, how distinctions are drawn between legal rights, values,

¹¹ Jasanoff *supra* n5 at 14.

¹² *Ibid.*

interests and general concepts, and similar ideas or customs that are nevertheless unqualified as “legal” concepts. Such distinctions are the subject of this chapter and a critical step to understanding the complex social dynamics involved in the conflict over and recognition of new social values, practices, soft impacts and harms, and new or emerging legal concepts.

The methodology and the original contribution in the form of conceptualising “emerging” legal concepts are inseparably intertwined due to the problem of both *identifying an emerging legal concept* whilst simultaneously articulating *what an emerging legal concept is*. As explained in chapter 2, the very nature of the problem of forming an explanation and concepts to help explain the change in society is that knowledge and concepts, practices, values and interests, their conceptualisation and their diffusion and acceptance within society are in flux. Any approach to the formation of the explanatory concepts – for example what is an “emerging” legal concept - needed to help explain this process, needs to be able to both uncover these fluxing social understandings and practices, as well as being able to help link them to or distinguish them from processes of influence and shaping of individual legal concepts. This is problematic. As will be explained, traditional legal scholarship whilst developing understanding of legal concepts and the content of law (as well as developing concepts *of* law) have not historically looked at the social dynamics of how they were created (although with the rise of socio-legal studies this has changed in recent years). On the other hand sociological theories of law whilst concentrating more upon the social in the development of law and in forming concepts of law, do not concentrate on understanding the substantive content and concepts *within* law. The methodology, therefore needs to reconcile these different approaches in order to uncover and link the wider social discourse to the potential changes and conflict within law, which neither of the approaches of legal scholarship touched on above can do alone. Therefore, part of the research problem for this chapter, and thus also of the formation of the explanatory concept of “emerging legal concepts”, lies in the reconciliation of these different approaches and the outline of the methodology.

2.3.1 The Approach in this Chapter

After reviewing the relevant literature I start from the premise that “law” is a social construction and that “legal concepts” are ideas in and about law with potential practical effect. Following the interpretative method I take the conventional approach that law is whatever is ascribed as law according to society, through their practices, discourse and general acceptance and understanding. As such, “legal concepts” are taken to be the abstract

products of, and in turn inputs into, this social process. I argue that the ascription of legality and any concept *of* law, should account for the often on-going conflict and renegotiation over its boundaries and content. Viewing legality as a matter of perspective that is contested, and individual legal concepts (and law in general) as part of a family of ideas and mechanisms of governance, I argue, allows for the identification and tracking of potentially emerging legal concepts before they may be officially promulgated or declared as legal. It further facilitates the uncovering of concepts at an earlier stage of emergence than do existing literatures that look at the development of law. It also aids the connection of such ideas more concretely to existing legal scholarship - and all the valuable insights and understandings therein - with the social.

Critical to my conceptualisation is that legality and authority are elements that are a matter of perspective and ongoing debate existing as distinct but inseparable spectra. To this I add the perspective of legitimacy, also a matter of debate and perspective. These three elements may be used to support each other or to contest the claims to authority or legitimacy or legality of another perspective, concept, instrument or body of governance. The following sections build to these conclusions by laying out the initial research problem - for this chapter - of the multiple and conflicting conceptualisations and theories of law and, further, of the conflicting orientations and methods for investigating the relationship between law and society. Central to the justification that an interpretative methodology is required for this research, is that differing branches of legal research have differing aims and orientations and that the interpretative methodology is best placed to reconcile the insights that are required to be pulled from each of these branches in understanding the conceptualisation of emerging legal concepts. The idiom of coproduction introduced at the end of chapter 2 and explored again in chapter 4, is also called upon as part of the method of analysis in identifying factors related to the emergence of new legal concepts. However, I also assert that much as the idiom of coproduction, as articulated by Jasanoff and developed in STS, aids analysis of emerging legal concepts and their dynamics, my original contribution lies in directing such analysis at specifically “legal” concepts. It is further distinguished and adds to the approach of Jasanoff by providing the conceptualisation of “emerging legal concepts” as dependent upon the interaction between perceptions and claims of “authority”, “legitimacy” and “legality”. The first section outlines the historical development of legal scholarship as part of understanding the need for the interpretive methodology and also of arguing that legal scholarship itself, as historically oriented to legal practice, *may be a site of emergence and development of new legal concepts*.

3. Legal Practice and Legal Scholarship: Demarcating a Domain

The term “law” is ambiguous, capable of referring both to “the social practice or domain of law but also to the reflection upon that social practice taking place in research.”¹³ Historically, legal education across Britain was treated as a practical subject with training through apprenticeship and only latterly as part of a fulltime degree program, where studies and research were oriented to the correct interpretation of existing law and its use in practice.¹⁴

During and after the 1960’s legal education was reformed, but this carried with it, for some, an undesirable divorce of university legal teaching from the practice of law.¹⁵ In the intervening years, both practice and education in universities started to diversify and to actively specialise in certain forms of law.¹⁶ This was followed in the 1980’s with the introduction of the Research Assessment Exercise which was later replaced by the Research Excellence Framework in 2014 used to assess the quality of academic research in differing areas, including for the first time in 2014 the impact of that research in a real world setting.¹⁷

This movement, described by Taekema as the reorientation of scholarship to the measures of success employed by natural and social sciences¹⁸ is demonstrated in the debate over methods and over the epistemological status of traditional doctrinal scholarship mentioned above. This orientation focuses upon peer review journal articles as a measure of worth and successful academia and not necessarily upon its relevance to the practice of law.¹⁹ As a result contemporary research in law schools have a diverse range of methods and agendas, many of which embrace socio-legal studies and draw upon the insights of social theory and

¹³ S. Taekema references this ambiguity in “Relative Autonomy: A Characterisation of the Discipline of Law” in B. Van Klink and S. Taekema (eds) *Law and Method* (2011) Mohr Siebeck, Turbingen at 33.

¹⁴ For an overview of the history of legal education in Scotland see S. D. Girvan “Nineteenth Century Reforms in Scottish Legal Education: The Universities and the Bar” (1993) *The Journal of Legal History* 14:2, 127-141; and D. Edward “Scottish Legal Education and Legal Profession” in MacQueen (ed), *Scots Law into the 21st Century (Essays in Honour of W.A. Wilson)*, WGreen/Sweet & Maxwell, 1996, 50-64 Scots Law in to the 21st Century . For an overview in England and Wales see A. Boon and J. Webb “Legal Education and Training in England and Wales: Back to the Future?” (March 2008) *Journal of Legal Education* 58: 1.

¹⁵ Boon and Webb *ibid* at 58.

¹⁶ *Ibid* at 63.

¹⁷ For an extended overview of all reforms see the body of the article of Boon and Webb *ibid*. See also F. Cownie “Law, Research and the Academy” in P. Trowler, M. Saunders, and V. Bamber (eds) *Tribes and Territories in the 21st Century: Rethinking the Significance of Disciplines in Higher Education* (2012) London: Routledge at 66.

¹⁸ Taekema *supra* n14.

¹⁹ *Ibid*.

empirical studies.²⁰ The development of new approaches to law as an academic pursuit has also meant that disparate branches of legal scholarship are aimed at shedding light on differing aspects of law. Although all contributions are valuable and aid the understanding of law, they do not always align and leave gaps in understanding. These gaps may require the technical knowledge of traditional legal scholarship in the form of understanding existing legal concepts, rules and their application and interpretation, but the methods and orientation of more socio-legal endeavours.

As part of the study of the development and emergence of legal concepts, an understanding and explanatory concept of law is required as part of conceptualising what is meant by “emerging” legal concepts specifically. The problem for this research is that the historical development of law as an academic enterprise is such that not only are there multiple approaches to and orientations of scholarship aimed at developing differing knowledge sets in relation to both the substantive contents of law – legal concepts – but also differing approaches to a development of theories or concepts of law. Theories about law, and concepts of law developed differentially as between legal scholars and research as part of law and society or sociological theories of law. Each also capture different understandings, and use differing methodology. Both are required for this research.

As pointed to in chapter 3 and analysed by Black in relation to her conceptualisation of “decentred regulation”,²¹ the rise of new governance mechanisms that include “soft” law and private regulation form a challenge to law. This is a challenge not just of practicality in relation to their potentially greater capacity to influence behaviour and impose control that the law may also seek but fail to ensure, but also in terms of an academic understanding of what is meant by the concept of “law”. As pointed to by Black, the critique of regulatory failure in general, and thus also of the “challenge” posed by the rise of new governance to an academic understanding of what “Law” is, is difficult to pin down.²² In general, it appears to be a critique of a caricaturised conception of law and regulation as command and control, theorised and typified by Austen,²³ but rarely taken for granted in most contemporary writing on law.²⁴ Lack of clarity as to what the challenge to a concept of law consists of is compounded further due to the fact that there is no one concept or theory of law agreed upon

²⁰R. Collier 'We're All Socio-Legal Now?' Legal Education, Scholarship and the 'Global Knowledge Economy'- Reflections on the UK Experience" (2004) *Sydney L. Rev.* 26, 503 at 522-523.

²¹ See J. Black “Critical Reflections on Regulation” (2002) *Austl. J. Leg. Phil.* 27:1; and “Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a ‘Post-Regulatory’ World” (2001) *Current Legal Problems*, 54:1, 103-146.

²² Black “Decentring Regulation” *ibid* at 105.

²³ J. Austen, *Lectures on Jurisprudence, or The Philosophy of Positive Law*, (1911) London: J Murray.

²⁴ *Ibid*.

as an academic explanatory concept. I argue in the proceeding sections that this challenge may be better understood as a critique of lawyer's conceptions of law as that which is seen to be legal and normally emanating from central authoritative sources such as state institutions and designated authoritative legal texts. Central to the obliqueness of the challenge presented by alternative governance to law, I argue, is the historical orientation of law, as an academic discipline, to practice. I argue that this practical orientation and the contribution of legal scholarship lies in its creative endeavour as part of an ongoing process of development of ideas about the content of law and its application. I also argue, however, that such scholarship - whilst it may be a site of, and therefore the subject to be studied in looking at emerging legal concepts - does not provide the methodologies and approaches to concept formation as part of an explanation and conceptualisation of emerging legal concepts.

Before moving to the discussion of the concept of law to be used in this research, this section sets out the disparate branches of legal scholarship, their contemporary development and the historical orientation of law, as an academic subject, to practice. I will argue that this orientation has resulted in debate over the epistemological credentials of traditional doctrinal legal scholarship. To reiterate: this is important for the discussion of what is 'emergence' of legal concepts because it sets out the differing knowledge bases to be drawn upon to form this concept and explanation and the need for a methodology that therefore reconciles these differing insights.

3.1 Categorising Legal Research

MacCormack provides an analytical categorisation for the purposes of clarifying perspectives on law in relation to their orientations and methods.²⁵ Although by no means unchallenged, it is here introduced as a means of plotting both the separation and overlap between the differing orientations and accounts of law, their aims and methods. Raw law is the experience of the lay public with the courts or when they fill out tax returns; it is individual judicial decisions; it is the work of solicitors.²⁶ Raw law can simply be described as the practice of law highlighted above.

²⁵ See N. MacCormick "The Ideal and Actual of Law and Society" in J. Tasioulas (ed) *Law, Values and Social Practices* (1997) p 21, see also N. MacCormick "Four Quadrants of Jurisprudence" in W. Krawietz, N. MacCormick and G. H. von Wright (eds), *Perspective Formality and Normative Rationality in Modern Legal Systems* (Berlin: Duncker & Humblot, 1994) at 53-74.

²⁶ MacCormack *ibid* (1997) at 21-23.

Doctrinal law and research, as the traditional form of research outlined above, is the attempt to make sense of this experience by divining and analysing the rules and precedents underpinning them.²⁷ It may also include general jurisprudence which is the study of concepts (in law) and which seeks to identify discrete categories of law such as property, tort, contract, public and private law, and particular principles that exist across jurisdictions and can be thought of as general principles that facilitate the legitimacy and theory of law.²⁸ MacCormack also includes legal theory in general within this category which subsumes what has also been termed as analytical jurisprudence typified by Hart, although, as I will demonstrate later, such research does not necessarily fit with the precise aims or orientations of doctrine and general jurisprudence as traditionally conceived.

Research on fundamental values and principles is the study of ethical principles, theories of justice, human rights as absolute goods, and procedural principles of rational discourse.²⁹ It provides material for constructing arguments as to what law ought to be; that which we use to critique the overall system of law.³⁰ Doctrinal law, MacCormack argues, sits conceptually separate from but referring to both raw law as a phenomenon (in that it seeks to impose order on raw law) and fundamental rights and values from which recommendations as to what the law should be, can be discerned.³¹

Law and society research includes sociological, socio-legal and approaches from other social sciences,³² where law is approached as part of “society” that theories seek to understand and thus is understood as part of a theory about the greater whole. It encompasses philosophical sociology, but will also include empirical approaches to understanding, for example, the impact of a particular rule or regulation upon society. Raw law is studied through the lens, epistemology and methods of these other social sciences, which take as the starting point human behaviour and practices rather than the legal rules and concepts themselves as the objects of study. Law studied in terms of sociological and legal theory can be seen as a particular branch or application of social theory.³³ Although as professional academic practices law and sociology have similar remits and aims (when it comes to legal phenomena) they have opposing epistemological bases and methods. Broadly legal scholarship seeks to understand the law as application and analysis of rules, whilst social theory looks to

²⁷ MacCormack *ibid* at 24.

²⁸ MacCormack 24. See also D. Priel “H. L. A. Hart and the Invention of Legal Philosophy” Osgoode CLPE Research Paper Series 7:5 Research Paper No 17/201., at 12.

²⁹ MacCormack *ibid* .

³⁰ MacCormick *ibid* at 30.

³¹ *Ibid*.

³² MacCormack *ibid*.

³³ R. Cotterrell, *Law's Community: Legal Theory in Sociological Perspective*, (1995; OUP) at 77.

understand law as social relations, behaviours and practices.³⁴ As such, their approaches to researching and conceptualising law are difficult to reconcile. Whilst there is no agreed definition of socio-legal studies,³⁵ they are generally considered to combine the traditional aims and methods of doctrinal scholarship but draw upon insights and information from the social sciences in making their normative recommendations, usually by reference to empirical research on the impact of law on society. They look to the interaction of law in society. Socio-legal studies occupy an ambiguous position and may be seen as part of the reorientation of legal scholarship to academic practice and interdisciplinarity outlined earlier. What is considered legal scholarship is as much debated as the status of such scholarship as an academic and scientific discipline. A debate explored further in the following subsection.

These different approaches to the study of law, particularly as between traditional doctrinal scholarship (which may encompass general jurisprudence) and sociological perspectives, not only bring distinct methods to bear on the study of law but they also approach the formation of concepts for the explanation and understanding of law differently. Argued in the next sections is that whilst the epistemology of traditional or doctrinal scholarship has been critiqued, its orientation and aims mean that it may itself be part of the formation of the content of law. In relation to understanding how legal concepts emerge and develop this insight is critical. It also demonstrates why the original contribution – in conceptualising and explaining emerging legal concepts and their relationship with emerging technologies and wider society – is inseparably intertwined with issues of methodology. The following section outlines the authority paradigm and character of “traditional” legal scholarship with the aim of introducing its symbiosis with practice and the reasons behind its critique as an academic subject and utility in forming understandings of how law and individual legal concepts develop as a social construct.

3.2 Legal Doctrine, Legal Scholarship and the Authority Paradigm: Law as a Creative Discipline

The concepts that are part of legal doctrine have the dual characteristic of being part of the legal system itself and of providing the structural components that scholars must know,

³⁴ R. Cotterrell, *The Sociology of Law: An Introduction*, (2nd ed, 1992) London; Butterworths at 4.

³⁵ See P. A. Thomas “Socio-legal studies: The case of disappearing fleas and bustards” p 2 in P. A. Thomas (ed) *Socio-Legal Studies* (1997) Aldershot: Dartmouth and see also S. Wheeler “Socio-legal Research” in P. Cane and J. Conaghan (eds) *Oxford Companion to Law* (OUP 2008) and C. McCrudden “Legal Research and the Social Sciences” (2006) *Law Quarterly Review* 122, 632-650 at 637.

understand, and use as a frame for understanding new legal developments.³⁶ In this way the legal system is both the *object of study* for legal scholars, conducting research in the traditional sense, and simultaneously provides the *conceptual framework or theory* for doctrinal legal research.³⁷ The epistemology of law and legal doctrine in this sense is rooted to its object of study as that of the norms and concepts that can be divined from the cases, texts and legislation identified as law such that the principles derived from this systematisation are based on rational coherence.³⁸ This rational coherence is also a source of validity within legal doctrine. It prima facie asserts that decisions of judges are based upon objectivity and the rule of law thus removing their subjective bias from decisions - a claim contested rigorously by legal realists and critical legal scholars amongst others - and thus also reinforces a claim to authority.³⁹ Authority may also come from the validity of the political or constitutional source of the law.⁴⁰

Constructing legal doctrine can be seen as what judges or legal decision-makers “do” in terms of deciding cases on the basis of pre-existing principles and concepts in law, with lawyers presenting their own arguments in particular cases based upon their interpretation of that body of legal knowledge which, although contested, is broadly recognised as part of the community. It is also what academics do as part of their research. The object of study for law students is the body of norms, with the emphasis on learning what the law is as a body of rules (and concepts and principles etc) with these rules and concepts themselves becoming the “ontological and epistemological basis of legal knowledge.”⁴¹

Samuel points to a relatively recent transition within legal scholarship in general from an epistemology of form and structure outlined above to the more contemporary movement of legal thinking present now, which, in addition to the validity of coherence, looks to other

³⁶ P. Westerman “Open or Autonomous? The Debate on Legal Methodology as a Reflection of the Debate on Law” in *Methodologies of Legal Research: Which Kind of Method for What Kind of Discipline?* M. van Hoecke (ed.), Hart Publ. Oxford, 87-110 at 89.

³⁷ Ibid.

³⁸ G. Samuel “Is Law Really a Social Science? A View From Comparative Law” (2008) *The Cambridge Law Journal*, 67, 288-321 at 294-295; McCrudden supra n36 at 633, and see for the conceptualisation of this process as “rational reconstruction” MacCormack “The Ideal and the Actual of Law and Society” supra n26 at 23-26. See also E. L. Rubin who defines the traditional academic study of doctrinal or black letter law as essentially work that frames “recommendations or prescriptions to legal decisions-makers” in “Law and the Methodology of Law” (1997) *Wisconsin Law Review* 521 at 522. See further on this the characterisation of this practice as scientific construction (to be returned to presently), B. Hansson “Recent Trends in the Philosophy of Science” in A. Peczenik, L. Lindhal and G. van Roermund (eds) *Theory of Legal Science: Proceedings of the Conference on Legal Theory and Philosophy of Science*, Lund, Sweden, December 11-14, 1983 (1984; Dordrecht; Lancaster: Reidel) at 17.

³⁹ Samuel *ibid* at 295.

⁴⁰ Ibid at 295.

⁴¹ Ibid at 292.

social sciences or social, political and economic contexts in which law and legal decisions are situated.⁴² This has led to an instrumental turn away from formalism.⁴³ Instrumentalism may be the implicit theoretical bent of most socio-legal studies.⁴⁴ It was the implicit instrumentalism inherent to the analyses of much law and technology literature that Tranter critiqued as failing in understanding the nature of law and the relationship with the wider socio-technical environment. In a very broad sense instrumentalism can be understood as the implicit understanding that law is used as a means of securing certain ends. Samuel argues that despite this shift towards instrumentalism which has also been exhibited by judges in their decision-making, there has been no real shift in paradigm in terms of the way legal scholarship is executed.⁴⁵ Law historically exhibits a commitment to a paradigm of authority, where legal texts are seen as authority (even if they are interpreted and reasoned in different directions) for knowledge about the legal system.⁴⁶ It is within these bounds that terms such as “coherence”, “rationality” and “best fit” are still made in relation to how rules, concepts and knowledge about law are discussed, with reference to legal text as the authority for that knowledge.⁴⁷

Doctrinal research then, is both conceptually oriented to legal practice and is in a symbiotic relationship with legal practice.⁴⁸ It is both research in to, and an expression or communication (and critical analysis) of law forming the basis of knowledge that lawyers and judges rely upon in forming arguments and decisions, and thus also drawing upon critical analysis supplied by academic research where it may benefit their arguments. In terms of forming an explanatory concept of law as an understanding of what law is as a part of our social world, doctrinal scholarship generally looks less at law as an ontological category, instead conceptualising law – almost as a technical matter - as dependent upon the conditions and authoritative sources conferring legality. Before being an object for research, legal doctrine demarcates what is accepted as law by lawyers and legal practitioners: that which is demonstrably legal, can be relied upon in court, or when devising legal strategies.⁴⁹

⁴² Ibid at 308-310.

⁴³ Ibid at 310, and B. Tamanha “The Tension Between Legal Instrumentalism and the Rule of Law” (2005-2006) *Syracuse Journal of International Law and Communication* 33, 131.

⁴⁴ R. Cotterrell “Spectres of Transnationalism: Changing Terrains of Sociology of Law” Queen Mary University of London, School of Law Legal Studies Research Paper No. 32/2009 at 9.

⁴⁵ Samuel supra n39 at 310.

⁴⁶ Ibid from 310-313.

⁴⁷ Ibid.

⁴⁸ Taekema supra n 14 at 36.

⁴⁹ R. Cotterrell, *The Sociology of Law: An Introduction* (2nd ed., 1992) at 38.

It is this self-introspection that forms the kernel of criticism of social scientists and natural scientists alike, that legal scholarship in this sense does not provide new knowledge about the world or understanding of law as a social phenomenon.⁵⁰ The challenge to legal scholarship coming from a critique of the epistemology (or potentially lack thereof) especially from the social sciences is primarily aimed at the lack of insight in to law as more than the abstract rules and principles of a practical subject. It is not clear however that any one epistemology should make a higher claim to “academic” status or more precisely, to contributing original ideas.

Rubin counters the claim that such legal scholarship is not academic by arguing that the academic credentials of legal scholarship are derived from its prescriptive nature as opposed to social sciences more descriptive orientation.⁵¹ He describes standard legal scholarship as research that posits “recommendations, or prescriptions to legal decision-makers” which in some instances may include critique of current regulation, judicial decisions or statutes, with the simple prescription being that the “decision-maker should act differently”.⁵² He explicitly eschews more descriptive work even though the descriptive work of doctrinal law in general is the body of knowledge out of which this normative endeavour arises. This refers to the need for originality⁵³ as the hallmark of academia, and Rubin seems to be arguing that it is only through the prescription of alternative recommendations as to what the law *should be* that such originality is attained.⁵⁴

General jurisprudence (included within MacCormack’s doctrinal law quadrant), in part taking insights from work found in the fundamental principles and values quadrant outlined above, is oriented to divining unifying principles and values within legal doctrine that give it its legitimacy, historically seen as part of a theory of law. As outlined by Samuel, such theory was normally used to both justify the existence of law and its practical application, but also to justify the normative arguments of the researcher and their interpretation of the law in question. In line with legal doctrine, general jurisprudence focused not simply upon the legitimating values of law, but also upon the individual substantive concepts and categories such as the distinction between public and private law, property and personality

⁵⁰ Westerman supra n 37; Taekema supra n14 at 34; Samuel supra n36 at 295.

⁵¹ Rubin supra n36 at 523 he also distinguishes more general ontological considerations of legal theorists also, branding them more as a form of philosophy rather than as standard legal scholarship.

⁵² Ibid at 522.

⁵³ Ibid at 523.

⁵⁴ See M. Siems for a detailed overview of just how legal academics achieve originality of research in “Legal Originality” (2008) *Oxford Journal of Legal Studies*, 28: 1,147–164.

rights, causation, possession.⁵⁵ It looked to divine the concepts, principles and values in law that were common to all legal systems. Normative legal theory, again also included by MacCormack within his doctrinal law quadrant, usually places the concept of law within the ambit of more general political theory,⁵⁶ and together with general jurisprudence posited what the law *should* be and what values, human rights or principles should underpin it. Such normative claims may be justified by reference to different ideas of legitimacy based upon political or philosophical theory including natural law, social contract theory, utilitarianism, and liberalism.⁵⁷ In effect the general orienting principles as described in general jurisprudence and normative legal theory, not only claim to describe law but are also themselves prescriptions of ideal standards or interpretations of the existing law and what it arguably *should* be.

Coupled with the need for originality outlined by Rubin as a requirement to prescribe improvements, amendments or alternative interpretations to the existing law, such legal scholarship can be seen as a creative endeavour (with some caveats). Howarth argues that law as an academic discipline sits in relation to the humanities as does engineering to the natural sciences, in that he sees it as a technical, but also creative subject.⁵⁸ The concepts *of* law, and the substantive concepts *in* law (the values, principles, norms that the law consists of), that are both interpreted and prescribed in general jurisprudence and legal doctrine, are themselves new or altered arguments aimed at improving the existing body of law. Even concepts *of* law – what law is theoretically deemed to be as an integrated part of society – as outlined in normative legal theory, may be prescribed precisely because they are part of normative arguments to show that one concept of law over another is superior in terms of the effects it would produce and in terms of the values and principles it subsumes and expresses.⁵⁹ The profession of new ideas for the law can be seen as a valuable original contribution in itself, although it is not the aim of this research to defend legal scholarship as an academic endeavour per se (although my thoughts on the subject are allied with such a defence). This clarification of the endeavour of such particular legal scholarship is to show

⁵⁵ MacCormack *supra* n26 at 17.

⁵⁶ Cotterrell *supra* n50 at 24.

⁵⁷ See P. G. Stein, *Legal Evolution: The Story of an Idea* (1980) as explaining law's legitimacy as flowing from theoretical considerations of modern society as part of the theory of social contract, or as derived from God in the case of Natural Law. Modern Natural Legal Scholars, as explained by MacCormack, are more likely to take as ascribing the authority and legitimacy from law as stemming from objective, agreed upon conditions required for human flourishing.

⁵⁸ D. Howarth "Is Law a Humanity? (Or is it More Like Engineering?)" (2004) *Arts & Humanities in Higher Education* 3:1, 9–28 at 20–22.

⁵⁹ See discussion in F. Schauer "The Social Construction of Law: A Reply to Julie Dickson" (2005) *Oxford Journal of Legal Studies*, 25: 3, 493–501.

that its orientation to practice mean that in relation to shedding light on the *social dynamics* of how law develops and how legal concepts emerge are not best served by the methodology of traditional legal scholarship as aimed at prescriptive jurisprudence. What can be taken from this understanding of legal scholarship instead, is that it itself may be the subject of study: a potential site of the development and emergence of new substantive legal concepts.

Taekema points to the absorption of the recommendations of doctrinal law in to legal practice.⁶⁰ This is demonstrated by the many legal journals specifically aimed at practitioners and in some cases, particular doctrinal recommendations or interpretations being accepted as correct by judges, and perhaps further when legal academics are sought to contribute advice for and even draft legal reform.⁶¹ That research conducted by academics can influence the development of the law itself can be inferred in relation to the influence of teaching on students who then may go on to be lawyers, judges and legal decision-makers themselves. In a more tangible and demonstrable sense, however, certain arguments and ideas presented by academics can be referred to in cases. Brief examples of this latter point can be made in relation to *Micosta SA v Shetland Islands Council* where Lord Ross quoted with approval Walker's textbook on Delict in making comments on the list of interests that may be the subject of delictual action.⁶² Also – more speculatively - of the recognition of the *actio injuriarum* in Scots law accepted by the Court in *Stevens v Yorkhill NHS Trust*⁶³ in accepting a particular interpretation of three obscure Scottish cases, which in turn had only recently been explored by Whitty in his analysis of rights over excised tissue from the body.⁶⁴ In bringing arguments and strategies before the courts, and in influencing their judgments, legal research contributed by the legal community in general, and by legal academics in particular, may have an influencing effect upon the law.

Legal research can be reactionary much like the legal system itself, a point frequently referred to in relation to the challenges precipitated by emerging technologies as explored in chapter 3. In such circumstances legal scholarship is aimed at solving the regulatory problems identified: issues of improper interpretation of existing case law, identification of legal lacuna, inefficacy (howsoever framed), or the development of new conceptualisations of specified harms to interests or values that are currently unprotected or neglected by the existing regime. In identifying such problems, reference can be made to the points identified

⁶⁰ Taekema supra n11 at 33.

⁶¹ Ibid.

⁶² 1986 SLT 193 at 198, citing *The Law of Delict in Scotland*, 2nd edn (1981), at 9.

⁶³ [2006] CSOH 143.

⁶⁴ N. Whitty "Rights of Personality, Property Rights and the Human Body in Scots Law" (2005) *Edinburgh Law Review* 9:2, 194.

by Moses as outlined in chapter 3 in relation to the potential challenges to law posed by NEST.

This latter point is particularly salient in the light of the discussion in chapter 4 subsection 2.4 of the capacity of NEST to catalyse a tipping point in favour of views that may have been previously overlooked, and of the coproduction of concepts and understandings of the changed socio-technical environment and their potential recognition in law. The activities of legal scholars may mark the beginning, or part of the process of potential recognition of (and competition between) new or previously unacknowledged conceptualisations of harms and of their implications for law. It may also mark a site where the beginning of a change in thinking or recognition of responsibility of the state (or those to be held responsible by the law), and a change in the balance of thinking about who should be held accountable, and for what they should be held accountable, occurs. Legal scholars engaging in a process of arguing what the law should be and providing alternative interpretations and applications of existing legal concepts, and potentially advocating new legal mechanisms required to deal with the particular problems they highlight, may contribute to the development of new legal concepts. This insight may be part of an understanding of how legal concepts emerge, and should be taken in to account when forming explanatory concepts of both law and of “emerging legal concepts”.

3.3 Diverging Aims and Orientations: The Problem of Reconciling Methodologies with Differing Legal Insights

To explore the relationship and potential influence of the wider social environment, impact of technology, and changing perspectives on law, and to form explanatory concepts of what is meant by an “emerging legal concept”, more than the legal authority paradigm of traditional legal scholarship is required. What is needed is not simply a method of understanding what law is, how it has formed and how it develops, but also a way of discerning how it relates to and is affected by the wider socio-technical environment. An explanatory concept of law is required, as part of constructing an explanatory concept of and analysis of “emerging” legal concepts.

The orientation of traditional legal scholarship, including doctrinal law and normative general jurisprudence and legal theory as outlined above, are both describing what the law is by reference to the existing interpretations and concepts within law and legal scholarship – a description of themselves - and prescribing what the concept of law *should* be. Such

scholarship is not aimed at uncovering social truths about law in the same sense as research in the social sciences. Their prescriptive and descriptive elements are inseparably blended such that the two are easily conflated when looking beyond the creation of legal arguments, to the formation of explanatory concepts of law as a social phenomenon. It cannot accommodate or account for conflict over authority to regulate as part of a descriptive explanation of the social reality and creation of law, and the social processes involved in that conflict because it itself is taken as a description of legality and authority. Such scholarship and theories take for granted their own claims to legitimacy.

This latter point is of particular concern in the present research. In reference to the coproduction of our socio-technical reality and of technomoral change in general, I argued in chapter 4 that conceptualisations of harm and new values or interests that pertain to the soft impact of new technologies may or may not become recognised and influence broader social action and debate. Law was positioned as part of an ongoing process where different conceptualisations of social reality, including different potential “problems” or conceptualisations of the same issue may compete for recognition. Recognition in law of a particular conceptualisation may lend it legitimacy as well as frame potential action to mediate it. Concepts utilised for explanation of the technologies, the language used to discuss them, and the way in which meaning and understanding is formed, is also subject to a complex process of interaction between the material and the social. Such descriptive concepts themselves may form the implicit basis of policy or legal understanding. As such, their modulation and challenge in the wake of new technology, and the social reaction therefrom, may lead to conflict not simply over the values, practices and potential social norms that they implicate, but also as to the descriptive concepts used in understanding the new socio-technical reality and their presumption in law. The argument highlighted in chapter 4 subsection 2.1 in reference to the distinction between hard and “soft” impacts of new technologies was that this was partly a rhetorical political device akin to the division between the private and public sphere. What the content of law is, what harms are recognised and what concepts are used to both describe such harms, the values and principles used to justify their recognition, and the implementation of concepts or legal mechanisms to protect against such harms or facilitate the realisation of complementary rights, will be a matter of *conflict over their legitimate recognition*. This conflict may in part, centre upon the division between the public and private sphere which is used in liberal theory to demarcate legitimate spheres of state interference.

This conflict, and the dynamics of the shift in recognising certain harms or acknowledging certain views of the socio-technical reality, is at the heart of this thesis. The methodology must be able to help uncover these dynamics, and the explanatory concepts formed in relation to “law” and to “emerging” legal concepts must also be able to account for such conflict. Normative prescriptions that themselves are based upon a particular perspective as to what is or should be considered law, can themselves be seen as part of the arguments being studied as part of the process of conflict over authority and recognition. They do not provide a means of approaching the formation of explanatory concepts as they themselves may be examined as part of forming such explanatory concepts.

In contrast to the methodology and aims highlighted above in reference to traditional legal scholarship, Hart’s development of analytical legal theory (or legal philosophy) starts from the premise that law and the legal system is a social construct, and in the preamble to his book remarks that his approach could be instructive to both legal academics and sociologists alike.⁶⁵ Priel argued that legal theory as a subject took on a different emphasis after the publication of Hart’s *Concept of Law*,⁶⁶ and it is such theory that Rubin critiques as more akin to philosophy than to legal scholarship.⁶⁷ Hart began from a basic (intuitive) sociological observation that law exists where legal professionals believe they are under a legal obligation (notwithstanding their intention to adhere to such an obligation). Hart then, however, continued in his analysis arguing that law is a system of rules broadly recognised by legal professionals who act and apply their authority in accordance with the rules. This was termed the internal perspective of law. Hart’s endeavour was not to prescribe what law should be, but was more in line with aiming to describe law as a social phenomenon based upon observation and the application of philosophy to provide clarity to the analysis of the form of law. His aim and orientation is at understanding law as first and foremost a social phenomenon and as such is in line with aims and orientations of those in the law and society. This potentially provides valuable insights in to law as a phenomenon that goes beyond the creative or prescriptive nature of traditional doctrinal law and general jurisprudence.

Following Hart, positive legal theory makes a claim to conceptual clarity by refuting that there is a necessary link between law and morality.⁶⁸ This is not to say that law does not reflect morality or broader society, but that there is no necessary link as a social fact between

⁶⁵ H. L. A. Hart, *The Concept of Law* (1994; 2nd ed., Oxford, Clarendon Press) at vi.

⁶⁶ See for this argument Dan Priel “H. L. A. Hart and the Invention of Legal Philosophy” Osgoode CLPE Research Paper Series vol 7 no 5 Research Paper No. 17/2011.

⁶⁷ Rubin supra n39.

⁶⁸ This general description of positive legal theory in the tradition of Hart and Austin is outlined in B. Tamanaha, *A General Jurisprudence of Law and Society* (2001; OUP) chapters 2 and 6.

the validity of law and its morality. It also makes clearer the distinction between description and prescription in the concept of law forwarded. In severing the link between law and morality it problematises the relationship between law and society and the claims of legal validity and legitimacy.⁶⁹ It raises the possibility for legal theory to ask questions about the relationship between law and broader society including as to how the content of law, of the actual rights, rules and general concepts encapsulated, are influenced and formed taking in to account the social practices and collective meanings and understandings on which they are based. This is of key import in investigating whether or how changes within the socio-technical environment might affect the law and the development of substantive legal concepts.

However, Priel argues that there is no inquiry conducted within Hart's work that comes close to an acceptable method for sociology, or of empirical evidence of the claims that he makes in relation to the nature of law.⁷⁰ Hart acknowledges the limits of his theory, in that what he sought to provide were the tools for descriptive sociology and not a form of descriptive sociology itself, and that it fundamentally had lawyers in mind as the audience.⁷¹ Furthermore, Hart's formation of law as a concept, and positive legal theory in general forwarding that law is a system of rules broadly recognised by legal professionals who act and apply their authority in accordance with the rules are criticised by Samuel because such reliance upon the internal perspective also fails to escape the authority paradigm. Priel also argues that by relying upon the internal perspective of legal officials in assigning the recognition of law, the argument has a cyclical or self-satisfying effect in that law is law because those who practice law say it is so.⁷² Although it takes as its basis, an observation of social practice, it does not go beyond what is already deemed to be authoritatively law, and falls prey to the criticism of social theorists and specifically legal pluralists of failing to take in to account non-Western understandings.⁷³ Hart has further been accused of neglecting the "internal workings of law" of substantive legal concepts and how they and their structure may contribute to overall understanding of law as a phenomenon.⁷⁴ By redirecting attention away from questions about the content of law to ontological questions as to the essence of law, legal philosophy has largely ignored legal doctrine, history, political thought and their

⁶⁹ This argument is developed substantially by Tamanaha *ibid* chapter 6.

⁷⁰ Priel *supra* n 29 at 9.

⁷¹ See "Hart Interviewed: H.L.A. Hart in Conversation with David Sugarman" (2005) *Journal of Law and Society* 32:2, 267-293 at 291.

⁷² Priel *supra* n 29 at 10.

⁷³ B. Tamanaha "An Analytical Map of Social Scientific Approaches to the Concept of Law" (1995) *Oxford Journal of Legal Studies* 501 at 501.

⁷⁴ Priel *supra* n59 at 14.

impact upon law.⁷⁵ This claim might be challenged as failing to give enough credit to the work that Hart and others put in to clarifying such concepts as causation among others,⁷⁶ but methods and insights drawn from legal positivism have not been directed much to the history and development of such concepts or to their formation as part of a social process.

In contrast to the critique of Hart as relying upon the internal perspective, legal sociological scholars have been criticised by Cotterrell for *failing* to acknowledge the importance of the internal perspective of legal professionals understanding of law or of the development of ideas about law and its substantive legal concepts.⁷⁷ As will be explained further in the proceeding sections it is the social interaction of legal professionals and their creative and prescriptive arguments and perspectives that may have an overwhelming influence over the course of legal development. As such, understanding the social dynamics *within* legal professions in the construction of legal concepts represents a further dearth of literature upon which to draw in understanding how legal concepts themselves emerge (or are thwarted).

The social sciences aim for better understanding of the social world, thus far, however socio-legal scholarship and sociological theories of law have been criticised as failing to concern themselves with the importance of substantive legal concepts for law. In legal scholarship, although the aim of prescription may be a better understanding of how a rule or concept should be interpreted, it is not an attempt to understand and explain the social processes and relations behind this interpretation. As such this demonstrates the inseparability of the original contribution of providing a conceptualisation of “emerging legal concepts” and an account of their emergence, from the problem of articulating an appropriate methodology. Whereas legal doctrine and legal theory may provide sustained analysis of the content of law and the concepts that form it, they themselves are part of the subject to be studied as part of the ongoing process of meaning-making and conflict over authority and recognition of concepts and harms in law. Socio-legal scholarship and sociological theories of law provide the requisite approaches to concept formation and methodology for studying social interaction in general, but have thus far neglected to look at the emergence and development of specific substantive concepts in law. Neither do they account for the technical knowledge and structural impact that pervades as part of the internal perspective of legal professionals.

⁷⁵ Ibid.

⁷⁶ D. J. Galligan “Concepts the Currency of Social Understanding of Law: A Review Essay on the Later Work of William Twining” (2015) *Oxford Journal of Legal Studies*, 35: 2, 373–401 at 381.

⁷⁷ R. Cotterrell “The Representation of Law’s Autonomy in Autopoiesis Theory” in J. Pribán and D. Nelken (eds) *Law’s New Boundaries: The Consequences of Legal Autopoiesis*. Aldershot: Ashgate, 2001, 80– 103 at 99; see also Cotterrell *Laws Community* supra n35 at 297.

3.4 Intermediate Conclusions

Following the discussion above and coming back to the point raised about the challenge to an explanatory concept of law provoked by the so-called rise in new governance and regulation in relation to forming explanatory concepts of both law and of what is meant by emerging legal concepts, there are two issues that need to be addressed for the purposes of the rest of this thesis:

- the rendering of methods of concept formation between different approaches such that they can be read as part of the same methodology or otherwise discounted;
- over or under-inclusion in terms of specifying a concept that is best positioned to help in understanding and explaining law.

The latter point is in reference to the need both to articulate the relationship and potentially the distinctions between “law” and other social phenomena that may be “law-like”. As will be shown in the following sections, such a distinction is not necessarily recognised in social theories of law, and legal pluralists in general disagree as to such distinctions. These are addressed in the following sections building to the outline of a working approach to a concept of law and of emerging legal concepts, and the methodology and analytical framework that will be followed in the case studies relating to identity and emerging technologies.

4. Conceptualising Law and Emerging Legal Concepts: Methodology and Concept Formation

My aim is to investigate the relationship between law and regulation, technology and broader society, of how new and emerging technology create moments of flux in changing perspectives of reality, changing values and norms in society, and their potential to prompt changes in law. This discussion has drawn from philosophy of technology in relation to the co-evolution of harms and/or values, with accountability regimes within society as part of a collective social process of recognition and coproduction. I have argued that the distinction between public interest and private concerns can shift to acknowledge a change and recognition by the state for responsibility for harms hitherto ignored or unseen. Alternatively, soft impacts can be seen as implying a collective public interest not necessarily tied to the

state and so in keeping with plurality of law. My contention is that new conceptualisations of such soft impacts and recognition of harms can come to be recognised as new concepts and emerging concepts within law and that a concept of identity may encapsulate or frame many of these soft impacts.

One of the most fundamental conceptual assumptions of our reality is tied to the understanding of ourselves, of both our individual identities and the collective understanding of our humanity. Legal interventions may be based upon implicit general understandings of the expectations and relations of individuals emanating from, and consisting of, their identity in assigning rights, responsibilities and thus protecting these expectations. In the past and in many places still around the world, law has placed restrictions and condemnation on aspects of identity including sexual orientation, discrimination and oppression of certain groups including the denial of rights and refusal to recognise certain relations and expectations they might have in relation to marriage and children and privacy against unwarranted interference. Transgender recognition and the legal rights assigned with such recognition have also changed as knowledge about, and perceptions of the reality of gender have changed.⁷⁸ Rights and status, protection and recognition at the beginning and end of life also stem from implicit understandings of identity and personhood as related to identity. In relation to new biotechnologies and the changing knowledge in relation to medicine and the capacities to intervene in procreation, our understanding of the brain and of cognition and psychology in general have impacts on our embodied and physical aspects of identity. Changed understanding of genetics, genetic inheritance, disease and the technologies that have made interventions in them not only a potential possibility but a fact of life, all have implications for the broader social perspectives of identity and the relations and values important to us. Therefore, even though identity is itself a nebulous and abstract concept, law, and specific aspects of law, emanate from implicit understandings of identity that may be changing, and have definitely changed in the past. Understandings of identity, and the ways in which it is implicated in law and by emerging biotechnology and biomedicine in particular, are more fully explored in chapters 6 and 7. For now, it demonstrates the importance of identity to law even if not explicitly stated and the fact of its potential flux as a result of new technologies shows its potential as a point for development and scrutiny for law. As is implied above and analysed in detail in the following chapters, changes to perceptions of identity, and the conceptualisation of interests, values and soft impacts as representative of identity or by a concept of identity could be seen as an emerging concept within law.

⁷⁸ See the judgment in *Christine Goodman and I v UK* (2002) 35 EHRR 18.

The methodology required and approach to the formation of explanatory concepts needs to be able to account for such ongoing conflict and flux as well as help to articulate the distinctions between law and other law-like phenomena as manifested by new governance, or alternatively to justify their treatment as one and the same thing. As concluded in the last section, the disparate branches or approaches to legal scholarship have differing orientations and aims and as such a methodology capable of reconciling their combined insights is advised. The interpretative methodology, I argue, is the prime candidate for this and indeed has been used by contemporary legal scholars in general to this end.

4.1 Reconciling Legal Theory with Social Theory: Using the Interpretative Turn in the Social Sciences

As described above the problem in relation to outlining a requisite methodology and of approaching and forming explanations of and concepts to help explain what “emerging legal concepts” are, lies in the differing aims and orientations of scholarship concerned with law. The differing insights and knowledge formed in each academic tradition give only partial insight into the aspects of legal development and its relationship with society in general and of demarcating its distinction from the social sphere. Whilst traditional legal scholarship – broadly understood – has studied substantive concepts and content of law, it does not look to the social dynamics within itself and neither does it have the methodology to do so, to understand how it contributes to and is part of the development of law and the substantive legal concepts. Social theories whilst displaying the insight and methodology to examine such social dynamics, have neglected the knowledge about and content of the substantive concepts of law. This can be extended also to the development of concepts of law, where insights in both legal theory and social theory are informative but do not speak to each other due to diverging methodologies and approaches to concept formation.

In reviewing the work of Twining, Galligan⁷⁹ seeks to set out an approach that could pave the way to establishing a genuine general jurisprudence, an aim of Twining’s,⁸⁰ that would unite a coherent whole of all the theoretical approaches to law including the analytical, normative, anthropological, realist, comparative and social.⁸¹ The reason cited for why legal philosophy is the stumbling block to this endeavour follows the similar pattern of criticism

⁷⁹ D. J. Galligan “Concepts the Currency of Social Understanding of Law: A Review Essay on the Later Work of William Twining” (2015) *Oxford Journal of Legal Studies*, 35: 2, 373–401.

⁸⁰ Galligan focuses on two later works: W. Twining, *Globalisation and Legal Theory* (Butterworths 2000), and *General Jurisprudence: Understanding Law from a Global Perspective* (CUP 2009).

⁸¹ Galligan *supra* n 80.

explored above; it is limited by not looking at the many different ways in which law is experienced, and that the work of Hart as the main progenitor of modern legal philosophy “inhibited its full flowering”.⁸² The rationale for this critique, and referring back to Twining (and Priel above) is that the account remained an intuitive one based upon contemporary experience within Britain (or Western) legal systems, and that Hart and those following him set up “artificial boundaries” to the research.⁸³ Twining’s criticism of analytical jurisprudence as closed off from the social aspect is, according to Galligan, based upon the way in which concepts are formed.⁸⁴ In reconciling analytical jurisprudence with the social method, and in distinction to Twining, Galligan suggests that Hart’s concept formation is better read through the Weberian interpretative method.⁸⁵

Weber’s interpretative method involves the formation of ideal types/concepts from generalised uniformities of practice: such uniformities have meaning for those engaged in them and it is this meaning that forms the ideal types or general concepts of explanation.⁸⁶ By studying meanings, the researcher can identify concepts that are implicit within them.⁸⁷ The researcher brings their own preconceptions as prior ideas about the concepts that are divined out of the social practices and meanings explored, therefore a certain amount of common understanding is required or apparent.⁸⁸

Galligan, amending the interpretative approach slightly, posits that it consists of three stages:

- identification of concepts implicit in social practices;
- reflection on those social practices to see to what extent they fit with the concepts and what is left over to make other concepts and/or amend the concepts already formed;
- tracing the history of meaning of those concepts.⁸⁹

This approach in turn also quells some of the critique levelled at Hart’s methodology raised by Priel in relation to a failure to employ any method that might be recognised by social scientists. Galligan counters that the criticism of Hart’s approach to concept formation and methodology is a failure to acknowledge that Hart and others rely on empirical information

⁸² Ibid at 375.

⁸³ Ibid at 375.

⁸⁴ Ibid at 380.

⁸⁵ Ibid.

⁸⁶ Ibid at 386.

⁸⁷ Ibid at 385-386.

⁸⁸ Ibid at 385-386.

⁸⁹ Ibid, but note that this third stage is an addition of Galligan’s.

in terms of their own understanding of law and legal practice.⁹⁰ Thus, Hart's own empirical experience of law and observed social practices inform his concept formation.⁹¹ The real problem of Hart's approach is that he did not take the second step of reflecting concepts back upon the social practices they sought to describe.⁹² On this view such concepts could be seen as a pre-conceptual analysis of the law: still valuable but requiring further work to test their utility in terms of furthering understanding.⁹³

The relationship between the pre-concepts and the formed concepts based upon empirical analysis is an ambiguous one. Galligan maintains that Weber's approach was to abstract from the reality of the social practice such that the exercise was one of rational reconstruction of understanding about (social) reality from the raw experiences of practice in real time.⁹⁴ This links with MacCormack's assertion that work done in the law and society quadrant is similar to work done as part of legal doctrine and general jurisprudence in conducting rational reconstruction from the perspective of social methods as opposed to those prevalent in legal scholarship.⁹⁵ These ideal types are not meant to represent reality as such; they are constructions made in the mind of the researcher based upon their observations. The next step would then be to analyse such concepts to elucidate their elements. Thus in the construction of these ideal type concepts there is cognitive work done that goes beyond or is distinct from description to the point that they become "ideas in the mind of the observer".⁹⁶ Galligan continues that reflection on empirical practices helps to uncover meanings that may be hidden from view in the first construction of concepts, and that it was Hart's failure to implement stage two of the interpretative method described above that marked their differences.

The adoption of the interpretative theory implies that concepts and insights developed within analytical jurisprudence and even normative legal theory can be read in such a way that they can be analysed, developed or discarded when read in part with social and empirical scrutiny. They are also able at least *prima facie* to escape the authority paradigm given their concentration upon social practices and the wider and deeper understandings to which they aim. My intention and aim in this thesis is to provide a conceptual understanding of the dynamics of emergence of new legal concepts and their relationship to the broader socio-

⁹⁰ Ibid at 384-386.

⁹¹ Ibid.

⁹² Ibid 381-382.

⁹³ Ibid.

⁹⁴ Ibid.

⁹⁵ MacCormack *supra* n26 at 17.

⁹⁶ Galligan *supra* n 80 at 387.

technical environment. As argued throughout the concentration of the original contribution is in the formation of a concept or definition of what is meant by an “emerging” legal concept and an analysis of the potential factors in play in such emergence. Future work may draw upon more rigorous testing of such explanatory concepts against wider empirical and qualitative inquiry, but such is outwith the scope of this thesis. The point for now is that the interpretative approach to concept formation can aid in reconciling the insights developed within social theory with those in legal theory in coming to a concept of law for developing an understanding and conceptualisation of “emerging legal concepts”. Furthermore, this approach can go beyond the concerns of the authority paradigm critiqued above to examine and account for developing ideas and perceptions of harm, value or interest expressed in broader discourse not simply within explicit legal doctrine in influencing the development of law and as constituting part of the emergence of legal concepts.

4.2 Justifying the Interpretative Methodology: Accounting for Differences in Meaning Between Different Discourses and Understanding Meaning in Practice

This section sets out why the interpretative approach is justified not simply by reference to reconciling the approaches and insights across research examining law. It sets out that in addition to reconciling the insights from traditional legal scholarship and theory – including Hart’s positive legal theory - the interpretative approach and the conventionalist formation of a concept of law can meet intertwined challenges. This includes accounting for the relationship between the formation of substantive concepts or ideas in law, and the broader discourse and formation of knowledge within society in general. Partly this is concerned with the approach used in forming an explanatory concept of law itself and of understanding what is included within such a concept.

The fact that perspectives of the world are socially mediated means that there will be certain perceptions of our reality that are contested and shift over time. It is this that is implied in the thesis of techno-moral change and coproduction explored in chapter 2. Even the language we employ in attempting to understand these changes may fall short of accuracy and may vary between cultures and contexts. The tacit conceptual assumptions of reality and the social relations and expectations upon which legal regimes and doctrinal categories, concepts, rules and principles are based may be diffuse, pervasive and implicit. As such, they may be particularly difficult to identify and challenge whilst simultaneously framing the explicit concepts and rules to which they give rise. The interpretative method allows for the illumination of implicit meaning: that which is not explicitly articulated.

The adoption of one description over another may itself be a normative choice and has normative implications. Changes to the language, metaphors and general concepts used to describe the practical capacities of new technologies and relationships will be value laden and may influence the normative judgements that are made in relation to them. A key example may be as between describing an entity as an embryo or as a pre-embryo, the former of which arguably is imbued with more morally charged anxiety while the latter is less so, and so may be judged differently along with any procedures or research that may be carried out in relation to it.

The interpretative approach allows for the deeper analysis of meaning within actions, relations, discourses and practices. Furthermore however, it can help aid the formation of concepts of, and distinction between law and other social phenomena. The conventionalist approach to concept formation endorsed by both Tamanaha⁹⁷ and Black,⁹⁸ and explored in more detail in the following subsections, is subsumed within the interpretative approach. As will be highlighted in the following sections, this approach to concept formation asserts that the value of any concept, as created and deployed as part of social research, lies in its ability to facilitate understanding of the social phenomena being studied. Such explanatory concepts in this view are not to be treated as universal ontological truths which, Tamanaha argues, is the weakness of legal theory in general.⁹⁹ Instead, they are to be continually evaluated and to ensure that they are the best means of explanation for the practices involved.

Jasanoff in *Reframing Rights* specifically states that a right does not necessarily come in to existence only when explicitly recognised in court or through legislation, “but when people (and institutions) assume that they or others own the right and can assert it in the ways they live.”¹⁰⁰ As such there may be “quasi-constitutional rights” undeclared by courts or legislatures but created through everyday practice and thought.¹⁰¹ It is not clear from Jasanoff’s discussion of reframing rights that such expectations or “rights” could be properly called “legal” or at what point we might discern that such expectations have the potential to become entrenched legal concepts at a future date. She is explicitly stating that not all “rights” need be formally recognised in law to be considered so as a matter of academic inquiry. This stance on “rights” as a concept that does not necessarily require legal recognition in order to exist is consistent with the approach to concept formation endorsed

⁹⁷ Tamanaha *supra* n69 at 313.

⁹⁸ Black “Decentring Regulation” *supra* n22 at 141.

⁹⁹ B. Tamanaha “A Non-Essentialist Version of Legal Pluralism” (2000) *Journal of Law and Society* (2000) 27:2 , 296-321 at 297.

¹⁰⁰ Jasanoff *supra* n2 at 14.

¹⁰¹ *Ibid.*

by Tamanaha and Black. The concept of “right” endorsed by Jasanoff is one that accounts for and thus recognises the reality of claims made and practically realised even if they do not exist in written constitutions and have not been tested in formal legal forum. The example she gives is the right to say no to certain kinds of scientific research through measures that the existing legal order may see as extra-legal or even illegal (although she does not describe what such measures look like).¹⁰² The interpretative method, along with the conventionalist approach to concept formation – described in the following sections – can allow for the creation of conceptual distinction between law and other social phenomena that can take in to account their relationship with practices and meanings as developed in the wider social schema.

The interpretative method aids the illumination of connections between behaviour rooted in meaning or expectation of behaviour, and the potential formation of legally recognised concepts. It can do so by providing a qualitative understanding of the causal relations between broader social behaviour, cognitive framing and the entrenchment of new legal concepts. By adopting the stance that Jasanoff does in relation to the interpretative method and the idiom of co-production explored in chapter 2 section 4, and chapter 4 subsection 2.4 and section 3, an understanding of and articulation of complex causal dynamics between particular social interactions and their links to broader social structures, institutions and ideas can be explored. This method is followed in the present research as best able to aid explanation of the complex dynamics and links between potentially emerging legal concepts and the wider array of practices and ideas in society. What is still required, is a means of conceptually distinguishing between law and other phenomena, and to account for such distinctions within the understanding of the development of the law in general as coproduced within the wider socio-technical environment, and the emergence of new legal concepts in particular. This is something that Jasanoff does not do and which the coproducing understanding, without more, cannot necessarily explain.

My research aim is to investigate the influence and relationship of wider ideas, understandings and expectations relating to the socio-technical environment and the law, therefore a means of distinguishing and relating them to, or subsuming them within an understanding of what is meant by law is required. The interpretative methodology, as embraced by legal scholars, such as Tamanaha and Galigan, seeking to reconcile the differing strands of legal scholarship and theory, can aid in such concept formation.

¹⁰² Ibid.

5. Law as Socially Constructed Ideas About Governance

It must be stressed that it is not the aim of this thesis to contribute to legal theory or to the development of a concept of law in general. An understanding of law as a social tool or device is nevertheless required as part of forming an explanatory concept of “emerging” legal concepts. Insights drawn from chapters 2 to 4 show the capacity of NEST to trigger a potential catalytic moment in which new perspectives of understanding and different moral and value positions may gain traction. It was also observed in chapter 4 section 2 that the difference between “hard” and “soft” impacts as much as the line between the public and private sphere may be subject to conflict and to shift. Central to an understanding of emerging concepts, in general and in relation to law, I argue, will be to account and explain such conflict and competition. It also needs to be able to account for, distinguish between, or justify as the same, and help explain causal connections between “law” and other “law-like” phenomena. This also applies to the situation highlighted by Jasanoff above in relation to behaviours and relationships in which people may act in accordance with a presumed or claimed right, even where such a right may not have been formally recognised. An explanatory concept of law, and specifically an explanation of what constitutes an emerging legal concept needs to be able to distinguish between such actions and law, or to justify why they might be one and the same, and to investigate whether they may lead to a formally recognised legal concept. I argue in the following sections that central to these distinctions and links is conflict over the authority of particular social institutions or of specific ideas to influence or guide behaviour and decisions.

5.1 Challenging a Centred Concept of Law and Essentialist Concepts: Conflict Over Authority

Legal doctrine as symbiotically produced between legal professionals and legal academics may be one of the aspects to be studied in the explanation for the emergence of legal concepts, but it does not follow that legal doctrine is to be taken as a concept of law, at least without more. This illustration of doctrinal law and traditional legal scholarship is somewhat of a caricature especially in the light of the changes and move toward interdisciplinarity touched on in section 3.

The rise of new governance¹⁰³ – broadly used to encompass governance mechanisms and regulation that are composed of non-legal or a mixture of legal and non-legal governance techniques including participatory governance, private regulation, and anticipatory governance - has been described as a challenge to the concept of law. Black argues that this is really a challenge to the concept of law and regulation as arising from a central authoritative source or as command and control, which she concedes is also a caricature of law.¹⁰⁴ I would argue that what it represents is the aggregate viewpoint of legal professionals of legal authority adhered to by lawyers in terms of arguments and instruments of binding or varying persuasion depending upon their source. I argue that the challenge may be more an articulation of a practical and theoretical challenge to the authority of doctrine and sources of law as emanating from the state to regulate on specific issues. The proliferation of international conventions, supranational structures, the rise in transnational law, and the development of private realms of rules and arbitration specifically within the commercial and financial sectors challenge centred understandings of authority and have been described as the “chip away at the sovereignty and the autonomy...of the nation state”.¹⁰⁵ The social manifestations of power, or perceived authority of other regulatory or law-like systems challenge the perception of the State’s monopoly on the right (or duty) to regulate.

The proliferation of new governance, of transnational law and litigation, supranational institutions, and international conventions, along with private regulations has been regarded by Tamanaha as a new wave of thinking about legal pluralism.¹⁰⁶ Original insights in plurality stemmed mainly from legal anthropologists in studying the presence and sometimes the mutual coexistence and cooperation between customary or indigenous law and that of colonial powers of the time.¹⁰⁷ The same can be said now on a global scale as between the recognition of transnational *lex mercatoria* schemes, or of international conventions in terms of their binding authority upon different nations or communities. These insights can further extend to professional regulators and regulations such as those seen in the General Medical Council which demonstrate law-like characters by having both a written code of conduct for medical professionals and the institutions and capacity to enforce them with sanctions (such as removal of individuals from practice).

¹⁰³ As argued by N. Walker and G. de Búrca in “Reconceiving Law and New Governance” EUI Working Paper LAW No. 2007/10, the term “new governance” is contested. Thus its definition and to which phenomena it applies to is also contested. This is in fact part of the point in theories seeking to come to a concept of “law” and how it is distinct from other non-legal phenomena.

¹⁰⁴ J. Black “Critical Reflections on Regulation” (2002) *Australian Journal of Legal Philosophy* 27 at 2-3.

¹⁰⁵ Tamanaha *supra* n69 at 129.

¹⁰⁶ *Ibid* at 116.

¹⁰⁷ *Ibid* .

It was stated at the beginning of the chapter that the opacity of the “challenge” posed by new governance to “law” as a concept, was due to the practical orientation of legal scholarship to practice. If the challenge to a concept of law is - as I have argued above - in reality a challenge to the taken for granted authority of currently recognised sources of law, it can only be seen as challenging an *explanatory* concept of law if *legal doctrine and the conditions of authority* are seen as explanatory concepts of law. In critiquing the contributions of legal pluralists, Tamanaha points to the problem within legal pluralism that there is no underlying agreement on the concept of law that is challenged, and which unites the idea of legal plurality.¹⁰⁸ He argues against essentialist legal concepts as grounded in the assumption that “law is a fundamental category which can be identified and described, or an essentialist notion which can be continually worked on until a pure (de-contextualised) version is produced.”¹⁰⁹ Such explanatory concepts may be over-inclusive in terms of being unable to distinguish between phenomena displaying functional equivalences such as university regulations and sports regulations, or they may be under-inclusive and exclude other forms of law which do not meet the criteria set out in the concept, both of which may go against intuitive notions of law.¹¹⁰ Linked to under-inclusion of essential concepts based upon law’s perceived function as that of keeping social order, is that many institutionalised norms, as demonstrated in relation to command and control regulation, which seem to fail in keeping social order, may play many other roles related to keeping justice, symbolism, and conferring status.¹¹¹ As argued in chapter 3 subsection 3.4, the failure to effect behaviour or to guarantee compliance may not necessarily defeat the notion that a particular rule or institution is law. It may in fact be the best compromise in the situation.

Issues of over and under-inclusion in relation to essentialist concepts also point to the problems inherent in normative legal theories that conflate description and prescription in setting and describing concepts of law whilst also prescribing what they should achieve. If a particular aim is laid out in such a theory or argument, failure to achieve that aim may be conflated with failure *as law*, but in fact no such thing may be true. It may be conceded that law - a particular piece of legislation, or rule - is *intended* to achieve particular aims, but so long as it is recognised as a rule, as law, and people modulate their behaviour by reference to this recognition (even if they do so as an act of non-compliance), then failure to achieve the intended aim or the ascribed function may not negate its recognition as law.

¹⁰⁸ B. Tamanaha “A Non-Essentialist Version of Legal Pluralism” (2000) *Journal of Law and Society* 27:2 , 296-321 at 297.

¹⁰⁹ Ibid at 299.

¹¹⁰ Ibid.

¹¹¹ Ibid at 301-302.

As Black argues, however, no specific explanatory concept of law is necessarily identified as challenged or problematised by the rise of new governance. It is not a fully reflected and conceptualised problem based upon any one concept of law. Furthermore, it presupposes that practice does not allow, within its parameters and understandings, for shifts in recognition of authority. This is not necessarily true. Most modern theories of epistemology acknowledge that there are no pure descriptions, that every contact with reality is socially mediated and all “descriptions are theory laden; they emerge from a vision of the world in which our norms and our beliefs are deeply embedded.”¹¹² Any prescriptions made by legal scholarship and any descriptions made by social sciences are both based upon beliefs about our world and society that are historically and culturally contingent and “derive from a basic world view, a ‘fore-understanding’ that cannot be placed in either category.”¹¹³ The concepts and boundaries as between academic disciplines may be contested and may shift to encompass new methods and approaches to concept formation. Legal scholarship could shift to accommodate the orientations and methods of the broader social sciences; the authority paradigm as part of practice and as a social construct can therefore also shift. It may mark a change in recognition of different forms of legal authority *within* practice or amongst legal professionals, and by extension scholarship would not seek to explain this change per se but would mark the justifications or logic behind their recognition and the arguments used in favour or against such recognition. This can be seen as part of the social process of legal development. If the concept of doctrine and its tests of legality are treated as essential and thus unchanging it cannot account for potential real-time changes in practice. Such a concept would be a snapshot of authority as vested at one particular time. This in fact is the criticism of the approaches of legal positivism in general (including Hart’s theory of law) as demonstrated in chapter 3 in relation to legal scholarship and Brownsword’s conceptualisation of regulatory disconnect. It diagnoses problems as a snapshot in time but is not aimed at understanding the social processes of change within legal doctrine itself. This feeds in to the criticisms of essential concepts raised by Tamanaha above, that also apply to legal theorists such as Hart that seek universalistic concepts of law – seen to be true across societies and times.¹¹⁴ Such a presumption does not take in to account that law as a social construction (which is the basis of Hart’s theory) can, and has changed across time. It does not accommodate the paradox that all concepts of law - as prescribed or aimed at by different

¹¹² Rubin supra n39 at 542.

¹¹³ Ibid at 543

¹¹⁴ B. Tamanaha “What is General Jurisprudence? A Critique of Universalistic Claims by Philosophical Concepts of Law” (2011) *Transnational Legal Theory* 2:3, 287-308 at 304.

theorists - have all claimed to be *the* concept of law points to the futility in so arguing that there is one abstract truth about what the law is in society.¹¹⁵

What is recognised as authoritative law in practice may alter over time, and thus what is recognised within legal scholarship as authoritative may also shift, but this does not represent a change in an academic explanatory concept of law: the change is that which such an explanatory concept must study and account for. As such, the challenge to a concept of law outlined in relation to new governance techniques could be seen as a conflation of practice with a rigorous explanatory concept of law that is not the same thing. The following subsection seeks to outline a concept of law and the formation of an understanding of emerging legal concepts in accounting for conflict and competition over authority as requiring a conventionalist approach – that law is whatever is ascribed the label law by our actions and meanings – as better able to accommodate conflict or shifting in recognition of authority. It is important to consider this relative to this thesis as a whole because conflict over and changing ideas and recognition of authority can contribute to the power or influence that a rule, governance mechanism, or idea may have over persons actions and perceptions of legitimacy. This is explored and developed further in relation to the conceptualisation and understanding of the dynamics of “emerging legal concepts”.

5.2 A Conventionalist Approach to Concept Formation

Tamanaha argues that law is understood differently in different cultures, as are many social concepts such as marriage, and can change over time as attitudes and perceptions change.¹¹⁶ His approach to concept formation is based upon a conventionalist turn such that law is “whatever people identify and treat through their social practices as law”,¹¹⁷ it is “determined by the people in the social arena through their own common usages, not in advance by the social scientist or theorist.”¹¹⁸ The key in this argument is the notion of social practice, which “involves an activity that contains aspects of both meaning and behaviour, linked together by a loosely shared body of (often internally heterogeneous) norms and activities.”¹¹⁹ This follows Galligan’s description of Weber’s interpretative approach, but itself is ambiguous

¹¹⁵ Ibid.

¹¹⁶ B. Tamanaha “What is General Jurisprudence? A Critique of Universalistic Claims by Philosophical Concepts of Law” (2011) 2 *Transnational Legal Theory* 3 at 287-308 at 301. See also Schauer *supra* n56.

¹¹⁷ Tamanaha *supra* n94 at 313.

¹¹⁸ Ibid at 314.

¹¹⁹ Ibid .

and devoid of normative assumptions, and Tamanaha concedes that it is but a heuristic device for the purposes of study.¹²⁰

Tamanaha further argues that the label ‘law’ is conventionally attached to multiple “multi-faceted and multi-functional” phenomena including natural law, international law, religious law, state law, and customary law and that if there is a common trait among them it is that they all claim (or that people claim for them) authority to rightful power.¹²¹ Understanding why they are labelled so, and what is gained by labelling them thus in terms of political, symbolic or rhetorical advantage, he argues, is central to a true movement of general jurisprudence.¹²²

By asserting that law is whatever the label “law” is attached to, Tamanaha faces the challenge that because the label law may be attached to fundamentally different phenomena there is a danger that research could be comparing “apples and oranges”.¹²³ It also still needs to account for the distinction between the differing phenomena that may be law-like but not considered law, or to justify their inclusion within the explanatory concept of law. Black endorses Tamanaha’s approach whilst also acknowledging the problem of comparing dissimilar phenomena; overcoming this problem by asserting that the concept that is settled upon must be evaluated according to that which best aids explanation.¹²⁴ Black forms her concept of regulation by reference to better explaining power dynamics and as such conceptualises regulation as any activity intended to influence behaviour.¹²⁵ In so doing, her explanatory concept of regulation and decentred regulation takes in to account the practices and instruments that are usually not attributed with the pedigree of law but which nevertheless make claims to authority to regulate over a specific sphere or issue. She makes no comment upon the concept of law per se.

My aim throughout this chapter and through the thesis in general, is to examine the relationship between the socio-technical environment and development in law, and as part of this I am concentrating on the conflict over recognition of particular concepts in law. Conflict over recognition is the operative element in this analysis, and conflict over authority is integral to the distinctions and relationships between different institutions that purport to influence behaviour and provide guidance in decision-making and disputes. The following sections outline how the distinction and relationship between law and other phenomena and

¹²⁰ Ibid.

¹²¹ Tamanaha *supra* n69 at 535.

¹²² Ibid.

¹²³ Ibid at 195.

¹²⁴ Black “Decentring Regulation” *supra* n22 at 141.

¹²⁵ Ibid at 143.

the emergence of legal concepts are dependent upon conflict over, differing perspectives and acceptance of the ascription of legality, legitimacy and authority to any one concept. Having outlined both the methodology and approach to concept formation being adopted, justified its appropriateness and critiqued other conceptualisations of law, the following sections outline the conception of law being used in this research and the conceptual elements that make up an understanding of “emerging legal concepts”.

5.3 Law as Ideas about Governance and Competing Authority, Legality and Legitimacy

Cotterrell conceptualises law generally as a “*field of experience* shaped and structured by problems of government, social control, and social order”¹²⁶ and that legal professionals are concerned with the specific professional experience of law as legal doctrine, “focused on, developed in, and given its distinctive characteristics by particular kinds of agencies regularly concerned with its creation, interpretation, application or enforcement.”¹²⁷ He views legal doctrine as ideas about law, and explicitly engages with the diversity of authority of law and its relation to society. He specifies that legal pluralism should be seen as framing social relations and social regulation as forming a continuum of practical authority; “that lines between the 'legal' and 'non-legal' depend on perspective; and that the legal character (however assessed) of regulation is often a matter of degree and (not necessarily resolvable) debate.”¹²⁸ Some sources of regulation may seem more 'official' than others, but what counts as official becomes a matter of controversy and varies with viewpoint, as sources of regulatory authority compete.¹²⁹ The idea of competing authority as between different sources of regulation is intrinsic to the discussion and conceptualisation of emerging legal concepts. Cotterrell’s arguments, however, seem to obscure or treat as synonymous legality and authority. I add, as pointed to in the previous subsection, that ascription of legality is not necessarily the same as ascription of authority, which Cotterrell’s arguments appear to elide.

As asserted at the beginning of section 5, I am not concerned with developing a theory and rigorous conceptualisation of law. In taking Tamanaha’s conventionalist approach, I am taking for granted that law is ascribed to well recognised and formal phenomena, where authority is recognised as “legal” authority, namely that which is proclaimed in statute, in case law and secondary legislation, and in ratified and formally recognised international

¹²⁶ Cotterrell, *Laws Community* supra n29 at 3 (emphasis added).

¹²⁷ Ibid at 4.

¹²⁸ Cotterrell “Spectres of Transnationalism” n40 at 4-5.

¹²⁹ Ibid at 5.

conventions and formally recognised institutions such as the European Union (EU). However, I am concerned with understanding how and why certain phenomena are labelled “law” and the dynamics of conflict and competition that I have outlined as inherent to the social dynamics of recognition of certain concepts or “problems” and their potential translation in to law. Conflict over authority, and between the authority of different legal institutions (domestic or international) and the authority of other legal or law-like conventions (such as private self-regulation as in the case of for example the GMC) can be directly linked in some circumstances to the recognition and emergence of new legal concepts and the potential problems and harms to which they pertain. This is expanded on and explained by relation to the distinction as between authority, legitimacy and ascription of legality outlined in the following paragraphs.

The ascription of the label “law” may be dependent upon differing factors including reference to both legitimacy and authority. Authority in my understanding is taken as the claim of, and/or actuality of *right to power* or *expertise* over a certain situation, and for the purposes of my arguments, relates both to a *belief* (a subjective element) that a person or institution has such authority, and the claim made to such authority (which relates to the positive action or assertion of such authority). Related to teasing out this distinction is the differing ways of viewing legitimacy. Legitimacy is a status or recognition of authority as defensible or justified or conformed with. It may be seen as a normative question – when should the actions of differing actors and institutions be seen as legitimate? - justified by reference to normative reasoning drawing upon different moral standpoints, or by reference to values or principles of political or legal discourse.¹³⁰ Such normative arguments of legitimacy may also include procedural justification of legitimacy: legitimacy is justified by reference to procedural conditions that are agreed upon and observed. There is also a difference as between a question of normative legitimacy which will consist of specific normative arguments and justifications, and legitimacy as accepted on a social level which is a more sociological and empirical question.¹³¹ On this latter point Black observes that in a sociological understanding legitimacy is an “objective” fact, but one which is socially constructed such that whether an actor, action, or instrument of governance, is seen to be “legitimate” means that it “is perceived as having a right to govern both by those it seeks to govern and those on behalf of whom it purports to govern”.¹³² In looking at the dynamics of constructing and contesting legitimacy in relation to regulatory environments, Black

¹³⁰ J. Black “Constructing and Contesting Legitimacy and Accountability in Polycentric Regulatory Regimes” (2008) *Regulation & Governance* 2, 137-164 at 144.

¹³¹ Black *ibid.*

¹³² *Ibid.*

acknowledges that perceptions of legitimacy, and acceptance or compliance, can be asserted and conceded in strategic fashions based upon multiple factors including the cognitive environment of different institutions involved, and the values, interests and expectations of those “perceiving or accepting the regime as they do in the regime itself.”¹³³ I assert that authority and legitimacy may be seen as distinct but intertwined in that claims of authority to act may not align with perceived legitimacy of the actions involved, but that elements or conditions of legitimacy such as procedure that may have been met, are pointed to and used as support for authority. Equally, the perceived authority of an action may spring immediately from perceived legitimacy at a social level (or a majority held view) despite the fact that no formal conditions of legitimacy are met, and even where no actual authority to act exists. Furthermore where a majority of opinion believes a certain view and certain actions to be legitimate (or at least acceptable) they may recognise authority to act even if such actions go against the normative legitimacy as reasoned from moral, political, and/or legal fundamental principles. Equally normative arguments of legitimacy, or mechanisms of procedural legitimacy may be deployed – potentially strategically - to present objective legitimacy without it being accepted in a wider social or community sense.

The distinction between these elements, and their complex interaction in both recognising what is law and seen to be legal as potentially distinct from what is seen to be legitimate and authoritative is based on intuitive understanding but has its roots in the conceptual clarity presented in positive legal theory. Specifically it is sourced in the distinction made as between morality and legal validity within the positive legal theory epitomised by Hart, and in the critique by Tamanaha of the mirror thesis – that law reflects wider society – a feature of much legal and political theory.

Tamanaha’s legal theory is aimed at reconciling the kind of positive legal theory epitomised by Hart, with Sociological legal theory in much the same sense as Galligan and Twining. The mirror thesis has permeated legal theory and even legal positivism as part of the explanation of the origin, development and conceptualisation of law.¹³⁴ It is often portrayed as the reason why law is able to establish social order, and crucially is seen as one, or *the* means by which law is legitimated.¹³⁵ It has been linked with evolutionary theories of law and social contract, and posits that law reflects the views, values and morals of society; that the two have developed together and thus is a broad comment on their relationship.¹³⁶ In

¹³³ Ibid.

¹³⁴ Tamanaha supra n69.

¹³⁵ Ibid.

¹³⁶ Ibid.

general terms it begins with origin stories that law developed from a sort of primordial soup of custom, religion etc, thus tying its roots to the values and norms of social life whilst implementing stability.¹³⁷ Such origin myths are not based on robust empirical evidence and cannot be so stated because such origins began before the initiation of writing and are thus pre-historical.¹³⁸

Tamanaha's counter genesis story suggests instead that law as a construct might follow the imposition of power by one person, or group of persons, with the resources and power to enforce their will. Some theorists may not regard such a set up as an example of law, but may see it as "gunman writ large" as protested by Hart.¹³⁹ In defending his position, Tamanaha argues that such criticisms may underestimate the potential of societies to believe that power to rule may entitle one to rule.¹⁴⁰ It also assumes that there is measurably more public approval for the kind of positive law those theorists criticising such material power may themselves have in mind, which may not be the case.¹⁴¹ The label of "public" authority is contestable in terms of the fact that such a label may symbolically lift actors claiming the public good, above the struggles of other private actors in their bid for power or control. The separation between public and private domains is not only contested but is to a certain extent a fiction in itself:

"The evolutionary and social contract tales build upon the public/private distinction assuming that it represents a fundamental, identifiable social divide. The alternative genesis story, in contrast, views the distinction from the standpoint of its rhetorical import. It recognizes the possibility that a self-interested group dons the 'public' mantle for the legitimization benefits that flow therefrom. They simply claim to be 'the law', and thereby benefit from the connotations of public authority that attach to this label."¹⁴²

¹³⁷ Ibid at 59.

¹³⁸ Ibid at 59.

¹³⁹ Ibid at 66.

¹⁴⁰ Ibid at 66.

¹⁴¹ Ibid.

¹⁴² Ibid at 66-67.

This claim has more basis in examples from early medieval European legal systems and actions of monarchy.¹⁴³ It captures the spread of state law around the world as part of colonisation efforts, and the character of many contemporary and historical systems of state law that are authoritarian, totalitarian or military in nature.¹⁴⁴ The seeds for such subversion of the mirror thesis may even lie within legal positivism itself. In legal positivism morality, or legitimacy in terms of morality, is not necessarily linked to legal validity – or authority.

I would argue that this discussion highlights the power of ideas, the power inherent in being able to shape and influence ideas and/or in carving up the structure of society whether through law or political ideology to foster legitimacy as in the case of the public/private divide. This is not to say that ideas and rhetorical flourishes alone can legitimise imposed power or convince communities and individuals that such power is legitimate. It may point to the potential that such ideas and rhetoric, over time and in conjunction with changes in practice and treatment (by a ruling power), and acceptance of such will to rule, may come to influence the perception of legitimacy of that rule. This analysis and the distinction as between claims of authority, and claims of legitimacy, also correspond with the observations and analysis generated in chapter 2 in reference to the distinction between hard and soft impacts of NEST and of the conflict over the recognition of new harms.

The recognition of actions as legitimate, authoritative, or specifically legal can change over time and according to shifts in practices and meanings. As such, groups or institutions that impose law or social control that is seen to be illegitimate as in the case of gang or militia violence may come to legitimise over time or to gain enough recognition or passive acceptance so as to move closer to being perceived as legitimate. Thus, there may be some grey areas in discerning who or what has authority, power or legitimacy, where legitimacy does not necessarily attach in a widespread manner to any social actors or institutions, particularly in countries in transitioning justice and places in conflict situations. I would argue that in identifying law in different countries and jurisdictions, particularly in a global world, that not simply the views of those in obeisance to a particular power are taken in to account. Others with competing claims to authority and those further afield (such as the international community) may contest the legitimacy and authority of certain practices and groups. In such a way crimes of international law can be and are claimed, and different groups chastised and denounced, or supported, depending upon international communities.

¹⁴³ Ibid, examples relate to the use of the public/private divide only when such a divide became a useful rhetorical device, and of private companies such as the Dutch East Indies Company with the power to negotiate treaties and amass armies.

¹⁴⁴ Ibid at 68.

This also shows that perception and power dynamics are critical in understanding the social reality of how and why certain concepts, institutions and actions are recognised and ascribed as “law” and how this can also be simultaneously contested in many different quarters.

The above genesis story points to such conflict in order to gain recognition as law, but Tamanaha’s analysis does not look to observe or account for such conflict per se, but instead posits simply that the concept of law used by researchers as an explanatory concept of law must simply change as based upon observation of practice and meaning. I argue that the understanding of legality, authority and legitimacy as intertwined but distinct considerations can help in explaining the conflict over authority, but that this becomes most pertinent in understanding how a specific idea or substantive concept in law can be seen to be emerging. Thus far the discussion has focused upon the macro-level, of how “law” is ascribed as a whole, but my contention is that at the micro-level, in terms of jurisdictional disputes, and in reference to the recognition of a specific substantive concept or rule as “legal”, the distinct ascription, claims, and perceptions of “legality”, “authority” and “legitimacy” can help clarify and conceptualise the dynamics of “emerging” legal concepts.

I have outlined that law is whatever we ascribe by our actions and interpreted out of their meanings. I have argued that the interaction and conflict over claims, and subjective perceptions, and potentially strategic acceptance, of authority, legitimacy and, as will be explained below, legality are critical to understanding the dynamics of and thus forming an explanatory concept of “emergence” for emerging legal concepts. The rest of the chapter seeks to elaborate on this and form an explanatory concept of “emerging legal concepts”.

5.4 Distinguishing Law from Other Phenomena: Interaction of Legality, Authority and Legitimacy

My concern in looking to understandings of law and in picking out as intertwined, but distinct perspectives, legality, authority and legitimacy, is not necessarily to develop a general conception of law. It is to highlight what I believe to be central to the development and the conflict or competition over differing perspectives of the socio-technical reality and in the competition to have particular conceptualisations of harm, specific values or interests or rights recognised in law. In this subsection I outline how the interaction of perspectives of authority, legitimacy and legality can account for the complexity in social and power dynamics outlined in chapters 2 to 4. Critical to this discussion and illustrative of how they are combined in a conceptual account of “emerging” legal concepts, is their ability to shed

light upon the complex distinctions and relationship between differing regulations, governance mechanisms and institutions, and law in general.

De Burca and Walker, in investigating and analysing the conceptual relationship between law and new governance conceptualise each as part of the genus of normative order but as existing at differing ends of a spectrum differentiated by their adherence to different values: reflexivity and universalizability.¹⁴⁵ Each as a normative order must be both universal in terms of being readily understandable and applicable to like cases, and also reflexive in that universalisable norms must be capable of being reflected upon in new situations of its application lest the order be subject to ossification.¹⁴⁶ Law tends towards imperatives located more at the universalist end with constraints as to the general structure of law and its nature as being of claimed higher authority “that frames and trumps all others within a particular social formation.”¹⁴⁷ These constraints are three-fold: input constraints that limit and delineate who may contest and endorse rules; process constraints determining the process, application, interpretation and amendment of rules; and output constraints to ensure that the legal measures are sufficient to achieve their ends.¹⁴⁸ In very general terms, they argue, such imperatives speak to the meta value of social regularity. New governance however, they argue, displays characteristics geared towards more reflexivity and flexibility, or a meta-value of social responsiveness.¹⁴⁹ In their final analysis it is not that there should be a binary distinction as between non-law and law, or law and new-governance, but that the two are mutually interpenetrating, overlapping and involve fluid and shifting boundaries as between law and new governance.¹⁵⁰ These boundaries could shift, and in their analysis it appears that it is the variability and adherence to these meta-values that might determine how and when such shifts occur.¹⁵¹ Wilkinson also endorses this view of the conceptual relationship between law and new governance building to his own contingency thesis which views law and new governance as a continuum of varying shades of grey, and that they may co-exist, sometimes in harmony, and sometimes in tension or outright conflict.¹⁵²

Whilst not intended as a contribution to an understanding of a concept of law, I argue that law can be considered as part of a normative genus discussed by De Burca and Walker, but

¹⁴⁵ Walker and de Burca *supra* n107.

¹⁴⁶ *Ibid* at 15.

¹⁴⁷ *Ibid*.

¹⁴⁸ *Ibid* at 16.

¹⁴⁹ *Ibid*.

¹⁵⁰ *Ibid* at 17.

¹⁵¹ *Ibid*.

¹⁵² M. Wilkinson “Three Conceptions of Law: Towards a Jurisprudence of Democratic Experimentalism” (2010) *Wisconsin Law Review* 2: 673 at 712.

that governance can be seen as an umbrella concept subsuming law which can be seen as one mechanism or means of governance. This is important because I want to account for contention as to authority and legitimacy between differing institutions and bodies in relatively stable and well established geopolitical areas that are not troubled by conflict, but which have complex governance structures. In the complex social environment where various international conventions, supranational institutions, and a variety of governance and private regulatory bodies co-exist, there is debate over, or conflict between institutions as to their authority to act or intervene on certain issues. Where sovereign states have formed agreements or ceded authority to other international institutions on some areas of policy (the European Union being a chief example) there will still be conflict over when, and in what situations that authority applies. Such conflict is most likely to be settled through political fora and the courts.

Following from the distinctions made above, authority that is claimed or exerted may depend upon many factors including the recognition that legality is not necessarily itself a guarantee of higher authority or monopoly in particular situations. This is true especially where there are arguments for viewing certain relations as purely private matters. As much as labelling a certain concept or phenomena as legal may depend upon conflicts over authority and legitimacy, legality may itself be claimed or used for the purposes of accruing authority and legitimacy. This was touched on earlier in reference to the fact that the mere claim or recognition of authority – or material power – may be accepted as legitimacy to act by some. In the same sense, claiming something as legal may bolster its appearance or likely acceptance as legitimate.

I argue that viewing all three elements – legality, authority and legitimacy - as distinct but intertwined perspectives or claims, that the ascription of “law” itself is not necessarily a guarantee of authority or legitimacy, is better able to account for the complexity of social and power dynamics outlined in chapters 2 to 4. Most particularly, I argued that law may not represent the most pervasive view or perspective of the socio-technical reality, and that even if a particular conception of a “problem” or fundamental principle is entrenched in law this means that it has successfully permeated law, but not necessarily that it denotes a successful or legitimate view of the good or the socio-technical reality. Again, this matches with the debunking of the mirror thesis explored above, but further compounds the need to account for the dynamics that lead to particular perspectives or particular concepts in law to emerge and how they may or may not correlate with other view points in the socio-technical environment. It may be that a concept or view of the socio-technical reality that does

correspond with more widespread opinion is to be found in alternative governance mechanisms.

The analysis and arguments made above are abstracted and deal mainly with perceptions and claims of legality, authority and legitimacy as they might be attributed to whole institutions, regimes of governance, private regulation and differing law. Their interaction at a micro level, however, lies at the heart of my conception of “emerging” legal concepts. Having said this, the conflict over authority as between institutions is critical to part of an understanding of how particular legal concepts might be said to emerge. As stated, law and other governance mechanisms contain and implement ideas, values, principles and rules. As such it is possible that reference to other governance mechanisms, other “legal” institutions, such as international instruments, can be drawn on in reference to claims made, and may influence the perception as to the authority, legitimacy and legality of a *particular substantive concept* of governance or law. Therefore, the following section will ground this analysis in an historical example of an emerging legal concept – privacy – to provide a more concrete illustration and to point to the characteristics that may be looked for in identifying a potentially emerging legal concept, and which themselves may be factors that make their emergence more or less likely.

6. Conceptualising “Emerging” Legal Concepts

As outlined above, even where the identification of law is otherwise well accepted, there is always conflict, negotiation and general flux in relation to the specific issues that might be recognised as authoritatively and legitimately within the remit of legal attention, and between the jurisdiction and power to intervene of other regulatory and governance institutions and mechanisms. From the discussion of social problems literature in chapter 4, section 2, I highlighted insights that show the ongoing conceptualisation and competition between differing conceptualisations of “problems” in society and law as part of this process. I also argued, in conjunction with Swierstra’s techno-moral change thesis, that changes in knowledge and modulation, or mediation of practices, moralities, and values by the introduction of new science and technology can lead to new types of conflict, and new platforms upon which conflicts are performed. The new knowledge derived from such change can render explanatory and descriptive concepts used in the general schema of understanding, as inaccurate themselves, and further can challenge the rationale of fundamental moral, ethical or legal principles, values and the descriptive or evaluative conceptual understandings they are based upon.

New technologies and science themselves may become the object of conceptualisation as a problem – which coincides with the reality of a concentration upon specific technology “targets” of regulation pointed to in chapter 3 section 3.1 – but as pointed to in chapter 2 section 2, it is the erosion of particular values and the changing of perceptions, that underpins much anxiety in relation to NEST. An example of the potential for a debated fundamental principle or value as being eroded by changing practices, social expectations and the value placed by collective populations upon the disputed value, is that of privacy.¹⁵³ As will be outlined in the following section, the development of a right to privacy in America followed on the heels of an article written by Warren and Brandeis, who divined and advocated not just a right to Privacy, but also provided legal protection with a theoretical basis for securing different legal remedies for its intrusion.¹⁵⁴ As such they were arguing for an explicit concept of privacy in law, which was eventually accepted in court.¹⁵⁵ There does not exist a recognised stand-alone legal concept of privacy in the UK as it has not been pronounced in case law or legislation although it is protected as part of the European Convention of Human Rights (ECHR) article 8 right to private and family life. I have said that I am not looking to add to a theory of law, and the earlier analysis was to show that law or “legality” is ascribed according to our practices and meanings, and as has been explained, this normally requires that they are explicitly endorsed in authoritative legal sources. But as also argued and central to the argument and conceptualisation of “emerging” legal concepts, authority may be a matter of perspective much like “legality” and “legitimacy”.

This section looks to elaborate on what is meant by “emerging” legal concepts by drawing on privacy as a past example and a concept that has “emerged” (although not everywhere), and also upon the influence of the value or principle of autonomy within medical jurisprudence to divine factors and dynamics pertinent to the formation of explanatory concepts and factors affecting emergence. It further sets out that insights of coproduction - as endorsed by Jasanoff, developed in STS and introduced in this thesis in chapter 2 – aids the analysis and determination of factors that influence the creation and emergence of particular legal concepts. Importantly this section roots the analysis firmly in the interaction of the three spectra of legality, authority and legitimacy and illustrates how this interacts with the wider socio-technical environment as it is affected by disruptive emerging science and

¹⁵³ See for example; I. Szelkey “Building our Future Glass Homes – An Essay About Influencing the Future Through Regulation” (2013) *Computer Law & Security Review* 29 540-553 which looks at how the development of the value of privacy might progress in to the future and what regulatory measures may be taken to navigate such development.

¹⁵⁴ S. Warren and L. Brandeis “The Right to Privacy” (1890) *Harv. L. Rev* 4, 193.

¹⁵⁵ *Pavesich v New England Life Insurance Co* 50 SE 68 (1905) (Sup. Ct Georgia).

technology. It is the articulation of the intertwining spectra of “legitimacy”, “authority” and “legality”, and the specific conceptualisation of “emerging legal concepts” that is the original contribution of the analysis and which goes beyond the insights of coproduction in its application to legal development.

6.1 Emerging Legal Concepts: An Historical Example

Warren and Brandeis are usually attributed with the “invention” of the legal concept of privacy in America, in their article *The Right to Privacy*,¹⁵⁶ published in 1890. Their article was ostensibly triggered in part by Warren’s frustration with unwanted intruding practices of photojournalism,¹⁵⁷ itself a product of the development of the technology of photography, but it was remarked that the effects were entrenched, and legitimated by the concurrent behaviour of some members of the photographed elite.¹⁵⁸ It is an historical example of what was an emerging legal concept, one recognised in America at the turn of the 19th century by the courts only after its development in public fora and by academic engagement.¹⁵⁹ It is instructive to briefly examine its early life and development in America before its formal recognition in court as a means to discussing both the possible factors of influence and emergence that can be pointed to in reference to emerging technologies, and which form part of the analytical questions posed in relation to identity in the following chapters.

Warren and Brandeis pointed to previous case law and convention that they argued implicitly protected a right to privacy,¹⁶⁰ articulated a rudimentary jurisprudential theory of what such a concept consisted of, and rooted it in the individual’s right to life and in the separation between the public and private sphere.¹⁶¹ They conceived of privacy as a fundamental right, but also as having a practical function in providing legal protection with a theoretical basis for securing different legal remedies for its intrusion.¹⁶² As such, they developed it as dual natured. The relationship between the right to privacy as securing legal protection of an individual’s control over information that is made known about them; and the right to privacy as a descriptive of part of an individual’s individualism is argued to have had a

¹⁵⁶ Warren and Brandeis *supra* n158.

¹⁵⁷ D. Glancy “The Invention of the Right to Privacy” (1979) *Ariz. L. Rev.* 21, 1.

¹⁵⁸ Glancy *ibid* at 11 and see also Warren and Brandeis condemnation of the the intrusions and correlative effect it has on the behaviour and desires of the population in general *supra* n139 at 196.

¹⁵⁹ It was not formally recognised in case law until *Pavesich v New England Life Insurance Co* 50 SE. 68 (1905) (Sup. Ct Georgia).

¹⁶⁰ Warren and Brandeis *supra* n 139.

¹⁶¹ Warren and Brandeis *ibid* and see also Glancy *supra* n161 at 17.

¹⁶² Warren and Brandeis *ibid*.

circular relationship in establishing the concepts legitimacy: “the right to privacy was both means and ends”.¹⁶³ This aspect is important because they perceived privacy as a fundamental principle, but it had not been so recognised by the Courts beforehand. In arguing for the recognition of a right to privacy, they both identified it *as* fundamental – which had not been done before – and justified its recognition because it *was* fundamental.

Characteristic of privacy and its early emergence within American jurisprudence were the purported influence of new technologies: the camera and development of photojournalism and increasingly intrusive practices of journalists in general in their treatment of American elites and public figures. There had also however been growing development of concern within the wider population and the writings and actions of Cooper are perhaps demonstrable of the role of individuals in driving the recognition and action within the law.¹⁶⁴ Cooper not only wrote criticising the actions of the press but also engaged in various legal battles against them in the mid-19th century.¹⁶⁵ Warren and Brandeis’ article should be seen against the backdrop of this ongoing social commentary on the workings of the press, the intellectual history of individualism into which the right to privacy slotted, and the already many attempts to curb the erosion of what was seen as the private sphere. There is even the admission that the actions of the press, the heightened publicity focussed upon certain individuals and the active courting of such publicity by some served to legitimate the intrusions that many sought to curb, thus having a coproducing effect on the intrusion and cause of others dismay.¹⁶⁶

Privacy in American jurisprudence despite its growing debate in social commentary and the perceived protection or tradition of implicit protection through other legal concepts and rules, was not explicitly argued and proclaimed in court until several years after the publication of *The Right to Privacy*.¹⁶⁷ Privacy may have found an intellectual home and support with legal academics and in public debate but it could have no explicit practical force until decided so in the terms of the court. This does not detract from the fact that *as an idea* it already existed and was being developed in practice implicitly through the case law cited by Warren and Brandeis in their article, even without its explicit description.

¹⁶³ See for this analysis Glancy *ibid* at 23-24.

¹⁶⁴ Glancy *ibid* at p11 citing for example, J. Cooper, *The American Democrat* 183 (Penguin ed. 1969) (first published 1838); J. Cooper, *Home as Found* 66, 179, 208-11 (1838).

¹⁶⁵ *Ibid*.

¹⁶⁶ Glancy *ibid*.

¹⁶⁷ *Pavesich* *supra* n144.

6.2 Conceptualising “Emerging” Legal Concepts

Privacy related to a problematisation not simply of technology, but of a specific harm by reference to the characterisation of specific personal interests, the value placed upon them, and their justification by the creation of a theory of the concept as a fundamental principle of public and political life. Such harms or interests may be common to many practices and also to many conflicts. This correlates with arguments made by Bernstein touched on in chapter 4 section 3, such that a concentration upon the interests that are implicated in common between different technologies might provide a more unified legal response and academic treatment of the problems of technology.¹⁶⁸ The example Bernstein uses is that of identity. She articulates the “problem” for technology and society that she is addressing as a conceptualisation of interests and values which, as with privacy, are not limited to the circumstances of a particular technology or practice, but are a category of interests that may be justified, and in this case also theorised as part of a formulated fundamental principle.¹⁶⁹ On this latter point, Warren and Brandeis pointed to the formulation and enforcement of laws and case precedent that, whilst never explicitly mentioning a right to privacy, were taken as implicitly protecting privacy interests.¹⁷⁰ As such these cases were used as “authority” for the legal recognition and protection of privacy. This further matches with another argument made by Bernstein that emerging technologies can bring to the fore previously hidden, or neglected legal interests and values.¹⁷¹ Bernstein argues that identity interests are implicated by new technologies and are brought to the fore as “legal” interests, but unlike Warren and Brandeis she does not cite cases where identity interests are impliedly already protected. She simply notes certain legal controversies that implicate normative concerns for identity, where the legal discussion and cases have failed to articulate and discuss such identity implications, but where, she argues, the existing legal concepts - such as freedom of expression, privacy and autonomy - have failed to capture or adequately protect what she argues is the real harm being done: harm to identity interests.¹⁷²

Common to the argument of both Bernstein, and Warren and Brandeis, is that interests or concepts in law may be “implicit” in that they are not formerly recognised. Instead they are either already protected through other legal mechanisms, or have not been implicated before

¹⁶⁸ See G. Bernstein “Accommodating Technological Innovation: Identity, Genetic Testing and the Internet” (2004) 57 *Vand. L. Rev.* 965.

¹⁶⁹ *Ibid.*

¹⁷⁰ Warren and Brandeis *supra* n148, see also the detailed historical analysis of the context of their work by Glancy *supra* n149.

¹⁷¹ Bernstein *supra*. Please note that in such argument she seems to use the terms “interests” and “values” synonymously.

¹⁷² *Ibid.*

and thus have not required explicit recognition, coming to the fore only because a change in the material and social circumstances have led to a “gap” in legal protection in relation to these interests. This also points to the potential influence of the structure of existing substantive legal concepts upon the framing and recognition of new concepts, or of the movement of “implicit” concepts to the “explicit” legal space. The above discussion implies that a specific class of interests or a specific idea can be conceptualised and problematized as implicated in common by many different technologies, or simply as interests that can be harmed in many ways. It is this that is the “problem” or the harm that can be claimed as requiring protection and recognition in law. Therefore, it is this specific conceptualisation that is being advocated as a stand-alone legal concept. This is in contrast to conceptualising a material problem, such as a technology, as requiring legal and governance intervention. Interests that are commonly harmed, and their justification by recourse to a claimed value or principle, are both more particular in nature as to the development being claimed for in law, whilst being more general in scope and potential application. This is the nature of the emergence or recognition of changing morals or values as conceptualised, debated and potentially recognised in response to technomoral change and its link to “concepts” in law.

That interests or values may be implicitly protected by existing, explicit legal concepts and enforced rights may be common sense to a certain extent. Many concepts may be broad enough or exert specific protections that inadvertently protect interests that are not necessarily expressed or which are expressed only in relation to justifying the explicit concept. For example interests of autonomy and the principle of autonomy may be protected through multiple different concepts including protection of property rights and rules of consent especially as they appear in medical jurisprudence.¹⁷³ However, that other existing concepts are able to protect the claimed implicit interests or values also points to the notion that there may be other ways of conceptualising the interests at stake. As will be demonstrated in chapter 6, the concept of identity is subject to multiple differing conceptualisations, and may subsume more specific concepts including “genetic identity”. This highlights a crucial point for my argument about, and understanding of, emerging legal concepts: each specific conceptualisation is a normative argument or claim and not simply an “objective” pre-existing interest that is “uncovered” in conflicts surrounding new technologies. Even where collective understandings may support the observation or argument that a specific conceptualisation of interests or values is implicitly protected by existing legal concepts, or harmed by new technologies, they are still a normative claim that

¹⁷³ See further discussion on this in chapter 6 subsection 5.2.

is made. Thus they may be both subject to disagreement as to whether they *should* be protected, and as to whether they are the most accurate conceptualisation of the interests at stake.

I argued in chapter 2 that conceptualising and describing new scientific and technological phenomena as part of the socio-technical environment in general is almost always partly a normative exercise due to the ethical controversy surrounding such developments. Whether or not a particular conceptualisation of phenomena or of implicated interests *is* recognised in the socio-technical environment, it may be one of many differing and often competing conceptions of the socio-technical reality. Identifying the predominant conception in society at large, or within specific communities, would require empirical work, but may nevertheless point to an inconclusive winner. In the case of emerging *legal* concepts, there *is* an obvious way in which to identify a “winning” conception by dint of the fact that a successful concept may be eventually formally promulgated.

Casey and Scott look at how norms in transnational private regulatory regimes become effective – crystallise – in circumstances where they do not have an authoritative legal source.¹⁷⁴ Classically, they argue that such crystallisation would be seen to occur at the point of their recognition and observance in the formal processes of legislating and rule making.¹⁷⁵ This is broadly my point that legal concepts only become such through formal pronouncement within an authoritative legal source. In relation to norms within transnational private regulatory regimes however, Casey and Scott look to a different means of discerning crystallisation because this means cannot be relied upon. They argue that even in the circumstances that a norm or rule has been promulgated in an authoritative source of law, it may not actually affect compliance or guide the behaviour of social actors.¹⁷⁶ Crystallization then, for Casey and Scott is not the formal and authoritative recognition of norms as “legal” but the point at which they actually affect behavioural compliance.¹⁷⁷ The dynamics of this crystallisation then is what they aim to elucidate and point to a continua of norms such which are more or less crystallised, eschewing a binary division between those that are and those that are not affecting of behaviour.¹⁷⁸ The factors that they relate as determinative of

¹⁷⁴ D. Casey and C. Scott “The Crystallization of Regulatory Norms” (2011) *Journal of Law and Society* 38:1,76-95.

¹⁷⁵ Ibid.

¹⁷⁶ Ibid at 82.

¹⁷⁷ Ibid.

¹⁷⁸ Ibid.

crystallisation are the extent to which a norm has been distributed the degree of enforcement of the norm and its mode of transmission.¹⁷⁹

In relation to emerging legal concepts, I take the classical view laid out above, as the moment of crystallisation of specific emerging legal concepts. However, I want to temper that understanding by reference to Casey and Scott's conceptualisation of crystallisation and spectra of crystallisation outlined in reference to norms in transnational private regulatory regimes, by looking at the interaction of claims, perceptions, and strategic manoeuvring of legality, authority and legitimacy.

Before privacy was ever recognised officially in court, academics and legal professionals were already discussing it and arguing for its recognition.¹⁸⁰ In fact, it seems that Warren and Brandeis chief argument was that privacy was, however implicitly, already recognised in law. This claim, it should be noted, was not only a claim that privacy was already "legal" and therefore was an argument to ascribe legality, but also that the argument that it was "legal" was being used to strengthen the "legitimacy" of recognising and protecting it. This feeds in to the insight given by Glancy in relation to the circularity of their justification of privacy's legitimacy outlined above. The claimed legality of the concept was being used to shore up support for its legitimacy, and perceived authority, yet at the same time the concept itself was being debated because it was not explicitly recognised in law. This not only points to the complex and strategic uses and averments to legality, authority and legitimacy, used to help shore support for each other, it also implies that academics, the wider public and intellectual discussion play an important role and are a strong factor of emergence for recognition of a concept. This correlates with arguments made in social problems literature that points to public debate as part of the conceptualisation process potentially leading to recognition in law. Further, and touching upon the implications of this research for development of legal foresighting, environmental scanning which is a methodology of strategic foresight - drawn on usually by industry – that also draws insights from social problems theory, points to academics and marginal public debate as signs of the potential direction of future regulation and policy.¹⁸¹ Glancy specifically points to the development of an intellectual home for an

¹⁷⁹ Ibid.

¹⁸⁰ Glancy supra n149 see p39 especially and citations therein including F. Lieber "On Civil Liberty and Self Government" (1853) 2 J Kent 2 Commentaries on American Law 15-16 (12th ed. O.W. Holmes, Jr. ed. 1873) (1st ed. 1826); T. Cooley, A Treatise on Constitutional Limitations 210 (1868). See also Warren and Brandeis supra n148.

¹⁸¹ G. T. T. Molitor "How to Anticipate Public-Policy Changes" (1977) *A A M Advanced Management Journal*, 1-13; I. Miles "The Development of Technology Foresight: A Review" (2010) *Technology Forecasting and Social Change* 77, 1448-1456; T. Lang "An Overview of Four Futures Methodologies (Delphi, Environmental Scanning, Issues Management and Emerging Issue Analysis)";

individualistic concept of privacy in America in academic debates leading up to the publication of Warren and Brandeis article on privacy.¹⁸²

The development of an intellectual discussion and debate surrounding a concept means that a specific idea can be gaining influence, and therefore perceived legitimacy and authority without necessarily being “officially” proclaimed in court or in legislation. Whether or not the concept is seen as also “legal” will depend upon the strength and persuasiveness of the arguments made in relation to it and how many people are actually persuaded. Ultimately however, it has to persuade those in a position to formally pronounce its recognition, judges sitting on a case, or Parliament or the drafters of legislation, for a potentially emerging concept to become “formally” recognised.

Those concepts that might be emerging can be identified as such not because of their explicit and formal recognition and pronouncement in law, but because of growing recognition or movements to claim such concepts as effective or justifiable within differing contexts in debate. Identifying arguments made in relation to a specific concept and problem, their framing and claims to authority, legitimacy and potentially legality can also be checked against the *counter* arguments used against them. What is being examined here is not necessarily the application of norms, although, Jasanoff’s assertion that rights can be conceived of and acted upon without formal recognition means that actions and interactions pertaining to norms can act as further evidence of legitimacy in arguments in favour of recognising a particular concept. What *is* being examined is the idea – the concept – of the norm that is developing as something that should be recognised. What is most important to the eventual recognition of an emerging concept in law is that legal professionals who are most involved in the development of ideas and the law in general, are persuaded that such a concept should be recognised. A concept may then be seen to be gaining in influence and potentially crystallising in the minds of those arguing for its recognition. Even where the concept is being argued against, and - as will be illustrated more clearly in reference to the Parliamentary debates surrounding the Human Fertilisation and Embryology (Mitochondria Donation) Regulations 2015 in chapter 6 - if it is seen to be growing in legitimacy, even those arguing against its recognition may perceive it to have strong *perceived* legitimacy by others and so frame their arguments accordingly. A concept therefore does not have to be formally recognised before it may begin to influence the direction of debate which in turn

and S. Inayatullah “Futures Studies: Theory and Methods” in Fernando Gutierrez Junquera (ed), *There’s A Future: Visions for a Better World* (Madrid, BBVA, 2013), 36-66, at 36.

¹⁸² Glancy supra n149.

may provide a more fertile environment and entrench perceptions of authority and legitimacy that may lead to its eventual formal recognition in law.

Perceptions of the legality of a particular concept may then be subject to effective argumentation and individual perspectives of the legitimacy and authority of such concepts. These spectra were outlined to demonstrate that emerging legal concepts are not officially recognised or proclaimed within law, but which are being used more and more in debate and in other forms of regulation, and which may show some evidence of being conceptualised within cases, in Parliament and in exercises aimed at regulatory design, or within general legal scholarship. “Emergence” refers to the development of arguments in relation to a specific idea or concept such that the increase in its influence can be tracked not simply upon those arguing for its recognition, but on those who may amend their counterarguments or act strategically in tacit recognition of the fact that it is growing in perceived authority and legitimacy.

An emerging legal concept is one that is moving from the implicit legal space to the explicit, but whose eventual recognition is still unknown and largely unpredictable. Their eventual recognition will depend or be influenced by a number of different factors, not all of which may be uncovered in this thesis. These factors however will have an effect on the perception, claims and arguments, of authority, legitimacy and potential legality of a specific concept, idea, or recognised interest or value. Only once a concept has been proclaimed and enshrined in formal law, whether written in to a statute, convention, or as part of case precedent might it be said that it has crystallised as a legal concept, and even after this point it may be shaped and developed in line with ongoing interpretation and application. Until this point, it can be described as a sort of Schrodinger’s¹⁸³ legal concept. It is not formally recognised by the sources of law that are deemed authoritative (within the jurisdictions observed), but it may or may not be in the future.

Factors affecting the emergence of a specific legal concept are analysed by reference to the interpretative idiom of coproduction and the coproducing relationship between law, technology and society in general as advocated by Jasanoff within STS, and explained in chapters 2, 4 and subsection 4.2 of this chapter. Whilst the coproduction idiom helps to articulate the complex causal dynamics and power struggles at play in the formation of new concepts in general, it has not been used to understand the emergence of a specifically “legal”

¹⁸³ Schrodinger’s cat is a thought experiment whereby a cat is said to be put in a sealed box with a poison that may be released at some unknown point. Until the box is opened and it can be revealed whether the cat is dead or not, it can be said to be both alive and dead at the same time.

concept. Coproduction is used here as a means for understanding and explaining the complex causal dynamics of emerging legal concepts and the factors that may influence such emergence. However, it is the articulation of the concept of “emerging legal concept” that is the original contribution and which takes the analysis further and in distinction from Jasanoff’s work. The interaction of the intertwined spectra of “authority”, “legitimacy” and “legality” as part of the conception of an “emerging legal concept” aids the understanding of the further complexity of the power and influence of a specific “concept” or idea as well as the relative power of the individuals and groups advocating such concepts. This is so because it takes in to account how influential a concept might be on different individuals and with differing groups. All three elements may be either/or a belief or perception, and claim of objective justification (of authority, legitimacy and legality). This allows for the potential strategic compromises and acceptance of authority or legitimacy as between differing groups and institutions (that may impose their own concepts and ideas of governance) and as between different ideas themselves. This is in addition to, and potentially in response to others authentic belief of the legitimacy, authority and potential legality of a specific concept and/or institutional authority.

The particular conception of emergence also aids in the understanding of the influence and relationship between behaviours, interactions, beliefs and general discourse and the conceptual content of formally recognised law. As highlighted above, Jasanoff’s conception of “rights” is not necessarily restricted to formally recognised legal (and constitutional) rights so as to aid understanding of the actions, interactions, expectations and beliefs of those engaged in them and the social order to which they pertain. Whilst the perceptions, beliefs and actions that indicate the existence of a “right”, within the definition given by Jasanoff, may be subsumed within the understanding of an “emerging legal concept” that conceptualisation does not aid in understanding and explaining how such perceptions and beliefs may impact and influence the content of the “formal” recognised law. The definition of an “emerging legal concept” as being an idea about law that is gaining in influence and increasing in perceptions of its authority, legitimacy and potential legality, is able to account for and help explain the influence of belief in, and actions consistent with, the existence of a “right” (in the definition given by Jasanoff) upon the content of formally recognised law. This is because it can take into account not simply the beliefs and perceptions of the wider public and the conflicting tenor of different discourses surrounding such an idea, but also of the factors affecting the perception of legitimacy, authority and therefore legality, of such a concept among legal professionals and decision-makers. Therefore, it can take in to account

the potential influence of general discourse and wider public perception within the particular dynamics of legal decision-making.

The next sub-section, will explore and explain these dynamics further by pointing to factors that will impact and shape perceptions and possible arguments that can be made to foster authority, legitimacy and potential legality for a concept, and by briefly highlighting examples of historical examples of emerging legal concepts, namely privacy. It will also link this analysis more concretely back to the insights raised in relation to technomoral change and NEST in chapter 2 and the issues of structure in framing legal development in chapters 3 and 4. This is aimed at setting up the following chapter which focuses the analysis upon identity as a claimed currently emerging legal concept.

6.3 Factors of Emergence and the Impact of NEST

To take stock at this point: an emerging legal concept can be said to be one that is increasingly seen within legal debate, scholarship, in public policy, and used within other governance mechanisms, which is gaining authority and/or legitimacy as a guiding concept or in influencing decision-making. A concept may be seen to be emerging where it is crystalising in influencing debates, whether as a justifying argument or solution to a problem, or potentially as a factor to be argued against or distinguished if its recognition would go against the alternative being argued for.

New technologies giving rise to new practices and new observable material conditions lead to new knowledge about our world that implies the coproduction of new concepts to describe such new material conditions within science and general discourse. Along with the creation of new objects or entities (such as, for example, the in vitro embryo, chimeras, artificial intelligence) and new practices, they may also give rise to newly perceived harms or felt subjective threats to personal or collective interests and values by individuals, groups or communities that identify with them. In perceiving anxiety or harm to interests, attempts to conceptualise and name those harms and interests may ensue. Newly implicated interests or values and judgements by new technologies and practices may be broadly attributed and conceptualised within existing conceptual parameters. How they are conceptualised, as argued previously, is the subject of ongoing coproduction and collective processes of meaning making.

Drawing on the insights from the discussion on techno-moral change, the often political and rhetorical divide between “hard” and “soft” impacts as tied to the continuously contested

division between the public and private sphere, I argued that recognition of new concepts or harms will be dependent upon conflict and complex social and power dynamics. Law is positioned, as reinforced throughout this chapter, as only part of this process. Coproduction and the insights gained from using such an interpretative method is key to understanding how specific concepts as they relate to the changing socio-technical realities may become influential and recognised in law.

In chapter 2 it was argued that technomoral change and the social response to modulated knowledge or practices represented by new technologies could lead to renewed scrutiny of existing moralities and values. Everyday language and concepts used, not simply in law, but in broader social discourse may also be unable to capture the changed socio-technical reality. Social realities and the language and concepts we use to make sense of them are themselves mediated by the social and cultural contexts within which we ourselves are situated. Where material and social conditions change, where new knowledge is gained, the concepts and language used to describe the existing socio-technical reality may be inadequate and unable without undergoing change itself, to capture the new reality. Conceptualisations of social or physical fact, or previously taken for granted assumptions of social or physical fact can be rendered inaccurate where a technology contradicts them. In relation to identity, or to different concepts that are related to and pertain to differing conceptualisations of identity, for example the idea that the DNA of only two people combine to make a new person, is now directly challenged by the development of mitochondria replacement therapy. That genetic makeup remains the same over a lifetime and that it cannot be manually changed, has been directly challenged by advances in genetic therapy (or potential advances). Such examples are material changes that challenge existing concepts, and in doing so they also elevate the choice or development of concepts used to describe such phenomenon, such as identity itself, to that of a normative or value choice as opposed to a more neutral description. This is so because if the existing concepts are still used despite the evidence of material conditions contradicting them, then that status quo position becomes a normative judgment of the morality of the new condition and physical capacities, and around this may then develop arguments and representations of the status quo concept as a value, norm or principled position.

Power dynamics clearly play a role in the recognition and entrenchment of particular concepts and recognition of different harms, interests and values in law. This is explicit in the discussion above in relation to the conflict over authority and legitimacy as part of a theory of law, and it is a key part of arguing for the recognition of particular concepts as

legal. The power dynamics inherent in the rising influence of a particular view of the good, of the socio-technical reality, of morality and questions about social norms and governance in general however, are, as I have endeavoured to articulate, more complex than a straight application of material power. As shown in relation to the discussion of the limits of law in chapter 3, the proliferation of new governance, and the understanding that law does not always reflect society, that it is argued to “lag behind” by some, and that it may experience widescale non-compliance and disillusion, points to the fact that successful recognition in law does not always equate with successful diffusion and agreement in broader social discourse and feeling. Neither, however, does non-compliance or disagreement necessarily mean that law itself is not just or the best case-scenario. There is inherent power in ideas as well as vested in numbers and in material power: the persistence of the public/private divide, even if it is constantly in flux, is testament to the power of some ideas. Widespread perceived legitimacy and authority within society will be key indicators of successful diffusion of such ideas.

Law does not necessarily reflect society and this holds true most particularly to the content of legal concepts in relation to their everyday counterparts. I argue that a way to understand the formation and shaping of law and its relationship with the wider socio-technical environment is by reference to the varying discourses, individuals, parties and institutions who debate and make claims about how the socio-technical environment should be governed, and how those arguments interact. To reiterate, this informs my claim to original contribution because it takes into account that ideas or concepts in law may be birthed and developed in this extra-legal debate, but this extra-legal debate and the actions and arguments of legal academics and legal scholarship itself have not been analysed or extrapolated to explain the dynamics of legal development and its relationship to the social.

It was stated above in relation to the “invention” of privacy by Warren and Brandeis that the concept of privacy was not a new one even then – it was a concept of regular usage in both academic and lay discourse but this was so in a very diffuse fashion – its novelty lay in its prescription for law. The development of discourse about privacy and the intellectual home of privacy in the public fora in America can be seen as part of the favourable environment in which a concept of privacy for law could germinate. Law exists as part of the integrated whole of the social, political and intellectual fabric. An idea or concept that gains influence and traction in wider society, and in academic debate, means that time and energy have already been expended in constructing a concept that is deemed to be authoritative and legitimate as an academic concern, regardless of whether it is believed that it should

influence legal concerns. When it is said that law “lags behind” society, or technology, partly it may be touching on the simple insight that in most cases there is no way the law can do more: it is based upon the already available insights and intellectual rationalisations of our world which implies in most instances that ideas are developed at best in tandem, but mostly as a precursor to legal engagement. An intellectual history of a concept and the garnering of authority and legitimacy both of the concept in relation to the intellectual debates in which it is deployed (and in which it may have been formed) and in the persons deploying it may therefore be one major factor that is indicative of emergence or key to such emergence. The question remains of the ideas developed within broader social, political and intellectual discourse, what other factors are involved in or make more likely their influence over law – or other governance mechanisms – or their recognition in law as a stand-alone legal concept?

Differing understandings and conceptualisations of concepts exist across disciplines, languages and institutions in general, but they represent potentially shared and diffusing ideas between them. Black points to the distinction in collective or intersubjective meanings as between similar concepts across languages and disciplines and outlines how such distinctions give rise to changes in meaning, or loss of nuance in meaning when concepts are translated across discipline divides.¹⁸⁴ The result is that, although a particular concept may have its origins in one discipline, institution or language, its meaning may come to change as it is shared across different forum and this in part may be due to a dissonance in understanding as much as with the strategic agency of those driving such diffusion.¹⁸⁵ In relation to emerging legal concepts, specifically as they relate to decisions and conflicts affecting biomedical and biotechnological regulatory decisions, the rise in bioethical institutions, and of branches of medical jurisprudence in legal scholarship in general, imply the possibility that bioethical concepts may become more influential in legal decision-making. I argue that this is in part seen in the rise of the recognition of, and some might say over emphasis upon autonomy in medico-legal decisions.¹⁸⁶

New technologies can modulate our understandings and challenge the utility of existing descriptive concepts and moralities. Interests, potential harms or at least changes to material and social conditions may be described by reference to existing language and concepts of wider discourse by analogy or by metaphor. Concepts themselves exercising a compounding effect upon intuitive understanding of sensory information, are compounded further in their

¹⁸⁴ J. Black “Regulatory Conversations” (2002) *J.L. & Society* 29, 163 at 176-179.

¹⁸⁵ Ibid.

¹⁸⁶ See C. Foster “Autonomy in the Medico-Legal Courtroom: A Principle Fit for Purpose?” (2013) *Medical Law Review* 22:1, 48-63.

translation to law. Spaak illuminates the process transforming concept (“X”) to law it will be made more exact whilst retaining its intuitive content such that it becomes more honed to a particular purpose within the law.¹⁸⁷ The practical nature of law is such that it requires more concrete and precise meanings and is debated on such terms as they relate to the practical consequences of particular definitions of legal concepts. Law and individual legal concepts may be criticised for over or under inclusion of differing practices and interests, that based upon other considerations of values or theories of justice ought not to be so included. Concept formation may also be criticised, depending upon its composition and practical application, for causing ambiguity within the law or of leading to uncertainty in relation to how specific concepts are interpreted and applied on a case to case basis. This is one of the many concerns highlighted by Moses in relation to the uncertainty caused by changing technologies that might shift social relations and practices,¹⁸⁸ or may themselves represent a departure from that already implicitly framed within the law as overviewed in chapter 3.

Law too may progress and develop through application of existing concepts by metaphor and analogy to new situations,¹⁸⁹ to protect newly recognised or threatened interests. In the general schema of language and concepts used to rationalise sensual information, there are limitations as to the truly novel concepts that can be created to deal with new information or understandings. As such metaphor and analogy are required to render novelty in the social and material world, more understandable by reference to already existing and understood concepts. Part of the outlined understanding of the development of legal concepts that has been discussed in legal literature and in analytical jurisprudence is the stretching of existing explicit legal concepts to cover issues and supply protections and remedies to circumstances and phenomena that do not align with the ontological considerations which underpinned their formation in the first place. The key example here is the application of property principles to excised human tissue and the ongoing debate over the ethical and ontological considerations.¹⁹⁰

As I illustrated with the emergence of privacy as a legal concept, and in relation to both Warren and Brandeis’ article relating to the conceptualisation of privacy, and Bernstein’s

¹⁸⁷ T. Spaak “Explicating the Concept of Legal Competence” in J. C. Hage and D. von der Pfordten (eds) *Concepts in Law, Law and Philosophy Library* 88 (2009; Springer) at 69.

¹⁸⁸ L. B. Moses “Recurring Dilemmas: Law’s Race to Keep up with Technological Change” (2007) *University of Illinois Journal of Law, Technology and Policy* 7, 239-286.

¹⁸⁹ See J. E. Murray “Understanding Law as Metaphor” (1984) *Journal of Legal Education*, 34: 4, . 714-730.

¹⁹⁰ See in general R. Hardcastle, *Law and the Human Body* (2009; Hart Publishing); N. Whitty “Rights of Personality, Property Rights and the Human Body in Scots Law” (2005) *Edinburgh Law Rev* 9:2, 194.

arguments in relation to Identity, one way of viewing the effect of new technologies and their interaction with the law is that they can bring to the fore previously hidden or implicit concepts, interests and values in legal discourse. In such scenarios analysing and making explicit these implicit concepts may offer shrewd insights and understandings of the constraints and shaping of explicit concepts of law, of their possible further shaping or stretching to other interests and scenarios, and of uncovering the values and interests that may be fuelling such shaping. It might also point to interests that fall within overlapping concepts or ideas within general social understanding and which in the legal setting can point both to interests that have otherwise been protected and recognised implicitly within existing legal concepts, that are now nevertheless threatened by the impact of new technologies and practices and the lack of more explicit consideration. This also has the effect of shoring support for the authority and legitimacy for the recognition of such a new interest, concept or value by arguing that it has been implicitly recognised in law anyway – inferring in fact that it is to some extent already “legal” – and also that because of such recognition its normative validity and justification has also already been accepted.

Concepts that are used or entrenched as ideas about and for governance and regulation, as potential emerging legal concepts, may be conceived of in differing discourses, in different contexts and diffuse to others. They may also develop simultaneously but otherwise unrelatedly. As such, it is difficult to impossible to uncover the causal pathways or origins of a concept which may be complex and non-linear. What can be attempted is a greater understanding. The coproduction idiom as used in STS, which places symmetrical emphasis upon both agency and structure in its analysis, provides a means of interpreting and understanding the diffuse and complex casual relations involved.

The idiom of coproduction is meant to help understand the interaction between the cognitive (i.e. the concepts that have been used to describe the socio-technical reality), the normative (which might include values and priorities and judgements made in relation to that socio-technical reality and including law and regulation), the social (meaning social patterns of behaviour and interactions), and the material (which relates to the physical objects encompassing technology, which is the main focus of STS in general). The discussion above in relation to legal concepts, of what is meant and understood of the nature of law, and even of language and linguistics as understood within discourse theory, implies that concepts within law have a more concrete effect than language in general may be understood to have. Concepts in law may have been made more precise, and will have a firmer structure and hierarchical nature than is necessarily seen within language in general. Legal concepts can be

deployed strategically and therefore also complied with strategically, and potentially hijacked for intentions and aims other than those that underpinned the rationale of the concept or norms original development. The same may also be said of the arguments used in favour of the recognition of (or against) certain concepts of governance, or social problems. In this sense law and regulation are themselves hybrids as social artefacts demonstrating characteristics of the social, cognitive, material and normative in their very nature and of their own composition.

Within the confines of the legal or regulatory array, the concepts themselves may act much like material objects in terms of their structuring effect upon the recognition and development of other concepts or the interpretation and stretching of existing ones. This effect is tempered by the agency and normative intention of individuals or collective aims of those involved in the regulatory array, of the modulating social response and general understanding of those who must apply the law. It will also, perhaps obviously, be influenced by the problems, issues and conflicts in which the concepts are deployed and applied. The development of any one particular legal concept can itself be looked at as a micro study of coproduction where the existing legal concepts may take on the nature of material elements coproduced by the social interactions of those involved in law making, the normative aims of differing parties to the process, and the arguments and understandings of the existing law as forming the backdrop and conditioning factors of the new material concept. This is only one part of a greater whole in terms of analysing the emergence and developments of legal concepts since the wider social context, developments within technologies and wider social debate is the macro context where coproduction of the socio-technical reality takes place.

Studies in coproduction in relation to technologies and their interaction in society have focused normally on case studies progressing work and insights around the development of the pathways of coproduction including the development of institutions, identities, discourses and representations of technology. My discussion above would suggest that the development of a particular concept is akin to the development of representations or discourses, but that in context of the law the development of discourses and representations could be in reference to a new or emerging legal concept, as opposed to a particular technology. This is not to say that the development of discourses and representations pertaining to technologies and the issues they pose is not part of the development of law. Indeed, it is critical to the arguments and insights of this research that new conceptualisations of knowledge or description of technologies, normative judgements made in relation to the

socio-technical reality and the modulation of society by technology in general is an ongoing process of which law is a part. What is argued is that because of the nature of legal concepts as forming both the subject and theoretical framework of law as a domain, that the dual nature of such concepts mean that they themselves may act as objective or material-like elements in their own development, and that this inseparable but distinct dynamic within the law has a varying degree of influence over the translation of concepts developed within broader social debate and their acceptance and development as part of law. It also accounts for part of the reason behind differences in nuance and meaning as between similar concepts and their application within law and within other discourses, disciplines and contexts.

My contention is that in order to draw more concrete conclusions about the potential for the emergence of specific concepts within law, that the existing framework and substantive concepts be taken as in part structural, normative and cognitive in the sense that they form knowledge about, as well as themselves constituting the content of law, and as in part akin to material objects in modulating of the acceptance of specific arguments made in favour of recognising a new concept in law (whether a value, principle or more concrete traditionally recognised legal concept). Arguments made in relation to any new concept of law may themselves be coproduced by the modulation of existing understandings and concepts used to describe the socio-technical reality by the emergence of new technologies and practices.

This also highlights a distinction as between the dynamics at play when arguing for, or attempting to push through, the recognition of a new concept in the context of a court case, and the formation and argument of an emerging concept in the context of Parliament and legislation. A concept may emerge simultaneously in both case law and in debates surrounding legislation especially since, as I have argued, the wider social context influences their coproduction. However, in Parliamentary debates and the drafting of legislation many terms can be created *de novo*, whereas cases brought before the court may only be decided within the confines of the existing law, interpreting out or extending current legal concepts. Furthermore, within the context of Parliamentary debate, Members of Parliament that influence and vote to pass legislation will not necessarily, or even typically, have much knowledge of existing law or expertise on the topic in question. Thus the arguments used and the perception of legitimacy, authority and legality of particular arguments and concepts may be subject to misunderstanding, tactical deployment and more political manoeuvring. For this reason discussion of the emergence of identity in chapter 6 investigates case law, whilst chapter 7 focuses on the passing of the Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015 and the specific dynamics of the Parliamentary context.

Another factor to add back in to this discussion is the plurality of governance mechanisms and the interaction of international law and national law. As explained previously, there is the potential for conflict over jurisdiction and authority to regulate on particular matters as between different institutions even where there has been broad agreement as to the sharing of powers. There may be set hierarchies of authority between different institutions – obvious examples include the relationship between the European Convention and Court of Human Rights and members of the Council of Europe, and the EU Institutions and its Member States – such that concepts conceived of in overarching institutions will be enforced and become part of the law of member states. In addition however, and as will come to the fore in the final chapter and example of the Human Fertilisation and Embryology (Mitochondria Replacement Therapy) Regulations 2015, International Instruments, and other governance mechanisms which do not apply to specific jurisdictions or issues, may be drawn upon as part of contesting the legitimacy of certain arguments and concepts. Integral to the analysis of emerging legal concepts is always the growing perceptions and arguments as to the legality, authority and legitimacy of specific concepts. In relation to any concept then, many different appeals to evidence and opinion may be made to bolster the claims of all three elements in competing to have a specific concept – or against a specific concept – being recognised or applied in a particular scenario. Other examples may include reference to public opinion or the outcome of consultations – a specific reference to the participatory mechanisms discussed in chapter 3 – which may be used to bolster claims to legitimacy, or otherwise, but which may also be distinguished by reference to other normative arguments.

7. Concluding Remarks

At the end of this discussion we now have a definition of an emerging legal concept as an idea about law that is gaining in influence in increasing the perceptions of its authority and legitimacy and/or in increasing the perception and need to accommodate for others believing in its authority and legitimacy. The ascription of “legality” will be dependent upon these perceptions but will also be dependent upon strategic behaviours, such that claims that a particular concept is already “legal” as in reference to being implicitly recognised in law already, may also be used in a cyclical sense to justify its recognition and persuade others. Following the discussion immediately above factors of emergence can be identified as:

- Favourable intellectual and social support – for example, the history of privacy;
- Advocates for and of a new concept in broader social debate and in legal academia;

- Structure of existing regulatory array – counter arguments and narrative both for and against recognition of concept;
- Evidence of implicit use in law – objective structural factors such as existing legal concepts as used to cover and subsuming interests that may be correspond with an alternative concept
- Increase in conflicts and modulation of concepts/morals.

These factors and the insights developed throughout this chapter are drawn upon in highlighting and describing how a concept of identity can be seen to be potentially emerging in law and how it is impacted by emerging biotechnologies.

Chapter 6

Notions of Identity in the Law

1. Introduction

Fundamental categories such as “human”, “person”, “thing”, the therapy/enhancement distinction that we might suppose to be rudimentary to knowledge and perceptions of reality may be described as part of our “symbolic order” and to which, as Brazier has asserted, NEST increasingly pose a disruption.¹ With the discoveries of genetics, development of genetic therapies and technologies, together with the development of assisted reproduction, and going in to the future the implications of discoveries in neuroscience and concurrent technology, ideas about identity, whether that be what constitutes human identity, or how we perceive ourselves and what we be allowed to pursue in the name of our identity, are challenged. The values or moralities implicated by new technologies, changing practices and the potential descriptive conceptualisations of the socio-technical reality may be opened up to scrutiny and identified as potential harms caused by new technologies. Identity is a concept in flux in social life that embodies differing values and meanings for different people but that also underpins understandings upon which legal and moral frameworks may be based. Identity may also be used to conceptualise and argue over the differing challenges of emerging technologies.

Much like the concept of law disputed in chapter 4, identity as a polysemic concept is subject to multiple differing conceptualisations and as such it is not clear which conception is being challenged by the emergence of new technologies and scientific understandings. Conceptions of identity then may be multiple and disagreed upon, but they may also vary in their understanding and application by context of debate or discussion. As argued in the previous chapter, the existing regulatory or governance array may itself frame and contribute to the coproduction, not simply of legal arguments and concepts, but of wider debate and discussion which in turn will affect the legal debate and potentially the development of law itself. As such there is complexity in approaching the factors and indicators of emergence that were outlined at the end of chapter 5.

¹ M. Brazier “Human(s) (as) Medicine()” in S. MacLean (ed) *First Do No Harm: Law, Ethics and Healthcare* (2006) Ashgate.

This chapter looks to investigate identity as a potentially emerging concept in law as a means of demonstrating the dynamics of emergence, and the impact of new science and technology. It will show how identity fits with the conception of “emerging” legal concept outlined in chapter 5 and will also begin to introduce what that concept looks like and how it may be developing specifically within the context of biomedicine. The final sections of the present chapter looks to legal cases in the UK that I argue demonstrate conflicts where the interests or felt harm at stake can be characterised as relating to identity even where identity is not itself mentioned. In the context of these cases, together with the intellectual and legal context of conceptions of identity, and a broader social interest in identity, I argue that it can be seen as growing in perceived legitimacy as framing interests implicated in the new socio-technical environment. In line with this I argue that there is the potential for its emergence as a legal concept especially in Scotland where there are fewer legal barriers to its recognition. The rise in influence, or perceptions and diffusion of a particular conceptualisation, stand-alone concept or principle of governance can be illustrated through the use of the interpretative methodology with recourse to the idiom of coproduction. However, it is the interaction of claims of and perceptions of authority, legitimacy and legality that point to the conceptual analysis of the dynamics of emergence.

As highlighted in chapter 5 the dynamics and factors that influence emergence are distinct in case law than in the creation of legislation. As such chapter 7 is distinct in its analysis of the passage of the 2015 Regulations although drawing from the insights made in the present chapter. The interaction of authority, legitimacy and legality will come more to the fore in relation to the analysis of the passing of the 2015 Regulations. With this in mind the following section begins with some further explanation of the factors of emergence identified at the end of chapter 5, including the role of structure and existing conceptual content of the law upon the potential for emergence of a new concept. Partly this explanation sheds light on the distinction between the dynamics at play in case law, and that in play in the passage of legislation.

2. Identifying Identity as a Potentially Emerging Legal Concept

At the end of chapter 5 I outlined five factors that may indicate the potential emergence of a concept and that may also affect the likelihood of its successful recognition or crystallisation. The factors of consideration are inherently intertwined and, as emphasised throughout, do not give rise to linear causal relationships. The analysis will attempt to negotiate, and to

explain, the causal knot which such factors contribute to. Before moving to analyse them in the context of identity however, some clarifications are still required.

The first point highlighted as a factor indicating emergence of a particular concept, and which also contributes to an environment in which such a concept will gain in influence, is the existence of a favourable intellectual and social history of such a concept. This was indicated in the brief look at privacy as an historically emerging concept in American jurisprudence in chapter 5 subsection 6.1. It follows also that, in ongoing intellectual debate and conflict over conceptualisations of different issues relating to new technology, there will be advocates and detractors from a particular conceptualisation. These two factors help to clarify the complex interactions developed by the remaining three points highlighted at the end of chapter 5: the structure and content of the existing regulatory array together with the structure and patterns of arguments and counter-arguments pertaining to a particular technology or concept; evidence of implicit protection in law; and increase in conflicts and modulation of concepts/morals.

This section takes up the problem identified in chapter 5 subsection 6.2, that any conceptualisation of interests or values that may be “uncovered” in law due to the development of new conflicts pursuant of new technologies can be seen as themselves normative arguments about what the law should be. With this in mind identifying a potentially emerging legal concept could itself be seen as a normative claim that the concept is emerging or that it should emerge. I argue that it is the context of the existing broader intellectual discourse and social debate that can point to or make more likely that certain conceptualisations over others are growing in influence, and hence are more likely emerging. I am not arguing that there are no other conceptualisations that may also be emerging or could be used to apply to the same conflicts or interests as identity, but that there is enough intellectual and social support for such a concept that it can be identified as potentially emerging with the caveat that other variations of such a concept might also be explored. This section sets out in more detail the role of structure and the existing conceptual content of law and regulation in the emergence of new legal concepts and the way in which the macro context of social and intellectual debate support the identification of and potential emergence of specific concepts.

2.1 Explaining the Interaction of Structure, Discourse and Social Perceptions in Emerging Legal Concepts

New technologies giving rise to new practices and new observable material conditions lead to new knowledge about our world and may also give rise to newly perceived harms or felt subjective threats to personal or collective interests and values and thus also to increased conflict. These conflicts will be framed by the existing regulatory array and the differing arguments may form patterns of argumentation, drawing upon the existing conceptual parameters to articulate the nature of the harm or anxiety felt and to justify why and how it should be addressed. The idea of structure in regulation and law as well as the patterns of the arguments and counterarguments surrounding an issue or technology extends to language in general. It is rare that completely new words or concepts are created to describe sensual information and the linguistic structures of different languages entrench that limitation. More often than not newly perceived harms will be conceptualised using the existing amalgam of concepts which may themselves be developed or stretched through the deployment of metaphor or analogy. Different concepts may be related to each other in terms of being used to describe the same or similar phenomena, or of pertaining to a higher concept at a greater degree of abstraction. Clusters of concepts or metaphorical assemblies of concepts may refer to more abstract overarching concepts in the same way that “thing”, “possession”, “owner”, “theft” may refer to “property”, or “notes”, “tune”, “sound” may refer in some way to “music” within conceptual understandings. Larsson, in following the methodology and theoretical insights of metaphor theory relates a means of identifying implicit concepts, those that are not explicitly written into the law but which may be overarching or which pertain to or are associated with concepts or “metaphor clusters” which are explicit.²

The idea of structure also plays in to the consideration of and arguments made that concepts and interests can be implicitly protected within law. Abstract concepts can overlap, and it may be that more concrete concepts that are explicit within the law protecting well established and justified interests and claims will also protect interests which may be attributed to other concepts within the wider social understanding. As detailed in chapter 5, Warren and Brandeis argued that privacy had been protected by various past legal concepts and some current (at the time of their writing at the turn of the 19th century) legal concepts such that they could trace the protection, and hence recognition, of a concept of privacy by implication within the law and thus justify their position of arguing for such a concept in an

² See S. Larsson, *Metaphors and Norms - Understanding Copyright Law in a Digital Society*, (2011) Lund University (PhD Dissertation).

explicit sense.³ This was at the root of my argument that emerging legal concepts may also be moving from the implicit legal space to the explicit legal space. In relation to identity, Bernstein also argued that whilst existing legal concepts, such as privacy, protected identity interests there are circumstances where they are inadequate and that the recognition of identity interests and potentially of an explicit stand-alone concept of identity within the law would be better placed to protect them.⁴ She argued that there are some interests and scenarios that can only be accurately described as identity interests and failure to articulate them renders opaque the forces and prioritisation of values within debate and legal decisions, and reinforces the fragmentation of discourse because the similarities and overlap between doctrinal concepts may be obfuscated.⁵ Further, direct naming and incorporation of identity tensions and interests within legal discourse is needed in order to evaluate whether privacy as a philosophical concept encompasses identity protection.⁶

Following this logic, in the legal setting where existing doctrinal concepts do not span all claimed interests, values and social understandings, interests that have otherwise been protected and recognised implicitly because they are subsumed by overlapping concepts may be nevertheless threatened by the impact of new technologies and the lack of more explicit consideration. As argued in chapter 5, this argument can also be used to support the authority and legitimacy of such a new interest, concept or value by arguing that not only has it been implicitly recognised in law anyway – inferring in fact that it is to some extent already “legal” – but also that because of such recognition its normative validity and justification has also already been accepted.

This argument to a certain extent presupposes collective understanding within society of the existence and meaning of the concepts deemed to be implicit such that they can be seen almost as objective social facts or material considerations that can be uncovered. Larsson to a certain extent does treat them as such by pointing to the intersubjectivity of concepts to be treated as social facts in the sense endorsed by Durkheim.⁷ As acknowledged in chapter 5 subsection however, the relationship between subjective and intersubjectivity of concepts in linguistic theories is a contentious one. Indeed the lack of consensus on such issues is the very subject of my research concern. Whilst common ground and common concepts, particularly those that seem fundamental to our understanding of the world, can be

³ See Chapter 5 subsection 6.1

⁴ G. Bernstein “The Socio-legal Acceptance of New Technologies: A Close Look at Artificial Insemination” (2002) *Wash. L. Rev.* 77, 1035 at 1034-1036.

⁵ *Ibid.*

⁶ *Ibid* at 1038.

⁷ Larsson *supra* n 3 at 34.

highlighted and intuited, the exact definitions, scope, applicability and understanding of a concept will be subject to disparities. Therefore, ascribing interests or phenomena to concepts that previously were not explicitly recognised is to a certain extent a normative claim.

This creates a methodological issue for my own work. If there is disagreement as to understanding, definition and scope of a particular concept, and where many different concepts may overlap, it is possible that many different conceptualisations of the interests or harms implicitly protected can exist and as such identification of any one might be seen to be a normative argument in favour of that particular conceptualisation. This can be remedied by reference back to the first two elements pointed to as factors for consideration in the analysis of potentially emerging legal concepts: that there is a history of intellectual and public debate pertaining to a particular concept and proponents of its recognition. More fundamentally however, the argument at hand is not that identity is the only way in which these issues can be understood, it may be one of several ways in which issues are understood, the point is that it is one example of a *potentially* emerging concept. Identity may never crystallise, that is not the point, but evidence of its rising perception of legitimacy as evidenced by intellectual history hint that it has a potential to emerge.

Using the interpretative methodology, the general shared understanding of a concept - for example identity - can be pointed to and identified if it is borne in mind that implicit concepts must always be subject to the caveat that they may be one of several potentially implicit concepts, depending on the context, that might emerge or be interpreted out of the regulatory array. Thus I argue that whilst general concepts and implicit understandings will be present in and may frame or be framed within the law, they are not merely objective concerns waiting to be uncovered. They are themselves partly shaped by and shaping of the existing conceptual array, and shaped by and shaping of the intellectual and public debate that may grow up around them or identify them, individual and collective perceptions, biases and judgements made in relation to them and the scenarios they are deployed to describe. The non-linear nature of causal relationships as accounted for by coproduction must be emphasised, along with the complex nature of the analysis looking to shed light on potentially emerging legal concepts as indicated by the factors of existing legal and regulatory structure, increasing conflict and the potential “evidence” of implicit use of concepts within the existing regulatory array.

The rest of this chapter draws on the five factors outlined at the end of chapter 5 and in the opening paragraph of this section whilst keeping the intertwined nature and complexity of

the causal plane in the forefront of the analysis. Primarily the analysis focusses upon the growing ideas around identity and the conflicts, partly fuelled by new technologies most particularly reproductive therapies and genetic innovations, to point to the underlying perceived harms driving the conflict. Whilst I also point to the interaction of perceptions and claims of legitimacy, authority and legality, these will be more greatly emphasised in chapter 7 which deals with the influence of genetic identity in the debates surrounding the 2015 Regulations. The final analysis of this chapter addresses 5 cases of broadly 3 different disputes which are nevertheless linked in nature, which point to the potential of identity underpinning their motivations. Before turning to this analysis however I outline a preliminary rationale of why identity should be subject to consideration as a potentially emerging legal concept.

3. Identity: An Overview

Identity is subject to an ever increasing array of literature studied in philosophy and applied in bioethics, political theory, social theory, sociology, psychology and anthropology to name a few. Even within these literatures there is no agreement on any one concept of identity. To a lay person and on a general understanding of identity we may say that it is something we are as individuals, as members of a family, community or global species. It may refer to various political affiliations, be constructed through hobbies and social roles such as mother, father, sibling, friend, cousin and through professional work roles, and through physical and emotional personality traits, through our sense of humour or the things we like to do in our spare time. It may be the sum total of all these things, our desires and plans for the future, the story of what we did and thought in the past and what we hope to achieve, where we want to live and what we want to do with our lives in the future. What comes to light when talking about identity is that we are bound by the limits of language in that no sooner than we speak of *who* we are than we speak about *what* we are, the characteristics and elements we believe this constitutes. Different conceptualisations of identity may come to permeate different contexts and arguments in relation to new technologies and the law in general.

An overview of the differing approaches to conceptualising identity can help to elucidate where identity is already drawn upon in law, which conception may be argued to be implicitly drawn upon or protected within law, and which conceptions are challenged by new technologies and/or which could be used to describe the potential harms felt as a result of new conflicts precipitated by the new technologies. Whilst this overview cannot provide an extensive or exhaustive account of the ways in which identity is theorised it seeks to focus

on specific points of reference that have the most bearing upon decision-making in the legal, political and policy context, and as they may underpin behaviour. These elements include personhood and moral status, and their relationship to bioethical questions; the ascription of status in general to particular characteristics and the socially negotiated process of narrative identity – self-perception - and formation of collective or group identities; related concepts of autonomy and authenticity that have their own theoretical baggage.

3.1 Numerical Identity, Personhood and Essence

Diachronic numerical personal identity, developed in philosophy, is concerned to identify that a person or entity is the same person or entity as that at differing stages over time: it is “the relationship an entity has with itself over time in being one and the same entity.”⁸ The concerns here are in describing the types of criteria that matter for the purposes of establishing identity and distinguishing from other persons and from other similar entities (such as animals). This discussion pertains to establishing personhood and is inherently intertwined with notions of essence and moral status. There is debate however as to what the essence of being human, or being a person actually is. DeGrazia gives a thorough overview of the differing personal identity arguments of the conceptions of what essence is.⁹ There are two broad approaches: ascribing psychological criteria as defining the essence of who we are and our capacities to exist over time, or biological criteria which point to us as being essentially human animals.¹⁰ Such analysis goes to the heart of identifying whether an entity is the same entity from conception through to birth, through to death and has connotations for the identity of ‘persons’ in permanent vegetative or minimally conscious states, or have undergone a loss of awareness through for example neurodegeneration. DeGrazia has argued that biological and psychological criteria can be used together to establish when an entity can be termed to be “human” and part of the human species and when an entity may be a “person” with the complex psychological faculties which this identity implies.¹¹ This intellectual work has distinguished that an entity can be part of the human species, displaying

⁸ D. De Grazia “Enhancement Technologies and Human Identity” (2005) *Journal of Medicine and Philosophy*, 30, 261–283, at 264.

⁹ D. DeGrazia, *Human Identity and Bioethics* (2005; CUP) Chapter 1.

¹⁰ DeGrazia *ibid.*

¹¹ *Ibid.*

characteristics of being human but may be a person for only a phase of its life.¹² Disagreement abounds as to the limits of personhood and when it can be ascribed.

The question of what characteristics are essential and exemplary to being identified as one thing as opposed to something else is infinitely difficult to discern. This becomes critically important when considering such concepts of genetic identity that underpin the Oviedo Convention.¹³ It is far from clear - if genetic composition or similar is treated as an essential component of human identity - at what point any deviation or mutation might go beyond what can be considered human, or in combination with what physical characteristics or cognitive changes might be seen to render an entity dissimilar to homo sapiens. This can have a profound impact on what is considered acceptable intervention in the human genome in line with new genetic technologies. Arendt argues that it is unlikely and impossible that we should ever have knowledge of our own essence as to do so would involve being something, such as a deity higher than ourselves, capable of describing *what* we are.¹⁴ As noted above, no sooner do we speak of identity to ask who someone is, than our language for dealing with the “who” with essence, with identity, than we start describing “what” someone is.¹⁵

In addition to essence, what is debated is *why* differing identities should be imbued with moral value or status.¹⁶ Shoemaker argues that what matters in bioethical debates is not necessarily the identity of an entity per se but the moral status that is attached to such identities and particular characteristics. The concept of human essence and moral status is closely tied to the idea of dignity both in bioethics and natural or human rights. The problem with dignity is that it is subject to different formulations of which Brownsword is aware and

¹² For this distinction see D. Shoemaker “The Insignificance of Personal Identity for Bioethics” (2010) *Bioethics* 24: 9, 481-489.

¹³ Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine Oviedo, 4.IV.1997 (Oviedo Convention).

¹⁴ H. Arendt, *The Human Condition* (1958; Chicago; London : University of Chicago Press), at10.

¹⁵ See also B. Ajana “Recombinant Identities: Biometrics and Narrative Bioethics” (2010) *Bioethical Inquiry*, 7, 237-258 at 239.

¹⁶ Shoemaker supra n 13 see also; Special Issue: Personal Identity and Bioethics of Theoretical Medicine and Bioethics Volume 31, Issue 4, August 2010. Relatedly see the non-identity problem (where a future person is argued to be harmed by being born at a certain time as opposed to another, the problem being that that future person is not the same person as would be born at that other time) discussed in T. Hope and J. MacMillan “Physicians’ Duties and the Non-Identity Problem” (2012) *The American Journal of Bioethics* 12:8, 21-29; J. P. MacBrayer “Rights, Indirect Harms and the Non-Identity Problem” (2008) *Bioethics* 22: 6, 299–306; N. S. Jecker “The Right Not to Be Born: Reinterpreting the Non-Identity Problem” (2012) *The American Journal of Bioethics* 12:8, 34-3.5.

makes a critical exposition.¹⁷ It can encompass a conception tied intricately to autonomy so that any denial of autonomy infringes dignity; this is dignity as empowerment.¹⁸ It may also be tied to a more protectionist concept linked to human essence, so that even seemingly autonomous actions may be denied if they are viewed to compromise dignity or essence; this is dignity as constraint.¹⁹

Taking a stance on what is or is not included within particular identities, and adopting an essentialist concept of identity invokes a patently normative and moral choice in conceptualisation. History is testament to the great harm done where identity and personhood is denied. Slavery, the suppression of women, the many atrocities of Nazi Germany, which cannot be avoided when discussing the mass denial of personhood and identity to swathes of a population, are all examples of such harm. It is not simply that a concept of identity was wrong or that general understanding of identity was poor. The actions of those in power had a political and normative agenda regardless of any objective “truth” about identity. As argued in relation to the concept of law in chapter 5 subsection 5.3, the relative power of distinct groups and their ability to impose conditions and law – regardless of its moral legitimacy – give rise to the practical and social reality of lived conditions and of the outward or objective perspective of the concepts and values lived by. Concepts and understandings are themselves coproduced within the social, material and cognitive framings of the lived experience of society, and as argued throughout this thesis, it is not that the dominant or the formal means by which they are justified and conceptualised (usually by those with a stake in ensuring the status quo continues) reveal an empirical or essential consensus or truth, but that they may have been successful in the framing of, or themselves entrenched by, the formal and substantive manifestations of social power. This touches more upon legal and political status that matters in terms of formal recognition and protection. Social status or value can also attach to certain identities with consequences for how individuals and groups may be perceived and treated.

¹⁷ See R. Brownsword “Human Dignity, Ethical Pluralism, and the Regulation of Modern Biotechnologies” in T. Murphy (ed) *New Technologies and Human Rights* (2009).

¹⁸ Ibid at 26.

¹⁹ Ibid.

3.2 Narrative Identity, Identity in Politics and Social Theory, and Identity as Socially Negotiated

Narrative identity is how an individual perceives themselves and is the cumulative history of an individual, their collective lifetime response to their condition, the collection of values, beliefs, desires, personal characteristics and social roles.²⁰ Appiah regards identities as constructed in relation to others and embodying the reaction of others, he also links them to a narrative story; a life plan of which social identities form a resource to be drawn upon.²¹ Christman argues that narrative identity is the result of self-interpretation within the context and through the mediation of social norms.²² The value placed by third persons' upon specific character traits and those who exemplify them, may affect their treatment of those displaying those characteristics. In turn the treatment of others will have an impact upon an individuals' sense of self and so may have an influence upon their future behaviour, the choices they make, what they come to value about themselves and others. This corresponds with understanding of objective and subjective identity, or *idem* and *ipse*, with *idem* referring to the perception of outsiders, or "others", of what we are (or what any entity is) and *ipse* referring to what we experience as our sense of self.²³

A third element theorised and debated more fully in reference to the intellectual endeavour of identity politics, political theory and multiculturalism is collective identities. Classifications or group identities including membership of differing races or ethnicities can have a direct impact on the way that individuals and groups are treated and hence affect their self-perception and relations with others. This is most clearly demonstrated in relation to the historical abuses of power towards certain swathes of the population in the history of slavery, racial discrimination, the treatment of those identifying as different from heteronormative sexuality and cis gendered persons. Multicultural theorists and activists in identity politics (which is a broad church) have debated and struggled with a concept of social identities and recognition that will ground distinct identity related interests requiring to be protected.

Within political theory, and in particular in relation to identity politics and multiculturalism, there are multiple ways in which identity is conceptualised, and different understandings of

²⁰ See De Grazia's thorough explanation of such a concept in *Human Identity and Bioethics* supra n10.

²¹ K. A. Appiah "The State and Shaping of Identity" (2001) *The Tanner Lectures on Human Values*, Delivered at Claire Hall, Cambridge April 30 and May 1, 2001 at 249.

²² J. Christman, *Politics of Persons: Individual Autonomy and Socio-historical Selves* (2009; Cambridge : Cambridge University Press) at 83.

²³ See P. Ricouer, *Oneself as Another*, followed in M. Hildebrandt "Profiling and the Identity of European Citizens" in M. Hildebrandt, S. Gurtwirth and P. De Hert, *Implications of Profiling Practices on Democracy and Rule of Law*, FIDIS Programme Deliverable, 2007.

the relationship between identity, politics, power, culture and subjective and collective experience.²⁴ Differing branches of literature concentrate on differing aspects of identity with more social-psychological, or micro-sociological literature concentrating on the ways in which cultural meanings and interactions are internalised as part of self-reflection and personal identity. Notions of collective identity draw upon these same insights but look to the common identification with or shared definition of a group between members.²⁵ The variation and disagreement over such concepts of identity relate mainly to differing emphases placed upon the sources from which identities may be created (for example from professional roles, ethnicity and sexual orientation, social roles of mother, father, caregiver, spouse and partner) and the processes of identification such as between internalised role-identity or emphasis upon culture and situational context upon self-perception and identity.²⁶ All differing conceptualisations cannot be addressed here but a general understanding demonstrates the distinct but intertwined relationship between personal and collective identity, and of their use in framing claims in political and legal movements.

Appiah has asserted that someone displaying the characteristics of an “L” who identifies as being an “L” and “L’s” come to be seen as a group with others expecting behaviour typical of “L’s” is part of this social construction of social identities, not all of which will be necessarily true or positive.²⁷ This he highlights in work relating to stereotyping and identity, and leads to the insight that social identities, including gender identities and other more personal roles such as mother and father, are products of social construction.²⁸ They may therefore be subject to wrongful construction and suppositions of behaviour. As social constructions they may change (in terms of social perception and identification), may be subject to fluidity becoming transient and capable of being chosen or not so as to form part of personal identity. As such personal identity and collective identity may at times be in tension between each other pulling in inconsistent and incoherent ways. This tension can also be attributed to issues of authenticity as part of a concept of identity.

Christman has argued that part of the formation of identity involves passive acceptance or internalisation of aspects of culture (in which we might include collective identities), but that it is also something actively pursued or created.²⁹ DeGrazia explicitly pointed to the idea of

²⁴ M. Bernstein “Identity Politics” (2005) *Annu Rev Soc* 31, 47-74 at 48.

²⁵ T. J. Owens, D. T. Robinson and L. Smith-Lovin “Three Faces of Identity” (2010) *Annu Rev Soc* 36, 477-499 at 490.

²⁶ Ibid.

²⁷ Appiah *supra* n 22.

²⁸ K. A. Appiah “Stereotypes and the Shaping of Identity” (2000) *Cal. L. Rev.* 88, 41.

²⁹ Christman *supra* n 23 at 100.

self-creation as an aspect of narrative identity and directly links it with a concept of autonomy. He defines self-creation as “the conscious, deliberate shaping of one’s own personality, character, other significant traits (e.g. musical competence, athletic prowess), or life direction”.³⁰ Critical to the fulfilment and development of self-creation is the exercise of autonomy. The pursuit of a life and practices in line with the values, ambitions, and desires of an individual, will depend on whether such acts of self-creation are practically possible. This element of practicality is salient in relation to the potential for emerging technologies to modulate new capacities and abilities for self-creation. In relation to new biomedical technologies the role of autonomy becomes more contentious and it is in such situations that identity in a narrative sense and the related notion of authenticity comes to bear.

DeGrazia defines authenticity as “being true to oneself and presenting oneself to others as one truly is”.³¹ Part of the dilemma addressed by DeGrazia is the danger of certain self-creating behaviour being influenced by outside pressure, sometimes explicitly through outward discrimination of differing groups or more subversive systemic cultural norms such as ideals of beauty and commercialism, or more implicit pressures to conform within a family, to a partner or to competitive working environments.³² In this sense, authenticity - being true to oneself - may point to ways forward in assessing whether an individual’s self-creating identity project is in fact autonomous and not simply pursued out of duress or manipulation.³³

This is however, only one conceptualisation of authenticity and undue influence upon a person’s decisions is only one way in which inauthenticity, and questions over autonomy, are raised. Stereotypes or negative values and socially ascribed status, and/or identities that are ascribed to us by third persons in error can have a profound impact upon the individual and those who are also identified thus. This third person ascription of identity and what it may involve may be internalised by the individual and seriously impact upon their own self perception of themselves causing them emotional and mental harm, perhaps in addition to any formal injustice, restriction of resources both social and economic which may accompany the patterns of the behaviour of the majority, or powerful, over these other social identities. This point relates to a concept developed by many multiculturalists in structuring social identity claims: recognition. Recognition relates to acknowledgement by others in

³⁰ DeGrazia supra n9 at 10 90.

³¹ Ibid 108.

³² Ibid.

³³ This is also pointed to by Appiah who cautions that such notions derive from ideal type rational actors conceived of by Philosophers and so to this extent believes authenticity is something to strive for rather something to direct, in Appiah supra n22 at 269.

society of the identity, characteristics and history of the group and the individuals as they perceive themselves.³⁴ Appiah has argued that “[f]ree exercise of identity would mean being able to make a life as an L without the government’s interfering with our living out our understanding of what it means to be an L and, in particular, without the government’s trying to coerce us not to live as an L at all.”³⁵ This follows a critique of recognition in a basic form – that others should recognise your identity - that both he and Christman argue leaves theoretical room for individual’s identities or minority group identities to be dictated to them by the dominant society and norms, which would in fact undermine such identity. An individual needs to have their voice as the driving voice in portraying their identity, and similarly the group in question needs to have their say as the prominent voice in their identity.

Appiah and Christman disagree as to the element of choice involved in identity formation with Christman arguing that many social identities which impact upon and form part of individual identity are not simply choices to be made but in myriad ways are beyond the scope of choice. Our bodies and physical constraints do not simply make up our outward appearance and physical capabilities but will fundamentally shape our first person perspectives and the reactions of others who in turn will impact our own self-reflections. The physical manifestations of identity, or identity characteristics that otherwise are not capable of being changed are also open to modulation by the development of new technologies or techniques. Examples include the development of sex reassignment surgery and even simply surgical augmentation in general. Such interventions however are themselves modulated through social and material understandings of biology and gender. New genetic therapies now even have the potential to intervene in genetic composition, and neurotechnologies bring to the fore the possibility of physically intervening in the brain. However, choice is constrained through social framing as much as through material considerations. There may be situations where an individual, having grown up in a particular culture with specific values and customs comes to identify with them such that the element of choice is marginalised. For example, if Holly is brought up within a strict Christian community it may be that to question her religion simply does not occur to her, even though it may do to others. The element of choice – how flexible fundamental aspects of identity may be seen to be – and the combination of elements of essence highlighted above together with the potential negative socially constructed status placed on certain identities (by certain other actors in society) can interact to cause unjust results and further discrimination.

³⁴ Paraphrased Christman *supra* n23 at 192.

³⁵ Appiah *supra* n22 at 247.

Authenticity as related to identity has been developed and analysed in reference to capacity: to identify when a person is not acting autonomously, where their choices may be influenced by undue pressure, coercion or manipulation, and as such point to instances where their underlying capacity to make decisions is thwarted. This concept of authenticity however is much debated, and whilst it might be helpful in showing that an individual may not be acting in line with their previously indicated identity projects, given the social interaction of identity, the notion of inauthenticity may be related or elided with ideas of self-realisation. Self-realisation, in an almost Kantian sense relates to the idea of the discovery or uncovering of the right or of a true sense of self, but as argued by Berlin, such a notion which is linked to that of positive liberty, more easily slides in to arguments typified by Rousseau in that you can be “forced to be free” that you would make different decisions if you were made aware to, or could understand what was truly right.³⁶ This line of thinking, Berlin argued, more readily leads to the justification of restriction and redirection of behaviour, or the oppression of behaviour seen by a majority, or by the dominant authority, to be undesirable.³⁷ In the human rights context and in her own analysis of the concept of identity displayed therein, Marshall has severely critiqued notions of identity that rely on the uncovering of a true and authentic self for this very reason, as it can be used to justify the suppression of certain identities or traits.³⁸

DeGrazia, Christman, Appiah and many others of a post-modern view of autonomy conclude that the ideal-rational type autonomy is not one which can realistically be achieved or act as a concept of autonomy since we cannot but act within the context of our values and social lives. That external influences impact our autonomous decisions should not be treated as a defeat of any concept of autonomy. Christman argues that a person will be autonomous relative to her basic orienting values and indeed any other factor that pervasively and fundamentally motivates and guides action.³⁹ Christman posits instead a concept of authenticity based upon feelings of alienation or non-alienation. A characteristic, whether an action, a way of being, or a value, will be authentic where the individual in question does not feel deeply alienated from it upon critical reflection, i.e. does not feel constrained or have strong feelings to repudiate it.

³⁶ I. Berlin *Two Concepts of Liberty*, 1958 Oxford at Clarendon Press at 29.

³⁷ Ibid.

³⁸ J. Marshall, *Human Rights Law and Personal Identity* (2014) Routledge at 100-104.

³⁹ Christman *supra* n23 at 136.

3.3 Preliminary Points

From the above discussion, although by no means a thorough account of scholarship on identity in general, there are at least common elements or points that are debated and which have practical impacts in terms of conceptualising identity for law. Ontological and personhood concerns of identity much debated in philosophy and bioethics point to the difficulties in essentialist concepts and the normative choices and judgements that may flow from them with serious practical consequences especially as they play out in relation to debate over genetic identity and intervention in the genome. This discussion also shows the close conceptual relationship between identity and moral status with dignity. Narrative identity and collective or group identities point to the social mediation of personal self-conception and the overlap of a concept of identity and the requirement for autonomy as part of self-creation projects. Debates here form around intellectual understandings of the relationship and emphasis on processes of identity formation, their interrelationship with wider social, cultural, collective identities and power dynamics. It also highlights the ways in which harms to identity can be seen – as injustices and discrimination and denial of personhood to particular collective identities, denial of choices pertinent to identity – which can influence what protections are argued for and justified by reference to identity. We see here also links to authenticity, autonomy and essentialist conceptions or the shadow of self-realisation, which tend towards casting identity as something fundamental and unchanging – and hence restricting of actions – or as a core self which can be used to justify illiberal restrictions and even intervention within individuals in order to ensure that their “true” self is fulfilled. Whilst these points might clarify what is meant, or various understandings of what is meant by a concept of identity, they do not necessarily point to an understanding of what a concept of identity in law would look like or how it might be deployed. Various formulations can be found in law already and are explored in the following sections.

4. Identity in Law

An overview and analysis of how identity has thus far developed in law in different contexts is given. This has the dual purpose of providing much needed background but also forms part of the analysis in relation to setting out the existing regulatory structure and arguments made in relation to a concept of identity in law in general, and as evidence of its intellectual history. My interest in identity as an emerging concept stems directly from the implications for identity of biotechnologies, specifically in the realm of medical jurisprudence in relation to new genetic technologies, regulation of research using human tissue, and assisted

reproduction. Looking specifically at the UK context I analyse cases which show that there are interests and harms that have emerged within case law that are fuelling the conflict that are not covered, or only incidentally covered by the existing law. These may be described as identity concepts but not within the understanding of the informational concerns usually protected within jurisprudence relating to the personal right to identity, but as they appear closer to active self-creation of identity. Furthermore, I will argue that this self-creational aspect is one which is also only just beginning to emerge within the human rights context but which clashes with a more essentialist concept of genetic identity that appears to be crystallising within international bioethical instruments such as the Oviedo Convention⁴⁰ and followed by the European Union Clinical Trials regulation.⁴¹ The following sections lead to these conclusions which frame the more concentrated analysis in chapter 7 in relation to the interaction and coproduction of identity in the context of the Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015.

4.1 Legal Persons and Identity as Recognised Personhood

Akin to the philosophical and bioethical implications of identity explored in the previous section, the first point of identity in law is in the recognition of what is a legal person, or who (or what) is recognised in law as a subject of law, someone who has rights, protections, and potentially responsibilities, liabilities and duties in law, or by autonomous action can incur such rights and duties. There is no discrete field of study of persons in law as these issues are integrated in to all areas.⁴² In American jurisprudence it has been observed that no unified understanding of personhood or humanity informs “legal personhood”. Ambiguity, strategic argumentation and exclusion were inherent in the historical jurisprudence pertaining to slavery, but little cohesion has followed in contemporary jurisprudence with an emphasis on the idea of biological humanity as the root of personhood running into issues in relation to the status of the foetus, and in direct opposition to the fiction of corporate personality.⁴³ In

⁴⁰ Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (Oviedo Convention 1997).

⁴¹ See Directive 2001/20/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (Clinical Trials Directive), and more recently Regulation (EU) No 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC (Clinical Trials Regulations).

⁴² M. Davies “Exclusion and the Identity of Law” (2005) *Macquarie Law Journal* 5, 5-30 at 5.

⁴³ “What We Talk about When We Talk about Persons: The Language of a Legal Fiction” Notes in (2001) *Harvard Law Review*, 114: 6, 1745-1768.

looking at the jurisprudence and academic and theoretical diaspora in relation to legal personhood, Naffine points to three broad means in which the legal concept of person is used in legal literature:⁴⁴

- Technical concept of legal person as a completely legally created concept or legal fiction that has no relationship with broader questions of ontology or metaphysical nature;⁴⁵
- The legal person as having a nature or even “God-given character” based upon an essential humanity which commands moral status;
- The legal person as a moral agent with intelligence and rationality.

The latter conception in particular has come in for criticism from feminist and critical legal scholars as this characteristic of the rational, normally masculine subject has dominated much of the history of law (and its potential injustices). All three are drawn upon – and rarely explicitly distinguished – in debate and may be used and switched between depending upon the context of the case.⁴⁶ It is most particularly in the hard cases of ascribing personhood which see the conflict and incoherent usage of these three broad approaches including the status and distinction between the unborn child or foetus, and infants, the legality or otherwise of abortion and concomitant rights of the unborn child and pregnant woman. Naffine argues that moving from the first to the third broad conception of legal persons excludes more beings from the status of legal personhood, becoming potentially more precise and hence exclusive.⁴⁷ She also argues that the first conception - that legal personhood is a legal fiction - can be looked at with the potential to be seen as the initial starting point in the formation of legal personhood that is then peopled by the debates and disparate uses of all three approaches (and the disparate conceptions drawn upon within them pointed to in section 3).⁴⁸ These three approaches may normally be deployed in different

⁴⁴ N. Naffine “Who are Law’s Persons? From Cheshire Cats to Responsible Subjects” (2003) *Mod. L. Rev* 66, 346 at 349-350.

⁴⁵ This point sits most neatly with corporate personhood as it allows for the recognition of such entities as persons for the purposes of law, but this conception falls in to difficulty in debates surrounding related issues of abortion, the status of unborn children where clearly everyday understandings and competing stances on the moral impetus of such scenarios influence legal outcomes.

⁴⁶ See Naffine *supra* n45 and the Harvard Law Review Note *supra* n44.

⁴⁷ Naffine *supra* n45 at 366.

⁴⁸ N. Naffine, *Law’s Meaning of Life: Philosophy, Religion, Darwin and the Legal Person* (2009) Oxford, England; Portland, Or.

ways in order to achieve what is looked on as the “right” decision (from the perspective of the judge and decision-maker in the context of the case or conflict in question).⁴⁹

In the UK, legal personhood is not recognised until birth with legal responsibilities and rights accruing to a person as they move through life.⁵⁰ In relation to the second approach listed above, conflict over moral status in the law and the lack of agreement in relation to this term is aptly demonstrated in the debates surrounding the passing of the Human Fertilisation and Embryology Act 1990 in the UK⁵¹ and acknowledged in the case law of the European Court of Human Rights which attributes a broad margin of appreciation in cases relating to such issues (such as the rights of the unborn child and the permissibility and access to assisted reproduction).⁵²

Whilst undoubtedly different conceptions of personhood underpin the legal realities and decisions in differing jurisdictions, I am not primarily interested with the development of this idea per se since it has been a swirling debate for time immemorial in relation to the law, but it is relevant to all other considerations of the potential emergence of a concept of identity as encompassing more, or as distinct from the ontological and legal ascription of personhood. Most especially, the idea of personhood as essentially biological humanity, and the protection of certain aspects of biological humanity however so they are conceived is a matter of primary concern later in relation to genetic identity. As highlighted in the preceding discussion, the polysemy of identity is such that it can be used to describe or refer to certain indicia or traits, or reduced to the protection of certain indicia or traits which may mask, but are also fuelled by debates in relation to personhood conceptions of identity. Genetic identity and its ties to a typically biological conception of humanity as personhood - much like the second approach to legal personhood highlighted by Naffine above - is an example of this and one which can be looked at in the context of an emerging concept competing with alternative conceptions of personal identity not yet formally crystallised. Before turning to this line of inquiry there is a second basic sense in which identity manifests

⁴⁹ Ibid.

⁵⁰ In Scotland the age of criminal responsibility is currently 8 years of age although it is to be raised to 12 (see s41 Criminal Procedure (Scotland) Act 1995 for the current law and for the proposed changes see, Report of the Scottish Government, *Minimum Age of Criminal Responsibility: Analysis of Consultation Responses, and Engagement with Children and Young People (December 2016)*). Capacity to consent to contractual obligations is deemed to begin at 12 years (Age of Legal Capacity (Scotland) Act 1992 s2).

⁵¹ See chapter 7 for further discussion this debate.

⁵² See *Vo v. France* (application no. 53924/00) Judgment 8th July 2004; and *Evans v UK* (Application no. 6339/05) Judgment 10th April 2007.

itself in law and that is in the formal recognition or registration of a person and thus their personhood. Indeed the next section details the development of administrative concerns with the registration of persons and collection of taxes to the entrenchment of a human right to registration as an inherent part of protecting and recognising the individual.

4.2 Identification and Registration

Supposing an individual has been recognised as coming within the ambit of a legal person there is a basic level in which identity in law can first be supposed to become an object for attention. Identification, individuation and proof of identity are needed in a society where property, exchange and authority exist. The historical development of registration along with identity as implicated in law is rooted in fiscal and administrative bureaucracy rather than fundamental beliefs about a right to identity per se.

In the medieval period, insignias, signs and coats of arms were used as identification and to verify the authenticity of documents.⁵³ By 1472 this was developed in to a treatise as a means to individuate and ascribe office to particular persons'.⁵⁴ Although mainly affiliated with the rich they were an early form of identification method by which office, authorisation to act in official capacities, and proof of identity and ownership could be made. Proof of identification and lineage were crucial to property exchange and for the enforcement of legal claims. It was also essential to the states management of, and in keeping track of assets and citizens a rationale echoed in the creation of England's first Parish records in 1538 set up by Thomas Cromwell "...for the avoiding of sundry strifes and processes and contentions arising from age, lineal descent, title of inheritance, legitimation of bastardy, and for knowledge, whether any person is our subject or no."⁵⁵

It could not be said that there existed a "right" to registration or identity since the rules in question were administrative and more relevant to the collection of taxes. Where registration coincided with harsher taxes, there was little benefit to the poor, who lacked property or interest, and wished to avoid impoverishing themselves further.⁵⁶ On the other hand,

⁵³ Valentin Groedner, *Who are you? Identification, Deception, and Surveillance in Early Modern Europe*, (2007; Brooklyn, N.Y. : Zone Books) at 44.

⁵⁴ Ibid at 45.

⁵⁵ S. Szreter "The Right of Registration: Development, Identity Registration, and Social Security—A Historical Perspective" (2007) *World Development* 35:1, 67–86, 2007 at 73.

⁵⁶ This in fact is viewed to be the chief impediment to the introduction of secular registration in Scotland and the lack of integrity of Parish records during the 18th and beginning of the 19th century following the introduction of a steep Stamp Duty, for more on this see S. Basten "The Impact of the

registration and proof of identity along with the development of property rights, and the ability to police them, all contributed to the opening up of markets for more individuals resulting in an increase in economic development.⁵⁷ As such, although originating as instrumental rules, other rights dependant on registration and effective means of identification for their enforcement, have led in contemporary thought to the recognition of registration as a fundamental right of its own *necessary* to guarantee the base line level of living for individuals in society.⁵⁸ This is because some of the fundamental economic and welfare commitments made by governments to tackle poverty and increase the quality of healthcare and education (to name a few) require a comprehensive system of registration of persons so that their existence is legally recognised and accounted for.⁵⁹ Absence of registration acts as a barrier to receiving these benefits and health services, and as part of the dual nature of such registration prevents accurate recording of deaths and general health leading to poor and undeveloped public health research.⁶⁰ As such Article 7 of the United Nations Convention on the Rights of the Child (CRC) and Article 24.2 of the UN International Covenant on Civil and Political Rights (ICCPR) and the concerted efforts of the UN to register every child, is firmly promoted due to the need to ensure that each child is accounted for by the state in order to receive such state benefits as are essential to development. The right to registration has been described as:

“...more than just a right. It’s how societies first recognize and acknowledge a child’s identity and existence. Birth registration is also key to guaranteeing that children are not forgotten, denied their rights or hidden from the progress of their nations.”⁶¹

This gradual progression from administrative and informational proof of identity, to a focus on the right to be registered and recognised is reflected also in the development and acceptance in some jurisdictions of an explicit right and concept of identity. This is explored in the following subsection.

1783 and 1785 Stamp Duty Acts on Scottish Vital Registration” (2010) *Journal of Scottish Historical Studies* 30.1, 64–74.

⁵⁷ See Szreter *supra* n56 at 73.

⁵⁸ *Ibid.*

⁵⁹ *Ibid.*

⁶⁰ See Philip W Setel, Sarah B Macfarlane, Simon Szreter, Lene Mikkelsen, Prabhat Jha, Susan Stout, Carla AbouZahr “A scandal of invisibility: making everyone count by counting everyone” (2007) *Lancet* 370, 1569–77.

⁶¹ Geeta Rao Gupta, UNICEF Deputy Executive Director
http://www.unicef.org/media/media_71508.html accessed 13/12/2013.

4.3 Identity as a Personal or Personality Right and as a Proprietary Right

Identity is framed as a right within domestic jurisdictions, such as South Africa, Italy, and the Netherlands,⁶² set within established principles which share a common heritage within civil or Roman law and conceptualised as a so called personality right. Neethling defines identity as:

“a person’s uniqueness or individuality which identifies or individualises him as a particular person and thus distinguishes him from others... It is manifested in various indicia by which that particular person can be recognised; in other words, facets of his personality which are characteristic of or unique to him such as his life history, his character, his name, his creditworthiness, his voice his handwriting, his appearance (physical image) etcetera.”⁶³

He continues by explaining that a person’s right to identity is infringed where anyone of these unique indicia are used without permission in ways which are not in coherence with his “true image”.⁶⁴

Other countries, such as France, have also recognised a right to identity (including name and image).⁶⁵ Whilst in many cases such a right has deep roots in the civilian tradition of the legal systems in question, in others the right has a relatively young life span. Identity as it appears in Italian law is a relatively recent development being referred to in the past only as an obsolete reference to the whole of official personal data in public records, and in reference to name, date of birth, address, status among others.⁶⁶ Its relevance as a personal right was recognised at first as a right one has to be identified and distinct from other persons prompting protection of main distinctive features such as name and likeness.⁶⁷ The landmark case in the recognition of identity in Italy as a personal right is Pretura Roma 6-5-1974 (Pangrazi and Silvetti v. Comitato Referendum), which, as discussed and cited by Pino,

⁶² J. Neethling “Personality Rights: A Comparative Overview” (2005) *The Comparative and International Law Journal of Southern Africa* 38: 2, 210-245 at 211-214.

⁶³ J. Neethling, J. M. Potgeier and P. J. Visser, *Neethling’s Law of Personality* (2005) para 3.3.7. See also C. Gower and C. J. Visser “Distinguishing Between Dignity, Identity and Privacy: Is it Really Necessary?” (2012) *THRHR* 75, 154-162.

⁶⁴ Neethling *ibid*.

⁶⁵ Neethling *supra* n63.

⁶⁶ G. Pino “The Right to Personal Identity in Italian Private Law: Constitutional Interpretation and Judge-Made Rights” in M. Van Hoecke and F. Ost (eds) *The Harmonization of Private Law in Europe*, (2000) Hart Publishing, 225-237 at 225 citing Falco, “Identità personale”, *Nuovo Digesto Italiano*, UTET, Torino, IV, 1938, at 226.

⁶⁷ *Ibid* at 226 citing A. De Cupis, *Il diritto all’identità personale*, Milano, Giuffrè, 1949, and by G. Bavetta, “Identità (diritto alla)” *Enciclopedia del diritto*, XIX, 1970.

refers to the wishes of a couple who were photographed and the image subsequently used, without consent, in referendum propaganda on the part of the anti-divorce committee.⁶⁸ At the time Italy was holding a referendum on whether to retain the divorce law that had been passed a few years previously which had introduced the right to divorce. The couple were unmarried and opposed the anti-divorce sentiment. They won their case on the basis of article 10 of the Italian Civil Code which protected their right to their own likeness, but the judge added that the publication of the picture damaged their interest in personal identity; that the law protects a person's right to accept recognition for one's own acts and to deny those they have never undertaken.⁶⁹

Pino describes the right of identity as it is now as "the right everybody has to appear and to be represented in social life (especially by the mass media) in a way that fits with, or at least does not falsify or distort, his or her personal history."⁷⁰ It is distinct from the related concept of privacy in that privacy involves unauthorised invasion or access to true facts about one's private life and/or character, whilst identity involves the misuse or misrepresentation of such information which may already be within the public domain.

In general, identity as a personal right seems related to the aspects of identity as self-reflection, to a certain extent self-creation and authenticity: that individuals are recognised as they wish to be seen or how they are actually, with a legal concept of identity acting to prevent inauthentic representation by third parties. However it is limited to informational or expressive aspects of the self. It is therefore primarily concerned with the non-interference of others with the representation, or objective perception of identity. In this sense it might be seen as distinct from privacy because whilst privacy protects against publication or representation, the personal right to identity actively engages the accuracy of representation of information that may be readily available.

Identity in this sense forms part of the related personality rights, dignity, privacy and identity, held by all persons as non-alienable rights. Pino attributed the broader study and shift in concern and acknowledgement of personality rights and identity as a concept as a recent phenomenon, arguing that this is mainly due to a stance in legal culture which differentiated between and protected liberty and property: protecting against unwanted interventions of the state, and existing economic and private property rights typified in many liberal states.⁷¹ The second half of the 20th century, in the aftermath of two world wars and the ratification of the

⁶⁸ See the discussion by Pino *ibid* at 233.

⁶⁹ See Pino's paraphrasing *ibid*.

⁷⁰ *Ibid* at 225 citing Falco, "Identità personale", *Nuovo Digesto Italiano*, UTET, Torino, IV, 1938.

⁷¹ Pino *ibid* at 227.

ECHR, radically changed conceptions of how personal rights should be protected.⁷² Personality replaced property in the traditional liberty and property paradigm and paved the way for more strengthening of personal rights and an argued weakening of traditional economic or private property rights.⁷³ The weakening of property and economic rights might be debateable, but the development and codification of personality rights and fundamental or constitutional rights in the form of human rights conventions has been seen in Europe. Warren and Brandeis, in their justification of privacy, argued that society moves on to such an extent that the law can recognise the need to protect not simply basic rights to life and property but to recognise the sensations and hurt caused by injury to feelings so that fundamental basic rights such as the right to life become interpreted and developed so that it extends its scope to the right to enjoy life.⁷⁴ They continued:

“This development of the law was inevitable. The intense intellectual and emotional life, and the heightening of sensations which came with the advance of civilization, made it clear to men that only a part of the pain, pleasure, and profit of life lay in physical things. Thoughts, emotions, and sensations demanded legal recognition, and the beautiful capacity for growth which characterizes the common law enabled the judges to afford the requisite protection, without the interposition of the legislature.”⁷⁵

This is in line with Ishay’s analysis of the modern progression and development of human rights jurisprudence (in to which she includes fundamental constitutional rights) which has gone through change and paradigmatic shifts concurrently with political and social movements and in reaction to historical events such as the world wars.⁷⁶ In this vein, personality rights and rights of identity being interpreted out of existing case law, constitutional and convention rights are seen as a progression from more base level conditions to experiential concerns. In this sense it demonstrates that such a right and concept successfully emerged in a context where the existing structural and contextual circumstances were conducive to its recognition. Whilst the study of Italian law is not within the parameters of this thesis, it points further to the development of identity in general and

⁷² Pino *ibid* at 227-228.

⁷³ Pino *ibid*.

⁷⁴ S. Warren and L. Brandeis “The Right to Privacy” (1890) *Harv. L. Rev* 4, 193.

⁷⁵ Warren and Brandeis *ibid* at 203.

⁷⁶ M. R. Ishay, *The History of Human Rights: From Ancient Times to the Globalization Era*, University of California Press 2004, see specifically chapter 4 which argues that in the aftermath of the world wars there was a notable move toward international and domestic institutionalisation of human rights including the ECHR which then heavily influences the development and interpretation of domestic and common law.

how this may relate to its emergence in international law and potential for emergence in the varying jurisdictions of the UK.

In contrast to the shift to focus on personality rights as part of the liberal concern, identity as recognised in the US whilst also developed from privacy – itself a common law development – became a proprietary right as opposed to the non-patrimonial nature of the personal right to identity. Identity in US law developed from privacy via rights over publicity which first came to light in the case of *Haelen Laboratories Inc. v Topps Chewing Gum Inc*⁷⁷ in 1953. The case involved a dispute between two chewing gum manufacturers one of which had negotiated the right to use photographs of famous baseball players for collectable cards as part of the sale of chewing gum, and the other company then also used pictures of baseball players. The plaintiff argued breach of contract and also that they had exclusive rights to the pictures. The counter argument was that right to images fell within the rubric of privacy such that a person could waive their right to them but could not assign them to a third party. The judge held in favour of the plaintiff stating that independent of rights to privacy, persons held rights in the value of publishing one's own image and that such a right was assignable.⁷⁸ The relationship between this case and privacy as recognised in *Pavesich*⁷⁹ which officially recognised a right to privacy in American law, as touched on in subsection 6.2 of chapter 5, was highly debated in academia, with Prosser, whose writings on privacy became very influential, arguing that publicity rights fell within the ambit of privacy as the fourth of four interests protected by privacy.⁸⁰ Prosser argued that this interest is proprietary relating to the exclusive use of name and likeness as part of identity.⁸¹ In contrast Bloustein criticised this conceptualisation arguing that identity could not be reduced to a proprietary right and that privacy and identity were rooted in the protection of dignity, and that the use of image and other indicia of identity for commercial purposes undermined such dignity.⁸²

Case law in America does not point to any comprehensive definition of identity instead relating to a seemingly non-exhaustive list of indicia that should be and have been protected. Interestingly the statutes in America have never named identity rights explicitly but instead talk of “name, image, likeness”.⁸³ Bently has argued that Prosser as the first to use the term

⁷⁷ (1953) 202 F 2d 866.

⁷⁸ Ibid and see also L. Bently “Identity and the Law” in G. Walker and E. Leedham Green (eds) *Identity* (2010; CUP) at 31.

⁷⁹ *Pavesich v New England Life Insurance Co* 50 SE 68 (1905) (Sup. Ct Georgia).

⁸⁰ See Bently ibid citing (1960) 48 Cal.l.r 383, 388.

⁸¹ Ibid.

⁸² E. J. Bloustein “Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser” (1964) *N. Y. U. l. r.* 39, 962 at 971 and See Bently's discussion ibid at 32.

⁸³ See Bently supra n83 at 50.

potentially intended to limit the scope of protection afforded, arguing that it was not the name per se that was protected but the name as an indicator of identity.⁸⁴ Bently argued that what actually happened with this conceptual grounding was actually an extension of the right to publicity facilitating protection of matters associated with celebrities including a car routinely driven,⁸⁵ a catch phrase,⁸⁶ and dress style. All while the change in language from “image and other indicia”, to “identity” developed without comment and was largely adopted in these cases.⁸⁷ This is argued to have broadened the category such as to protect all manifestations of identity, and that it may do so because the courts see no principled reason to limit protection to attributes such as name and likeness.⁸⁸ But without definition, it is left open to ask when is something a manifestation of identity with a seemingly endless list and no common understandings and certainty as to what aspects of identity are owned by the individual. Part of my analysis of what may pertain to an emerging legal concept was the understanding that legal scholarship and practice can be symbiotic in terms of influencing the progression of each other. Bently in critiquing the development of identity within American jurisprudence inadvertently points to the suspected influence of commentators upon the explicit recognition of identity as an autonomous concept within law. Commentators conceptualised the right to image and various indicia as part of a concept of identity and then identity became used in the court room in referring to such rights with the consequences touched on above. This shows the potential influence that ideas developed and argued for by legal academics can have upon the development and enshrinement of a concept in formal law.

A key point to take from this discussion of both identity as a personal right, proprietary right and rights of registration, is the primary focus on objective and readily knowable information about the individual as the key component of concern with identity. A distinction between identity and identification is also implicit in these concepts. Registration may be used to a greater extent as part of an *identification process*: a means of differentiating one individual from another in order to verify claims and transactions. Identity as a personality right is discussed in connection with the misuse of such information to the individual’s detriment. Registration as a human right is still instrumental in nature in terms of facilitating other fundamental rights, whereas the personality right based concept of identity is framed as a substantive right on its own merit based upon infringements of an experiential identity:

⁸⁴ Bently supra n83 at 50. See also Prosser (1960) *Cal.L.R.*, 48, 383 at 403.

⁸⁵ *Motschenbacher v R. J. Reynolds Tobacco* 498 F 2d 821 (9th Cir. 1974).

⁸⁶ *Carson v Here’s Johnny Portable Toilets, Inc.* 698 F 2d 831 (6th Cir 1983).

⁸⁷ Bently *ibid*.

⁸⁸ Bently *ibid*.

identity seen as a projection of the individual to the world of how they are and wish to be seen.

The Future of Identity in the Information Society (FIDIS) network of academic institutions and companies from across Europe as funded by the EU have been concerned with delineating identity and identification as concepts and how they relate to and are challenged by the information society. Their concern is with identity as a set of characteristics and identification as the “set of terms, concepts, and mechanisms that relate to the disclosure of this identity information and the usage of this information.”⁸⁹ Concerns of identification lie with the legitimacy of private actions (making sure a person is who they say they are), the effective proof of such identity (documents and ID cards), the access to and use of identity information by others, and management of such access.⁹⁰ To this understanding of identification can also be added security issues such as profiling, surveillance, use of identity cards in some jurisdictions and the rising concern with identity theft and fraud.⁹¹ Identification processes are processes used in official capacities, in jobs, transactions and for security in order to grant authorisation to certain persons to perform certain tasks; as a means of accrediting persons or of proving their affiliation with certain groups, jobs or roles or nationalities and ensuring they are who they say they are i.e. through passport checks.⁹² Identity aspects closer in nature to personal rights are more directly implicated through the third strand of inquiry of the group, outlined by Nabeth as that of control of information pertaining to identity and identification such as control and use made of data processed through online activities and used in targeted marketing, or control of content of social network sites.⁹³

This aspect of control of information touches upon a further development in conceptualising identity: control of how information is presented to the world and a concept of active identity creation akin to the conceptions touched on in the previous section. Through the use of wiki's, blogs, interactions on different social networking sites, virtual worlds and gaming sites have led to the proliferation of differing platforms on which to create different images of oneself many of which may not correspond with each other or the individual in his or her

⁸⁹ T. Nabeth and M. Hildebrandt (eds), D 2.1: Inventory of topics and clusters D.21(2005) at 26 FIDIS: Future of Identity in the Information Society.

⁹⁰ Similar in nature to the earliest concerns of identification outlined above.

⁹¹ Claire Sullivan has posited that there should exist a right of identity, characterised as transaction identity, within the context of security and transactions in the age of a digital and data heavy world, see for example C. Sullivan “Digital identity, privacy and the right to identity in the United States of America” (2013) *Computer Law & Security Review* 29 348 e358.

⁹² T. Nabeth “Identity of Identity” in K. Rannenberg, D. Royer and A. Deuker (eds) *The Future of Identity in the Information Society* (2009; Springer) at 38.

⁹³ Ibid.

day to day life. This points to a crucial aspect in how we may perceive identity instinctively implicated in our day to day lives beyond registration and formal mechanisms of identification.

In relation to identity online there has been much made of the right to be forgotten.⁹⁴ Arguably the right to be forgotten is another example of an identity related interest given that what is sought is the removal of images, video, or other data that regardless of its truth and accuracy is felt by the individual to be harmful to them. The right to be forgotten has a history within different EU countries and is enshrined in the Data Protection Directive⁹⁵ which controversially was taken to apply to Google as a “data controller” for the purposes of the Directive.⁹⁶ Such a right still pertains to the objective scale of identity in terms of controlling the image of oneself through information made available.

In concluding this overview of identity as conceived as a standalone right within various jurisdictions, and even as contemplated in academic analysis of the implications of information technology upon law and identity there is little by way of development of identity as a concept in law beyond the control and presentation of unique image. Whilst the concept of identity as a practical mechanism for protecting identity rights in these instances has not developed beyond informational aspects, identity as conceived in human rights may develop beyond the overt conceptualisations tracked in this subsection toward the recognition (and hence protection) of more self-creational aspects of identity highlighted in section 3. Such aspects of identity are more closely related and overlap with conceptions of self-determination and autonomy.

4.4 Human Rights to Identity, and the Implications of Narrative and Authenticity

This subsection and the next develop the argument that the human right to identity is developing beyond a narrower focus on presentation of the self and unique image, to that of self-creation. It reviews the development of the right of identity within the context of the ECtHR - as interpreted out of Article 8 right to private and family life and the case law surrounding it - and contrasts its development and application to that of the formulation of

⁹⁴ See for example J. Ausloos “‘The ‘Right to Forgotten’ – Worth Remembering?’ (2012) *Computer Law and Security Review* 28, 143-152.

⁹⁵ Directive 95/46/EC of the European Parliament and of the Council of 24 October 1995 on the protection of individuals with regard to the processing of personal data and on the free movement of such data in Article 12, which upholds the right of EU citizens to request the data controller remove information that is excessive or inaccurate.

⁹⁶ See Case C-131/12 *Google Spain SL, Google Inc v Agencia Española de Protección de Datos (AEPD), Mario Costeja González* [2014].

the Article 8 right to identity enshrined in the UN Convention on the Rights of the Child (UN CRC). In following this contrast I also examine the specific context in which the UN CRC Article 8 right was conceived and the scenarios to which it has been applied by one of its principle supporters – Argentina – to demonstrate its distinction in development and character from that of the ECtHR development, and to illustrate the particular influence of social movements and activists in its framing. This outlines not just the differing dynamics of emergence and development of a particular conceptualisation of identity, but also frames my argument, developed in the following subsection and of more importance in the analysis in chapter 7. My argument is that identity as a human right having never been precisely defined has meant that it has been applied in differing conflicts and contexts with differing emphases upon essentialist notions of identity and authenticity, or more open self-creational and liberal autonomy based reasoning. However its future emergence and application may come to crystallise in a more defined and narrower base in differing jurisdictions and contexts. This is especially true in relation to the growing concern with genetic identity in societies at large, and as developed in the international context. To begin this discussion, I argue that fundamental human and/or constitutional rights are broader in definition and application than practical legal concepts that may be the means of protecting them, and will outline the development and application of identity in the ECtHR jurisprudence.

Warren and Brandeis' purported to argue for privacy as a concept in American jurisprudence by making two claims detailed in the previous chapter: (1) that there existed a constitutional right to privacy which was both already implicitly recognised whilst also justifying (2) a common law standalone concept of privacy that should be recognised as the legal means by which the right to privacy was guaranteed in law.⁹⁷ This points to the distinction as between fundamental rights and the concepts and legal mechanisms used to protect them. In relation to the right to privacy interpreted out of the ECHR Article 8 right to private and family life, English courts have refused thus far to recognise a concept of privacy using existing concepts such as confidentiality to protect the incumbent human right to privacy,⁹⁸ not to everyone's satisfaction. This both underlines that a fundamental, constitutional or human right can be implicitly protected through the machinations of existing overt concepts within the law and local jurisdictions, and points to the potential further development of the fundamental, constitutional or human rights that may underpin and justify explicit rights, including those of the same name, beyond what is declared by such explicit concepts. In

⁹⁷ Warren and Brandeis *supra* n79.

⁹⁸ See *Campbell v Mirror Group Newspapers Ltd* [2004] UKHL 22 ; and *Douglas v Hello! Ltd* [2005] EWCA Civ 595.

relation to identity as pictured in relation to informational aspects and presentation of the self, tracked in the development of identity as a stand-alone personal right and proprietary right and as rooted in registration, a human right of identity, I argue, is developing beyond such understandings.

The ECtHR has recognised a right to identity by interpreting out from Article 8 right to respect for private and family life,⁹⁹ and includes a child's right to know information relating to their start in life,¹⁰⁰ and their genetic origins as a principle part of their identity.¹⁰¹ In this way, the right to identity may be most successful in protecting interests in information and genetic maternity and paternity questions. Identity however, has never actually been properly defined in the case law. In *Gaskin*, the court cited with approval the recommendations of the commission who opined that the right to respect for private and family life "requires that everyone should be able to establish details of their identity as individual human beings..."¹⁰² *Pretty v the United Kingdom*¹⁰³ established that the concept of self-determination or autonomy underpinned the interpretation of article 8¹⁰⁴ and reiterated that private life encompasses aspects of physical and social identity.¹⁰⁵ The case concerned a challenge to the UK's blanket ban on assisted suicide that ultimately failed, but in relation to aspects of one's identity the court further added that:

"In an era of growing medical sophistication combined with longer life expectancies, many people are concerned that they should not be forced to linger on in old age or in states of advanced physical or mental decrepitude which conflict with strongly held ideas of self and personal identity."¹⁰⁶

This implies that that to a certain extent identity and the right to identity includes subjective, individually driven ideas about their physical and mental functioning and wellbeing, but also that interests in when and how an individual dies are also important aspects and interests in

⁹⁹ In the case of *Christine Goodwin and I v UK* (2002) 35 EHRR 18 at para 90 it was held that respect for autonomy underlined the interpretation of the convention and that this in turn included the right "to establish details of their identity as a human being..."

¹⁰⁰ *Gaskin v UK* Judgment 7 July 1989 A. 160.

¹⁰¹ *Mikulic v Croatia* App no 53176/99, *Odievre v France* App no 42326/98 2003, *Godelli v Italy* Application no. 33783/09 2013. The history of the right to know ones origins has been discussed by R. Blauhoff "Tracing Down the Historical Development of the Legal Concept of the Right to Know One's Origins: Has 'to Know or Not to Know' Ever Been the Legal Question?" (2008) *Utrecht Law Review* 4:2, 99-116.

¹⁰² *Gaskin* supra n at para39.

¹⁰³ App no 2346/02 [2002] ECHR 423 29 April 2002.

¹⁰⁴ Ibid para 61.

¹⁰⁵ Ibid.

¹⁰⁶ Ibid at para 65.

identity that ought to be protected. However the court concluded that the blanket ban and use of criminal law was not disproportionate in the pursuit of legitimate aims under the convention and thus the challenge failed in this instance.¹⁰⁷

Identity was still not defined in *Pretty*, and where it has been invoked in the case law it is to underscore the importance of a particular aspect of identity, and thus to emphasise the importance of the interest as justification for it being included in protection as part of respect for private and family life. The idea of autonomy as underpinning the interpretation of Article 8, and thus also of the right to identity, does mean, however, that the concept of identity applied in ECtHR jurisprudence can go beyond simple control and access to information about oneself. In *Goodwin v the United Kingdom* the question was whether the UK Government had complied with a positive duty to ensure the protection of the applicant's private life, specifically in relation to the failure to recognise her changed gender in official documents including her birth certificate.¹⁰⁸ Finding that the UK Government had failed in its obligations the court stated that "[i]t must also be recognised that serious interference with private life can arise where the state of domestic law conflicts with an important aspect of personal identity."¹⁰⁹ Further that although the member states enjoy a margin of appreciation in applying Convention laws this margin is narrowed where the matter in question forms an integral aspect of identity. It further argued, citing *Pretty* with approval:

“Under Article 8 of the Convention in particular, where the notion of personal autonomy is an important principle underlying the interpretation of its guarantees, protection is given to the personal sphere of each individual, including the right to establish details of their identity as individual human beings.”¹¹⁰

It concluded that the trend of international thought on the subject, regardless of the lack of consensus among Member States, and the unsatisfactory intermediary position of changed physical appearance and gender identity with the legal administrative recording meant that the States margin of appreciation no longer existed and a simple breach of article 8 was found. This shows that changing social attitudes can influence the decision of the courts regardless of a lack of formal consensus in law among member states. I would argue that in this instance, and possibly related to the more liberal mind-set of the judges presiding the

¹⁰⁷ Ibid.

¹⁰⁸ *Goodwin* supra n104.

¹⁰⁹ Ibid para 77.

¹¹⁰ Ibid para 90.

case, that this demonstrates the effect of changing and perceived legitimacy vesting in broader public discourse, and that loose references to “changing attitudes” competing with and trumping the perceived legitimacy of the formal authority and legality of individual member states. However, the expansion and contraction of the margin of appreciation accorded to member states in the application of convention rights does still point to the conservatism of the court in relation to “ethically controversial” topics. Whilst such controversy in the eyes the court may not now cede to questions of sexuality and gender as much, it does still apply to cases of novel technology and questions of the beginning and end of life (as represented in *Pretty*). Such questions go to the heart of debates surrounding personhood and identity in bioethics.

Evans v the United Kingdom established that interest in becoming a genetically related parent also formed an integral aspect of personal identity as did the concomitant interest in not becoming a genetically related parent.¹¹¹ It also demonstrates again the impact of developing technologies as their uptake and use increased. The case concerned the use of embryos frozen in line with IVF treatment when the applicant Ms Evans was diagnosed with cancer. Both her and her then partner signed consent forms for treatment together as a couple on the understanding that the frozen embryos could be implanted at a future time. In the interim period the applicant had recovered from her illness and treatment, which had rendered her infertile, but the relationship had also broken down with the subsequent refusal by her former partner to consent to the implantation of the embryos. The conditions of the Human Fertilisation and Embryology Act 1990 required the consent of both parties. The court reiterated that Member States governments had positive obligations in respect of adopting measures ensuring compliance with convention rights between individuals.¹¹² In the case of competing convention rights – and this case involved the competing article 8 rights of both Ms Evans and her now estranged partner – member states have a margin of appreciation in balancing the interests of the parties. This margin of appreciation although narrowed in relation to aspects of private life integral to identity – as in this case – are nevertheless wider in circumstances of ethical contention where there is a lack of member state consensus in circumstances where the State has to strike a balance between competing private and public interests. They found the conditions in place in the 1990 Act to be proportionate and within that margin of appreciation.

¹¹¹ App no. 6339/05 Judgment 10th April 2007 para 73.

¹¹² Ibid.

The right to identity is not defined in the case law of the ECtHR, but its application has expanded to cover differing aspects that are not merely captured by a narrow conception of access and control over information and image, or of registration. Furthermore its historical development is exemplary of a right emerging and being recognised in circumstances where it was never explicitly referenced in the original convention and thus is judge-made or at least judicially developed. As such it is subject to both gradual change and is framed by the existing concepts and reasoning of the jurisprudence, whilst simultaneously being open to flexible application in a way that it may not have been if it had been expressed precisely in the convention originally. This leaves its application open to differing use and differing reasoning depending upon the context of the conflict in question, which means that differing approaches or conceptions of identity can be used in differing cases depending on what is seen as legitimate or the “right” result in a specific case. This is the point made by Naffine in her analysis of the differing reasoning about personhood drawn upon in establishing the *subject* of law.¹¹³

This more flexible application to interests beyond access to information – such as the interest in becoming or not becoming a genetically related parent - and the respect for autonomy that underpins the interpretation of Article 8 have been cited by Marshall as evidence of a self-creational rationale of identity where identity and interests of identity are seen as an ongoing project.¹¹⁴ This stands in slight contrast to the perspective of the formulation and application of the UN CRC article 8 right to identity and the genesis and use of a right to identity in Argentina outlined below. However, whilst this flexibility allows for the use of many differing conceptualisations or approaches to identity arguments in different contexts, it does not preclude the recurring use or entrenchment of a particular approach to identity reasoning or conceptualisation of the identity interests at stake in particular conflicts. I argue further in relation to the formation and application of article 8 of the UN CRC and in relation to the anonymous birthing and access to information about genetic parentage in the ECtHR and within the UK, that the particular contexts of genetics and parentage as well as broader public concern may be leading to such an entrenchment.

Article 8 of the United Nations Convention on the Rights of the Child 1989 enshrines a child’s right to identity by placing on States responsibilities to respect identity and to preserve it “including nationality, name and family relations” with Article 8.2 stating

¹¹³ Naffine supra n45.

¹¹⁴ Jill Marshall, *Personal Freedom through Human Rights Law? Autonomy, Identity and Integrity under the European Convention on Human Rights*, International Studies in Human Rights Volume 98 (2009) Kojinklijke Brill NV, Leiden, see in particular chapter 1 and chapter 10.

obligations to re-establish any aspects of such a right where they have been unlawfully deprived. Again the right to identity is not defined but framed by relation to a non-exhaustive list of elements of identity that should be secured. Examples of activities which have been put forward as implicating this right to identity as framed within the convention include:¹¹⁵

- Forced disappearances – as seen where persons are abducted and their family connections disrupted and their psychological integrity threatened
- Illegal adoption
- Anonymous births – seen in some countries such as France where mechanisms allow births without records of maternal and therefore paternal identity
- Assisted reproduction through gamete donation – pointed to specifically in the cases of anonymous donation
- Forced assimilation and social engineering – as seen for example with the Australian Governments forced separation of Aboriginal children from their families

Whilst these examples were not put forward as exhaustive, they do point to the kind of conflict or harm that may have more directly influenced the conception and articulation of Article 8, as opposed to questions of sexuality, gender, end of life decisions and interests in becoming a genetically related parent that have coloured the rights emergence in the ECtHR. Article 8 was conceived of as a direct result of the lobbying by parties to the Convention, most notably Argentina, whose immediate past involved human rights violations which included disappearances and illegal forced adoptions resulting in numerous children being brought up in ignorance of their true parentage and the circumstances of their birth.¹¹⁶ It is also an example of a social movement in conjunction with a reaction to political atrocities as a driving force of legal change and the formation of a fundamental legal principle. Within Argentina the group Abuelas – grandmothers and mothers of the disappeared – organised to put pressure on the government of Argentina to do more to locate and reunite forcibly adopted children with their remaining blood relatives.¹¹⁷ This was done in tandem with pursuing their own efforts to find now adult children and in pushing for a right to “truth” in relation to the past atrocities committed by the government against political opponents during the “Dirty War”. It is an example not only of how an emerging technology – genetic

¹¹⁵ The examples listed are those forwarded in T. McCombs and J. S. Gonzalez “Right to Identity” International Human Rights Clinic, Berkeley School of Law 2007.

¹¹⁶ See J. S. Cerda “The Draft Convention on the Rights of the Child: New Rights” (1990) *Hum. Rights. Q.* 12, 115.

¹¹⁷ This group was instrumental in presenting article 8 to the UN Working Group. See L. Avery “A Return to Life: The Right to Identity and the Right to Identify Argentina’s “Living Disappeared”” (2004) *Harvard Women’s Law Journal* 27, 235 at 271.

profiling – was drawn upon in aid of justice and simultaneously contributed to a shift in approaches to thinking about human rights law,¹¹⁸ it also shows the role that an advocate group with coordinated purpose were able to have in directly framing a new human right of identity. One result of this campaigning was the passing of a law to allow for the collection of DNA from those who may be children of the Disappeared who were forcibly adopted.¹¹⁹ Paradoxically, these children, now adults, may not in every instance wish to know their biological heritage. This has led to the unique position that DNA samples can be taken (from other articles such as hairbrushes, not forcibly from their bodies) without their permission, clearly violating their interests in privacy and ironically in their choice to retain the identity they have been brought up with over the purported “authentic” identity of their birth.¹²⁰ This may be countered by another unique right currently being debated – the right to truth – which in the interests of justice for past wrongdoing may weigh in favour of such laws.¹²¹ I would argue that the nature of the conflicts and the political and social context within which this right was birthed and developed, namely to restore justice and uncover crimes, have coloured both its implicit framing and rationale. Its application in Argentina follows a narrower rationale based upon the objective authenticity of a child’s birth and their genetic parentage, but leaves little room for the choice of the presumed “stolen” child in who they wish to recognise as their parents, nor for the balancing of their interests in privacy.

In the case of children forcibly adopted, they undoubtedly have interests in privacy in reference to unwanted removal and DNA profiling of their tissue which conflicts with the protection of a so-called right to truth and justice. Further, they may have an interest in retaining their assumed familial identity and of refusing to acknowledge their genetic origins and birth. In the case *Gualtieri, Rugnone de Prieto* it was this which Prieto was arguably concerned with.¹²² This might be seen as a clash in identity interests of the now adult child who does not wish to know the truth (one way or another) about their genetic heritage and birth origins, which are themselves recognised and important aspects of identity, with the

¹¹⁸ Noa Vaisman in “Relational Human Rights: Shed-DNA and the Identification of the ‘Living Disappeared’ in Argentina” (2014) *Journal of Law and Society* 41, 3 391-415 argues that the Judicial treatment of both the subject of law and the relationship to the bounded body has shifted in contemplation of the profiling of shed DNA as part of the pursuit of truth such the legal subject in such cases is treated as relational rather than as an autonomous and bounded individual.

¹¹⁹ The law in question is Law NO 26549 Nov 26 2009 (Arg).

¹²⁰ See Vaisman *supra* n41 and the discussion of the case Corte Suprema de Justicia de la Nación (Argentina's National Supreme Court) 8 November 2009, ‘Gualtieri, Rugnone de Prieto, Emma Elidia y otros s/sustracción de menores de 10 años’ (11/08/2009 ± G. 291. XLIII).

¹²¹ For comment on this see E. B. Ludwin King “A Conflict of Interests: Privacy, Truth, and Compulsory DNA Testing for Argentina’s Children of the Disappeared” (2011) *Cornell International Law Journal* 44 535.

¹²² See Vaisman *supra* n125.

emphasis on the need for justice and truth tipping the scales in favour of DNA profiling. Interests in privacy and control of information and access appear to clash later in life at the stage of adulthood, whereas the initial wrongdoing (even though it could be argued that the wrongdoing is on-going in cases of wrongful adoption)¹²³ took place at birth when resolution of the conflict would clearly imply return to the biological parents.

Whilst forced disappearances and adoptions, as well as assimilation practices obviously implicate indefensible harms not simply limited to identity interests, the other points outlined including assisted reproduction and anonymous birthing laws introduce further conflict between the rights of private individuals including potential conflict in competing rights to identity and private life. Anonymous birthing and assisted reproduction implicate directly competing human rights of private persons including privacy concerns of biological mothers and gamete donors from the moment of birth, or conception. Both have been considered within the ambit of the ECtHR in relation to alleged violation of Article 8 right to private and family life.

However, as outlined above in balancing other competing interests the court allows a margin of appreciation to the member states, and has utilised a fine balance between the privacy interests of mothers who potentially may be in vulnerable positions at the time of the birth, and the identity interests of the (now adult) children seeking identifying information.¹²⁴ At least one commentator shows preference for the more nuanced balancing of interests in favour of the mother in the approach of the ECtHR as opposed to the emphasis placed upon the primacy of the child in the UNCRC article 8 protections.¹²⁵ Marshall has argued that women, in leaving their children at sites designated for such actions, may be exercising, and should be considered to be acting, in accordance with their own identity in refusing motherhood.¹²⁶ This would imply that such practices involve a conflict not just between the child's identity interests in knowing their biological parentage and the mother's rights to and

¹²³ This is argued by McCombs and Gonzalez supra n 88 at 19.

¹²⁴ See *Odievre* supra n106, where the action failed and *Godelli* supra 106, where the action succeeded due in the main to the lack of identifying information about her origins (which was supplied in the *Odievre* case) and the blanket refusal of any further information by the authorities who patently failed to adequately weight up the interests at hand.

¹²⁵ S. Besson "Enforcing the child's Right to Know their Origins: Contrasting Approaches Under the Convention of the Rights of the Child and the European Convention on Human Rights" (2007) *International Journal of Law, Policy and the Family*, 21, 137–159.

¹²⁶ See J. Marshall "Giving Birth but Refusing Motherhood: Inauthentic Choice or Self-Determining Identity?" (2008) *International Journal of Law in Context* 4, 169-185; for further discussion see J. Marshall "Concealed Births, Adoption and Human Rights Law: Being War of Seeking to Open Windows in to People's Souls" (2012) *Cambridge Law Journal* 71:2, 325-354.

interest in privacy, but also the interest a woman has in her own identity of choosing not to become a mother.

This broader view for the right to identity, argued for by Marshall, not captured by the machinations of the legal response in Argentina, might provide some assistance to those in the paradoxical position of having found out that they are the children of Disappeared parents but wish to retain the name of their adoptive parents and finding that they cannot so this.¹²⁷ A more nuanced understanding of the identity interests at stake, or perhaps more precisely, an approach to identity with less emphasis on the “authenticity” or of objective truth in relation to identity would allow that choice in name and familial relations as integral to identity.¹²⁸ Again however, the distinction between the ECtHR jurisprudence in this regard, and the stricter application in Argentina, can be partially explained by reference to the nature of the political history, social context and specific conflict in question all of which point to an emphasis on righting and recognising broader social and political crimes. In the cases of anonymous birthing however, the root cause of the problem is fuelled by the private decision of the parent in question for different reasons, many of which may pertain to their own physical safety. The ECtHR jurisprudence in relation to identity has also been sought to apply to the differing scenarios outlined above and so has allowed reasoning and application of identity rights to broader categories of interests including those more related to autonomy and self-creational based concerns. Whilst the coexistence of such differing underlying rationales is possible with a lack of definition and as a broadly framed human or constitutional right, the incompatibility of such rationales can be clearly pointed to in the resistance to the original wording of article 8 UN CRC.

The original wording of Article 8 UNCRC granted the child right to retain “true and genuine personal, legal, and family identity”¹²⁹ but was opposed primarily by countries lacking a concept of “identity” in their national legislatures and where strides were being made in to IVF and genetic engineering.¹³⁰ One view is that the use of the words, “true and genuine”, delineate an underlying intended rationale of authenticity for the right to identity even if this did not make the final draft.¹³¹ Authenticity as argued in the previous sections can be

¹²⁷ See Uki Goni “Child of Argentina's 'disappeared' fights for right to keep adoptive name” Guardian online available at <http://www.theguardian.com/world/2011/sep/23/child-argentina-disappeared-adoptive-name>.

¹²⁸ Vaisman *supra* 1251 points out that in the case of Prieto much was made of genetic and birth origin as integral to identity but not so much of social familial ties.

¹²⁹ Report of the Working Group on a Draft Convention on the Rights of the Child, UN Doc. E/CN.4/1986/39.

¹³⁰ Cerda *supra* n121 at 116.

¹³¹ This is the argument of McCombs and Gonzalez *supra* n88.

construed in many different ways itself, but as demonstrated in relation to the application of the right to identity in Argentina it might lead to a restrictive reading of identity and disclosure of information to the subject against their will and in violation of their own construal of their personal identity. This might flow on a rationale of identity as a *true self according to third parties*. In the ECtHR Marshall argues that within cases relating to sexuality the court has implicitly endorsed an approach which views identity as a project of development, whereas in terms of the truth of paternity or maternity cases there is a subtle emphasis on knowing one's true self which seems steeped in an essentialist reading of identity and authenticity, where the true self is one which requires knowledge of genetic parentage.¹³² Marshall argues that the essentialist turn in these cases endorses a problematic version of liberty as self-realisation and may be used to justify prohibitions placed upon private behaviour (such as sexuality) where it is used to explain that there is an unchangeable core self that should be protected.¹³³ Marshall directly justifies her claims by reference to the arguments of Berlin such that positive perspectives of liberty tied as they can be to notions of self-realisation (which draws on an umbrella understanding of different theories) and uncovering of a core authentic self or of the "right" more readily leads to the view that persons can be "forced to be free", that the right and moral thing to do is something that an individual would do if they were in a position to understand it, and thus leads to conflation and justification with illiberal and oppressive actions.¹³⁴

Whilst Marshall has argued that some of the reasoning shown in the anonymous birthing cases displays an essentialist turn of viewing identity as an objective or essential truth about a person, as I have argued above the development and application of identity in the ECtHR jurisprudence has been varied and developed by reference to underpinning autonomy. As such, and as argued by Marshall, other cases relating to sexuality and gender in the case of *Goodwin* portray a more open self-creational tenor to the jurisprudence. The following subsection further discusses this potential, but also points to the wider favouring of more reductionist or essentialist readings of genetics and identity as part of the international sphere. This discussion, is intended to demonstrate the context and tenor of the idea and intellectual debate surrounding identity as part of demonstrating why I have identified it as a concept that has emerged in some jurisdictions but which is still only potentially emerging in others,

¹³² J. Marshall *supra* n119 at133. It should be noted however that identity is not explicitly referred to in such cases and that Marshall's analysis primarily relates to her own conception of identity as it should be protected and how it has been protected through the development of human rights jurisprudence.

¹³³ Marshall *ibid*.

¹³⁴ I. Berlin, *Two Concepts of Liberty : An Inaugural Lecture Delivered Before the University of Oxford on 31 October, 1958* (1958; Oxford; Clarendon Press).

such as the within the UK. With this in mind, the next subsection seeks to further analyse the ways in which identity has emerged and is emerging so far and the international context that may influence its emergence in the UK which is the final focus of this chapter.

4.5 Moving Beyond Identity as Protection of Control and Access to Information

The above case law introduces a further aspect to a concept of a right to identity beyond the personal or proprietary concepts discussed earlier. The courts comments make it clear that identity is inherently linked to autonomy and that aspects crucial to identity include positive choices and actions that should be recognised (in the case of Christine Goodwin) and also to active interests and choices in relation to becoming a parent. In this latter case, it is not simply that becoming a social parent is seen as of critical importance but that genetic lineage specifically should be recognised. These cases are not simply about the protection of one's knowable information as recognised by the world, or of allowing access to such information, but tentatively promote the idea that identity as a lived social experience requires and subsumes protections of active behaviours in the pursuit of the development of such identity. However, a conceptualisation of identity is never overtly spelled out in the ECtHRs deliberations and the cases involved, as argued by Marshall, have shown a potential mismatch in the underlying understanding and reasoning used in relation to aspects important to private life – and by extension identity – as between the reasoning used in cases relating to sexuality and those relating to genetic parentage and birth origins as highlighted above. But as argued by Naffine in relation to the underlying reasoning and conceptions of identity or personhood as the *subject* of law, differing conceptualisations and reasoning in general may be relied upon in order to come to the “right” decision in the case at hand (according to the decision-makers or judges in question), for example, . as to what is perceived as the *legitimate* outcome of the immediate conflict.

In common law, and case law in relation to the ECtHR, the courts discretion is necessarily framed and therefore also limited by the existing Convention framework and past case precedent. Where the concepts or principles in question have broad definitions (or in the case of identity no explicit definition due in part to the fact that it has only relatively recently been referred to in the case law) then it is open to more disparity in interpretation and the reasoning used to populate its application. In the case of identity in the ECtHR, it is being used as a means of legitimating and grounding the interests that parties, and the Court, argue should be protected. It is taken for granted – it is never actually expanded upon in the cases

where it is explicitly pointed to – that identity and identity interests, at least the ones being argued for in context, are important and thus should be protected.

Its undefined nature leaves the right and underlying reasoning for its application or legitimacy open to differing interpretations to justify differing outcomes. The nature of the conflict in question and perspectives on that conflict will have an influence on the underlying reasoning and thus it is not surprising that disparities in such reasoning split along easily recognisable fault lines.

Cases such as *Goodwin* along with social and intellectual movements have developed in many cases towards a wider acceptance of fluidity in gender (and sexuality) combined with an understanding that such aspects of identity may be so integral that a person should not be made to renounce them. On this latter point, immutability of identity has been used as an argument that both acknowledges that choice in identity is possible but that some aspects are perceived, felt and acted on by an individual such that they are not a changeable aspect of their own identity.¹³⁵ In the case of transgender and transsexual persons who endeavour to physically change their appearance and physiological character, their identity as a person of the gender distinct from their assigned birth gender is the element of identity that might be considered so important that they should not be required to live in denial of it, and the action to change as the self-determined act. The court does not engage with such intellectual thought beyond acknowledging a wider international change toward acceptance of transgender and transsexual persons in *Goodwin*, but the decision nevertheless finds an intellectual home in such literature.

The cases of anonymous birthing, right to know ones identity as related to knowing ones genetically related parents can be seen in line with a distinct but nevertheless pervasive trend in thinking: genetic essentialism. In *Mikulic v Croatia* as highlighted by Marshall in her analysis, the court noted that the applicant – who wished to establish who her father was – wished to establish a “biological truth” about her parentage.¹³⁶ In *Odievre* the court reiterated that “truth” about biological parentage constituted an important aspect of identity.¹³⁷ The majority opinion fell short however of saying that full knowledge of one’s origins was essential to identity, in contrast to the dissenting judges who argued that knowledge of ones origins was “the essence of a person’s identity”. Marshall argues that such comments and even the majorities opinion could lead “towards validating a version of freedom as self-

¹³⁵ See A. R. Enriquez “Assuming Responsibility for Who You Are: The Right to Choose “Immutable” Identity Characteristics”(2013) *N.Y.U. L. Rev.* 88, 373.

¹³⁶ App no. 53176/99 Judgment 7th Feb 2002.

¹³⁷ *Supra* n106.

realisation” which is problematic, for the reasons drawn upon above, that such reasoning if applied beyond the context of right to access information, can be used to oppress or constrain the actions and lives of individuals.¹³⁸ It should be noted however that we are still dealing with a concept that is undefined and in which Marshall’s critique is based on the *potential* validation of such an approach to identity (and freedom). It does however coincide with a movement that has seen greater emphasis placed upon genetics and genetic heritage.¹³⁹ This is fuelled by the changes in genetic technologies which have led to commercial enterprises such as those that trace mitochondria DNA as a means of showing maternal genetic ancestry (utilising databases to show where particular genetic markers indicate certain populations, ethnicities and likely geographical diaspora), and others such as 23andMe capitalising on a demand for knowledge about genetic predispositions to diseases.¹⁴⁰

In relation both to the potential this conception of a self-realisation and essentialist understanding has gained authority and legitimacy, and also linking to the potential development of a concept of identity in UK law, Marshall turns to *R (And the application of Rose and Another) v Secretary of State for Health and another*.¹⁴¹ Before statutory changes were made to the Human Fertilisation and Embryology 1990 Act and attendant secondary legislation Justice Scott Baker found in favour of the applicants in *Rose* such that article 8 should be interpreted as providing the right to obtain information about a sperm donor as the purported biological parent, that the claims being made “went to the very heart of the claimants identity and to their makeup as human beings.”¹⁴² Whilst amendments to the 1990 Act then superseded this judgment, it is not clear what the wider implications in relation to the concept of identity in the UK will have. It is the UK law to which the following section turns.

Whilst Marshall is an active proponent of a conceptualisation of identity that should be protected through law that is grounded in the idea of a socially formed and self-determining identity,¹⁴³ the weight of popular thought in the media at large and potentially evidenced in popular imagination (or understanding of the science involved) places much weight upon

¹³⁸ Marshall *supra* n107 at 133.

¹³⁹ Programmes such as “Who Do You Think You Are” where participants track their family trees, might exemplify this preoccupation in popular culture.

¹⁴⁰ For a brief review in to the potential challenges and questions relating to genetic essentialism and its capture of popular and laypeople’s imaginations, see P. Brodwin “Genetics, Identity and the Anthropology of Essentialism” (2002) *Anthropological Quarterly* 75:2, 323-330.

¹⁴¹ [2002] EWHC 1593.

¹⁴² *Ibid.*

¹⁴³ See especially J. Marshall, *Human Rights Law and Personal Identity*, (2014) Routledge.

genetic knowledge as integral to identity.¹⁴⁴ As such the emphasis placed on “genetic identity”, both as it pertains to finding out parentage and as it is related to the capacity to become a genetically related parent, which was the crux of *Evans*, may have a burgeoning perception of authority and legitimacy with both the lay public and within case decisions. However, it may not be that essentialism per se is universally endorsed as integral to a legal or lay perspective on the concept of identity. An individual’s description of the importance they place on a particular element or characteristic, or even of their need to access information, as “essential” to their personal identity - such terminology may even be reiterated in court - does not necessarily mean that a resulting concrete concept of identity need encompass the language and understanding of essentialism. The polysemy of identity and understanding is fluid enough to accommodate differing emphases on what is “essential” to an individual’s understanding of themselves and personal development without excluding that development of identity and matters important to identity can also involve active choice, positive action and development. It may be that a laypersons understanding of the diverging rationale, and certainly that the outcomes of the differing identity related cases of the ECtHR, are entirely reconcilable. This does not however make for a concrete concept that can be applied in law.

The issue springs from the potential future development of the underdeveloped concept, and the way in which it is construed for more concrete application, if at all. Concepts themselves as exercising a compounding effect upon intuitive understanding of sensory information, are compounded further in their translation to law as outlined in chapter 5 subsection 6.3. Any potential new concepts may stand a better chance of being perceived as legitimate where they more closely ascribe to conditions of interpretation and method, as well as – what might be termed paradigmatic conditions of the subject and practice of law – standards of precision and clarity that are viewed as required for legal concepts. A legal concept in academic and professional parlance and as a matter of practical feasibility should normally be precise enough such that it can be effectively applied. If this condition is debateable – and it potentially always is – then this may play as another factor in perceptions and acceptance by legal decision-makers of the legitimacy or otherwise of such a concept. The development of a standalone concept, distinct but linked to justification and recognition as a fundamental right, may have a more defined and therefore narrowed definition for more practical application. This might go some way to explaining the greater breadth of rationale behind identity within the ECtHR jurisprudence as opposed to the more set and defined technical

¹⁴⁴ See EC Expert Group 25 *Recommendations on the Ethical, Legal and Social Implications of Genetic Testing*.

application and definition of identity as a personal or proprietary right. It also points to some of the worry expressed by Marshall in relation to the potential for a human right to identity and concept of identity within law in general to be pushed down the route of essentialism if developed further for practical application.

Identity in the ECtHR context may still be open to further development and it may continue to encompass a broader rationale and application than for example a proprietary right to identity as demonstrated in the US. It may then continue to endorse a self-creational approach to identity alongside a potential for essentialist tendencies. However, as already indicated in relation to *Evans* above and in relation to the impact that genetic technologies have had in general, new technologies including assisted reproduction and advances in genetics may be modulating understandings of identity in many ways. Essentialism, especially as it applies to genetics, and moving away from its connotations for narrative identity – which is that which is implicated in such conflicts above – has other connotations in the face of biomedical progress. This may be reflected in the initial reticence of parties to the CRC to endorse the original authenticity invoking wording of article 8 particularly those engaged in reproductive and genetic therapies research. If identity can be seen as being constituted by core unchangeable, or sacrosanct characteristics, then changes to those characteristics may be prohibited according to this view. Whereas Marshall attacks this stance on the basis of its potential to prevent legitimate private actions of individuals who have experienced discrimination on the basis of sexuality (the implicit argument being worries about who decides what is authentic behaviour and how can this be distinguished from illegitimate prejudice and discrimination), biological or genetic basis of essentialism may justify prohibition against therapies such as IVF and other genetic therapies.

Genetic essentialism, although specifically discredited on a social level for existing persons by Article 3 of the UNESCO International Declaration on Human Genetic Data 2003, nevertheless is implicated in a different sense within the Council of Europe's Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine (Oviedo Convention 1997). Article 1 of the Oviedo Convention guarantees the protection of the "dignity and identity of all human beings". Article 13 of the Convention however prohibits any modification of the human genome, unless undergone for therapeutic reasons, and against any modifications which would change the genome of descendants. In the travaux préparatoires the reasoning given for this instrument was to protect against what was

seen to be worrying biological threats to the integrity and identity of the human species.¹⁴⁵ As such the Convention does not recognise essentialist tendencies or concepts of personal identity and genetics, but the underlying ontological, or numerical identity of the human race seems to be entrenched upon an essentialist concept of biological genetic identity. Andrade has argued that this stance can be seen as in direct conflict with the proposed personal right to identity which he aligns more with the personal rights to identity found in the tradition of continental Europe,¹⁴⁶ and which sits comfortably with Marshall's call to protect a self-determining conception of identity. The UK as it stands has not ratified the Oviedo Convention – and thus it is not strictly applicable in UK law. However, in literature, in policy debates, between scientists and in the public in general (as will be discussed in chapter 7), it has been drawn upon as a bright line or consensus on the matter. Hence the Oviedo Convention has broad appeal in terms of its perceived legitimacy and importantly of perceived *authority* in relation to the actions and developments even in those countries who have not ratified.

5. Identity in UK Medical Jurisprudence

This case study is not intended as an exhaustive study of identity in the law. Neither is it necessarily an in depth study of all the ways in which identity is emerging. Identity is used here in an illustrative sense to show how and where notions of identity are indicated in the law due in part to the novelty of technologies that are driving the conflicts studied. As part of establishing the background to any such emergence, the overview of identity as a stand-alone concept within different jurisdictions and internationally is intended to show the intellectual history of the concept and the form in which it has emerged elsewhere. It is also intended to show the conceptions of identity gaining in perceptions of their legitimacy in the human rights context and as it pertains to biomedical developments in general. Subsections 4.4 and 4.5 also aimed to demonstrate some of the factors at play in framing the arguments involved and as gathering perceived legitimacy and authority. Whilst this latter point will be engaged in more thoroughly in the next chapter, it is also pertinent in the context of the UK case law in terms of the kinds of harm and how that harm may be construed in new conflicts as identity related. My argument is that identity can be seen as a potentially emerging legal

¹⁴⁵ Steering Committee on Bioethics (CDBI) Convention on the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine, Preparatory Work on the Convention, CDBI/INF (2000) 1.

¹⁴⁶ Norberto Nuno Gomes de Andrade “Human Genetic Manipulation and the Right to Identity: The Contradictions in Human Rights Law in Regulating the Human Genome” (2010) *SCRIPTed* 7:3, 429.

concept within the UK in relation to medical jurisprudence but also as it may touch on other aspects that although not medical are nevertheless the result of advances in medical technologies. Taking up the insights of structure pointed to at the start of this chapter particularly in section 2, the main drive of the following discussion of potential emergence concerns the conceptualisation of the particular harms felt or perceived, made possible by developments in genetics, and reproduction in general.

5.1 Identity as Property and Identity as Right in the UK Context

In the UK there is no personal right to identity as there is in many European countries and neither has any concept of a proprietary right to identity been recognised. In relation to identity as a proprietary right there is little academic engagement (that I can find) in relation to whether it should be of concern in the UK. Although there have been a couple of examples of scholars examining the concept of identity and its potential application in English and in Scots law with divergence between opinions as to its desirability. Marshall has devoted much writing to identity as a concept to be protected in and through human rights and in law in general, but Bently, who seems to provide one of the only writings on the subject of a proprietary right to identity in English law is examined further here. His analysis also brings to the fore the role of the ECHR in prompting potential for change in Member States law. The Human Rights Act 1998 passed by the UK Government further provides that UK domestic law should be read so as to be compatible with Convention rights and as such provided direct authority for the recognition of certain harms and interests and rights which had not previously been given similar attention.

Bently has suggested that the lack of identity protection within English law has been called in to question by some commentators who urge that such a right should be recognised so as to be in line with the rights and protections of the ECHR.¹⁴⁷ His basis for this comment seems to come from arguments made by Beverly-Smith and Lucas-Schloetter in *Privacy, Property and Personality: Civil Law Perspectives on Commercial Appropriation*, in relation to their treatment of the ECtHR judgement in *Von Hannover v Germany*.¹⁴⁸ In this case Princess Caroline of Monaco sought restraint of publication of pictures taken of her and published in various German Newspapers. Bently argued that the comments of the court upon image and the need for protection can be seen as made within the context of the case

¹⁴⁷ Bently supra n83.

¹⁴⁸ App nos. 40660/08 and 60641/08 Judgment 7th Feb 2012.

and not as direct statements about the interpretation of article 8.¹⁴⁹ He explained that it does not follow from the judgment that all photographs contain private information, which is what the case was mainly about as an intrusion in to Princess Caroline's private life. As such he asserted that it is not a strong argument in support of image rights.¹⁵⁰

Bently's rejection of the argument that Article 8 of the ECHR and the related jurisprudence of *von Hannover* necessitate the recognition in English law of a right to identity is based on the negation of the argument to recognise the right of identity as a proprietary right as seen in the US. He does not engage at all with the later jurisprudence, highlighted in subsection 4.3 above which explicitly points to a right to identity, neither does he contemplate the possibility of identity as a personal right or tort. This may be because in framing his analysis around identity as so far understood as a concept in relation to proprietary rights he does not link such cases as *Evans* to the same debate. As argued already, the right to identity may have a broader rationale and application than the concepts and mechanisms used to protect it. It may be that having started from a frame of reference directly linked to the American proprietary right, it was only this narrow informational sense that drove his analysis and inquiry believing other concepts in English law or regulations as already covering the other potential aspects of a right to identity. If that is the case however, he does not make this explicit. English law does not recognise personality rights as seen on the continent, instead it protects the person and personality through individual torts which do not recognise identity in any autonomous sense.

Bently is critical of the need to recognise a proprietary right of identity given the difficulty in coming to any clear definition of the concept and that even in regards to the individual indicia that are usually the subject of such rights – name, image, voice – there is conflict as to whether they warrant different legal treatment.¹⁵¹ He makes a distinction as between the content of the concept of private life in Article 8 and “the legal content of the ‘right to respect’ for one's private life in article 8”.¹⁵² Whilst a name has been recognised as coming within private life under Article 8, he argues that this does not mean that it justifies a proprietary right over it.¹⁵³ Proprietary rights or exclusive rights over a name does not equate with its protection as part of private life. Whilst this is true, and is in keeping with the distinction made earlier as to the breadth of rationale of a human or constitutional right to identity as opposed to a concrete concept and mechanism by which such rights are protected,

¹⁴⁹ Bently supra n83 at 45.

¹⁵⁰ Ibid at 46.

¹⁵¹ Ibid at 54.

¹⁵² Ibid at 47 and 54.

¹⁵³ Ibid.

it does not follow that this was ever a contemplation of the jurisprudence and seems highlighted by Bently here as a way to introduce the chief argument against recognition of a proprietary right in identity in the UK per se. He cites Rosemary Coombes, who has critiqued identity as property extensively, in arguing that in many cases the indicia of one's own identity can be a resource for others in developing their own identities.¹⁵⁴ Making such indicia proprietary can limit and prevent the development of personality and identity of others. In this he cites the case of *Belise Du Boulay v Jules René Hermégilde du Boulay*¹⁵⁵ as an example where the defendant as the son of a former slave had continued use of the duBoulay surname that his mother had adopted on being granted freedom with the claimant seeking to prevent its use.¹⁵⁶ The claimant ultimately failed but the case is used to show how property rights in identity in such a case would restrict the liberty of others in the pursuit of their own identities.

Bently's arguments against the recognition of identity as a concept in English law and as a proprietary right are persuasive. It does not seem that there is much by way of academic engagement with a proprietary right to identity within England in any case and there seems to be few academics arguing for its recognition – certainly none cited by either Bently or Marshall who has extensively published on identity and reviewed the literature. A search for proponents, or opponents, to a proprietary right to identity within English law provides no results. In Scotland however, there is at least one commentator actively advocating the potential recognition of a proprietary rights to image and publicity – if not identity – in Scots law.¹⁵⁷ Black however concentrates upon the commercial interest in images as they might be linked with advertising and whilst engaging with the argument that image rights might be protected as through privacy, the application of the ECHR Article 8, she acknowledges, much as Bently overtly argues, that the convention rights do not sit well or seem to logically justify property rights in identity indicia.¹⁵⁸ Beyond this she also acknowledges that Scots Law does not engage in rights in image or identity. However, commercial interest and what Bently describes as “the tendency of legal norms to expand and, in areas of harmonization, to gravitate towards the most protective regime”¹⁵⁹ imply that the force of market incentives may make the prospect of a concept of identity for commercial

¹⁵⁴ Ibid at 55 citing R. Coombe “Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue” (1991) *Texas Law Review* 60, 1853 at 1877. For more contemporary work see R. Coombe and L. Weiss “Neoliberalism, Heritage Regimes, and Cultural Rights” in L. Meskell (ed) *Global Heritage: A Reader* (2015).

¹⁵⁵ (1869) L.R. 2 P.C. 430.

¹⁵⁶ Bently supra at 58.

¹⁵⁷ G. Black “Publicity and Image Rights in Scots Law” (2010) *Edinburgh Law Review* 14:3, 364-384.

¹⁵⁸ Ibid see especially 377.

¹⁵⁹ Bently supra n83 at 48.

exploitation more desirable and hence also legitimate, if not to Judges then perhaps to Business and through them, Governments.

Neither Bently nor Black engage with the ways in which the right to identity has been developed in Convention jurisprudence that might be recognised in a different sense than by proprietary rights. This omission leaves open the possibility that an alternative analysis of the right to identity as enshrined within the Convention Jurisprudence might lead to the recognition of a concept of identity in a different sense to that of a proprietary right. The intellectual debate surrounding identity as an autonomous concept within the law has not been foreshortened, but explicit academic engagement is still lacking. The distinctions as between the law in England as opposed to that in Scotland also mean that there is a greater likelihood that such debate and recognition of identity as an autonomous concept would find more fertile ground north of the border.

Scots law is closer in nature to those jurisdictions on the continent that recognise a right to personal identity, than English law. Privacy as a concept has also never crystallised in English law or Scots law in the way it has on the continent or in America. Privacy has however entered the academic legal lexicon and is widely debated and entrenched in academic concerns in the UK. Where privacy has been referred to in case law in England it has been protected through the stretched concept of confidentiality instead.¹⁶⁰ In reference to the recognition of privacy as concept in law in Scotland, despite the lack of its argumentation in Scots case law, commentators have been generally more favourable that it might be recognised should it be argued in Court.¹⁶¹ The structure of law in Scotland is such that it is rights based, as opposed to remedy-based as it is in England.¹⁶² There are therefore no structural reasons preventing judicial development in the recognition of protected rights. Reid cites *Micosta SA v Shetland Islands Council* where Lord Ross did not consider it a barrier to recognition of a delict that there was no precedent for such recognition.¹⁶³ Lord Ross went on to quote with approval David Walker's text book on delict, arguing that whether an interest is recognised and a remedy given as part of extending the list of delicts is a matter of social policy.¹⁶⁴ Reid goes on to argue that this means there is little by way of the structural difficulties for Scots law to recognise a right to privacy or to offer protection for

¹⁶⁰ *Campbell v Mirror Group Newspapers Ltd* [2004] UKHL 22; and *Douglas v Hello! Ltd* [2005] EWCA Civ 595.

¹⁶¹ E. Reid "Protection for Rights of Personality in Scots Law: A Comparative Evaluation" Electronic Journal of Comparative Law vol11 (4) (December 2007), <http://www.ejcl.org> at 30.

¹⁶² *Ibid.*

¹⁶³ 1986 SLT 193.

¹⁶⁴ At 198, citing *The Law of Delict in Scotland*, 2nd edn (1981), at 9.

privacy as required by the ECHR.¹⁶⁵ This argument is particularly strengthened by the relatively recent revival in interest in the *actio iniuriarum* within Scots law. The action *iniuriarum* has a common lineage with that in other European jurisdictions which also recognise identity and privacy as personality rights, and Reid points to these as comparative approaches that Scotland might look to in protecting privacy.¹⁶⁶

My interest in this line of thinking is two-fold. The first is that the case cited by Reid in defence of the flexibility of Scots law in terms of recognising new delicts itself draws upon the arguments of a legal commentary thus strengthening the claim that law in practice may be influenced, even if partially by legal academia¹⁶⁷. The second is that the *actio iniuriarum* in Scots law was revived only relatively recently from obscurity within Scots law, and its revival was fuelled not just by academic interest but also by the scandal and reaction to practices revealed as endemic to the medical profession and by the ambiguous position of human material implicated by modern biomedical practices and developing technologies. This argument came to fruition in the case of *Stevenson v Yorkhill NHS Trust & Another*, allowing action for wrongful conduct in the case where the pursuer had authorised a post-mortem on her daughter but claimed not to understand what was involved and suffering psychiatric harm as a result.¹⁶⁸ *Stevenson* involved the retention of tissue and organs by the hospital in question leaving the mother, upon discovering the practical reality of what had happened to the body of her baby, shocked and further bereft. This reflects the wider organ retention scandal at Bristol and Alderhey Hospitals where relatives of deceased were informed of ongoing and widespread practices of retaining tissue and organs without consent. The judgment relied upon the post-mortem cases cited by Whitty in his article which was also cited in the case at hand, and which until that point may have been consigned to obscurity.¹⁶⁹ The judges recognised that the conduct constituted a harm for which damages could be awarded under the head of the *actio iniuriarum*. It may be possible then that the *actio iniuriarum* and a potential flexibility means that there is at least no hard barrier to the recognition of a similar right to identity - if it were ever to be argued in Scots law. Further, there is some precedent, in the form of the *actio iniuriarum*, in recognising new interests and personality rights. This is notable because, even though there has been no explicit debate or formulation of identity as a personality right in either English or Scottish law, the kinds of

¹⁶⁵ Reid *supra* n 179.

¹⁶⁶ *Ibid.*

¹⁶⁷ This was specifically highlighted in chapter 5.

¹⁶⁸ (2006) CSOH 143.

¹⁶⁹ N. Whitty "Rights of Personality, Property Rights and the Human Body in Scots Law" (2005) *Edinburgh Law Review* 9, 194-237, see especially 210-219.

conflicts that are becoming more frequent in the courts are those that can be characterised as engaging identity rights as discussed earlier in relation to the human rights jurisprudence. Furthermore, the interaction of technologies, such as IVF and strides made in genetic medicine, have engaged public discourse and media concern with questions over identity which form the backdrop to cases involving harms and conflicts stemming from the diffusion of these technologies and practices. The following section looks at this context and 4 cases which exemplify scenarios where identity can be invoked to describe the interests or harms that are implicit in the conflict but never articulated. The foregoing discussion of the intellectual and legal history of identity has set the context in which identity can be seen as a compelling concept that can be used to articulate the harms or interests engaged by these new technologies and conflicts to strengthen the analysis made in the next subsection. The next subsection also takes forward the influence that existing concepts in the English and Scottish legal systems may have on the potential perceived or claimed authority and legitimacy of identity as a concept, and thus of its likelihood of emergence.

5.2 Genetic Technology, Reproduction, and “New” Harms: Shaped by, and Shaping of Existing Law

Part of my analysis of what may pertain to an emerging legal concept was the understanding that legal scholarship and practice are symbiotic: that arguments and rising perception and support for particular arguments within academia can have an influencing effect, and therefore is considered a sign and factor of potential emergence of a legal concept. Marshall has completed extensive analysis both of a conception of identity and of how identity is protected, the kinds of identity that are excluded at times from within human rights law. In establishing a conception of a right to identity drawn from analysis of philosophy, political theory and prescription of what identity should be, she critiques the way in which identities are protected through human rights law. She argues that many freedom of expression, freedom of religion and the protections that flow from the right to private and family life are identity based claims. It should be noted however that there are only a few cases in which a right to identity is discussed as part of the claims being made. It is not clear what the work of identity as a stand-alone right within ECtHR jurisprudence does or what it protects beyond the indicia already pointed to in terms of access to information about oneself. Marshall grounds a right to identity, and theorises its justification and as such may be seen as part of potential emergence and as a potential resource from which legal decision-makers and other academics may build.

Technology also fuels the conflicts that have come before the ECtHR and subsequently implicated the burgeoning right to identity. It was referenced specifically in the biomedical context in *Evans* whereby it was stated that the Convention recognises a right to identity as protected by Article 8 right to private and family life, and that the choice of becoming a genetically related parent was intrinsic to identity, as was the companion choice of not becoming a parent.¹⁷⁰ In this instance the identity interest in question is not informational but more closely linked with autonomy and of self-creation. It was highlighted in the previous subsection that there are no necessary structural barriers to a recognition of either privacy, and I would argue of identity in Scots law as there are in English law. In the section 2 I outlined how the structure of the existing law and legal concepts frame and potentially themselves are used to justify, to shore up support for claims of legitimacy. Furthermore however, they also frame the harms that are recognised in law and if others are to be recognised existing concepts have either to be stretched to cover them, new concepts are to be recognised, or they are simply to go unrecognised as legally protected or recompensed.

This section turns to argue how the combination of new technologies, leading to new conflicts, and the existing case law point to harms that are subtly distinct from those currently protected by existing legal concepts that might be conceptualised as identity related harms, particularly in line with the self-creational aspect pointed to above. Five cases are examined spanning the jurisdictions of Scotland, England and Northern Ireland, and three different types of conflict but relating to different aspects of related technology in assisted reproduction and the impact of genetic screening. It is reiterated here that whilst identity may be an implicit motivating factor behind the harms and interests brought to bear in court, there is in fact very little evidence of identity entering in to the debates in these cases in an overt sense. In relation to the interaction of differing arguments, strategic arguments and perceived legitimacy, authority and legality, these elements are more apparent within the legislative process and will come to the fore in chapter 7. For now, my aim is to show that the kinds of conflicts coming to fruition may also pertain to identity and that identity, as understood and clarified through this chapter, may even more accurately represent the subjectively felt harm that many involved in these cases actually feel as opposed to the legalese explanation given.

The first of these cases is *Yearworth v North Bristol NHS Trust*¹⁷¹ which requires some extensive introduction to outline the more prevalent view that this case forms part of the line

¹⁷⁰ *Evans* supra n116.

¹⁷¹ [2009] 2 All ER 986 (CA).

of emergence and crystallisation of autonomy rather than identity. The case involved male claimants who had all undergone therapy for cancer and had stored semen with a fertility clinic for future use in the event that their treatment rendered them infertile. The cooling system malfunctioned resulting in irreversible damage to the sperm. The men claimed on appeal that they had suffered personal injury caused by negligence; damage to property; and losses as a result of breach of bailment conditions. The reason the men forwarded an argument of damage to property is a direct result of the ambiguity of the harm under the traditional heads of legal loss. The argument that the men had suffered physical injury is specious given that the semen was separate from their body and therefore their physical bodies suffered no harm. Personal injury could be argued on the basis of psychiatric injury: that loss of the sperm and the likely chance of fathering genetic children having been greatly reduced, harm to psychological wellbeing resulted. Claiming psychiatric injury is notoriously difficult and the claim under the first head of personal injury due to negligence failed. The Court of Appeal did however find in favour of the men having property rights in their semen and therefore of suffering loss.

The Court based this finding on the work and skill exception which has applied to excised human tissue and parts that ordinarily are not taken to be subject to property rights.¹⁷² It follows a gradual expansion of the concept of property under the guise of the work and skill exception to a growing number of tissues, and whilst it stretches the notion of what “work” or “skill” is taken to mean – in this case freezing – it could be seen to be in line with this precedent. The development of the extension of the work and skill exception has been thoroughly explored in academic writings, as has the unsatisfactory reasoning and engagement by the court in *Yearworth* as to the application of property principles and the philosophical and policy arguments that perpetuate the extension of property to the body.¹⁷³ I will not be engaging with them further here. The point I want to take up as it pertains to identity is the argument that *Yearworth* fits comfortably with a different line of precedent of the recognition of particular “health-related interests”.¹⁷⁴ Harmon and Laurie argue that the decision in *Yearworth* fits with the line of cases supporting the principle of autonomy, traced back all the way to *Bolam v Friern Hospital Management Committee*,¹⁷⁵ through *Sidaway v.*

¹⁷² Ibid.

¹⁷³ See for example Whitty supra n187; R. Hardcastle, *Law and the Human Body : Property Rights and Ownership* (2007); S. Harmon and G. Laurie “*Yearworth v North Bristol NHS Trust*; Property, Principles, Precedents and Paradigms” (2010) *Cambridge Law Journal* 69:3, 476.

¹⁷⁴ S. Harmon and G. Laurie “*Yearworth v North Bristol NHS Trust*: Property, Principles, Precedents and Paradigms” (2010) *The Cambridge Law Journal* 69,476-493 at 488.

¹⁷⁵ [1957] 1 WLR 583.

Board of Governors of the Bethlem Royal Hospital,¹⁷⁶ to the cases involving claims for wrongful conception in *McFarlane v. Tayside Health Board*,¹⁷⁷ and *Rees v. Darlington Memorial Hospital NHS Trust*,¹⁷⁸ to the consideration of *Chester v. Afshar*,¹⁷⁹ and the finding of a failure to warn of a tiny risk that came to fruition in the absence of proven negligence.

Bolam and *Sidaway* each broke away somewhat from deference to the medical profession by laying down that the standard of care should be that based upon a “responsible body of medical opinion”, and that professional judgment might determine the information given to patients in making their decision as to whether to consent to treatment. In *McFarlane* general damages were awarded in recognition of the denial of an “important aspect of their personal autonomy”, although the claim for damages associated with raising an unplanned child (following a failed vasectomy) were denied. In *Rees* a conventional sum for the loss of autonomy following a failed sterilisation were also endorsed. *Chester* may be the most prominent display of the contortion of settled legal principles in finding in favour of the claimant even though causation between failure to warn and the injury materialising was entirely lacking and seemed to condone damages for lack of “mere, sheer choice”.¹⁸⁰

These cases compromised of strict application of legal principles in favour of a pragmatic response to medical ethics, making decisions based upon the interests of justice in the immediate case. This might also hold true of the line of cases in general that gradually expanded the work and skill exception for human tissue. This finding would set much store on the influence and perceived perception in alternative principles to those that were strictly seen as legal – in this case arguably respect for autonomy within these specific medical cases gained enough perception as legitimate, and, as the precedent developed, perceived and accepted authority. The move from paternalistic medical deference to greater emphasis upon informed consent might be seen as testament to the ebb and flow in perceptions and claims of legitimacy and authority of a concept of autonomy. *Yearworth* can be seen as developing this line of thought that provides remedies for breach of autonomy and perhaps even the emergence of autonomy as a right in law itself.¹⁸¹

¹⁷⁶ [1985] AC 871.

¹⁷⁷ [1999] UKHL 50.

¹⁷⁸ [2003] UKHL 52.

¹⁷⁹ [2004] UKHL 41.

¹⁸⁰ G. Laurie “Personality, Privacy and Autonomy in Medical Law” in N. Whitty & R. Zimmermann (eds), *Rights of Personality in Scots Law: A Comparative Perspective* (Dundee 2009) 453–484, at 463.

¹⁸¹ See for comments to this effect Harmon and Laurie *supra* n192 at 492–493.

It is not however a foregone conclusion that the harm, or the interests involved, at the basis of the impetus for the men's claim is autonomy simpliciter. For one, autonomy is another concept that is subject to multiple definitions, although it seems that its most common practical application in medical jurisprudence tends toward a Millian self-determination linked with the harm principle than with deontological ethics akin to Kantianism. Philosophical points aside however, the harm the men suffered, whilst fitting to a certain degree with the understanding of autonomy as self-determination – the men will not have the chance to lead the life they could have had the semen survived – I would argue that the perceived or subjectively felt harm is closer in nature to that highlighted in *Evans* above. The now complete inability to have a genetically related child: an integral aspect of identity. Whilst *Yearworth* involves negligence as opposed to a private party refusing consent, the core interest remains the same. Both involve thwarted autonomy, but it is the damage to identity that is the driving motivation behind the claim since autonomy may be exercised in multiple ways but it is the long term adjustments to self-perception in the resulting path of life that is now changed or closed off forever that is the lasting harm felt. As pointed out both autonomy and now identity are recognised rights interpreted out of Article 8 of the ECHR. *Yearworth*, whilst not exactly showing support for a concept of identity – instead bolstering potential recognition of the legitimacy of autonomy – does represent the sort of conflict that undoubtedly will resurface and where identity interests, as self-creation and perception, may seem to be a driver.

Following from the above argument that *Yearworth* may bolster the legitimacy and authority of autonomy as an underlying and justificatory right within medical jurisprudence, it is also an example of the disparate practical legal concepts that are used to protect that right. These practical concepts themselves, especially the application of property to excised tissue and reproductive tissue in such circumstances, were not conceived of nor justified for the harms for which they are being utilised to protect or recompense. The underlying rationale of property is rooted in self-determination and autonomy, in that it provides protections and mechanisms to exert autonomy over objects, land or other intangible resources. But property is also steeped in its use of oppression over persons, as the history of slavery attests to, and the rationale of commercialisation, and the ability to profit from and alienate possessions. In this context it may be that whilst the application of property concepts is best able practically to provide the requisite protection or remedy, its rationale, justification and further rights and entitlements – such as rights to commercial exploitation and to transfer such rights to a third party – do not reflect, fit, or ably conceptualise the underlying harm perceived. *Holdich* points to scenarios made possible by the development of technology, where the legal

concepts and regulation do not cover the novel circumstances debated and where the harm is also ambiguous or vaguely articulated.

Having argued that the appropriateness of applying property mechanisms to protect the interests and harms in question is in doubt, it is important to note that the precedent set in *Yearworth* has not been developed so far¹⁸² but relatively recently a “Scottish” *Yearworth* reached the courts in *Holdich v Lothian Health Board*.¹⁸³ The facts are almost identical. The pursuer sought damages for distress, depression and loss of a chance at fatherhood. In this case the pursuer forwarded two bases for the claim: breach of contract of deposit by damaging the pursuer’s property – the sperm – and a claim in delict. The case never settled the matter in relation to property over body parts or tissue as the matter was a procedure roll hearing with the finding that the legal argument was not bound to fail and therefore merited a proof before answer. There is also some academic support for recognising property in these cases and in excised body parts in general in Scotland.¹⁸⁴ Further, whilst the matter was never resolved in this case, the court did review the arguments in favour of recognising property. But the court also touched on an alternative “unified body” theory,¹⁸⁵ which is cited with approval by Whitty¹⁸⁶ as a means of conceptualising the harm as a personal injury and providing a remedy in delict as a protected personal right as opposed to a protected property right and thus avoiding the ethical controversies that flow from the property debate.

Whitty’s article was written before *Stevenson* and *Yearworth* and so could not consider either judgment in analysis, but he does argue in favour of property rights in the body according with property vesting with the source of the tissue in most instances. Whitty also considers the reasoning given in a German case relating to the status of sperm, stating that sperm, or ovum and any other excised part that is destined to be returned to the original subject or to another subject but to be used for a typical function – procreation – should not be treated as property but as part of the body as a functional unit protected by the right to personality.¹⁸⁷

¹⁸² Its effect upon the application of property principles to the body is actually looked on with scepticism given its application and reasoning within the narrow context of the application of the Human Fertilisation and Embryology Act (1990) regulatory structure. See S. Harmon, “*Yearworth v North Bristol NHS Trust: A Property/Medical Case of Uncertain Significance?*” (2010) *Medicine, Health Care & Philosophy* 13:4, 343-350.

¹⁸³ [2013] CSOH 197, 2014 SLT 495.

¹⁸⁴ See K. Reid “Body Parts and Property” University of Edinburgh School of Law Research Paper Series No 2015/25, Forthcoming in Andrew Simpson, Roderick Paisley and Douglas Bain (eds), *Northern Lights: Essays in Private Law in Honour of David Carey Miller* (Aberdeen University Press, 2016).

¹⁸⁵ *Holdich* supra n201 at para9.

¹⁸⁶ Whitty supra n187 at 224.

¹⁸⁷ *Ibid* citing Bundesgerichtshof, Urteil 9 Nov 1993, Aktenzeichen VI ZR 62/93 (reported at BGHZ, 124, 52).

The court in considered the German case in *Yearworth* but dismissed this unified body theory, but in *Holdich* Lord Stewart confessed to having less trouble accepting the functional unity theory, although as the pursuer (in *Holdich*) wholly rejected this point (perhaps because the personal injury claim in *Yearworth* had been so absolutely rejected) it was not argued and thus Lord Stewart did not engage with the point.¹⁸⁸

Thus *Holdich* demonstrates not merely that these types of scenarios will reappear in the courts, especially as the law is still ambiguous as to the claims, rights and remedies that may be available; but also that the development and scope to recognise new concepts and reasoning in a particular case are framed and restricted by the arguments that are brought before the court. Existing legal concepts also define the parameters and the normative and objective factors that may influence the coproduction of new arguments, and conceptualisations of the harms being addressed in court. Property is used, and argued on the basis of its ability to provide an existing legal remedy where none truly fit with the situation. In this case the debate surrounding property is that which has been perceived in *Holdich* as authoritative and most likely to be recognised because it is an already legally recognised concept - applied in *Yearworth* in England - that could be extended. Extending an existing legal concept was seen as having a greater chance of success than a new interpretation or conceptualisation which has not received much attention or debate, and thus might be perceived as less likely to persuade the judge of its legitimacy and legality. Despite this, the judge in *Holdich* signalled that alternative arguments and concepts in such an ambiguous area could have been argued. This demonstrates that whilst existing concepts do have a framing effect in setting out the kinds of arguments and justifications that are considered legitimate and authoritative, the agency and perceptions of legal decision-makers including judges can lead to unpredictable results.

In this instance the functional unity theory of the body touched on by the court would seem to place the loss of sperm as still part of the body and hence as an assault on bodily integrity. However, the development of the functional unity theory also does not seem to capture the interests of autonomy that are being argued for within the broader commentary looking at this line of cases. Reid has argued that harm normally claimed under personal injury (assault on the body) involves “disease and... impairment of a person’s physical or mental condition” which does not sit well with the harm being claimed here – deprivation of opportunity of procreation.¹⁸⁹ For this reason she rejects the functional unity theory and personal injury

¹⁸⁸ *Holdich* supra n201 at paras 7-9.

¹⁸⁹ E. Reid “Delictual Liability and the Loss of Opportunity of Fatherhood: *Holdich v Lothian Health Board*” University of Edinburgh School of Law Research Paper Series No 2015/30, Forthcoming in

claims as a means of protecting such procreational autonomy. Reid's argument however, seems to extend to the critique of the underlying "right" to procreational autonomy as an interest that *should* be protected in cases such as these in the first place; an argument against the underlying justification of procreational autonomy as a right that should be protected absolutely. This extends to colour her arguments *against* the recognition of a stand-alone concept and personality right of autonomy or procreational autonomy as applied to cases of access to reproductive therapy.¹⁹⁰

Autonomy is briefly discussed by the judge in *Holdich*, more because, as Reid says, it "seems" to the court to be a "personality right".¹⁹¹ Reid, in critiquing *Holdich*, engages with the right of autonomy as developed in ECtHR jurisprudence and acknowledges that whilst such a right is recognised, the domestic courts have had trouble outlining and enforcing exactly what it means.¹⁹² Reid criticises the idea of a separate head of claims in delict of a right of autonomy, or more specifically a right of reproductive autonomy, beyond what is protected and vested in property rights.¹⁹³ As such Reid seems to give support to the argument that property rights could vest in reproductive material as a protection of autonomy but, does not extend her support to an unconditional right to reproductive autonomy protected through personal rights. This is a critique not necessarily simply of the right to autonomy (as developed in human rights jurisprudence), but of the available legal concepts in Scots law that might implement protection of the right and the kinds of harm they recognise. Whilst lending support to protection of autonomy as a personality right seated in "corpus" in Scots law, Reid extends her support only to the protection of the desire *not* to have a child, which springs from the *McFarlane* and *Rees* precedents outlined above. - Reid is not as convinced that a right to autonomy might or should be recognised in relation to deprivation of the *opportunity to become* a parent.¹⁹⁴ Whereas in *Rees* and *McFarlane* the harm to autonomy can be clearly linked to a harm to bodily integrity – the unwanted pregnancy and the physical manifestation of this – destroyed gametes separated from the body have a more tenuous physical connection. She further argues that whilst in the case of wrongful conception the right to make informed choices about what happens to one's *body*

Andrew Simpson, Roderick Paisley and Douglas Bain (eds), *Northern Lights: Essays in Private Law in Honour of David Carey Miller* (Aberdeen University Press, 2016) at 6.

¹⁹⁰ Ibid.

¹⁹¹ Ibid at 7.

¹⁹² E. Reid *supra* n166.

¹⁹³ Ibid.

¹⁹⁴ Ibid at 15.

can be seen as an inalienable right to corpus (and as such is justifiable), it is not apparent that the same can be said in access to assisted reproduction services.¹⁹⁵

Central to Reid's argument against the recognition of an unqualified right to procreative autonomy as a protected personality right in this scenario is the likelihood (or lack thereof) that conception would have been possible even if the sperm had not been damaged, arguing that given the uncertainty of successful conception it is problematic to render the right to make a baby or access services as an absolute right of autonomy.¹⁹⁶ Even if the right to reproductive autonomy in such a scenario should be recognised as some sort of personality right, Reid argues that the chances of successful IVF undermine the requirements for causation as many factors are involved in IVF, and she cites the success rate of IVF at 32% as published on the HFEA website. She argues that at best a man (or couple or other person whose reproductive material had been damaged in this way) could claim loss of a chance, but would have to prove that that chance of conception through IVF was over 50% which she implies could not be proven.¹⁹⁷ This statistic however can and should be challenged. Whilst per cycle of IVF the chances of conception and successful pregnancy may be 32%, this increases cumulatively with every cycle – where more embryos are created. This is why the NICE guidance suggests that three rounds of IVF should be available.¹⁹⁸ It is by no means an endorsement of an unqualified right, but this issue is at least debateable if such an argument is ever to be made in court.

Reid's argument is not against the protection or even recognition of autonomy as a personality right per se, but seems directed at the conception of the harm and specific right being argued for in the context of *Yearworth* and *Holdich* and its legitimacy as justification for a personality right *not* specifically rooted in property. She does not engage with property arguments save to acknowledge their discussion by others and to support that there are good reasons to recognise the justification for their recognition in such contexts. It is the unfettered right and justification of a procreational autonomy and its potential formulation as a personal right as guaranteeing access to reproductive services that she takes issue with for the practical and justificatory concerns outlined above. Her arguments are as much a support for the legitimacy of recognising autonomy in law - or at least of recognising the application of certain concrete legal concepts such as property as justified by reference to autonomy – as they are a critique of its limits. Arguably however, and as may be implicit but unarticulated

¹⁹⁵ Ibid.

¹⁹⁶ Ibid at 17-18.

¹⁹⁷ Ibid.

¹⁹⁸ The chances of success over three cycles increase from 45 to 53%: see <https://www.nice.org.uk/news/blog/the-importance-of-3-full-cycles-of-ivf> accessed 30/04/2017.

in the reasoning of the courts and of the commentary, whilst autonomy is certainly engaged it does not sit as well as a harm in these cases as it does in those involving informed consent which is a direct interference with the ability of a person to make an informed and autonomous decision, or wrongful pregnancy where bodily integrity is clearly linked.

Reid's critique is aimed at the importance and justificatory merit as to why such procreative autonomy should be protected. It may be that as a justification for and recognition as a stand-alone personality right in delict, in such situations, the practical delineation of the concept would be problematic, and as inferred by Reid, would suggest that the right be a positive one of access to services. Such a scope is questionable from a public policy perspective in terms of allocation of resources and the scope of the duty of the state, but also has logical practical issues in terms of the uncertainty that conception and successful pregnancy can ever be guaranteed. Whilst these concerns might be mollified by proper definition, it would seem that the root of the concern is the justification of the right in the first place: since procreation cannot be practically guaranteed in any case, it cannot and should not logically be framed as an inviolable right and interest. However, if this argument is sound in terms of rejecting the justification of a personal right to reproductive autonomy in such a case, then it also casts doubt on the justification of the application of property rights over gametes in similar situations. Furthermore whilst harms recognised by property law are normally linked with unauthorised use or exploitation or damage to possessions, in this instance the specific harm felt is the loss of any chance of becoming a genetically related parent. Such a harm is not well articulated nor justified in property rights, but neither does it appear well served by an inviolable right to procreational autonomy as discussed above.

I suggest that as in *Evans*, these cases relating to sperm and damage to sperm might be seen more clearly as implicating identity, and specifically the importance of the choice or at least the yearning for a genetically related child as part of identity that is now irrevocably closed to the pursuer and plaintiffs. Such a right and justification need not extend to absolute right to access reproductive technology, but can acknowledge that harm is done where by the negligence of others the pathway to such an identity is closed off forever. The harm is to the perception of one's potential future and the ongoing mental adjustments required to resolve any new future identity with what had previously hoped for. Such a harm may be captured and protected through recourse to the *actio iniuriarum* discussed in the next paragraph and indeed touched upon in the discussion in *Holdich*. Reid, however does not engage with the case of *Evans*, which although not presenting the same facts, at least represents the same type of harm: deprivation of a chance to have a genetically related child.

It is by no means clear that identity can be said to be explicitly endorsed in this case, but it does show that even in the case of autonomy, which can definitely be pointed to as emerging – some might even say already having emerged given its frequent appearance in court reasoning in relation to medical cases – there is an unease in relation to its adequacy to conceptualise the harm actually implicated. The discussion in *Holdich* did recognise three types of delictual case in which recovery for damage to mental harm could be made one of which included:

“...situations involving mental injury consequent on wrongful harm to the claimant other than bodily injury, the unifying principle being pre-existing legal proximity. "Wrongful harm" in this context extends to include harm to the claimant's rights or other non-patrimonial interests.”¹⁹⁹

The discussion in fact went further and cited both the organ retention cases including *Stevenson* as authority for the type of mental injury sustained – affront and hurt feelings under the *actio iniuriarum* – and also pointed to *Evans* as authority for the proposition that the defenders knew or ought to have known that their actions may lead to mental harm on the part of the pursuer. The judge in *Holdich* explicitly highlighted passages in *Evans* from the Court of Appeal (not the ECtHR) from the discussion by Arden LJ that giving birth for women “gives many women a supreme sense of fulfilment and purpose in life” and further that “[i]t goes to their sense of identity and to their dignity.”²⁰⁰

Yearworth in England and its counterpart in Scotland, can be seen as an illustration of cases of thwarted identity as much as of autonomy, but it seems clear that any concept that might arise is most likely to name autonomy as the right or conceptualisation of such harm in general given its prevalence. The comments above, however, do still leave open a window of potential for identity. It is argued here that in such a nascent state, even as referred to in human rights literature, identity, and the importance in particular of genetic identity and parentage, is driving the cases and is implicitly endorsed as a legitimate loss by the courts, even if it may not be one with an easy or clear mechanism for recompense. The harm that these cases speak to and that has been conceptualised as thwarted autonomy, I argue by reference to both the existing structure of the legal concepts and arguments, and the ambiguity of the application of autonomy to such harm (and its justification of property

¹⁹⁹ *Holdich* supra n1201 para 90.

²⁰⁰ Cited in *Holdich* *ibid* para 95.

rights or personality rights) can be better conceptualised and may be implicitly understood as thwarted identity.

Other cases illustrative of the potential conceptualisation of identity as the harm driving the conflict can be found in two cases the first being *Leeds v Mr A, Mrs A and Others*²⁰¹, the second being *A (a minor) and B (a minor) by C (their mother and next friend) v A Health and Social Services Trust*.²⁰² Both cases involve the negligent fertilisation of ova with the wrong sperm. The most recent case, that of *A(a minor)* was brought in Northern Ireland and involved the insemination of the mother of the couple undergoing treatment together using donor sperm with that of a “Caucasian (Cape Coloured)”²⁰³ donor resulting in twins born of mixed race and with significantly darker skin complexion to that of their parents. The normal practice of pairing Caucasian or “white” donor sperm with Caucasian couples was clearly breached in error, and the couple had been successful in claiming compensation – although settled out of court – for the negligent act. The case represented a challenge on behalf of the twins for harm suffered as a result of “derogatory comments and hurtful name-calling from other children, causing emotional upset”; similar hurtful comments relating to their dissimilarity to their parents and each other leading to their questioning of whether they were adopted; and a third head that if the twins were to go on to have children with a partner of mixed race, any child born to them was likely to have a different skin colour from either parent.²⁰⁴ The action was clearly that of wrongful life since it was brought on behalf of the twins themselves: a claim that the Trust should have used other – “white” – sperm. For this reason it was always doomed to fail following the precedent of *McKay v Essex Area Health Authority*²⁰⁵ as if different sperm had been used the twins themselves would not be alive.²⁰⁶

This being said however, Sheldon takes issue with the reasoning of the judge on what should count as compensatable harm, in particular critiquing the brusque dismissal of the suffering of the twins.²⁰⁷ Justice Gillen concluded that even if a duty of care were owed to the children (which he concluded there was not) in contemporary society, skin colour could not and should not be considered a harm any more than eye or hair colour, and any cruel and racist

²⁰¹ [2003] EWCA 259 (QBD).

²⁰² [2010] NIQB 108.

²⁰³ Ibid.

²⁰⁴ Ibid para 5.

²⁰⁵ [1982] QB 1166.

²⁰⁶ Indeed, this situation can be argued to be settled by reference to personal numerical identity as much as narrative of self-creational identity is implicated in the resulting heads of harms.

²⁰⁷ S. Sheldon “Only Skin Deep? The Harm of Being Born a Different Colour to One’s Parents” *Med Law Rev* (2011) 19 (4): 657.

comments directed at them should not be taken as evidence of their damage.²⁰⁸ Sheldon points out that whilst race cannot and should not be considered a harm in itself, following in line with work in social science and multiculturalism, race can be seen as a social construct, but it is one with a lived reality. She points to an interview with a second couple – the Williams – also living in Northern Ireland and having received sperm from the same donor and who conceived two children with marked distinction in skin tone and physical appearance. The general culture of their rural life in an almost wholly white community is starkly described, including the racial taunts and the gossip pertaining to alleged infidelity, a far cry from the benign image of multiculturalism described by Justice Gillen.²⁰⁹ Whilst this might be deplorable, such harm should be laid firmly with the perpetrators. To find that that harm is caused by the Trust, that being born a certain race is a harm remains and should remain unacceptable.

Sheldon's second point pertains to the claim that physical dissimilarity to their parents was a harm itself. She argues that racial matching – a form of reproductive selection – is intended to allow families to “pass” as a genetically related family unit.²¹⁰ This swims against the trend towards openness in regard to donor insemination and gamete donation.²¹¹ Indeed it goes against the sentiment and weight placed upon the importance of knowledge of personal genetic identity of which *Odievre*, *Mikulic*, *Godelli* and the other cases in relation to genetic origins in the ECtHR jurisprudence illustrated, and which *Rose v Secretary of State for Health* established in UK law. However, Sheldon argues that there is a difference in encouraging openness and forcing it upon families – which is arguably achieved in such cases – which might signal a severe breach of privacy (whether or not such a breach is actionable in such a case).²¹²

Sheldon also cites *Leeds* above – another case of the “wrong sperm” being used in fertilisation - in contrast to the judgment and description of harm outlined by Justice Gillen, pointing to the (also questionable) reasoning of Butler-Sloss. *Leeds* was a case involving a conflict over the custody and parental rights of twins born to a Caucasian couple who had consented to treatment together under the terms of the HFEA 1990 to undergo IVF using their own gametes. Due to a negligent mix up, the sperm of a second couple - also undergoing IVF to use their own gametes – was used with the ova of the first couple. As a result the children were the biological children of the woman from couple A and man of

²⁰⁸ Ibid.

²⁰⁹ Ibid at 665.

²¹⁰ Ibid.

²¹¹ Ibid at 666.

²¹² Ibid at 667.

couple B and the children were mixed race, pointing immediately to the error. Whilst not dealing directly with the issue of negligence and harm, Butler-Sloss remarked in relation to the potential custody decision that the persons whose human rights were undoubtedly affected were the twins themselves in not, in all likelihood, being able to form a relationship with their biological father in childhood, and most controversially, because they had “inherited two cultures” one of which they would have no access to. The idea that culture is genetically inherited does not need to be endorsed in order to observe that there is at least support and acknowledgement that there may be harm here, or at least that there is perceived harm here. Whilst, as rightly pointed to by Sheldon, not all forms of harm necessitate or justify a legal remedy,²¹³ these cases do point to harm that could have been explored more thoroughly, and which I would argue implicitly leans towards an identity based conception of harm (even if such a conception is not capable of expression in law in these cases). The interest of the family as a unit and of the consenting couples, to the integrity of their identity as a family can be pointed to here in the same sense as that implicit in *A (a minor) and B (a minor) by C (their mother and next friend)* above. The interests of both couples in having children genetically related to them as was their intention in undergoing treatment can also be pointed to in kind with *Yearworth* and *Holdich*. In this instance however, and in line with Butler-Sloss, Sheldon seems to be highlighting the need to explore the potential harm felt by the resulting children. Sheldon explicitly argues that a fuller consideration would have been merited and points to article 8 of the ECHR.

It is not clear that any perceived harm caused by the actual negligent act of using the wrong sperm, can logically and defensibly be attached to the twins or any child resulting from wrongful life cases. This is well argued ground and is settled by *MacKay*. However, in line with human rights jurisprudence and taking in to account the development of arguments surrounding identity and the emphasis placed upon the value of genetic parentage, and the right to know about such parentage, a possible harm might lie in the lack of clarity and rights the children have to contact with their biological father and his family. This could be both an interference with their right to respect for family life, but also of the distinct right to identity and to have access to, and to form relationships with others. As has been repeatedly argued, understanding of origins and genetic parentage is at the heart of the development of the right to identity within the ECtHR jurisprudence, and so capacity to form relationships, or at least not to be actively thwarted (by the state) in forming such relationships with those important to identity may be a natural progression of this right.

²¹³ Ibid at 668.

The final case I want to look at is *In the Matter of the Baronetcy of Pringle of Stichill*²¹⁴ which involved a referral by the Queen to resolve the competing claims of two parties as to the title to the Baronetcy of Stichill and as to whose name should be registered with the Official Roll of Baronetage. The heart of the matter revolved around the admissibility of DNA evidence in disputing the right to the title. The conflict came about as a result of information that came to light following the voluntary donation of genetic material by the late Sir Steuart Robert Pringle who was entered as the 10th Baronet of Pringle, to Norman Murray Archibald MacGregor Pringle (Murray), , for the “Pringle Surname Project”. The project ostensibly had been aimed at tracing family history and the family tree, and to perhaps determine the likely Pringle clan chief, the last chief having died without heir at the end of the 18th century. The result of DNA testing revealed that Sir Steuart was not in fact a descendent of the Pringle male birth line and that as a consequence there must have been a “break” in the male line at some point before his birth. Whilst it seems that there had been rumours of illegitimacy at some point, rumours of which it is clear that Murray was aware, no confirmation had ever surfaced before now. Murray claimed that the 9th Baronet – Norman – was not the eldest son of the 8th Baronet, there being evidence of a mismatch in timings and marriage of the 8th Baronet with his wife and the subsequent birth of Norman. Murray instead claimed that Ronald, the second son born to that marriage was the true first born son of the 8th Baronet and that he Murray, as the eldest son of Ronald, was the true heir to the Pringle Baronetcy. It appears from the facts of the case that Murray may not have been entirely ingenuous when he first introduced himself to Sir Steuart and asked for his cooperation in the “Pringle Surname Project” which seems in line with his subsequent challenge to Sir Steuart’s title in the latter years of Sir Steuart’s life. Both Murray and Sir Steuart’s son, Simon invested much time and money disputing the matter. The Court held, with some reluctance and sympathy for Simon Pringle, and expressed concern for Sir Steuart at facing the challenge – and the knowledge of his true genetic lineage – so late in life, that the DNA evidence was admissible and that the rival claim could succeed. The case has potential repercussions for the aristocracy in general, potentially opening the floodgates to like claims of broken lineage and past illegitimacy. Although birth outside of marriage undoubtedly does not carry stigma in contemporary Britain in the way it used to, and this issue seems to encompass a very upper class issue, it also undoubtedly characterises a strongly felt harm and pain by the defending Baronet and his son. The Baronetcy was not a conflict over money – none flowed from recognition of the title – it was purely the title and identification as the Baronet that was in issue. Whilst it might be far away from the

²¹⁴ [2016] UKPC 16.

contemplation of most people's idea of identity, Sir Steuart had gone his entire life in to his final years believing himself and his father to be the rightful holders of the title and the family history and sense of identity flowing from that. His son Simon would have grown up believing this to be his heritage also. Not only was that genetic tie quite dispassionately severed by the revelations of the DNA test, they then also faced the challenge to their claim to the title which clearly neither contemplated as a potential result of their consenting to the DNA test.

The Court in finding the DNA evidence admissible very perfunctorily dismissed any claims in relation to the ECHR and any potential breach of privacy. Arguments in relation to identity however were never mentioned. It may be hard to see how such a claim might be made in the very specific circumstances of the case – the admissibility of the DNA evidence – but I would argue that the nature of the harm is clearly one most definitely tied to identity as opposed to autonomy or privacy. Whether the stripping of a title can be seen as a breach of human rights however may be a stretch too far for some, but it does have some echoes of the cases (albeit of a far removed nature) to the claim and harm of the individuals in cases of the living disappeared touched on earlier who wish to retain their assumed family surname, as opposed to the surnames of their birth families. Whilst not in the same league in terms of the harms caused, the nature of the harm is alike, with the forcible imposition of a particular identity against personal will albeit in accordance with the genetic “truth”. This case may have further policy connotations for the establishment of lineage and heritage for members of the aristocracy in general, and whilst this may not be a problem for most people, it undoubtedly may mean that many more persons, sure in themselves of their identity may face challenges and impositions that go to the heart of such self perception. Regardless of whether this sort of identity challenge, or the social emphasis and value placed upon genetic and hereditary ties is “right” or desirable, it cannot be denied that the tide of popular opinion places great weight upon such notions, and it is possible that a deal more conflicts of a similar nature will appear in future.

6. Concluding Remarks

In the case of the Baronetcy of Pringle, the idea of identity is even clearer in regards to describing what the parties were concerned with. This case however is more illustrative of the clear case in which identity interests can be isolated and distinguished from any others including privacy or autonomy as being in issue. As a case of disputed title it is doubtful to have much impact beyond its narrow application. I argue however that it does show a line of

conflicts that keep identity in the foreground even if implicitly in legal thought. Identity interests then can be a more accurate description of the harm to interests that are felt in these cases as implicated and created by new biotechnologies and both represent active self-creation, or continuation of existing projects of the self that are removed from the informational realm. In Scotland, as has been argued in relation to privacy, and in relation to the organ retention scandal which also demonstrated an ambiguity in a description of the interests implicated and harm felt, the law may be more open to the recognition of a personal interest and right to identity as covered within the *actio iniuriarum* and as limited or not by the principle rights based system. There is also precedent in that Scots law may be more open to influence to borrowing from other civilian jurisdictions that also recognise identity, but with the development of biotechnologies, and the lack of the existing recognition of identity, there is potential that such a concept might develop to take into account the active self-creation aspects that are closer in line to autonomy, than simply informational aspects of identity developed elsewhere. It is the nature of new biomedical technologies that are driving these conditions for the potential emergence of identity as self-creation.

Having said this, the nature of the conflicts, and the emphasis placed upon genetic parentage and the right to both choose to become a genetically related parent, and to access information relating to genetic parentage, seems to promote the sort of genetic exceptionalism, and an essentialist or self-realising type identity warned against by the likes of Marshall. As has been argued throughout this chapter, whilst the concept of identity remains nascent, emerging and largely undefined, the concept, and the rationale used in applying it, may comfortably accommodate the opposing rationales. This does not preclude that one rationale or application over another might come to dominate the debate in particular contexts, or that it might crystallise as a defined legal concept at some point in a way that excludes the broader and more nuanced arguments. The case law reviewed in the preceding subsection points to:

- the recurring conflicts made possible by new genetic and reproductive technology;
- the framing and constraining effect on the legal discussion and debate of existing precedent and legal concepts;
- the unpredictable effect of the human agency of judges and the intersection of precedent and wider social trends in affecting the perception of legitimacy and authority of particular conceptualisations and arguments in court.

The development of a concept of identity in case law (or lack of) is part of the general development of the concept, albeit that its development within case law is itself a micro-level study of its potential emergence. Identity however, as has been detailed in this chapter, has

already crystalised in international human rights conventions. Its application and the context within which it has been drafted in these various documents, especially within Oviedo, has focussed upon the threat to genetic identity.

In the next chapter I discuss the case study of mitochondria replacement therapy as an example both of how further new biotechnologies are modulating identity, but also of the unique environment, as opposed to case law, where concepts might emerge. In this case study I will also introduce where identity is influencing the ongoing arguments being made, where there is a wider wealth of bioethical and legal literature that points to identity as a concept that could or should guide such critical decisions. Further, I will show how a differing conception of identity that is closer to identity as authenticity linked with a collective human or genetic identity acting in an essentialist fashion, as entrenched in international bioethical conventions have impacted the dynamics of the debates surrounding the regulation of mitochondria replacement therapy. As has been emphasised in this chapter and above, the potential for identity to emerge and be recognised varies by context and by the forum in which conflicts implicating identity are brought, and the dynamics of case law and of the creation and drafting of legislation are very different. Having already analysed some of the dynamics at play in the UK case law, the next chapter takes a more in depth look at the dynamics of legislative drafting and its relationship with the broader social and international debate.

Chapter 7

Notions of Identity in the Law and Genetic Technologies

1. Introduction

This chapter turns to look at the debates of the Houses of Parliament in the passing of the Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015 - which were placed before the UK Parliament on the 17th of December 2014 - as a concentrated study of the way in which identity-based arguments and a general concept of identity is developed in such a setting. In chapter 5 I outlined my conceptualisation of an emerging legal concept as one which is being argued more in debate and gaining traction as an idea in society at large such that perceptions of it as authoritative and legitimate are increasing, and thus whose perceived or claimed legality might also be increasing. It is a concept that in academic and legal circles might be moving from the implicit to explicit legal space, and whose emergence, and perception as legitimate and authoritative depends on many factors. I identified five such factors at the end of chapter 5:

- Favourable intellectual and social support;
- Advocates for and of a new concept in social debate and the legal academy;
- Structure and content of the existing regulatory array including the patterns of argumentation and narrative, both for and against a new concept (and/or new technology);
- Evidence of implicit use in law and regulation – the objective structural interactions and gaps in the protection granted by existing legal concepts and paradigms;
- Increase in conflicts and the modulation of concepts and moralities.

The previous chapter provided an overview of the rise in the intellectual and legal history of the idea and concept of identity as an example of an emerging legal concept in the UK. I also set out that the dynamics in which a concept may be developed and recognised in case law, as part of its emergence and potential crystallisation, were distinct from those involved in the formation of legislation and regulation. The recognition and definition of a concept might crystallise and be set out in either the forum of the court or Parliament, and thus the debates playing out in both may contribute to emergence. But the dynamics of such debate in Parliament, whilst still framed and constrained by the existing law, are more directly

dependent upon a broader range of viewpoints and levels of expertise of those who must be persuaded to vote for them. This means that the scope for differing levels of understanding and perception of legality, authority and legitimacy is also broader. The passing of legislation and the development or recognition of a particular concept may be swayed by arguments and personal beliefs that do not necessarily reflect the official government stance, and which may be more open to political pressure, strategic argumentation, wilful misrepresentation, and affected by a lack of understanding of law.

On the 3rd of February 2015 the House of Commons voted to pass the 2015 Regulations by 382 to 128 votes. These regulations give powers to the Human Fertilisation and Embryology Authority to approve licenses on a case by case basis for the purposes of carrying out mitochondrial replacement therapy with in vitro fertilisation (IVF) for couples at serious risk of passing on mitochondrial diseases to their children. This event captured much media and public interest. Attention centred upon the use in the media, and by those primarily arguing against the technique, of the term “three parent babies” to indicate that the therapy results in the creation of a human embryo which is composed of the DNA of three people; the intended father and mother, and the mitochondrial DNA of the donor.¹

In this chapter I examine the dynamics and patterns of argumentation in relation to identity as they have played out in the passing of the Regulations. I highlight the arguments about identity, and other supporting or detracting arguments about the technology itself which also frame the debate as it pertains to a concept of identity. I outline the ways in which perceived and claimed authority, legitimacy, and even legality of a concept of “genetic identity” have impacted on the passage of the Regulations. This theme underpins one of the main points taken from chapter 6, that in the international human rights sphere differing emphases or rationales have been used to underpin a concept of identity in different contexts. From a self-creational, autonomy enhancing and liberal conception of identity, to one that might be more objective, constraining and focussed on essentialist characteristics such as genetic parentage. Whilst differing rationales may be contradictory in their underlying reasoning (and hence of the conclusions they might lead to) the breadth of a concept of identity, especially as framed within ECtHR jurisprudence is such as to accommodate differing emphases and reasoning. However, there is the possibility that a particular emphasis on genetic essentialism, or

¹ See for example, D. Derbyshire “Three-Parent Babies a Step Closer After Watchdog gives Research Go-Ahead Despite ‘Life Meddling’ Fears” 20 March 2013 Mail Online available at <http://www.dailymail.co.uk/health/article-1378486/3-parent-IVF-babies-HFEA-gives-research-ahead-despite-life-meddling-fears.html>; S. Knapton “Three parent babies banned from knowing 'second mothers'” 23 July 2014 The Telegraph available at <http://www.telegraph.co.uk/news/science/science-news/10984068/Three-parent-babies-banned-from-knowing-second-mothers.html>.

genetic identity might lead to a more restricted concept of identity crystallising in relation to the regulation of biomedicine in general.

Protection of “genetic” identity has been enshrined within the Oviedo Convention² and further still within the European Union Clinical Trials Directive and the now in force Clinical Trials Regulations.³ Protections surrounding this concept extend to the prohibition against any interference with the genetic genome that is not therapeutic, and which guards against changes made to the germ line (those that may be passed on to offspring) in any circumstance. I argue that in the passing of the 2015 Regulations the growing perceived legitimacy and authority of these instruments plays a part in the arguments used by the Government in persuading Parliament to vote in favour of the therapies. I further contend that the strategy used, may have the effect not of distancing the UK from a concept of genetic identity, but of tacitly endorsing it.

The primary aim of this chapter is to demonstrate the dynamics of emergence and their distinction in a legislative setting and the particular context of this debate in reproductive and genetic therapies, taking in to account the novelty of the technology in question. It is also to demonstrate in this specific case what it means for the emergence of “identity” in the legal setting (in the UK) in general. More than genetic identity, or identity as a general concept, is debated in the passing of the 2015 Regulations. This chapter analyses and brings to the fore the interactions of perceptions of authority, legitimacy and legality of particular arguments and their impact upon the debate. The following is composed of an historical timeline and analysis of the progression of both the law and technology which has led to this point. The recurring ethical and social arguments drawn upon throughout the debate shall be highlighted with particular attention paid to those views and arguments directly relating to identity concerns. Further, the social and political imperatives driving the development (along with the technological pathways) will be identified, and a preliminary attempt will be made to construct a picture of the differing factors which have shaped the resulting legal landscape and the influence of the impact of differing conceptions of identity upon each step in the process.

² Convention for the Protection of Human Rights and Dignity of the Human Being with Regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine Oviedo, 4.IV.1997 (Oviedo Convention).

³ Directive 2001/20/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (Clinical Trials Directive), and more recently Regulation (EU) No 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC (Clinical Trials Regulations).

2. Mitochondrial Replacement Therapy: The Science and the Regulations

Mitochondrial replacement therapy and the techniques which are the focus of the 2015 Regulations are the result of several year's work conducted by a team of scientists in Newcastle, and promise to provide hope to women who wish to conceive a child that is genetically related to them and also free of devastating mitochondrial diseases.

Mitochondria are organelles present in cell cytoplasm that are critical for the cells metabolic function.⁴ They are not part of the cell nucleus which is where the majority of genetic material (over 99%) is located.⁵ However, any deleterious mutations in mitochondria DNA can result in deficient function in the mitochondria which can then have a severe impact upon the cell and the rest of the body.⁶ Mitochondria are passed on through the female line only, as the mitochondria that are present in the ova are those that are passed on to any resulting offspring, whilst sperm do not contribute mitochondria to the fertilised egg.⁷ Mitochondrial diseases are a result of inherited genetic mutations, but such mutations may be cumulative.⁸ This means that a woman may be a carrier of deficient mitochondria, but not suffer from the physical problems herself because the levels of deficient mitochondria in her cells are not enough to cause noticeable symptoms.⁹ However, she may pass on a level of deficient mitochondria to her children who will present with physiological problems.¹⁰ Mitochondrial disease can be devastating amounting to organ failure and premature death with many not living beyond early infancy with high levels of suffering and pain.¹¹ There is no cure for such diseases¹² and whilst pre-implantation genetic diagnosis (PGD) is available and effective for some known carriers – where embryos can be chosen with little or no mitochondria defects - it cannot work in many cases.¹³

The researchers at Newcastle looked to new ways of preventing the inheritance of defective mitochondria. The result is the development of two techniques: maternal spindle transfer and pronuclear transfer. This section gives a brief overview of the techniques proposed for

⁴ Nuffield Council on Bioethics, *Novel Techniques for the Prevention of Mitochondrial DNA Disorders: An Ethical Review* 2012, para 1.1.

⁵ Ibid para 1.3-1.5.

⁶ Ibid.

⁷ Ibid para 1.10.

⁸ Ibid para 1.15- 1.18.

⁹ Ibid.

¹⁰ Ibid.

¹¹ Ibid para 1.13-1.14.

¹² Ibid para 1.12.

¹³ Ibid para 1.28.

mitochondrial donation, an overview of the lead up to the passing of the 2015 Regulations and an explanation of their content.

2.1 The Techniques: Maternal Spindle Transfer and Pronuclear Transfer

Two techniques that are the subject of the 2015 Regulations: maternal spindle transfer and pronuclear transfer. Maternal spindle transfer requires the removal of the nuclear DNA from the intended mothers ova (which forms a spindle structure at one end of the ova, hence the name), and removal of nuclear DNA from the donors ova.¹⁴ The nuclear DNA which has been removed from the intended mothers ova is then transferred and inserted in to the enucleated donors ova, thus meaning that the resulting ova contains the nuclear DNA of the intended mother but now contains only the healthy mitochondria of the donated ova.¹⁵ The egg is then fertilised.¹⁶ Pronuclear transfer follows a similar principle but involves fertilising the intended mother's egg first before transferring the nuclear DNA to an enucleated, fertilised donor egg.¹⁷ The resulting fertilised egg is then implanted in the intended mother's uterus as in normal IVF treatment.¹⁸

The techniques of maternal spindle transfer and pronuclear transfer are similar to existing techniques applied to a different setting and for a different purpose. The physical manifestation of these techniques, involving the removal of a cell nucleus and transference to another enucleated cell, are similar to nuclear transfer (NT).¹⁹ NT involves a further step absent from the mitochondrial replacement techniques. Somatic cell nuclear transfer (SCNT) was the further evolution of NT, which was used in the creation of Dolly the sheep, a process involving the somatic cell, or specialised cell - one which has matured in to a specialised cell in the body such as a skin cell or blood cell – from an existing organism.²⁰ The further step required is explained in more detail in subsection 3.3, involves a process of reprogramming

¹⁴ Ibid para 1.27. See also Annex VIII: Scientific review of the safety and efficacy of methods to avoid mitochondrial disease through assisted conception: update, Report Provided to the Human Fertilisation and Embryology Authority, March 2013 para 2.1.2.

¹⁵ Annex VII *ibid*.

¹⁶ *Ibid*.

¹⁷ *Ibid*.

¹⁸ *Ibid*.

¹⁹ *Ibid* at para 2.1.3. See also Nuffield Council on Bioethics *supra* n4 at para2.19-2.23 on the similarity and differences of these techniques. See further on the development of NT, *Cloning Issues in Reproduction, Science and Medicine*, A Report from the Human Genetics Advisory Commission and the Human Fertilisation and Embryology Authority, 1998 section 1 and R. G. McKinnell and M. A. Di Berardino "The Biology of Cloning: History and Rationale" (1999) *BioScience* 49:11, 875-885; and G. Greggains, and L. M. Lister et al "Therapeutic potential of somatic cell nuclear transfer for degenerative disease caused by mitochondrial DNA mutations" (2014) *Scientific Reports* 4 : 3844.

²⁰ McKinnell *ibid*.

the cloned somatic cell such that it regresses to totipotent stage (the stage at which a cell has the capacity to develop in to any in the body) and thus can be made to develop as a fertilised embryo, to create an embryo that is genetically identical to the adult from whom the cell was taken.²¹ Across the world countries have either prohibited human reproductive cloning or have no recorded policy on such research and development.²²

This is expanded upon in more detail in subsection 3.3, but is notable now to demonstrate the evolution of these techniques, their technical similarity, but also their important differences in terms of their consequences. However, and as argued in subsection 3.3, their technical similarity was used to attack the ethical acceptability of the techniques, and the 2015 Regulations, purely because they were likened to cloning. As detailed in subsection 3.3, the ascription of even likely technical descriptors and concepts such as “maternal spindle transfer”, “nuclear transfer” and even “cloning”, whilst delineating subtle distinctions in the character of the techniques in question can themselves be subject to disagreement and laden with normative and ethical import. They can be used (even if they are not successful) to provoke emotive responses by association against (or in favour) of particular positions.

Cloning, SCNT and NT are distinct in their outcomes from that of maternal spindle and pronuclear transfer, but they do provoke common fears. One of these is the likely implications for identity of any resulting person born as a result of the techniques. Many of the fears and arguments relating to human reproductive cloning are rooted in understandings of identity.²³ In the case of mitochondrial donation, as discussed in section 3, identity concerns for the individual focus on the issue of the status of mitochondrial donor, and the fact that the genetic material of three people (however small a percentage) is present in the resulting embryo and child. On a collective level, in relation mainly to human reproductive cloning the threat to identity as a human species has been rooted in genetic diversity,²⁴ but also in more ontological considerations of the kind of humanity, the character of humanity and whether cloning does damage to this.²⁵ Such concerns are linked to similarly elusive concepts such as dignity: that the cloning of individuals, or the presence of the genetic material of three people, undermine human dignity in demeaning the value of life, and

²¹ Nuffield Council on Bioethics supra n4 at para 2.19. See also Annex VII supra n 14 at para 2.1.3.

²² See S. Camporesi and L. Bortolotti “Reproductive cloning in humans and therapeutic cloning in primates: is the ethical debate catching up with the recent scientific advances?” (2008) *Journal of Medical Ethics* 34:e15.

²³ *Cloning Issues in Reproduction, Science and Medicine*, supra n19 section6.

²⁴ Camporesi and Botolotti supra n 22 at 4.

²⁵ J. Harris “‘Goodbye Dolly?’” *The Ethics of Human Cloning* (1997) *Journal of Medical Ethics* 23:6, 353-360 at 354; see also R. Brownsword “Cloning, Zoning and the Harm Principle” in S. MacLean (ed) *Frist Do No Harm: Law, Ethics and Healthcare*(2006) Ashgate at 533.

commodifying the resulting child. Much of these arguments stem from fears over the “unnaturalness” of the techniques and the life created. As noted in the report of the Warnock Committee however, there is no settled understanding of the definition or what is considered “unnatural”.²⁶ As such, its force as a moral objection is relative to the importance placed on such definitions, whilst the premise of an ethical or moral distinction as between “natural” and “unnatural” is disputed.

Whilst maternal spindle and pronuclear transfer techniques are similar to NT and SCNT in terms of the technique involved but with diverging consequences, there is dispute over whether the techniques constitute genetic modification on the basis that they change the mitochondrial DNA present in the cell, despite being technically dissimilar to regular genetic modification techniques. The process or technique usually relied on for genetic modification requires the removal and insertion of genes at the molecular level (described in subsection 3.3). As explored in depth, and as a central element of the debate in Parliament is what the definition of “genetic modification” is and whether it applies to maternal spindle or pronuclear transfer. This debate is important as due to the drafting and conceptualisations present in existing international law, the definition could have had direct consequences for the perceived legality of the move to licence the techniques.²⁷ This point is developed further in subsection 3.3 and section 4. Essentially however, both within the Oviedo Convention and the Clinical Trials Directive, genetic modification resulting in a change to the genetic germline is prohibited. The exact legal authority these instruments have over the regulation of IVF and thus mitochondrial donation in the UK, is expanded on in section 4. As detailed, the government’s response to such challenges has been to argue that “genetic identity” is limited to nuclear DNA, and to frame their own definition of genetic modification such that changes in mitochondrial DNA, as separate from nuclear genetic identity, is not genetic modification.

The ability to remove mitochondria, and substitute healthy mitochondria within the cell, modulates notions of “genetic identity”, and whether it is seen to denote the whole genome or whether it is limited to nuclear DNA. It also points to a modulation of acceptance of genetic identity as sacrosanct in the first place, especially where “serious” diseases might be avoided. This modulation, and the coproduced narrative of assisted reproduction, pre-

²⁶ Department of Health, *Report of the Committee of Inquiry into Human Fertilisation and Embryology* 1984 (Warnock Report) para 2.4.

²⁷ See Article 13 of the Oviedo Convention *supra* n 2; and Article 9(6) Clinical Trials Directive *supra* n 3.

implantation genetic diagnosis (PGD),²⁸ and mitochondrial replacement therapy as “therapeutic”, which is explored in greater detail in the next subsection, also reinforces the tangled causal pathways influencing not just the technological development but the emergence of the concept of identity. The technology and the 2015 Regulations are a prime example of technology modulating morality and socio-technical realities, as well as providing a closer look at the dynamics of argumentation and emergence of “identity” within legislative procedures. The next subsection turns to look at the historical, social and political context in which the legal, policy and ethical debate surrounding IVF and 2015 Regulations developed.

2.2 History of the Passage of the Regulations

The 2015 Regulations are an amendment to the HFEA 1990 and HFEA 2008 which are directed at the regulation of assisted reproduction and embryology research. The following sub-section is a brief account of the trajectory of the debate in the UK surrounding assisted reproduction, research on embryos and the treatment of inherited genetic diseases as context for the analysis of the passing of the 2015 Regulations. As will be demonstrated, the main strands in the official narrative endorsing the development of IVF, research on human embryos, and the development of techniques such as PGD (and indeed mitochondrial replacement therapy) is framing of such techniques as therapeutic, and of infertility and congenital diseases as deserving of treatment, with an emphasis upon the interests of couples in becoming genetic parents.

Regulation of assisted reproduction in the UK began in earnest after the successful birth of the first baby born of IVF, Louise Brown, in 1978. Until this point there was little or no direct regulation of biotechnology and research except that through funding priorities and at the discretion of the research councils.²⁹ Edwards and Steptoe who pioneered IVF had their original application for funding for research in to embryology and use of IVF In patients rejected by the MRC.³⁰ As a result they had to develop the techniques as innovative treatment with the support of private donations mainly from Oldham hospital (in which

²⁸ Explained in subsection 2.2, it is a process of screening for genetic diseases in embryos before implantation as part of IVF.

²⁹ H. Valier and C. Timmermann “Clinical Trials and the Reorganization of Medical Research in post Second World War Britain” (2008) *Medical History* 52, 493-510 at 498.

³⁰ M. H. Johnson, S. B. Franklin, M. Cottingham, and N. Hopwood “Why the Medical Research Council refused Robert Edwards and Patrick Steptoe support for research on human conception in 1971” (2010) *Human Reproduction*, 25:9, 2157–2174, at 2167.

Step toe was a practising physician), and American philanthropists.³¹ Their success and the engagement of Edwards and Step toe with the media about their research and treatment was part of shifting the narrative around IVF and bioethics in the UK in general.

Before Louise Brown there was a lack of public bioethical debate in general, and on IVF specifically, and that which occurred was prompted by the efforts of Edwards himself.³² This media presence was at odds with many in the scientific community and may even have been a factor that contributed to the rejection of Edwards and Step toe's funding application.³³ It is clear from the views expressed by both Edwards and Step toe that their focus and the reasoning behind their research and development lay in the interests of infertile couples. Step toe argued that there was nothing morally wrong about the procedure and nothing that should override the right of a couple to have children.³⁴ However, their view of IVF as a therapeutic treatment for infertility was at odds with the views of the clinical research environment and medical research policy in Britain which prioritised the control of population and did not foresee the potential of manipulating reproduction in this way.³⁵

The birth of Louise Brown caused the MRC to reverse their policy regarding the funding of IVF and fertility treatments. More critical reporting swiftly followed initial positive media responses to IVF³⁶ and the push toward ethical and Parliamentary oversight of the treatment began in earnest with the formation of the Warnock Committee in 1982. Much of this critique centred on the status of the embryo, a topic given little attention in Edwards and Step toe's media interventions or by the research community. Wilson has argued that the critical movement of media and public reactions could be seen as in part influenced by, and itself influenced, the wider discourse and dynamic of public mistrust of self-regulation of

³¹ See L. Jiang "Robert Geoffrey Edwards and Patrick Christopher Step toe's Clinical Research in Human in vitro Fertilization and Embryo Transfer, 1969-1980" - See more at: <http://embryo.asu.edu/pages/robert-geoffrey-edwards-and-patrick-christopher-steptoes-clinical-research-human-vitro#sthash.ALbg4KWT.dpuf> .

³² D. Wilson "Creating the 'ethics industry': Mary Warnock, *in vitro* fertilization and the history of bioethics in Britain" BioSocieties (2011) vol 6 121-141 at 127.

³³ See Johnson et al supra n30 at 2167, whose analysis of the MRCs consideration of the application highlighted that some of the referees had objections to the professional persona of Edwards, seeing his media appearances and promotion of his research in to IVF as unwarranted and potentially harmful.

³⁴ R. G. Edwards "Fertilization of human eggs in vitro: Morals, ethics and the law" Quarterly Review of Biology (1974) 49: 3-26 at 16.

³⁵ Johnson et al supra n 30 from 2165-2166, analyse the opinion of the application referees as viewing increased successful pregnancy outcomes as the proper focus for reproductive research (not assisted conception). The reviewers saw the treatment of couples as superfluous to what they saw primarily as basic research in to conception and reproduction, with one reviewer describing the intervention as purely experimentation with no benefit to the patient, and thus setting the bar for safety particularly high leading to the rejection of the funding.

³⁶ Wilson supra n32 at 128.

biomedical research and development.³⁷ The call for open debate was endorsed by Mary Warnock (chair of the Warnock Committee) who also called for a permanent ethics committee.³⁸

The media and different pro-life and religious groups, as well as some high profile individuals, provided resistance and arguments against the technology and particularly of the continued research on human embryos.³⁹ In the Lords (and Commons) opposition was based around positions on the moral status of the embryo with many arguments drawing on anti-abortion rhetoric.⁴⁰ Publication of this opposition sparked a counter campaign by the MRC and many engaged in embryology in publishing letters and articles in favour of continued research.⁴¹ MP Enoch Powell (who also posed opposition to the 2015 Regulations detailed later) introduced a Private Members Bill in an attempt to prevent embryo research.⁴²

The Bill was eventually defeated and the compromise 14 day rule set out by the Warnock Committee, whereby research could be conducted on the embryo up until such a point before the development of the primitive streak, the evidence of the beginning of a nervous system.⁴³ To counter the opposition to continued research, the pro-research lobby focussed on the technique of PGD as providing hope for the prevention of genetic diseases, something that resonated with the public such that those expressing discomfort at the thought of embryo research were swayed when told that such research could help with the treatment or eradication of genetic diseases.⁴⁴ PGD was cited as evidence by the pro-research lobby of the kind of project and technique that would benefit from further research on embryos.⁴⁵ I would argue that the counter-narrative surrounding PGD reinforced the commitment that embryo research, PGD and IVF in general were of therapeutic and public health benefit. The founding presumption of the 1990 Act and of the technology in general as conceived by Edwards and Steptoe (and by the attitudes of their patients, couples and intending mothers) is that IVF is a therapeutic treatment, and the narrative built up in opposition to the anti-research rhetoric, is that genetic technologies such as PGD are also of therapeutic benefit.

³⁷ Johnson et al supra n33 at 2167.

³⁸ Wilson supra n32 at 133.

³⁹ Ibid at 128.

⁴⁰ A. A. Theodosiou and M. Johnson "The Politics of Human Embryo Research and the Motivation to Achieve PGD" (2011) *Reproductive BioMedicine* 22, 457-471 at 464.

⁴¹ Theodosiou and Johnson supra n40 at 465-466.

⁴² Ibid and see also Unborn Children (Protection) Bill 1985 HC Deb 15 February 1985 vol 73 cc637-702.

⁴³ Warnock Report supra n 26 at para 11.22-11.40.

⁴⁴ Theodosious and Johnson supra n 40 at 466.

⁴⁵ Ibid.

I argue that the entrenched position of the narrative of therapeutic benefit has meant that those opposed to IVF in general, but also others opposed to genetic technologies and/or research on embryos changed their arguments in reflection or acknowledgment that they could not realistically challenge that value assumption. This is highlighted in subsection 3.2. in relation to arguments made against the passing of the 2015 Regulations that were based on points of safety and inadequate Parliamentary procedure, that others claim were used strategically by those who “disagree in principle” with the techniques.⁴⁶ This does not mean that such a value assumption is indisputable. Its basis in therapeutic benefit directly stems from an underlying narrative that having genetically related children is something that is worthy of being facilitated. However, egg or sperm donation, or adoption are other means of forming families that avoid the ethically contentious need for mitochondrial replacement, or PGD. PGD does not treat an existing condition it ensures that one life is chosen over another. It is therapeutic if seen in conjunction with the idea that having genetically related children is seen as a fundamental interest that the spectre of genetic disease should not threaten. Thus the success of the therapeutic narrative is in part related to the value placed on genetic paternity as an interest.

In chapter 4 I detailed Swierstra’s analysis of moral and value plurality as existing as a force field or spectrum; that it was not that different people necessarily had different values, but that we weighted those values differently and those differences in priority may only become apparent when making difficult decisions. I also outlined that new technologies could act as a tipping point whereby a particular morality or value priority disrupts a previous hegemony or alternative widespread value priority. Whether this disruption occurs or whether the existing hegemony or value priority is reinforced is dependent on unpredictable social reaction and interaction. In this case, the creation of the in vitro embryo and practice of embryonic research (or experimentation) provoked feelings of discomfort and moral ambiguity in many but may have been effectively outweighed, or shifted in priority, by a counter narrative of therapeutic need and greater value placed on genetic parentage. Following the political and public debate around the 1990 Act, the pro-research lobby used their influence and framed their narrative persuasively enough to tip that balance back in their favour. I argue that they did this by appealing not just to the value placed upon health and therapeutic benefit, but to the value placed on the idea of family and of genetic affiliation in general as a widely held and prioritised aspect of identity. Whether that narrative and value priority continues in the face of mitochondria replacement therapy and future developments in genetics and assisted reproduction might still be open to challenge.

⁴⁶ See discussion in subsection 3.1.

The passing of the 2015 Regulations was anticipated during the debates and passing of the Human Fertilisation and Embryology Act 2008 which provided important amendments and updates to the 1990 Act,⁴⁷ itself having taken over a decade of public debate, and consultation. In the interim period there had been further technological advances to cause controversy such as the birth of Dolly the lamb, the first cloned mammal, which was quickly met by targeted legislation.⁴⁸ Biomedical advances, in particular the implications of genetic technologies, prompted international action resulting in, the Oviedo Convention, UNESCO International Convention on Human Genetic Data 2003, and Universal Declaration on the Human Genome and Human Rights (UDHGHR) 1997. The Convention on Human Genetic Data laid down principles for the protection of genetic data and the prevention of genetic discrimination, reiterating that genetic information had a special status whilst affirming that "... a person's identity should not be reduced to genetic characteristics".⁴⁹ Most notably, and as highlighted in chapter 6, the Oviedo Convention declares that in part its purpose is the protection of human identity, and it further prohibits genetic intervention except for the purposes of therapy or diagnosis and prohibits any intervention that might modify the human germline.⁵⁰ This prohibition is reiterated in the EU Clinical Trials Directive.⁵¹ There also grew a claimed consensus around the prohibition on the genetic modification of the human germline, a position that the UK Government and drafters of the 2015 Regulations would seek to circumvent.

The 2015 Regulations and development of the techniques can be set against this history. The possibility of mitochondrial replacement therapy was raised in 2000 in the Chief Medical Officer's Expert Group Report, *Stem Cell Research: Medical Progress with Responsibility*,⁵² this was followed by support for research in the area by the science and Technology Committee in 2005 and the group in Newcastle University who have developed the techniques were granted a license to work with human oocytes in the same year.⁵³ This was followed by the development of the techniques in 2010, following the relevant amendments in 2008 allowing the Human Fertilisation and Embryology Authority (HFEA) to grant

⁴⁷ See s26 Human Fertilisation and Embryology Act 2008 (HFEA 2008) and s 35A Human Fertilisation and Embryology Act (1990) (HFEA 1990).

⁴⁸ Human Reproductive Cloning Act 2001.

⁴⁹ Article 3.

⁵⁰ Article 1 and Article 13 Oviedo Convention.

⁵¹ *Supra* n3 Article 9(6).

⁵² Department of Health, *Stem Cell Research: Medical Progress with Responsibility: A Report From the Chief Medical Officer's Expert Group Reviewing the Potential of Developments in Stem Cell Research and Cell Nuclear Replacement to Benefit Human Health* (2000) paras 2.45-2.54.

⁵³ See "HFEA grants licence to Newcastle Centre at LIFE for Mitochondrial Research" HFEA press release 8th September 2005 available at <http://www.hfea.gov.uk/671.html>.

research licenses for this reason. In 2012 the HFEA launched a public consultation on the techniques.⁵⁴ In 2012 the Nuffield Council on Bioethics published its review, *Novel techniques for the prevention of mitochondrial DNA disorders: an ethical review*,⁵⁵ and in 2013 the HFEA published its report⁵⁶ which was followed by the announcement from the Department of Health and the HFEA that draft regulations would be published and subject to further consultation. The draft regulations were published in 2014 as were the evaluation of the results of the HFEA's public dialogue events and their third scientific review of the efficacy of mitochondrial donation.⁵⁷ The Department of Health also published the Government's response to the public consultation in July 2014⁵⁸ which was followed by back-bench debate in September 2014, a briefing session conducted by the Parliamentary Office of Science and Technology, an evidence session held by the Commons Science and Technology Select Committee and the publishing of the regulations in December 2014. All led to debates on the proposed Regulations in the Commons on the 3rd of February 2015 and the Lords on the 24th of February.

The emphasis on genetic parentage and therapeutic benefit places the development and direction of the UK regulation in tension with that of the international sphere, and protections and construction of a concept of genetic identity that may limit the scope of development of genetic and reproductive technologies. The rest of this chapter follows the debates in Parliament in the passing of the 2015 Regulations and where appropriate linking those arguments to those that were raised in the public consultation and back ground documents. However, I specifically focus on the narratives of therapeutic benefit, the value placed on becoming a genetic parent, their perceived legitimacy and authority and framing effect on the debate, and their interaction with the conception of genetic identity and genetic modification in the international sphere which I argue are critical to the character of a potentially emerging concept of identity in the UK. Before turning to this, the next

⁵⁴ See "HFEA launches public consultation, Medical Frontiers: Debating mitochondria replacement" HFEA press release 17th September 2012 available at <http://www.hfea.gov.uk/7517.html>.

⁵⁵ Nuffield Council on Bioethics, *Novel techniques for the prevention of mitochondrial DNA disorders: an ethical review* (2012).

⁵⁶ Mitochondrial Replacement Consultation: Advice to Government, Human Fertilisation and Embryology Authority, March 2013.

⁵⁷ Annex VIII: Scientific review of the safety and efficacy of methods to avoid mitochondrial disease through assisted conception: update, Report provided to the Human Fertilisation and Embryology Authority, March 2013.

⁵⁸ Mitochondrial Donation: Government response to the consultation on draft regulations to permit the use of new treatment techniques to prevent the transmission of a serious mitochondrial disease from mother to child, Prepared by the Health Science and Bioethics Division, Department of Health, July 2014.

subsection introduces the 2015 Regulations themselves with an explanation of their actual content.

2.3 Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015

The following is an explanation of the Regulations and the amendments that they make to the 1990/2008 Act. Part 2 of the Regulations sets out the amendments to ss 3(2)(b)(a) and 3(2)(a) as to what constitutes a permitted egg and a permitted embryo for the purposes of IVF and implantation into a woman. Regulation 3 states that the definition of a permitted egg may include one which has had maternal spindle transfer (the “process”)⁵⁹ applied to it. This process is set out in regulation 4 and described as having two steps:⁶⁰

- All nuclear DNA of the intending mother’s egg is removed and all nuclear DNA of the egg of the donor of mitochondria is removed
- The nuclear DNA of the intending mother is inserted in to the mitochondria donor’s enucleated egg.

Regulation 3(c) in relation to the permitted egg specifically states that it is permitted if no alterations are present in the nuclear and mitochondrial DNA “since egg P was created by means of the application of that process”. This is a somewhat ambiguous phrase seeming to pre-empt challenges on the basis that the DNA of the egg has been modified, whilst also conceding that the egg is “created by that process” highlighting the fact that the egg itself is produced by an intervening process resulting in a different entity to that which is normally implanted. In taking pains to emphasise that this is not genetic modification in the sense that many international instruments would prohibit, they may inadvertently have suggested that what is being done is the creation of a distinct entity (which for some it is) rather than the “curing” of the existing egg. This is reiterated in relation to pronuclear transfer and the “permitted embryo”.⁶¹ The process for pronuclear transfer is set out in Regulation 7 following the same patterns as that in Regulation 4.

Regulations 5 and 8 set out the circumstances in which the processes of maternal spindle transfer and pronuclear transfer can be conducted and these are when the intending mother

⁵⁹ The “process” is set out in regulation 4.

⁶⁰ Reg 4.

⁶¹ Reg 6 (c).

has mitochondrial abnormalities and there is a significant risk of passing these on such that resulting children will “have or develop serious mitochondrial disease”.⁶²

At no point within the wording of the Regulations are the phrases “genetic modification”, “genetic identity”, “identity” or “cloning” mentioned. This is despite the many times identity was mentioned during Parliamentary debates in relation to the Regulations and the proposed techniques, the direct examination of identity claims within the precursory policy documents and public consultations, and the direct labelling of the techniques as a form of genetic modification by the Nuffield Council in their Report published in 2012. The Regulations themselves are designed to limit their application strictly to the techniques defined as maternal spindle transfer and pronuclear transfer and seemingly with the intent to avoid the entrenchment of any general concept. Whilst this may ensure that only the techniques in question are the target of the regulations, it does not, and did not, dampen the debate on such ontological and legal questions. The following sections now turn to examine the Parliamentary debates and the dynamics of argumentation.

3. Main Arguments and Themes in Debate

Having set out the history of the passage of the Regulations, described the techniques and the basic science behind them and mitochondrial disorders, this section now turns to the main arguments used in their passage through the Houses of Parliament. An analysis of these debates and the challenges to the Regulations is detailed and an explanation as to their legitimacy or otherwise proffered. How these arguments interact with the therapeutic narrative, and emphasis upon genetic parenthood explored in subsection 2.2 is also analysed where relevant. From debate in the House of Commons the main opposition themes focused upon:

- Safety concerns relating to the new techniques
- An apparent rush to push through the Regulations without appropriate time for review and debate;
- Whether the physical manifestation of the techniques result in the creation of a separate entity – an argument as to personal (numerical) identity;
- Whether the input of a third parties DNA (the mitochondria donor) does potential damage to the resulting child’s sense of personal (narrative) identity;
- Definitions of “genetic modification” and its application to the proposed techniques;

⁶² Reg 8 (a) (i) and (ii).

- Whether the proposed techniques constituted cell nuclear replacement and were therefore prohibited in both domestic and international law;
- Whether the proposed Regulations were ultra vires in reference to the EU Clinical Trials Directive;
- Whether the proposed techniques altered human identity and breached international law.

These were reflected in the debate in the House of Lords as will be discussed. Whilst all strands of the debate are obviously relevant to the potential passing of the regulations the first two points above do not necessarily go to the heart of the issue for the sake of this research. These challenges further the strategic narrative pushback by those opposing the techniques, as will be explained in the following subsection. This narrative pushback can be seen as in part a strategy by those who oppose IVF, or research on embryos as a moral principle, but see that the entrenched position that research and genetic technologies have a therapeutic good, may render impossible any challenge the official position on the moral status of the embryo discussed in subsection 2.2. However, although they are aimed at challenging the legitimacy of the Regulations (and techniques) as a whole, they are not aimed at notions of identity per se. As such my focus is upon the latter four points highlighted above.

The following analysis will point to recurring themes and arguments that were raised in the Parliamentary debates that led to the passing of the Regulations and where relevant place them in the context of arguments made during the consultation period, in the broader media debate and to wider comment on the growing or entrenched perception of legitimacy in any one particular argument that seems to have swayed the strategy or tenor of Parliamentary debate. The point of this analysis is also to demonstrate the ways in which different proponents and opponents have appealed to different factors to imbue their arguments with legitimacy and discredit others, and also how the widespread perceived legitimacy and authority of some arguments – the clinical trials directive and appeals to genetic identity – have impacted the framed argument of the government. This latter point in particular has an impact on the eventual conclusion as to the status of emergence and tacit legitimisation of a concept of protected “genetic identity”. Other identity arguments are apparent in the debates, not the least allusions to “three parent babies”, and the driving motivations for the development of such regulations and techniques themselves are steeped in aspects that were deemed to be integral to personal identity in the last chapter – the chance to become a

genetically related parent – and whilst these aspects are touched on it is the move toward genetic identity that is front and centre in this chapter.

The main points in the debates are interwoven with each other and with other arguments pertaining to consensus, and to other scientific authority among others as ways of appealing to broader support and to sway opinion. These factors will also be interwoven in the following analysis. I will look at each argument in turn.

3.1 Safety Concerns and Rushed Procedure

Safety concerns and rushed procedure are dealt with briefly and together because whilst they reappear throughout the Parliamentary debates, they do not directly pertain to the developing narrative and argumentative structure that goes to the heart of the arguments in relation to identity. This is not to say however that these arguments may not have been persuasive to those uncertain of how they would vote, nor that they should not have been front and centre in the debate.

Arguments in relation to safety centred mainly upon a cited case in China – the Zhang study – carried out a decade earlier which opponents cited as using the same techniques but resulting in failure with the miscarriage and premature death of babies and foetal abnormality.⁶³ The procedure was then banned. This was quickly rebutted by sitting scientists and healthcare professionals in the Lords⁶⁴ and by the Government Minister, the Secretary of State for Health by pointing out that the study in question was for a different purpose, using distinct techniques, and that the adverse effects were caused by professional malpractice rather than the techniques themselves.⁶⁵ The study in question was not of the techniques developed in Newcastle although it was a form of mitochondrial donation.⁶⁶ It used the mitochondria of a donor egg and implanted it into the egg which was to be fertilised – thus the egg contained mitochondria of *both* the intended mother and donor – and was used as a means of treating infertility as opposed to preventing mitochondrial disease.⁶⁷ The deaths and complications associated with this particular study were also attributed to the botched obstetric procedures to reduce the number of foetuses, including those with genetic

⁶³ See for example Robert Ffello MP, HC Deb 12 Feb 2015, vol592, col164 WH and the opening statement by Lord Deben, HL Deb 24 Feb 2015, vol 759, col 1574; Lord Alton of Liverpool HL Deb vol 759 col 1610.

⁶⁴ See in particular Lord Patel, HL Deb 24 Feb 2015, vol 759, col1581-1582.

⁶⁵ Jane Ellison, HC Deb 12 Mar 2014, vol 592, col185 WH.

⁶⁶ Lord Patel supra n 64.

⁶⁷ Ibid.

abnormalities, that had been implanted successfully in to the womb.⁶⁸ As such the study was argued to be irrelevant to the safety of the maternal spindle and pronuclear transfer techniques.⁶⁹

In some confusion in arguments, it was suggested, for example, by Robert Flello, that the techniques placed before the House were not novel as they had been carried out before⁷⁰ – this was said whilst it was simultaneously argued that the procedures illustrated a next and fatal step on a slippery slope,⁷¹ although these arguments were not always stated by the same people. It was also argued that the regulatory body in America charged with overseeing the health and safety of food and drugs – the Food and Drugs Administration (FDA) - had refused to approve the use of the techniques without more experiments and knowledge of potential risks.⁷² This was appealed to as authority for refusing to endorse the regulations, again however this argument was rebutted on the basis that the team in Newcastle had conducted significantly more work.⁷³ Indeed much was made, particularly by the Government of the innovation of British scientists and the pride to be had in being pioneers.⁷⁴ Much emphasis was placed on the HFEA framework of regulation, of Britain's regulatory structure as being the envy of the wider world,⁷⁵ all pertaining to a vision of British exceptionalism.

Further arguments centred upon the extra tests that had been requested by the HFEA Licences Committee, which some claimed were still to be conducted and that as such signalled doubt over their efficacy and safety as well as disregard for due process.⁷⁶ Again these fears were rebutted by reference not only to the renewed approval of the HFEA licencing committee, but also to the fact that the Newcastle team had conducted further tests, the results of which were promising but which could not be divulged as they were awaiting publication.⁷⁷ Furthermore, although there had been calls for more tests on animals closer to

⁶⁸ Ibid.

⁶⁹ Ibid.

⁷⁰ See again Robert Flello supra n13 col 161 and especially 164.

⁷¹ See especially Fiona Bruce HC Deb 3rd Feb vol 592 col 169.

⁷² See Sir Edward Leigh HC Deb 3rd Feb 2015, vol 592, col167; see also in the Back Bench debates held 1st September 2014, Jim Shannon HC 1st September vol 585 col 115.

⁷³ See Lord Patel HL Deb 24th Feb vol 759 col1579-1580.

⁷⁴ See for example in the Back Bench debates Tom Loughton HC 1st Sept vol 585 col 101 and Chi Onuworah col 112.

⁷⁵ See for example the opening speech of the Under-Secretary of State for Health Jane Ellison HC Deb 3rd Feb 2015 vol 592 col163, and David Willetts HC Deb 3rd Feb vol 592 col177; the Parliamentary Under-Secretary of State for Health Earl Howe HL vol 759 col1571; Baroness Warwick of Undercliff HL Deb 24th Feb vol 759 col 1607.

⁷⁶ Lord Gordon of Strathblane HL Deb 24th Feb vol 759 col 1580; see also but expressing support for the Regulations, Lord Turnberg HL Deb 24th Feb vol592 col1583.

⁷⁷ Lord Patel HL Deb 24th Feb vol 759 col1580-1581.

humans, it had been argued by the researchers involved that animal models normally used – macaques had been advised – were not a suitable model for humans in these experiments for a number of reasons in that their physiology was sufficiently distinct so as to negate the saliency of findings.⁷⁸ It was further added, intertwined with the arguments above as to the world renown of the HFEA regulatory regime, that the HFEA would still have the power to approve or decline licences for the treatment, and that their assessment process was rigorous.⁷⁹ As such the approval of Parliament was but a permissive step so as not to unduly delay potential treatment. In sum, whilst there were undoubtedly safety concerns, the specific points made in Parliament relating to tests which were claimed to be required to be completed, or to existing research that resulted in complications and foetal death, were not only easily rebutted, but in the case of the Zhang study quoted, were revealed as misinformation. Appeals within Parliament to British exceptionalism and the strength of the HFEA licensing system may have been enough to reassure those undecided on the issues of safety.

One way in which such debate over safety did impact on the development and narrative around identity in the passage of the Regulations, was in its pairing with arguments over the application of the EU Clinical Trials Directive. These arguments are explored in more depth in section 4, but relate to safety concerns in two ways. Arguments against the passage of the Regulations challenge the legality of the techniques on the basis that they modify the germline genetic identity which the Clinical Trials Directive explicitly prohibits, however, it is only applicable to clinical trials. As outlined in section 4, because mitochondrial replacement therapy, under the Regulations, will be approved on a case by case basis, it is an innovative treatment and is not a clinical trial, thus the Directive is not applicable. This position is disputed, but as highlighted in section 4.1 counterarguments then centre upon the lack of a clinical trial as a safety concern. This will be explored in full in section 4.2.

In relation to procedure, it was pointed out in many instances, particularly in the Lords debate, that Parliamentary scrutiny of the Regulations and the decision as to the admissibility of the techniques was being rushed through.⁸⁰ Further arguing that there had not been requisite time for discussion and debate, Lord Deben, in particular, highlighted that were it not for his counter motion in the House of Lords, they would have had a debate in the much

⁷⁸ See Lord Turnberg HL Deb 24th Feb vol 592 col 1583.

⁷⁹ Lord Turnberg *ibid* and Earl Howe *ibid* at col 1617.

⁸⁰ See for example; Lord Bishop of Carlisle HL Deb 24th Feb vol 592 col1586; Lord Alton of Liverpool HL Deb 29th Feb vol 592 col1610; Lord Alton of Liverpool HL Deb 24th Feb vol 759 col 1612; and in the back bench debates Robert Ffello HC Deb 1st Sept vol 585 col 105 and again in the main debate HC vol 592 col 177.

smaller Moses room in Parliament as opposed to the full debate in chambers.⁸¹ Others highlighted that that Government had a habit of packing committees to benefit their own ambitions,⁸² an allusion to the alleged practice of appointing committees in charge of conducting reviews with persons known to be sympathetic to the cause or to the Governments position. Whilst this was a recurring argument and one normally twinned with that of safety, it did not go much further in shaping the final debate, and was repeatedly rebutted by the listing of multiple committee debates, briefings by the Parliamentary Office for Science and Technology, the publication by the HFEA of its public consultations, the briefing by the Department of Health, not to mention the debates that took place during the passing of the 2008 Act that had deliberately made provision for the potential to pass Regulations allowing these techniques in the future.⁸³

One element of the debate in relation to the safety concerns that is of key relevance in demonstrating the dynamics of discussion and potential emergence of identity, or success of a specific argument or outcome, is the counter-challenge led by proponents of the Regulations and techniques against those bringing arguments as to safety. This relates back to the arguments set out in subsection 2.2 in relation to the enshrinement of the 14 day rule in the 1990/2008 Act, the emphasis upon the legitimacy of IVF, PGD and other genetic technologies as being of therapeutic benefit, and the failure of counter-arguments to the technology based upon the moral status of the embryo to prevent their passage. In passing the 2015 Regulations, in the Lords, the debate formed mainly around issues of health and safety and matters of law (which will be dealt with in depth in section 4). This is in marked contrast to the debate in the Commons that focused more heavily on matters of ethics and future identity. Lord Deben who presented the killing motion in the Lords was at pains to caveat his arguments on the basis that he was in principle in favour of the regulations despite ethical disagreement with the pronuclear transfer technique, but that he was mainly concerned with safety.⁸⁴ He made this clear, he said, because he believed others would claim he was simply making this argument as a front for the fact that he disapproved in principle.⁸⁵ This worry came to fruition as many claimed that he and others were guilty of raising

⁸¹ Lord Deben HL Deb 24th Feb vol 759 col 1572.

⁸² See specifically Sir William Cash Stone Back Bench Debates HC 1st Sept col 94.

⁸³ See the introductory statement by Jane Ellison HC Deb 3rd Feb vol 592 col 160; Lord Hunt of Kings Heath HL Deb 24th Feb vol 759 col 1614-1615; Earle Howe HL Deb 24th Feb vol 759 col 1620-1621; and for a specific and derisory challenge against Robert Ffello in the back bench debate see Frank Dobson HC 1st Sept vol 585 col 105 and a more nuanced rebuttal by Andrew Gwynne col 117.

⁸⁴ Lord Deben *ibid* at col 1573.

⁸⁵ *Ibid*.

procedural and safety concerns as a front for their disapproval in principle,⁸⁶ a point raised most recurrently in the back bench debate.⁸⁷

Whilst it is impossible to discern the actual truth of either of these arguments, it is notable that the debate took a very distinct form to that of earlier debates in relation to the passing of the 1990 and 2008 Acts. In both, the status of the embryo and the ethical arguments surrounding it as such had been much deliberated and concluded with the famous compromise argued for by Baroness Warnock in relation to the 14 day rule for storage and research.⁸⁸ The status of the embryo in law, as practically demonstrated in the implementation of the 1990 and 2008 Acts, has remained with this compromise. Whilst the debates in the Lords did not resemble the ethical arguments of earlier years, I argue that with the passing of both the 1990 and 2008 Act, such arguments were viewed to be less effective, and potentially that their perceived legitimacy, both by proponents and by those seeking to undermine them, had been undermined due to the authority of the position within the law and created in the passing of the Acts themselves. To be successful such arguments would have to justify an overhaul of policy, the prohibition of existing and future research projects (in which money and time have already been committed) and the legal position of the Acts themselves. Success would thus seem unlikely unless some catalytic event (or technology) provided impetus for such a movement, a point which I will revisit at the end of this chapter in relation to the potential future trajectory of such technology. Arguments based on issues of health and safety, and procedure however - a switch to technical disagreement – may appeal to a broader section of society and MPs, and be perceived as more legitimate concerns by others not persuaded by the specific ethical and religious views of detractors. Thus the idea that such persons who disagree on principle would switch to more technical and morally neutral tactics can be seen as a direct example of strategic argumentation, and also of the influence that perception of authority and legitimacy can have upon the formation of arguments in the first place.

⁸⁶ See Lord Walton of Detchant HL Deb 24th Feb vol 759 col 1594-1595 in reference to Lord Deben.

⁸⁷ See Jim Dobbin HC vol 585 col 99; Tom Loughton supra n 23; Dr Julian Huppert col 104 and Andrew Miller at col 113-114.

⁸⁸ See Mary Warnock's arguments in the House of Lords HL Deb 07 December 1989 vol 513 1035-1037.

3.2 “Three Parent Babies” and Personal Narrative Identity Concerns

That children born as a result of such procedures would have three genetic “parents” were fears expressed during the public consultation undertaken by the HFEA⁸⁹ and taken into account in the Government’s response.⁹⁰ The HFEA and the Nuffield Council on Bioethics both addressed concerns relating to the status of the mitochondria donor although it was never seriously considered that the donation of mitochondria would place the donor on a par with the intended parents.⁹¹ Ultimately the relationship settled upon in the Regulations between the donor and the resulting child and the family unit is not even similar to those who donate gametes during the regular course of IVF and assisted reproduction. In the recent past, and particularly following the legislative amendments sparked by the decision of *Rose and Another v Secretary of State for Health*,⁹² discussed in chapter 6, identifying information about gamete donors could be requested on a person reaching the age of 18. Mitochondrial donors however are to remain anonymous. The conclusion of the Government and reflected in the practical machinations of the Regulations is that mitochondria donors do not come close to the status and should not be treated as akin to a biological parent.

The issue was raised during the HFEAs Consultation and public dialogue events a report of which was published in 2013 with the recommendation to the government that mitochondria donors have a similar status to tissue donors – not gamete donors – and that no identifying information be made available to children born as a result of these procedures.⁹³ The responses to the various consultation exercises displayed a range of views on the issue that changed according to the perception of the status and role of mitochondria DNA.⁹⁴ Those who saw all genetic contributors as parents - viewing future children as three parent babies – also viewed mitochondria DNA as part of identity and genetic identity.⁹⁵ On the other hand those who saw the role of mitochondria as nothing to do with identity – nuclear DNA being that which confers genetic identity – likened mitochondria donation as akin to blood or organ donation and thus subject to the same rules of anonymity.⁹⁶ Others existed somewhere in the

⁸⁹ See the Department of Health, Mitochondrial Donation supra n52 at 13-14 where it is acknowledged that this fear was raised by those expressing opposition to mitochondrial donation.

⁹⁰ Ibid at 14, although it is taken in to account to the extent that the Government disagrees with it.

⁹¹ See the Nuffield Council on Bioethics supra n 4 paras 4.86-4.114, and Human Fertilisation and Embryology Authority *Mitochondria Replacement Consultation: Advice to Government*, Report of the Human Fertilisation and Embryology, March 2013 paras 6.35-6.67.

⁹² [2002] EWHC 1593 (Admin).

⁹³ Human Fertilisation and Embryology Authority *Mitochondria Replacement Consultation: Advice to Government*, Report of the Human Fertilisation and Embryology, March 2013 para 1.13.

⁹⁴ Ibid at para 6.38.

⁹⁵ Ibid at para 6.39.

⁹⁶ Ibid at para 6.40.

middle of these stances, not viewing mitochondria as conferring identity but nevertheless seeing it as part of the origins of the person and thus part of the information that should be made available to persons born as a result of such procedures.⁹⁷ The Government's position is also tied to its position on genetic identity in general: that only nuclear DNA impacts on identity and thus the status of the donor should be similar to that of organ and tissue donors in general as opposed to gamete donors who are seen as genetic progenitors.⁹⁸ This is explored further in section 4.

The matter was raised twice in Parliamentary debates. In the back bench debate organised by Fiona Bruce MP, prior to the Regulations being laid before Parliament for the main debates on the 3rd of February and the 24th of February, and once in the Commons debate. In the backbench debate it was raised only at the very end of the session during the closing address of the Under-Secretary of State for Health, Jane Ellison, as an interruption by Sir Edward Leigh.⁹⁹ Jane Ellison repeated support for the government position outlined above but also added, "A wider point is that we should surely not reduce the notion of parenthood to genes... [i]t [parenthood] cannot be reduced simply to the donation of genes – I worry that that, in itself, would be a slippery slope."¹⁰⁰ This is a curious paradox that in rebutting the idea that contribution of mitochondria DNA amounts to parenthood, the Minister relies upon a rebuttal of genetic reductionism or the valuing of genetics as conferring parenthood, yet it is the desire for genetic parenthood that lies at the heart of the motivation for couples in the development and approval of these procedures. As argued in subsection 2.2, the narrative of therapeutic benefit is also closely tied to the value and priority placed on the desire to be a genetically related parent, but a counter-narrative, or differing weighting of the value placed on genetic parentage might have resulted in a different outcome in terms of approving the Regulations or even attempting the techniques. Denial of such procedures does not preclude the ability to become a parent through adoption or use of donor eggs. It is possible however, that an individual may perceive, and collectively an institution may hold the two positions as equally valid and legitimate especially under the auspices of furthering identity as a self-creational project which would emphasise the legitimacy of choice in creating a family. Indeed, Lord Ribeiro, in addressing a challenge from Lord Alton of Liverpool, emphasises that the use of fertility services underlines the idea that adoption is not the only answer to

⁹⁷ Ibid at para 6.51, although note that those expressing this sentiment were stakeholders including fertility staff who also explicitly highlighted the policy change in gamete donor anonymity in 2005, citing the right to know their organs, even genetic origins as the purpose behind the policy change.

⁹⁸ Department of Health, Mitochondrial Donation supra n8 at 15-16 and 29-30.

⁹⁹ Sir Edward Leigh HC Deb 1st Sept vol 585 col 120.

¹⁰⁰ Jane Ellison ibid at col 121.

such problems and that it should always be a matter of choice for families as to what they should do.¹⁰¹ One position may not negate the perceived legitimacy of the other even as one may have more influence over debate, or be more explicitly articulated, than the other. It is also possible that perception or the reality of persuading individuals and groups may mean that inconsistent positions nevertheless pervade. Particularly in the forum of Parliamentary discussion, where votes rather than consistent judgements will dictate what laws are passed, it is not necessarily the most rational or logical argument that may “win”, but that which appeals to most people. That compromise might also make its way in to expression in law. Indeed, as touched on in reference to the arguments of Naffine in relation to judges appeals to identity and personhood underpinning (rather than explicitly dictating) their judgements, differing conceptions and elements are picked according to what will best justify what is perceived as the “right” result.¹⁰²

Multiple prioritisations of values, and specifically of the value placed upon genetic parentage, are envisioned within a plural society. As explained in chapter 2 it is not that we might have different values but that we weight them distinctly between individuals and potentially between different groups within society. The emphasis placed on genetic parentage might be seen in this instance (along with the narrative of therapeutic benefit and of freedom of research) to be that which is prioritised, but other values can still be recognised and facilitated. Adoption and egg and sperm donation are all other options that express value in social relationships. In this conflict however, it is the priority placed upon genetic parentage that can be seen as either outweighing legitimate concerns about safety, the status of mitochondria donors and the construction of the identity of the resulting child; or as justifying the need for the techniques for which these detracting concerns have been legitimately rebutted.

In rebutting the concerns in relation to the status of the mitochondria donor and defending nuclear DNA as that which confers identity, the language used to describe the techniques, even as factual or neutral in tenor, might also be manipulated in favour of a certain position. As highlighted above, the status and relationship of the mitochondria donor is linked to the official narrative around the nature of the procedure itself. I also argue that the language used by Government representatives and framed in the Regulations themselves can be seen as an attempt to frame the socio-technical reality: of defining the perceived truth of the status of the mitochondria donor, mitochondria DNA and identity. Reiterated by the Under-Secretary

¹⁰¹ HL Deb 24th Feb 2015 vol 759 col 1606.

¹⁰² N. Naffine, *Law's Meaning of Life: Philosophy, Religion, Darwin and the Legal Person* (2009) Oxford, England; Portland, Or.

of State for Health and in the arguments of various proponents, mitochondria were referred to as the “battery packs” of the cell,¹⁰³ and the procedure in general, as declared in the title to the Regulations, framed as a “donation” of mitochondria. This language played in to the description of the nature of the treatment as akin to an organ donation or blood transfusion.¹⁰⁴ This language was aimed at minimising the significance of mitochondria and mitochondrial DNA beyond its role in cell metabolism and refuting its significance for individual identity and the status of the donor.¹⁰⁵ By minimising the status of mitochondria and mitochondria DNA as a component of individual identity, the role of the donor was also minimised and thus their status as anything more than a tissue donor was refuted. This is important because, as noted above, in analysing the responses of the public dialogue and the consultation, the report by the HFEA concludes that the views of individuals as to the “importance and role of mitochondrial DNA determines their view on the status of the mitochondria donor and how they conceptualise the relationship between the donor and the child”.¹⁰⁶ It was also found that views were affected by “using a range of comparisons and analogies to other types of donation and by views on information regarding the amount and role of mitochondrial DNA in a person’s genetic makeup”¹⁰⁷ whilst concluding that the most common view was that a child should not have the right to know the identity of the donor.¹⁰⁸ This demonstrates how even “factual” descriptions and explanations of the science to lay persons can be seen as normative in terms of the messages they wish to convey. Arguably the descriptions are an honest and neutral way of describing what might seem complex science to lay-persons. Equally however they can be seen as minimising the appearance of ethical and moral controversy and as deflecting from the description of them as a genetic modification of the germline. Whilst perhaps a genuinely held viewpoint it underpins the idea of mitochondria as supplemental to the cell but critical to functioning, and as irrelevant to personal narrative and genetic identity thus entrenching the argument that “genetic modification” and “genetic identity” do not include the substitution of mitochondria. This leads neatly on to the discussion of definitions in the Regulations including those of “genetic modification”, “genetic identity” and a related issue, and one turned to first, of the distinction as between these procedures and those used in cell nuclear transfer (CNT).

¹⁰³ This phrase and variations therefore is used through the debates in Parliament See for example Tim Loughton HC De 1st Sept 2014 vol 585 col 101. See Jane Ellison’s opening speech *supra* n83.

¹⁰⁴ See Julian Huppert HC Deb 1st Sept 2014 vol 585 col 103.

¹⁰⁵ For more on this particular discussion see section 4 below.

¹⁰⁶ HFEA Report *supra* n93 at para 6.42.

¹⁰⁷ *Ibid* para 6.55.

¹⁰⁸ *Ibid* para 6.56.

3.3 Arguments over Personal Numerical Identity, Cloning and Definitions of “Genetic Modification”

In subsection 2.1 I outlined how the techniques of maternal spindle transfer and pronuclear transfer were very similar to the techniques involved in NT and SCNT. The similarity of these techniques was raised as far back as the consultation and reports compiled when the 2008 Act was being considered.¹⁰⁹ It was raised again in the Governments Consultation on the draft Regulations and cited by the Department of Health’s response to that consultation as one of three main reasons of concern, the other two being that three people contribute genetic information, and that they are a form of genetic modification.¹¹⁰

Cloning was catapulted into public consciousness with Dolly the lamb, born in 1996 and announced in 1997 causing a media storm and speculation as to the alternative means by which the techniques which led to her birth could be applied; the chief fear was the application of such techniques to clone humans. She was created using a somatic, or adult cell as the donor cell. In other words she was genetically identical to the adult sheep whose cell was used to create her.¹¹¹ To create Dolly, the additional step of reprogramming the somatic cell was needed, forcing the cell to “forget” what it was and regress to its totipotent state, capable of differentiating in to any other cell.¹¹² Once this was achieved, somatic cell nuclear transfer (SCNT), the application of NT using somatic cells was possible.

The techniques of pronuclear transfer and maternal spindle transfer are similar to NT, but their application does not involve the use of a somatic cell, nor does it create a genetically identical organism: a genetically unique embryo is formed. This is the chief means of dismissing fears over these techniques related both in the 2005 report preceding debate over the 2008 Act, and by the Department of Health in their response to the consultation on the draft regulations.¹¹³ Further, at no point would it be possible to create two genetically identical embryos using the pronuclear transfer as the ova of the intended mother, or the fertilized embryo of the intending couple, are destroyed through the removal of the spindle/pronucleus with the donor ova or embryo used to “re-house” the spindle/pronucleus.¹¹⁴ The technical similarity of the techniques however formed a point of

¹⁰⁹ See House of Commons Science and Technology Committee : Human Reproductive Technologies and the Law Fifth Report of Session 2004–05 paras 78-82.

¹¹⁰ Department of Health supra n58 at18 and HFEA Report supra n para 1.13

¹¹¹ Nuffield Council on Bioethics supra n 19 at para 2.15-2.18; and McKinnell supra n 19 at 881.

¹¹² McKinnell *ibid*.

¹¹³ HFEA Report supra n 93 para 1.26.

¹¹⁴ Wording used here is taken from the Nuffield Council report supra n5 para 2.23. What is interesting however is that in both this technique and in SCNT or NT the nucleus, pronucleus or

argument opposing the Regulations. Jacob Rees Mogg MP raised the point that the licenses granted for the research in to the techniques was similar to that granted for the research leading to Dolly.¹¹⁵

The point about the similarity of the techniques to cloning is never really developed in the Parliamentary debates and appears to have been a dead end in terms of opposing the Regulations, however, David Burrows argued that the techniques were nuclear transfer, but did so seemingly to insist that therefore the nuclear DNA in the egg would be altered.¹¹⁶ His argument skimmed over any suggestion of similarity to cloning to instead attack the Government's contention that the techniques do not alter nuclear DNA which seems to treat the *donor egg* as that which is being altered. This raises points pertinent to personal numerical identity as outlined in chapter 6. Personal numerical identity concerns when an entity can be said to be the same entity over time and how it is differentiated from other similar entities. The removal of nuclei or pro-nuclei from the cell and insertion into another enucleated cell will always result in the destruction of at least one cell, but arguably from a particular interpretation and application of numerical identity, it may be that both cells are destroyed and a third distinct entity is created from the two. This is the argument purported by Fiona Bruce in the Commons debate stating "...pronuclear transfer – involves the deliberate creation and destruction of at least two human embryos, and in practice probably more, to create a third embryo".¹¹⁷ It is certainly true that one embryo will be destroyed since the process of pronuclear transfer requires that two fertilised embryos are used and one will remain at the end.

Fiona Bruce's argument and the implication of David Burrows' argument as it pertains to numerical identity, depends upon the importance placed upon the nucleus as opposed to the rest of the cell, or as to whether the nucleus and the rest of the cell should ever be considered in such dichotomous terms. Structurally the nucleus composes up to 10 % of the volume of the cell, but qualitatively the genetic information contained within it is taken to determine the function of the cell (once differentiated in to a somatic cell) and contains the genetic information for the entire characteristics of the body. As is often repeated the mitochondrial organelles in the cytoplasm of the cell contain less than 0.01% of the overall genetic material, although scientists are by no means certain how the mitochondria interact with the nucleus

spindle is transferred to an enucleated donor cell which "re-houses" the nuclear genetic material but the mitochondria of the cell cytoplasm will always be distinct from that of the cell of origin of the nuclear material.

¹¹⁵ HC Deb 12 Mar 2014, vol 587, col 164.

¹¹⁶ HC Deb 3 Feb 2015 vol 592 col 161.

¹¹⁷ Ibid at col 168.

and nuclear DNA. David Burrows' argument, was that the nuclear DNA was removed from one cell and placed in another – an accurate description of the techniques – but this led to him stating that this meant that the nuclear DNA of the cell had been modified and that therefore this constituted genetic modification. This argument presupposes that the cell cytoplasm – the “house” of the cell – is that which is most important to the numerical identity of the cell. Whereas Fiona Bruce appears to believe, similarly to Jacob Rees-Mogg, that two embryos are used to create the third complete separate embryo.

This weighting of what is essential for an embryo to be seen as the same entity over time is addressed by David Willetts in disagreement with Jacob Rees-Mogg, stating:

“I do not agree with my hon. Friend the Member for North East Somerset (Jacob Rees-Mogg) that this somehow creates different people. We are not talking about the nuclear DNA that makes us who we are – the characteristics of our character or appearance. This is about a very distinctive part of DNA that has been called, for us laymen, a battery part of the cell, not nuclear DNA, so it does not affect identity.”¹¹⁸

This statement however can be seen to conflate different aspects of identity. On the one hand he is arguing against the notion that a new entity is created – that the resulting embryo is distinct from the two that were required for the process. However, he also seems to be taking aim at the collective “human identity” in rebutting that any new form of *human* identity is created. The latter point is distinct from the first aspect of this argument although neither two elements are articulated clearly or distinguished from each other. The statement is made in response to Jacob Rees Mogg who is arguing that the creation of the embryo with healthy mitochondria is a distinct entity from the embryos (or eggs) that were started with. David Willetts in rebutting this argument precedes his comments with “many may say, “Alright, this alleviates mitochondrial disease, but the price – the threat to human dignity or integrity – is too great.” I should briefly like to touch on those types of objection.”¹¹⁹ This prelude highlights that the personhood or numerical identity arguments alluded to are to do with collective human identity whilst he simultaneously attacks the arguments related to the individual essence of an embryo.

These arguments based, consciously and/or unconsciously in arguments from numerical identity are set out so as to argue against the description of the techniques by the

¹¹⁸ HC Deb 1 Sept 2014 col 98.

¹¹⁹ Ibid.

Government. The names of the techniques, pronuclear transfer and maternal spindle transfer, are semantically opposite to the name given to the treatment; mitochondrial donation/mitochondrial replacement therapy. This can be explained if seen within the frame that what is important from the Government's point of view - and is constantly stressed during the debates in Parliament by those supporting the Regulations - is the integrity of the nuclear DNA, such that the nucleus/nuclear DNA is the essential component of the cell. This points to one way in which the drafters and scientists may have consciously framed the techniques so as to minimise their normative implications. This framing is also linked to the perception of the relationship and status of the mitochondria "donor" to the resulting child, as pointed out in the previous subsection.

The use of definitions and descriptions of the procedures and their relation to the labelling of the therapy and "mitochondrial donation" is a defensible and pragmatic course, but alternatives were available and the labels alone do not point to the potential deeper ontological or ethical dilemmas involved. It may also be that akin to arguments from the status of the embryo in general, the argument framed as it is in the words of Fiona Bruce may not have been seen as attracting much support, or appealing to many people. As highlighted above, the framing of the debate in relation to the Regulations, of the 1990 and 2008 Acts entrenched the position that embryos whilst having a special and protected status can still be subject to research experimentation providing they are not allowed to develop past 14 days. Having been accepted in law, and perceived as accepted in the public and in Parliament, the current legal and ethical status of the embryo may be perceived as accepted as legitimate and legal. Thus arguments pertaining to numerical identity and status seemed fewer than in past encounters, and the attempts by David Burrows and Fiona Bruce could be seen as a failed attempt to pursue an alternative rendering and description of these techniques in a sense that better supported their objections. This may have been doomed to fail given that regardless of whether other scientists considered the techniques to lead to a genetically modified germline, the prevailing, or successful view and description of the techniques and their purpose – to render mitochondria as the changed cell component – has been most successful in framing the debate in Parliament. David Burrows' argument however seemed also aimed at countering the Government's narrative that the techniques do not amount to genetic modification of the germline. Further, by trying to claim that it is the donor egg that is seen as the original egg and that the nuclear DNA is seen as that which is substituted in to this egg, he argues that the processes in question amounted to genetic modification of the nuclear DNA which is in direct contradiction to the Government's position and working definition of "genetic modification".

The significance of the Government's "working definition" of genetic modification lies not simply in the ethical implications that they might wish to downplay in denying that mitochondrial replacement therapy is a form of genetic modification, but also in the perceived legality of the techniques and therefore of the Regulations themselves. Most genetic therapies are used in the treatment of adults and international instruments prohibit their use where they might potentially alter the germ line (i.e. where any genetic modifications can be passed on to future generations).¹²⁰ Whilst David Burrows' argument above pertains to modification of the nuclear DNA by substitution, the technique of pronuclear transfer or NT is not that which is normally labelled as genetic modification. This was highlighted earlier in subsection 2.1. Simplifying, genetic modification involves enzymes used as scissors to cut segments of DNA or gene sequences which are then removed and inserted in to a corresponding gap (which had also been removed) from another organism, whether mammalian or bacterium or other.¹²¹

It is absolutely clear that the pronuclear transfer and maternal spindle transfer techniques will result in distinct mitochondrial DNA being passed down the generations, albeit only through the female line (this is in fact the point of them) and the Nuffield Council for Bioethics in their report on mitochondrial disease, and the report of the Human Fertilisation and Embryology Authority stated that the techniques were more accurately framed as a form of germline genetic modification. The Government, however, formed a "working definition"¹²² of genetic modification, deeming the maternal spindle transfer and pronuclear transfer excluded from this working definition and responding to criticism with the argument that definitions of genetic modification vary and are not universally agreed.¹²³ The rationale for this was stated to be that the techniques in no way altered the nuclear DNA,¹²⁴ and in fact that the mitochondria DNA are not themselves altered, they are transplanted as part of the mitochondria (which are whole organelle structures contained within the cell). The

¹²⁰ See Oviedo Convention article 1 in conjunction with article 13; Directive 2001/20/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (Clinical Trials Directive) and now see also Regulation (EU) No 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC (Clinical Trials Regulations).

¹²¹ C. F. De Jager "The Development of Regulatory Standards for Gene Therapy in the European Union" (1994) *Fordham International Law Journal* 18:4, 1303-1339 at 1306-1307.

¹²² Stated by Jane Ellison, Under-Secretary of State for Health, HC Deb 3 Feb 2015 vol 592 col 162.

¹²³ Ibid. See also Department of Health, Mitochondrial Donation, Government response to the consultation on draft regulations to permit the use of new treatment techniques to prevent the transmission of a serious mitochondrial disease from mother to child, July 2014 at 15.

¹²⁴ Ibid.

processes used to bring about mitochondrial transfer, techniques for the deletion and insertion of gene sequences is not used, and as such this cannot be said to be a continuation of what we might call genetic modification techniques. However, the consequences of the techniques, do result in changed genetic germline.

Opponents leapt upon the comments of Lord Robert Winston who had stated before the debates and was quoted in the press as criticising the Government for denying that the procedures amounted to genetic modification.¹²⁵ The conclusions of the Nuffield Council review¹²⁶ and the report of the HFEA¹²⁷ and the testament of the scientists in general is that the treatment is genetic modification. Furthermore, whilst it was argued that pronuclear and maternal spindle transfer were very similar to those of NT and SCNT, their consequences were distinct such that they should not be considered or classed as “cloning”, implying that the main concern in such conceptualisation is the ultimate consequences of the techniques. In this case, the argument that pronuclear and maternal spindle transfer be considered genetic modification is based not on the practical application of the techniques themselves but on their consequences in changing the genetic germline. As is explored in section 4, the dispute is then rooted not simply on whether or not the genetic germline is changed, but on whether the modification of mitochondria DNA is seen as morally equivalent to modification of nuclear DNA which the Government argues is central to genetic identity.

Lord Winston’s remarks were to the effect that the Government was being dishonest in claiming otherwise in a move that seemed to mislead the public and potentially damage trust.¹²⁸ The issue of trust, as highlighted in chapter X, is central to contemporary efforts of regulatory design for academics interested in regulatory studies and of regulation or governance of science and technology in general given a recent past of low trust in decision-makers and scientists evidenced by the public. Countering the counter-argument, the Under-Secretary of State for Health, Jane Ellison in the Commons debate reiterated the Government’s position, stating “[i]t has to be said that there is no universally agreed definition of genetic modification... we have used a working definition and it involves not altering the nuclear DNA.”¹²⁹ It proved a pyrrhic point in favour of the opponents to the

¹²⁵ See David Burrows at HC Deb 3rd Feb 2015 vol 592 col 185; Fiona Bruce HC Deb 1st Sept 2014 vol 585 col 93.

¹²⁶ Nuffield Council Report supra n 19.

¹²⁷ HFEA Mitochondrial Replacement Consultation, supra n56.

¹²⁸ Steve Connor “Scientists accuse government of dishonesty over GM babies in its regulation of new IVF technique” The Independent, Monday 28 July 2014 available at <http://www.independent.co.uk/news/science/exclusive-scientists-accuse-government-of-dishonesty-over-gm-babies-in-its-regulation-of-new-ivf-9631807.html>.

¹²⁹ Jane Ellison MP HC Deb 592 col 162.

Regulations to cite Lord Winston as he was nevertheless in favour of their passing and gave a speech to that effect drawing on his personal experience of couples, women and their families who had suffered a great deal through the loss of children to mitochondrial disease.¹³⁰ Indeed, Lord Winston was quoted in reference to the health and safety of the procedures also,¹³¹ but out of context to which he again reiterated his support for the procedure and the Regulations.¹³²

The efforts made by both David Burrows and Fiona Bruce as pertaining to numerical identity however, can be seen as not simply arguments on the basis of the status of the embryo, which as highlighted may not carry much traction, but as a direct challenge to the Government's genetic modification definition. As is explored in the next section, genetic modification is not an argument tied only to the perception and persuasion that the embryo should be protected, but is related to contentious arguments that carry, or are seen to carry more persuasive force, that genetic modification could lead to designer babies, eugenic practices, to the unnatural alteration of genetic identity. Most especially, the genetic modification of the genetic germline is explicitly proscribed in some international bioethics conventions including the Oviedo Convention, that, whilst not strictly applying to the UK nevertheless represent a significant blow to the legitimacy and perceived legality of the Government's position, and the techniques in question.

This section has attempted to demonstrate the nuanced positions and at times strategic manoeuvring of opponents to the techniques in arguing against the passage of the Regulations. Whilst the arguments relating to health and safety do not directly impact on the ideas about identity, they do infer a strategic move to argue on these technical points rather than to directly oppose IVF, and the techniques in principle (as they were accused of doing) on the basis of the moral status of the embryo. The language used to describe the techniques and the Regulations may have been framed so as to reduce the normative and ethical objections in relation to them. Threading through arguments in favour of the Regulations I have attempted to show the influence of the narrative of therapeutic benefit and the emphasis and priority placed upon genetic parentage as part of a wider move in valuing identity, and genetic affiliation. In doing so I highlighted that such narratives and the value placed upon genetic parentage do not preclude the valuing of other forms of social relationship and parentage, but that in line with Swierstra's analysis of value plurality and technomoral change, the prioritisation of genetic paternity and therapeutic benefit may tip the balance of

¹³⁰ HL Deb 24th Feb 2015 vol 759 col 1591.

¹³¹ Irranca-Davis HC Deb 1st Sept 2014 vol 585 col 98.

¹³² Lord Winston *supra* n 132.

perceived legitimacy in favour of supporting the Regulations over arguments against them. Furthermore I demonstrated that the strength of the objections to the techniques based on identity concerns relating to the contribution of a third party's genetic material, and the status and relationship of that third party donor, is heavily dependent upon the perception and description of identity and whether mitochondria DNA is considered to influence it. In conclusion this section has shown that the narrative of therapeutic benefit and the priority given to genetic parentage and identity in this debate have been utilised to legitimate the Government's position. The next section moves to show how this places the rationale of the Government on a collision course with the primacy placed upon genetic identity and ethical objections to genetic modification on the international stage. The definition of genetic modification is inherently linked to the main thrust of the arguments that I am interested in in this debate: legal arguments as to "genetic identity" and the interaction and legality of the Regulations in light of international law, EU Clinical Trials Directive, and purported international consensus.

4. The Interaction of International Law, the Clinical Trials Directive, "Genetic Identity" and the Government's Working Definition of "Genetic Modification"

This section now turns to the intersection of differing arguments that directly relate to different explicit conceptions of identity as they were deployed in debate. It further interrogates the influence of the narrative of therapeutic benefit and the value placed on genetic parentage, the impetus created by such narrative, and how it collides with the conception of genetic identity in international law. I further relate to the debate in Parliament surrounding the definition of "genetic modification" and what constitutes "genetic identity". I demonstrate the complex dynamics in perception and claims of legitimacy, authority and legality, as outlined in chapter 5, in circumstances where international law and convention - whilst non-binding legally - present an ambiguous, but contradictory narrative consensus on identity and reproductive genetic technologies to that in the UK. This is especially highlighted in relation to confusion, genuine misunderstanding and potential strategic argumentation around the authority and legality of the international regulations cited in debate, and the likelihood of their position being perceived as legitimate.

Before moving to look at the legal challenges based on the Clinical Trials Directive and international law, the first subsection introduces the Government's working definition of genetic modification. In doing so it also highlights the challenges against this definition which disagreed directly with the conceptualisation of "genetic identity" used by the

Government as in part justification for their insistence that mitochondrial DNA did not affect identity. This serves as a grounding for the legal arguments explored in subsection 4.2 that are themselves also vested in part in the ethical and moral significance placed on identity and “genetic identity”.

4.1 “Semantic Sophistry”: Identity and the Definition of “Genetic Modification”

The Government’s working definition that “genetic modification involves the germ-line modification of nuclear DNA (in the chromosomes) that can be passed on to future generations”¹³³ is laid out in the Government response to the public consultation whilst also acknowledging that the techniques result in germline modification.¹³⁴ Within their response they explicitly state that “[m]ost importantly, mitochondrial donation techniques do not alter personal characteristics and traits of the person.”¹³⁵ This position, that “personal characteristics and traits” were not altered by the treatment mirrors the conclusions made by the HFEA that many respondents who were asked what they thought of the techniques and whether they were comfortable with genetic modification – as framed by the HFEA and described by all other materials including the review by the Nuffield Council – had said the benefits outweighed the risks and that the modification would not affect the nuclear DNA which was taken to be central to identity.¹³⁶ Therefore, even when the official materials presented the techniques as genetic modification, many respondents perceived the benefits of the techniques as outweighing any discomfort they might have in genetic modification for this purpose. It is important to note however, that it was only later that the Government arrived at their working definition that explicitly excluded mitochondria replacement from their conception of genetic modification.

The idea and claim that mitochondria do not affect personal characteristics and therefore do not affect identity is presented in multiple forms throughout the debate in Parliament and mainly in the Commons. For example Luciana Berger MP states “these regulations are very specific and cover only mitochondria DNA, not the nuclear DNA that determine our physical characteristics...[i]mportantly, nuclear DNA, which makes us who we are and determines appearance and personality, will not be altered...”¹³⁷ David Willetts argued in response to the position put forward by Fiona Bruce that the ethical red lines she argues we would be

¹³³ Department of Health, Mitochondrial Donation *supra* n52 at 15.

¹³⁴ *Ibid.*

¹³⁵ *Ibid.*

¹³⁶ HFEA *supra* n56.

¹³⁷ HC Deb vol 592 col 167.

crossing in terms of genetic modification and the slippery slope towards designer babies is not one that is in fact crossed because “the mitochondria is not part of the core DNA that does that...” and further, “mitochondria can be inherited by the mother, but it does not change the character of the baby.”¹³⁸ Liz McInnes also stated that “mitochondrial DNA makes up a tiny proportion of our total DNA. Unlike nuclear DNA it does not pass on any personal attributes...Altering the mitochondria will not alter a child’s characteristics inherited from its biological parents...”¹³⁹ During the back-bench debate, and as pointed to above in relation to David Willett’s rebuttal of Jacob Rees Mogg, identity as both human identity - as genetic identity – and individual identity was also central in the arguments.

These are in response to challenges from opponents to the regulations that are based in the understanding that the techniques are genetic modification. Jim Dobbin argues “Dr David King, Director of Human Genetics Alert? He is sympathetic to this process but fears that science is racing ahead of ethics. He says that we are in danger of creating designer eugenic babies, and we do not know where we are going in future.”¹⁴⁰ Thus, by citing Dr King, he also drew upon the opinion of an independent self-declared public watchdog organisation in strengthening the authority for his argument. Attacking both the working definition of genetic modification used by the Government but also refusing to endorse that mitochondria should be treated as any less important to status and identity Sir Edward Leigh MP continued:

“...just because they are not nuclear does not mean that they are any less an integral part of a human being. The mitochondria that contain DNA interact with the nucleus and many scientists therefore believe that they contribute material to the identity of the individual. Bioethicists have up until this point expressed almost universal consensus on germ-line genetic modification of our fellow humans, rejecting it as grievously immoral and completely unethical...They are asking us to dissent from opinion in every other country in the world.”¹⁴¹

Steve Baker MP argued in the Commons:

“...in the course of this conversation there seems to have been what, at best, I could describe as “semantic sophistry” as to

¹³⁸ Ibid at col 178.

¹³⁹ Ibid at col 179.

¹⁴⁰ HC Deb 1st Sept vol 585 col 100.

¹⁴¹ HC Deb 1st Sept vol 585 col 112.

whether or not this process is genetic modification...if the germline is to be modified, to me that is genetic modification...for me the key thing is not so much where these parts of the DNA identity of a person came from, but where they are now. Each one of us has our own DNA identity. This procedure changes only a tiny part of it, but having changed it, we cannot know what the future consequences will be.”¹⁴²

Thus his argument refutes that there can be any meaningful difference between mitochondria and nuclear DNA for the purposes of identity. In this he is joined by John Hemming MP who remarked, “I cannot see the difference between modifying mitochondrial DNA and nuclear DNA. Both are inherited, and both can prevent inherited diseases. If we agree to this as a process, we are in essence potentially agreeing to swapping a pair of chromosomes...”¹⁴³ Whilst this last comment in relation to “swapping a pair of chromosomes” is more a rhetorical flourish than an argument based on accurate science, the thrust of these arguments does speak to the ambiguity of identity in this context which is not as clear cut as the Government, or even the scientists supporting the Regulations suggest. There is some uncertainty over how mitochondria interact with nuclear DNA, and from the perspective of the resulting child, arguably one of the most critical aspects of identity – health – is fundamentally changed by the procedure. Any resulting children will be living different lives had these techniques not been employed. I posit that implicitly the moral value of identity that is being endorsed, and differentiated by the Government in relation to the consequences of mitochondria replacement, lies in the specific identity characteristics that are given distinct moral weight. It is not necessarily that mitochondria function is not related to identity, but that it is not considered integral enough to outweigh the therapeutic benefit of changing it.

Identity underpins, and is explicitly drawn on in the debates but although it is attributed to characteristics both physical and intellectual, and is rooted in genetics, it is not defined, and neither is it made clear explicitly how it is being used as part of an ethical or moral principle. It is inferred from the arguments that it is special and implies the restriction of practices (such as genetic modification) but this is not expressly elaborated on. It is used to refer to multiple aspects of the debate including:

¹⁴² HC Deb 3rd Feb vol 592 col 173.

¹⁴³ Ibid at col 175.

- The personal numerical and potentially narrative identity of the future child in terms of whether their genetic identity or physical and personal traits are altered by the process;
- Whether the modified embryo is seen to be the same embryo and not a new creation; The (genetic) identity of humanity as a whole.

The arguments against the techniques and the passing of the Regulations were structured around related bases and argumentative strands stemming from the perceived ethical unacceptability of modification of genetic identity, the shadow of “designer babies” and eugenics, to a broader base of human dignity and integrity (pointed to by David Willets as quoted earlier) which in turn is related to one strand of the potential legal arguments against the techniques and the 2015 Regulations. Some of these elements have already been touched on in the section 3. However, it is the appeals to international law and an apparent international “consensus” on a ban of modifying germline genetic identity that I believe most influenced the definition of “genetic modification” used by the Government.

4.2 The Perception of Legitimacy, Authority and Legality: Legal Arguments, Appeals to Consensus and the Tacit Endorsement of “Genetic Identity”

In chapter 6 I highlighted that a concept of identity in international law, particularly within human rights and bioethical conventions such as Oviedo, had been explicitly recognised if not defined. I also highlighted that the UK had in all circumstances resisted the recognition of such a right, and were instrumental in opposing an earlier draft of the Article 8 right to identity enshrined in the UN Convention on the Rights of the Child which originally included the wording “authentic identity”. The UK resisted this wording along with other countries that were making progress in IVF and related technologies, presumably because of worries that endorsing such a concept might restrict any current and future research and techniques that might be seen to implicate identity concerns.

The Government took specific advice on international law before the 2015 Regulations were tabled. The Nuffield Council also explored the international legal position coming to similar, ambiguous conclusions. These were that although some international conventions, including the Oviedo Convention, explicitly rule against any modification of the genome of any descendants,¹⁴⁴ the techniques would not be prohibited in others.¹⁴⁵ The Standard Note made

¹⁴⁴ Art 13 Council of Europe Convention on Human Rights and Biomedicine establishes that modification of the genome is permitted for diagnostic or therapeutic purposes only if its aim is not to

available to MPs in the week prior to the debate in the House of Commons, that sought to summarise and address some of the issues that had thus far been raised, and citing the Nuffield Council Review made clear that some international instruments although aiming to protect the “human genome” did not contain any explicit statement against germ-line genetic modification, just “that human rights must be protected and biodiversity safeguarded”.¹⁴⁶ The preamble to UNESCO’s Universal Declaration on Bioethics and Human Rights was cited, highlighting that again genetic modification of the germ-line is not expressly prohibited, just that “The impact of life sciences on future generations, including on their genetic constitution, should be given due regard.”¹⁴⁷ The Oviedo Convention, which contains explicit provisions against germline modification and claimed to protect “human identity” has not been ratified by the UK and thus did not apply. The argument was also made that many other countries had also failed to ratify or had not signed up to these conventions and thus it could not be said that there really was “international consensus” on the matter.¹⁴⁸ What is pertinent to note, however, is that the Standard Note did not cite the specific article of the Oviedo Convention that prescribes against genetic therapy aimed at modifying the genetic germline, even though they did cite the Convention itself, and the preamble in particular. This may have just been an oversight, but the explicit prohibition against germ-line genetic modification is cited in the course of the Parliamentary debates.¹⁴⁹

These international conventions do not directly prohibit the techniques, and Oviedo does not have legally binding application in the UK, but it does still form a narrative around genetic identity that emphasises constraint in relation to genetic intervention. The narrative surrounding identity and genetic identity at the international and especially European level may be seen as having legitimised a concept of genetic identity (as part of undefined “identity” that seems to cover both personal and collective “human” identity) as something to be protected from intervention. Identity and genetic identity are not defined, but the implication is that identity is a status, and that certain characteristics pertaining to that status are protected from intervention. The “international consensus” and existing convention

introduce a modification in to the genome of descendants. Article 1 establishes that part of the purpose of the convention is to protect the “dignity and identity of all human beings”.

¹⁴⁵ This is cited in the Standard Note that was published as part of the papers made available before the Commons and Lords debates, Standard Note SN/SC/6833 Mitochondrial Donation by S. Barber and P. Border at 19-20.

¹⁴⁶ S. Barber and P. Border, Parliamentary Office for Science and Technology, Mitochondrial Donation Standard Note SN/SC/6833 at 20.

¹⁴⁷ S. Barber and P. Border, Parliamentary Office for Science and Technology, Mitochondrial Donation Standard Note SN/SC/6833 at 20.

¹⁴⁸ Ibid.

¹⁴⁹ See Jim Shannon MP HC Deb 3rd Feb 2015 vol 592 col 183.

declarations, regardless of their legal applicability, have created the narrative conception around genetic identity that carries perceived legitimacy and authority (and potentially misconstrued legality) such that it cannot be dismissed outright. It makes sense from the perspective of the Government, given the ambiguity of the concept and lack of definition, to distinguish both what is taken to mean genetic modification, and mitochondria from the existing narrative of identity. In other words, identity and genetic identity are already perceived as morally important and deserving of protection due to the existing predominant narrative, but the UK Government have instead particularised the conception of identity and genetic identity to place that moral weight on the nuclear DNA only as deserving of protection, so as distance the techniques from such objections.

A more direct challenge to the legality of the Regulations and techniques deployed time again both during debate and subsequently as formal challenge to the legality of the 2015 Regulations, was that the Regulations and the techniques were ultra vires of the EU Clinical Trials Directive. Specifically, the challenge concerned Article 9(6) of the Clinical Trials Directive which states that, “No gene therapy trials may be carried out which result in modifications to the subjects germ line genetic identity.” Clinical trials are required when a new “medicinal product” is brought to the market. They do not, however, cover instances of clinical treatment.

The response of the Department of Health to the challenges raised against the compliance of the proposed Regulations with the Clinical Trials Directive, centres upon the fact that the 2015 Regulations will permit the HFEA to assess on a case by case basis whether to allow mitochondrial donation *as a treatment*, and as such is *not a clinical trial* and therefore does not fall within the ambit of the Clinical Trials Directive. Furthermore, that the need for clinical trials is dependent upon the nature of what is being studied – medicinal products – which does not correspond with the nature of mitochondrial donation. These legal challenges were raised in both the House of Lords¹⁵⁰ and in the House of Commons¹⁵¹ and laid out specifically in a public statement by Lord Brennan.¹⁵²

¹⁵⁰ See for example Baroness Scotland of Asthall at HL Deb 24th Feb vol 759 col 1597, and a rebuttal by Lord MacKay of Clashfern HL Deb 24th Feb vol 759 col 1600.

¹⁵¹ See in particular here the challenges of Robert Ffello.

¹⁵² Lord Brennan challenged the regulations and see the Department of Health’s response at <http://www.publications.parliament.uk/pa/ld201415/ldselect/ldsecleg/99/9905.htm> see Steve Connor (Science Editor) “New three-parent baby law ‘is flawed and open to challenge’, says senior lawyer” available at <http://www.independent.co.uk/news/science/new-threeparent-baby-law-is-flawed-and-open-to-challenge-says-senior-lawyer-9978363.html> accessed 25/02/2015.

It was fairly clear that the Clinical Trials Directive did not apply to innovative treatment in embryology and this was subsequently confirmed by the EU Commission.¹⁵³ Clinical trials whilst commonly seen as the authoritative paradigm are not always the optimal model for different kinds of research,¹⁵⁴ and in the case of embryology and the development of different genetic interventions in the embryo cannot be practically used. This is because the model relies on the gathering of data on many patients to test the effectiveness of a particular treatment over another or none at all.¹⁵⁵ With embryology, there is no other treatment to be tested and the technique itself is part of the conception of a child, not a test of medicinal benefit. Regardless of the impossibility of clinical trials for such techniques, as discussed above, prohibition against intervention in the genetic germline and the narrative around a protected status for genetic identity in international law does undermine some of the legitimacy of the techniques. Further, and touched on in subsection 3.1, given that clinical trials in popular imagination are that which is used to test safety, the fact that clinical trials are not carried out in this case might be perceived, or manipulated to be presented as an illegitimate move to circumvent the EU Directive.

Clinical trials or specifically randomised clinical trials are the perceived “gold standard” for robust science, and certainly are at least commonly understood as normally necessary before an innovative drug or treatment is brought in to widespread use.¹⁵⁶ The perceived legitimacy of clinical trials as the commonly known or lay persons understanding of what constitutes “good” or safe science has a two-fold consequence for the Government in terms of persuading enough MPs to vote in favour of the new techniques. The first is that, even though clinical trials are not practically possible or relevant for such techniques, if the clinical trials model is seen as the dominant model it sows a seed of doubt in those who need to be persuaded that the science is sound enough to warrant the permissive step of passing the Regulations and this doubt needs to be overcome. The second is that even though the techniques as they are to be applied do not fall within the authority of the Clinical Trials Directive, the perception that they might or should be subject to clinical trials may persuade undecided persons that the proposed Regulations are not legally valid. Many MPs during the debate alluded to the infringement of the Clinical Trials Directive,¹⁵⁷ and in the course of

¹⁵³ See Petition No 0878/2015 by C.M. (British) on behalf of European Bioethical Research, on the alleged breach of the EU Clinical Trials Directive (2001/20/EC).

¹⁵⁴ See H. Valier and C. Timmerman “Clinical Trials and the Reorganization of Medical Research in post-Second World War Britain” (2008) *Medical History* 52: 493–510.

¹⁵⁵ See C. Jones “Research Methods” (2002) *The Pharmaceutical Journal* 268, 839-841.

¹⁵⁶ See Valier and Timmerman *supra* n157.

¹⁵⁷ Sir William Cash HC Deb 3rd Feb 2015 vol 592 col 163; Fiona Bruce HC Deb 3rd Feb vol 592 col 170.

speaking about the safety of the techniques, the fact that no clinical trials would be undertaken became a point of attack, whilst others focussed on the fact that techniques should be caught by the Clinical Trials Directive and argued that the Governments terming of them as a treatment is a way to circumnavigate the Directive.¹⁵⁸

Whilst the Oviedo Convention and the Clinical Trials Directive are not applicable, that genetic modification of the germline is explicitly highlighted and proscribed in international law might have persuaded MPs (and members of the public) of the legitimacy of the opposition to the techniques, and of the potential illegitimacy and illegality of the Governments position. In this circumstance it might not matter that the relevant Conventions do not actually apply, if there is a general perception that they should apply, or at least doubt or misunderstanding both in the wider public and among those not well versed in either the law or the science in Parliament. Whilst it is not clear whether the Government, or Department of Health, ever seriously considered that the Clinical Trials Directive might pose a perceived threat to the passing of the Regulations, they were nevertheless aware of it. It must be presumed that they would have been aware that the Directive could be drawn upon to be used in argument against the Regulations even if only because they strengthen the argument that the position in international law, in the international community, is firmly against any modification of the genetic germ line.

I argue that in this sense the perceived legality of the prescription against genetic modification of the germline might be seen as contributing – substantially – to the perceived legitimacy and persuasiveness of the ethical arguments already highlighted within the debates of those opposing the techniques, and potentially of swaying those who might be undecided as to the ethical merits of the techniques. It may have been seen by the Government as being perceived as legitimate enough as to warrant consideration in how the techniques and Regulations were described and argued in Parliament and the general public. As highlighted in relation to the description of the techniques and the naming of the therapy as mitochondrial donation, there are ways of minimising the normative or ethical connotations of descriptions. By using a “working definition” of genetic modification as applying only to nuclear DNA, not only does the Governments position seem to be trying to circumvent the normatively loaded term “genetic modification” but also to distance the procedures from any action that might be considered as prohibited in the sense of international law. In doing so, the justification that was given and reflected, as highlighted

¹⁵⁸ See the comments of Robert Flello Jim Shannon HC Deb 3rd Feb 2015 vol 592 col 177; Jim Shannon HC Deb 3rd Feb 2015 vol 592 col 183; Fiona Bruce HC Deb 3rd Feb vol 592 col 169; Sir Edward Leigh HC Deb 3rd Feb 2015 vol 592 col 181.

above, in arguments during the debates, is that nuclear DNA is unchanged and that it is the nuclear DNA that is essential to individual identity and integrity of the individual, and potentially by extension human identity. During the House of Commons one-off Science and Technology session on mitochondrial donation the Chief Medical Officer, Prof Sally Davies in response to criticism of the working definition said:

“It seemed to us that, in order to have the discussion we were having, it was important to lay down working definitions. Germline is anything that is done to DNA that goes through the generations, and mitochondria go from woman to child through the generations. This is clearly a germline modification because it passes through, but we needed to make the distinction between nuclear DNA, which makes us who we are and how we are—our personalities, heights, weights and whether or not we get baldness—and the 37 genes in the mitochondria which are about energy for the cell, and which we describe as the power pack. That was why we adopted that working definition.”¹⁵⁹

Interestingly it was also put to the Chief Medical Officer that the definition chosen by the Government had been accused by the press of being framed so as to introduce mitochondrial donation as an uncontroversial procedure.¹⁶⁰ Her response was that this was not a fair assessment, that she had suggested the definition so as to give clarity to the discussion that was being had, and she was supported in this by the Under-Secretary of State for Health, Jane Ellison, who added that any headline claiming that the treatments also resulted in “three parent babies” also needed to justify themselves, and that she at least was satisfied that the definition the Government had settled on was justified.¹⁶¹ This might suggest that nothing more deliberate or strategic was intended by the Government than to give the most clarity to the discussion. Even if this is so, as plainly stated by Jane Ellison, any definition requires justification, and whether conscious or not they justify their definition by recourse to the normative position that nuclear DNA, not mitochondrial DNA are responsible for an individual’s identity – which itself is contested. It is also clear, or can be interpreted out of this justification, that what is seen as important or morally relevant to the definition of genetic modification, is that identity is not modified, and therefore, according to the logic of

¹⁵⁹ Science and Technology Committee, Oral evidence: Mitochondrial Donation, HC 730 Wednesday 22 October 2014, 25.

¹⁶⁰ Ibid.

¹⁶¹ Ibid.

the premise underlying the Government's position, only interventions in nuclear DNA are attached with the label genetic modification. This moral distinction seems also to be reflected in the views of some of the respondents in the public dialogue events that were conducted by the HFEA, who had decided that genetic modification for mitochondria was justified because the benefits outweigh the risks, and because the identity of the future child was not affected.

No such distinction is made in the Oviedo Convention. Article 13 simply states that intervention in the genome should only be undertaken for diagnostic or therapeutic purposes and only where its aim is "not to introduce any modification in the genome of any descendants". Genome is normally taken to mean all genetic material which would surely include mitochondrial DNA. As already highlighted, Article 1 of the Oviedo Convention states the purpose and object of the Convention is to "protect the dignity and identity of all human beings". However, and again as I have already highlighted, identity within the Oviedo Convention, and other legal instruments has not been specifically defined so it is not clear what identity means and what is seen to be a harm to it other than a change to the genetic germ line. The rationale of the Government in relation to the working definition of genetic modification lays identity, specifically genetic identity, firmly within the confines of nuclear DNA. Cynically this could be seen as a crafted means of semantically and strategically circumnavigating or distinguishing the techniques from the harms guarded against within the Oviedo Convention, or at least of distancing them from the harms perceived when genetic modification is used in common parlance. This could be seen as a means not just of rendering the techniques less ethically controversial but of further distinguishing them from an international "consensus" and Convention that otherwise might be seen to have the form of legality and legitimacy that might be enough for individuals to doubt the absence of authority over application to the UK context. Even if this was not the intention, this is how the arguments played out in Parliamentary debates. More crucially for my overall argument in relation to an emerging concept of identity, the UK has argued in such a way that they have tacitly endorsed a concept of identity, or specifically genetic identity, as morally and legally relevant in the specific case of genetic intervention.

Raised at the beginning of this section, and still not resolved - because the concept has never been defined - is how identity, and genetic identity are being referred to and applied as part of a coherent ethical, moral or legal principle. It is only implied by its application and legal consequences. Having carefully avoided endorsing at an international level, any concept of identity or genetic identity that could be interpreted widely and thus act as a potential barrier

to innovation, we now have a situation where the official Government position is that genetic modification is limited to intervention in nuclear DNA. Indeed the justification of the definition of genetic modification given by the Government seems to explicitly attribute identity as the moral reason as to why nuclear DNA should not be interfered with. However, as highlighted above, identity based arguments implicitly cover many more specific ethical arguments which in debate can lead to confusion as to how identity is being argued over. It is taken for granted that identity must be protected and that this implicitly means that nuclear DNA in the germline should not be altered. This could be seen as the increasing perception and entrenchment of the legitimacy and authority of concept of identity in relation to genetics and as manifesting itself as a protected status of genetic identity in such contexts. This need not necessarily have been the case.

Having failed to engage with a concept of identity, and specifically genetic identity in relation to biomedicine, the UK Government failed to frame or influence a dialogue about the meaning of such a concept and what specifically it should protect. It was never expressly questioned whether identity as a concept itself *should* be given such moral weight, let alone whether identity or human identity should be conceived and protected as a status that should be free from alteration, or that the germline should forever remain intact regardless of the circumstances. It was never questioned that genes were an important element of identity that in this context should be protected from interference. Given the intellectual history and social preoccupation with genetics and identity (outlined at the beginning of chapter 6), an opposing stance might have been difficult to frame. Whilst there are ethical concerns linked with eugenics and arguments against the endorsement of genetic alteration of the germline nuclear identity, it is not clear how far such arguments justify the prevention of all interventions in the germline. I do not necessarily endorse such intervention, but the very fact that mitochondrial replacement therapy has now been approved and is itself a modification of the germline (regardless of which definition of genetic identity is followed), shows that there is clearly an impetus to pursue such intervention in the context and framing of therapeutic benefit. It is this impetus and narrative that I have argued throughout this chapter as fuelling and framing the debate as a fundamental touchstone of the UK regulatory framework in general. By not engaging sooner with the dialogue and international framing of identity, the UK Government have now had to craft their arguments to the dominant narrative around identity. Again however, whilst seemingly endorsing a concept of genetic identity, identity is never actually defined, but implied from the context. Neither is it enshrined in the 2015 Regulations which at no point mention identity. It does however point to the increasing use of the concept in debate and in influencing that debate and the position

that the Government has to take in relation to these issues. This does still seem to leave room for alternative arguments and conceptualisations of identity to emerge. Indeed, as I highlighted in section 2.2, in relation to Swierstra's conception of moral plurality and technomoral change, the further development of such genetic technologies and their potential applications may still prompt a modulation of perceptions around identity, and its current implied conception as protection against interference in germline nuclear DNA. The next section addresses this point.

4.3 Future Considerations

The 2015 Regulations, and the text of the 1990/2008 HFE Acts are careful to limit the exception to the permitted embryos that may be implanted to include only the techniques in question and explicitly exclude changes to nuclear DNA. This was in line with the recommendations given by the Human Fertilisation and Embryology Authority.¹⁶² The argument was made in debate in the Commons that mitochondria should not be treated in any different manner to nuclear DNA, that it was all identity, and that the same arguments that were currently being used by the Government – that the techniques were needed because they would help “cure” and prevent horrific disease – could be made in any case, about nuclear DNA.¹⁶³ This is precisely the sort of argument that both the Government and proponents wished to avoid in making the distinction between mitochondrial DNA and nuclear DNA because they argued, and many probably genuinely believe that there is a moral distinction and that the same arguments would not hold weight or be condoned in relation to nuclear DNA modification. Be that as it may, many of the justifications put forward in support of the techniques were directly attributed to laudable aims of “curing” and alleviating pain and disease, and these arguments can be almost directly used to justify potential modifications to the nuclear DNA. Indeed many of the arguments made in relation to distinguishing the morally relevant “identity” implications of nuclear DNA from mitochondrial DNA can actually just as easily be employed to distinguish between different genes within the nuclear DNA. For instance BRCA1 and BRC2 genetic mutations which increase the lifetime risk of ovarian and breast cancers in woman affected, have no real impact, that thus far can be shown, on other physical characteristics or personality traits. They are monogenic in form – dependent on mutation of only one or two genes - and therefore (relatively) easily identified and characterised as dealing only with the functioning

¹⁶² HFEA supra n36 at para 6.32.

¹⁶³ See subsection 4.1 above.

of proteins that would usually suppress tumors. Defects in the genes affect the body's ability to detect and suppress tumors hence the increased risk of cancer. But if these genes are not seen to do anything else other than this function, or if other genetic predispositions for disease are identified in future and also shown to have little or minimal impact on physical traits and personality, then according to the logic of the argument made by the Government, they would not necessarily pertain to identity, or at least to the morally protected identity that seems implied here.

The techniques for direct nuclear DNA modification have until relatively recently failed in their promise being both inefficient and subject to highly variable and disappointing results when used in adult treatment thus far. Recently however, and making rapid progress, the CRISPR-Cas9 technique has exploded exponentially in its successful application and use in research, to the extent that a moratorium had been called for, and a similar Asilomar event was conducted for scientists to discuss the potential implications for the technology and their ethical issues.¹⁶⁴ Whilst genetic defects such as BRCA are unlikely candidates for genetic germline intervention (use of PGD is already offered for couples wishing to conceive children free of the mutation) it is not outwith the realms of possibility that other genetic diseases might be subject to such discussion.

It is not clear how that discussion would go. The position of identity endorsed thus far has gone undefined, or potentially under-defined such that if the Government did wish to re-visit the issue of potential nuclear genetic modification of the germ-line it might have left enough ambiguity in its arguments to do so. I would suggest however that in using identity and endorsing implicitly and by context, genetic identity in the way it has, it has tacitly accepted the legitimacy of identity as a legal concept in the biomedical sphere. This however at this point can only be speculation, but I argue that the public perception, and the explicit debate has moved such that genetic identity as a protected status or concept, however still unformed in its definition, is emerging and strengthening in terms of perceived and accepted legitimacy and potential legality in this sphere.

¹⁶⁴ National Academy of Science, International Summit on Gene Editing 1st-2nd December Washington DC.

5. Concluding Remarks

I have endeavoured to show illustratively in both chapters 6 and 7 that identity can be conceived of as a potentially emerging legal concept, specifically as it relates to the UK. Chapter 6 concentrated on the intellectual history of identity and its rising prominence in social consciousness particularly as implicated by new genetic and reproductive technologies. It also examined the structural and coproducing effect that existing legal concepts, as factors affecting perceived legitimacy and the legality of new arguments and concepts, have upon the emergence of new concepts in case law. It particularly focused upon the case law of the UK and the implicit rise in identity interests - as understood from the wider intellectual and social context outlined – as underpinning the harms at play in cases of negligent IVF insemination, damage to stored sperm and challenges to hereditary title. It concluded that whilst identity had still never been explicitly debated in such cases, it was implicit, and that at least in Scotland there were no conceptual barriers to identity interests or identity as a concept from being recognised at some point in the future.

This chapter has turned the focus to the distinct dynamics of potential emergence of identity within the passing of legislation. As has been demonstrated there are different factors and dynamics at play, with fewer constraints on the debate and a wider range of views and persons who must be convinced to vote in certain ways, which may contribute to the likelihood and direction of conceptual emergence. As argued, there is more room for strategic argumentation, but also concomitant potential for misconception, misunderstanding and the need to accommodate arguments to circumvent the perceived legitimacy and authority of arguments based upon such misconceptions. I have argued that the perceived legitimacy of the international consensus on genetic identity, together with a potential misconceived authority of the Oviedo Convention and the Clinical Trials Directive may have corralled the Government's framing of identity and definition of genetic identity in line with this narrative. Ultimately this chapter has demonstrated the complex ways in which the perceptions and claims of legality, legitimacy and authority of the different positions on identity and on the techniques themselves have pushed the narrative of identity further along in the context of biotechnology regulation, even if not formally constructed in the Regulations themselves.

Chapter 8

Conclusion: Identity as an Emerging Legal Concept

1. Restatement of Aim

I outlined that the aim of this thesis was to explore the relationship between law, technology and society. I have argued that NEST are complex to manage but that such management and the ability to influence their trajectory into the future is justified and required if we are not to forego the political imperative that we have a say in the kind of society in which we will live. The unpredictable trajectory and social impacts of NEST, together with the plurality of opinion as to their desirability or the potential harms that they implicate, and their capacity to prompt shifts to social practices and values are at the centre of the issues pertaining to their management. Whereas there has been much research in STS into the relationship between technology and society, there is a dearth of understanding as to the relationship and interaction with law. My contribution lies in the development of an explanatory concept of “emerging legal concepts” and analysis of the mutual influence or coproduction of law with the wider socio-technical environment. The summation of the arguments that have been explored in this thesis are outlined in this concluding chapter to clarify this original contribution and the research justification

2. Summary of the Research Problem

This thesis has been set out in two parts. Part 1 outlined the research context, problem and, as part of this, its justification. Part 2 of the thesis moves on to set out my conceptualisation of an emerging legal concept, and identity as an example of such a concept in the biomedical sphere. In chapter 5 however, in order to form my conceptualisation of an emerging legal concept, I have also outlined that the development of a methodology and approach to the formation of such an explanatory concept was itself required. The reconciliation of the insights from traditional legal scholarship and theory, with the methodology and aims of social research on law and socio-legal research, were a research problem highlighted in

relation to the legal literature. The development of such a methodology and of the concept itself is part of the original contribution.

Chapter 2 sets out the complexity of managing NEST which are characterised as ambiguous and ambivalent, unpredictable in their development, and potentially transformative.¹⁶⁵ One of the main aspects of complexity is the plurality of opinion as to the desirability or ethical acceptability of emerging technologies, particularly biotechnologies. The technomoral change thesis highlights that new scientific knowledge and technology can modulate our interpretive understanding of the socio-technical reality, but that value change is not necessarily a bad thing, and that anxiety over NEST based on their capacity to change such values will always be a matter of perspective. It thus provokes the question as to how decisions made in relation to NEST should be decided and by what values should they be guided? It does also highlight that in modulating moral values, the social reaction to such modulation is unpredictable, and that emerging technologies provide a point of flux in relation to the dominant understanding and values of the socio-technical landscape. As such it provides a further layer of complexity to the question of which values should guide such decision-making.

I posited a few further questions that were relevant to the management of NEST. Whether the development and future of the socio-technical environment could in fact be actively shaped? If it can be shaped how do we practically achieve such shaping? By what values and priorities should such shaping be guided? I set out that the development of the sociotechnical environment can be influenced by collective action, and that the likelihood of such influence is increased where intervention comes at the point of early emergence of a technology, when its potential future implications are uncertain. Thus decisions and interventions made in relation to them must take place at a time of epistemic deficit in relation to its future. If such decisions are to be made, understanding the dynamics of the development of the socio-technical environment, of the relationship between technology and society, can shed light on its potential future development and the values that may be underpinning it. This in turn could aid decision-making in reference to NEST. It is to this aspect that I am contributing by providing further understanding of how the socio-technical environment develops.

I argued that the insights from STS show that the development of the socio-technical landscape is coproduced between technology and society. Furthermore I posited that the differing types of collective action, of which law may be but one, can compete to influence

¹⁶⁵ See section 2 of chapter 2.

the socio-technical environment, that some arguments and values were more successful, and thus pervasive and influential than others in the socio-technical sphere. As such identifying the winning arguments or values can help understand how the socio-technical future might develop, but the formation of these arguments and thus the collective action surrounding them are themselves coproduced. My further overarching research question then – what is the role of the law in the management of NEST – which is addressed in chapter 3, requires a greater understanding of the coproducing relationship between law and the wider socio-technical environment. In chapter 3 I argued that the existing literature addressing the response of law to emerging technologies and the problems of their management, has characterised the law as often lagging behind technology or failing. In critiquing this stance, I argued that such a description fails to take in to account an adequate understanding of the social dynamics and relationship between law and the wider socio-technical environment in its evaluation and characterisation of the law. Critique of the legal lag thesis within the law and technology literature developed a more nuanced analysis of the technical interaction between law and technology which provided greater clarity as to how diagnosis of issues with the law could be identified. Furthermore the development of literature surrounding new governance has also provided means of dealing with the issues of NEST including mechanisms to more rapidly respond to regulatory disconnection and integration of public participation in decision-making. However, I argued that this literature pointed to the inherent limits of any legal or governance regime in managing NEST, and that whilst such literature has contributed practical suggestions as to how NEST can be governed, it did not aim to provide a better understanding of law and governance as part of a coproducing relationship with the wider socio-technical environment. Critically as law as part of this coproducing relationship will impact on the future trajectory of the socio-technical future, the development of law itself, and the arguments and values that come to permeate it, must also be coproduced, however, none of the literature looks to the dynamics of such a development. It is this dearth of understanding, that as part of a wider understanding of the dynamics of the development of the socio-technical environment, that my research is contributing to.

Chapter 4 further clarifies that the law and technology literature whilst having developed more nuanced theoretical approaches for law in adapting to new technology, does not aim at providing an insight in to the development of the law itself and how this development relates to the changes in the socio-technical environment. However, although aimed at providing normative arguments as to what law should do, or what its content should be, this literature incidentally provides insights into some of the unique dynamics at play in legal

development. This includes the framing effect that the existing regulatory array will have in the future development and recognition of new rights or interests prompted by the development of new technology, and coproduced conflict and action that may proceed it. As such it points to the interaction as between the structure of the existing law and the agency of those involved in its practice. Having highlighted that new interests provoked and new potentially perceived harms may come to fuel new legal conflicts as a result of new technology, I argued that understanding how new interests or legal concepts emerge or become recognised can aid understanding of the development of law as part of the coproducing relationship with technology and society. STS whilst providing the insight of coproduction does to apply or develop its insights to the unique dynamics of specifically legal development. This is where my original contribution in lies in providing, as developed in chapter 5, an explanatory concept of “emerging legal concepts” as part of understanding and analysis the relationship between the wider sociotechnical environment, and changes prompted by emerging technology, and the dynamics of emergence of concepts in the law.

3. “Emerging Legal Concepts”: Summary of the Original Contribution

Chapter 5 marks the start of the second part of the thesis and sets out the main original contribution of the thesis which was the development of an explanatory concept of “emerging legal concepts”. Part of this original contribution is also tied to addressing a secondary but crucial research problem: the development of a methodology and approach to concept formation capable of reconciling the insights and understanding of traditional legal research and theory, with the insights and methods of sociological and socio-legal research. I set out that new ideas and normative arguments and judgments about what the law should be – what interpretations should be followed and what concepts or rules applied in certain contexts – made in academia can come to influence the arguments and judgments in court. As such academia and the ideas generated within it form part of an understanding of the dynamics of legal development itself. This meant that whilst traditional legal research provides an understanding of the conceptual content of law, it provides no method to understand its own development. Socio-legal research and social research provide methods and approaches to concept formation that could help explain such social dynamics and interaction in the research environment, but there is a dearth of application of such research to questions of legal development itself, and a lack of engagement with the conceptual content of law.

In overcoming this problem I argued that Weber's interpretative method could best reconcile the insights of legal doctrine and legal theory with the methods and insights of sociological theories of law, both in understanding what factors affect the emergence of a new legal concept, and in aiding the formation of an explanatory concept to aid understanding of such emergence. Part of the issue with legal theory, despite important insights about law, is that it often failed to take into account non-Western perspectives on what law is, or to account for the perspectives of non-lawyers in its recognition. I also argued that the interpretative method combined with a conventional approach to concept formation – that law is what we commonly understand it to be – best allowed for the formation of such an explanatory concept, and to account for the differing perspectives in a concept of law. It best helps distinguish between ideas and arguments that are not themselves “legal” concepts, and their influence upon ideas and concepts that are “legal”.

In coming to my conceptualisation of an emerging legal concept, I drew on insights from Tamanaha and Cotterrell, to argue that law as a social construct, is dependent on differing and possibly competing perspectives and claims to authority and legitimacy. That legality itself exists on a spectrum and is dependent on different perspectives. It is the interaction of the spectrum of perspectives and claims of legitimacy and authority that influence the eventual recognition of a concept as legal. An emerging legal concept then is one which is increasingly perceived and claimed as legitimate and authoritative. It is one that can be seen to be moving from the implicit to the explicit legal space in having been identified and potentially debated in legal academia, and in broader social debate, and seen as conceptualising and describing interests or perceived harms that underpin cases being brought to the courts or as the subject of legislation. Whilst such ideas themselves can be seen as being coproduced it is this interaction of authority, legitimacy and perceptions and claims of legality that distinguishes this approach from that of Jasanoff's use of the idiom of coproduction and adds a further conceptual clarity to such explanations. It is also the first time that such an explanation is being directly attributed to an understanding of emerging legal concepts and legal development itself.

Chapters 6 and 7 are illustrative examples of an emerging legal concept. They demonstrate that identity is an example of an emerging legal concept and highlight the presence of factors that indicate its potential emergence, and which also simultaneously affect its emergence. Chapter 6 showed the intellectual and social history of the concept of identity, whilst highlighting that in its nascent state, and largely undefined, its meaning is inferred from application, but can accommodate many differing rationales. In the UK context, I argued that

the development of reproductive and genetic technologies had fuelled new conflicts in the courts that could be seen to be implicitly about identity interests as inferred from the social and intellectual history outlined. I argued that the dynamics of emergence within case law were distinct from that in legislation although developments in both contributed to the overall formulation and emergence of the concept. In relation to the UK case law, whilst identity interests are featured more commonly, they have not developed to the point of crystallisation, but in Scotland at least there is no conceptual barrier to their being recognised in the future. Chapter 7 looks to the unique dynamics of development within the formation of legislation and regulation, by looking to the passing of the Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015. In this instance the interaction of perceptions and claims of legality, authority and legitimacy are made clearer. Whilst identity did not feature in the text of the Regulations, the narrative and arguments made in relation to identity in the process of debate lifted its prominence and placed the UK Government in the position of tacitly legitimising the concept of genetic identity, as vested in the nuclear identity of the cell, as deserving of protection from intervention. As discussed at the end of chapter 7, the future development of genetic modification techniques mean that such concepts and the value placed on integrity of nuclear genetic identity may be challenged in the future.

4. Closing Remarks

Part of my interest in interrogating the dynamic between law and technology was to get away from the idea of law as an instrumental force that is seen to act on technology – in the same way that technology is sometimes framed as an exogenous force acting on and shaping society – and thus often failing or lagging behind the progress of society and technology. In doing so I have set out my own conception of what is meant by an emerging legal concept which I directly link to the modulating effect that new technologies can have on settled understandings, norms and ideas about our socio-technical reality. I have argued that new technologies, such as mitochondrial replacement therapy, can open up to scrutiny settled ideas and norms whilst also leading to newly perceived harms or interests. Such harms, interests and the values or concepts used to articulate them could themselves come to be seen as or used in debate and potentially in legal discussion. My conception of legal concepts is that they are ideas about our reality, about our socio-technical reality, that are used to describe newly felt harms or interests or conceptualised values that may be becoming more influential in legal and political discussion. I have characterised the potential emergence by

reference to perceived authority, legitimacy, and hence also legality of a particular concept in how it is used and rebutted in debate. Key to this understanding is that a concept might only be seen as actually “legal” once it has been explicitly stated as such in a legal institution by a legal decision-maker such as a judge or through legislation. This conception allows for account to be taken of the complex power dynamics at play in the formation of legal ideas and concepts, as well as the complex causal relations as between the structure of existing law and regulatory array and the agency of those interacting with it.

BIBLIOGRAPHY

- Ajana, B. "Recombinant Identities: Biometrics and Narrative Bioethics" (2010) *Bioethical Inquiry* 7, 237-258
- de Andrade, N. "Right to Personal Identity: The Challenges of Ambient Intelligence and the Need for a New Legal Conceptualisation" in S. Gurtwith *et al.* (eds), *Computers, Privacy and Data Protection: an Element of Choice* (2011) Springer Netherlands
- de Andrade, N. "Human Genetic Manipulation and the Right to Identity: The Contradictions in Human Rights Law in Regulating the Human Genome" (2010) *SCRIPTed* 7(3)
- de Andrade, N. "The application of future-oriented technology analysis (FTA) to law: the cases of legal research, legislative drafting and law enforcement" (2012) *Foresight* 14(4), pp. 336-351
- Annex VIII: Scientific review of the safety and efficacy of methods to avoid mitochondrial disease through assisted conception: update, Report Provided to the Human Fertilisation and Embryology Authority, March 2013
- Appiah, K. A. "Stereotypes and the Shaping of Identity" (2000) *Cal. L. Rev.* 88, 41
- Appiah, K. A. "The State and Shaping of Identity" (2001) *The Tanner Lectures on Human Values*, Delivered at Claire Hall, Cambridge April 30 and May 1, 2001
- Arendt, H. *The Human Condition* (1958) University of Chicago Press
- Ashcroft, R. E. "Could human rights supersede bioethics?" (2010) *Human Rights Law Review* 10, 639-660
- Audit Commission *Trust in public institutions new findings: National qualitative survey* (2003) London: MORI Social Research Institute
- Austen, J. *Lectures on Jurisprudence, or The Philosophy of Positive Law*, (1911) London: J Murray
- Avard, D., Bucci, L., Burgess, M., Kaye, J., and Heeney, C. "Public Health Genomics (PHG) and Public Participation: Points to Consider" (2007) *Journal of Public Deliberation* 5(1), Article 7
- Avery, L. "A Return to Life: The Right to Identity and the Right to Identify Argentina's "Living Disappeared"" (2004) *Harvard Women's Law Journal* 27, 235
- Bently, L. "Identity and the Law" in G. Walker and E. Leedham Green (eds) *Identity* (2010) CUP
- Berg, P. "Meetings that changed the world: Asilomar 1975: DNA modification secured" (18 September 2008) *Nature* 455, 290-291

- Berlin, I. *Two Concepts of Liberty: an inaugural lecture delivered before the University of Oxford on 31 October, 1958* (1958) Clarendon Press
- Bernstein, G. "The Socio-legal Acceptance of New Technologies: A Close Look at Artificial Insemination" (2002) *Wash. L. Rev.* **77**, 1035
- Bernstein, G. "Accommodating Technological Innovation: Identity, Genetic Testing and the Internet" (2004) *Vanderbilt Law Review* **57**, 965
- Bernstein, G. "The Role of Diffusion Characteristics in Formulating a General Theory of Law and Technology" (2007) *Minn J L Sci and Tech* **8**(2), 623-644
- Bernstein, G. "Toward a General Theory of Law and Technology: Introduction" (2007) *Minn. J.L. Sci. & Tech.* **8**, 441
- Bernstein, M. "Identity Politics" (2005) *Annu Rev Soc* **31**, pp 47-74
- Besson, S. "Enforcing the child's Right to Know their Origins: Contrasting Approaches Under the Convention of the Rights of the Child and the European Convention on Human Rights" (2007) *International Journal of Law, Policy and the Family* **21**, 137-159
- Black, G. "Publicity and Image Rights in Scots Law" (2010) *Edinburgh Law Review* **14**(3), 364-384
- Black, J. "Critical Reflections on Regulation" (2002) *Austl. J. Leg. Phil.* **27**(1)
- Black, J. "Critical Reflections on Regulation" (2002) *Austl. J. Leg. Phil.* **27**
- Black, J. "Decentring Regulation: Understanding the Role of Regulation and Self-Regulation in a 'Post-Regulatory' World" (2001) *Current Legal Problems* **54**(1), pp. 103-146
- Black, J. "Regulatory Conversations" (2002) *J.L. & Soc'y* **29**, 163 at 176-179
- Black, J. "Constructing and Contesting Legitimacy and Accountability in Polycentric Regulatory Regimes" (2008) *Regulation & Governance* **2**, pp137-164
- Blauhoff, R. "Tracing Down the Historical Development of the Legal Concept of the Right to Know One's Origins: Has 'to Know or Not to Know' Ever Been the Legal Question?" (2008) *Utrecht Law Review* **4**(2), pp99-116
- Bloustein, E. J. "Privacy as an Aspect of Human Dignity: An Answer to Dean Prosser" (1964) *N. Y. U. l. r.* **39**, 962
- Blumer, H. "Social Problems as Collective Behaviour" (1971) *Social Problems* **18**(3): pp. 298-306
- Boenik *et al.* "Anticipating the Interaction Between Technology and Morality: A Scenario Study of Experimenting with Humans in Bionanotechnology" (2010) *Studies in Ethics, Law and Technology* **4**(2), 1-38
- Bongso, A. and Richards, M. "History and perspective of stem cell research" (2004) *Best Practice & Research Clinical Obstetrics & Gynaecology* **18**(6), Pages 827-842

- Boon, A. and Webb, J. "Legal Education and Training in England and Wales: Back to the Future?" (2008) *Journal of Legal Education* **58**(1)
- Braun, K., Moore, A., Herrmann, S. L., and Könninger, S. "Science governance and the politics of proper talk: governmental bioethics as a new technology of reflexive government" (2010) *Economy and Society* **39**(4), pp 510-533
- Brazier, M. "Regulating the Reproductive Business." (1999) *Medical Law Review*, 166-193.
- Brazier, M. "Human(s) as Medicine(s)." In S. MacLean, *First Do No Harm: Law, Ethics and Healthcare* (2006) (pp. 187-202). Ashgate.
- Brodwin, P. "Genetics, Identity and the Anthropology of Essentialism" (2002) *Anthropological Quarterly* **75**(2), pp323-330
- Brown, N. and Beynon-Jones, S. "'Reflex regulation': An anatomy of promissory science governance" (2012) *Health, Risk & Society* **14**(3), 223–240
- Brown, N. and Michael, M. "From authority to authenticity: The changing governance of biotechnology" (2002) *Health, Risk and Society* **4**(3), pp 259-272
- Brownsword, R. "Stem Cells and Cloning: Where the Regulatory Consensus Fails" (2004) *New England Law Review* **39**, 535
- Brownsword, R. *Rights, Regulation and the Technological Revolution* (2008) Oxford University Press
- Brownsword, R. "Human Dignity, Ethical Pluralism, and the Regulation of Modern Biotechnologies" in T. Murphy (ed) *New Technologies and Human Rights* (2009)
- Brownsword, R. and Somsen, H. "Law, Innovation and Technology: Before We Fast Forward—A Forum for Debate" (2009) *Law, Innovation and Technology* **1**(1), 1-73
- Brownsword, R. "Stem Cells and Cloning: Where the Regulatory Consensus Fails" (2014) *New England Law Review* **39**, 535
- Burke, D. "GM Food and Crops: What Went Wrong in the UK?" (2004) *EMBO Reports* **5**(5), 432-436.
- Butenko, A. and Larouche, P. "Regulation for innovativeness or regulation of innovation?" (2015) *Law, Innovation and Technology* **7**(1), 52-82
- Calabresi, G. "Do We Own Our Bodies?" in B. M. Dickens, *Medicine and the Law* (1993) (pp. 1-17) Dartmouth: Aldershot
- Camporesi, S. and Bortolotti, L. "Reproductive cloning in humans and therapeutic cloning in primates: is the ethical debate catching up with the recent scientific advances?" (2008) *Journal of Medical Ethics* 34:e15
- Carey, T. "Cycling doping report: Drug taking remains widespread" (2015) *The Telegraph Online* **9th March 2015**,
<http://www.telegraph.co.uk/sport/othersports/cycling/11458133/Cycling-doping-report-Drug-taking-remains-widespread.html>

- Casey, D. and Scott, C. "The Crystallization of Regulatory Norms" (2011) *Journal of Law and Society* **38**(1), pp76-95
- Cerda, J. S. "The Draft Convention on the Rights of the Child: New Rights" (1990) *Hum. Rts. Q.* **12**, 115
- Cloning Issues in Reproduction, Science and Medicine, A Report from the Human Genetics Advisory Commission and the Human Fertilisation and Embryology Authority, 1998
- Chandler, J. "Science Discovers, Genius Invents, Industry Applies, and Man Adapts Himself... Some thoughts on Human Autonomy, Law and Technology" (2010) *Bulletin of Science, Technology and Society* **30**(14)
- Chief Medical Officer's Expert Group Report, *Stem Cell Research: Medical Progress with Responsibility* (2000)
- Chritman, J. *Politics of Persons: Individual Autonomy and Socio-historical Selves* (2009) Cambridge University Press
- Cockfield, A. J. "Towards a Law and Technology Theory" (2003-2004) *Man. L.J.* **30**, 383
- Cockfield, A. and Pridmore, J. "A Synthetic Theory of Law and Technology" (2007) *Minn. J.L. Sci. & Tech.* **8**, 475
- Commission of the European Communities. *European Governance: A White Paper* (2001) COM
- Connor, S. "New three-parent baby law 'is flawed and open to challenge', says senior lawyer" (2015) *Independent Newspaper online*, <http://www.independent.co.uk/news/science/new-threeparent-baby-law-is-flawed-and-open-to-challenge-says-senior-lawyer-9978363.html> (accessed 25/02/2015)
- Coombe, R. "Objects of Property and Subjects of Politics: Intellectual Property Laws and Democratic Dialogue" (1991) *Texas Law Review* **69**, 1853
- Coombe, R. and Weiss, L. "Neoliberalism, Heritage Regimes, and Cultural Rights" in L. Meskell (ed) *Global Heritage: A Reader* (2015)
- Cotterrell, R. *The Sociology of Law: An Introduction*, (2nd ed, 1992) Butterworths
- Cotterrell, R. *Law's Community: Legal Theory in Sociological Perspective*, (1995) OUP
- Cotterrell, R. "The Representation of Law's Autonomy in Autpoeisis Theory" in J. Pribán and D. Nelken (eds) *Law's New Boundaries: The Consequences of Legal Autopoiesis*. (2001) Aldershot: Ashgate
- Cotterrell, R. "Spectres of Transnationalism: Changing Terrains of Sociology of Law" *Queen Mary University of London, School of Law Legal Studies Research Paper No. 32/2009*
- Cownie, F. "Law, Research and the Academy" in P. Trowler, M. Saunders, and V. Bamber (eds) *Tribes and Territories in the 21st Century: rethinking the significance of disciplines in higher education* (2012) London: Routledge

- Cycling Independent Reform Commission (CIRC) *Report to the President of the Union Cycliste International (UCI)* (2015) available at http://www.uci.ch/mm/Document/News/CleanSport/16/87/99/CIRCReport2015_Neutral.pdf
- Darnovsky, M. "A Slippery Slope to Human Germline Modification" (2013) *Nature* 499, 127
- Davies, M. "Exclusion and the Identity of Law" (2005) *Macquarie Law Journal* 5, pp 5-30
- DeGrazia, D. "Enhancement Technologies and Human Identity" (2005) *Journal of Medicine and Philosophy* 30, 261–283
- DeGrazia, D. *Human Identity and Bioethics* (2005) Cambridge University Press
- DeJager, C. F. "The Development of Regulatory Standards for Gene Therapy in the European Union" (1994) *Fordham International Law Journal* 18:4, 1303-1339 at
- Department of Health. *Remebering the Past, Looking to the Future, The Final Report of the Retained Organs Commission*. (2004) London.
- Department of Health, *Mitochondrial Donation: A Consultation on Draft Regulations to Permit the Use of New Treatment Techniques to Prevent the Transmission of a Serious Mitochondrial Disease from Mother to Child*. (2014) London.
- Derbyshire, D. Derbyshire "Three-Parent Babies a Step Closer After Watchdog gives Research Go-Ahead Despite 'Life Meddling' Fears" 20 March 2013 Mail Online available at <http://www.dailymail.co.uk/health/article-1378486/3-parent-IVF-babies-HFEA-gives-research-ahead-despite-life-meddling-fears.html>
- Dudziak, M. L. "The Court and Social Contest in Civil Rights History" (2005) *The University of Chicago Law Review* 72, 429
- Duxbury, N. "Do Markets Degrade?" (1996) *Medical Law Review*, 331-348.
- EC Expert Group 25 *Recommendations on the Ethical, Legal and Social Implications of Genetic Testing* (2004)
- Edward, D. "Scottish Legal Education and Legal Profession" in MacQueen (ed), *Scots Law into the 21st Century (Essays in Honour of W.A. Wilson)*, (1996) (pp 50-64) WGreen/Sweet & Maxwell
- Edwards, R. G. "Fertilization of human eggs in vitro: Morals, ethics and the law" *Quarterly Review of Biology* (1974) 49: 3-26
- Elliott, C. "Doing Harm: Living Organ Donors, Clinical Research and the Tenth Man." (1995) *Journal of Medical Ethics*, 91-96
- Enriquez, A. R. "Assuming Responsibility for Who You Are: The Right to Choose 'Immutable' Identity Characteristics"(2013) 88 N.Y.U. L. Rev. 373
- Eurobarometer 58.0. *A report to the EC Directorate General for research from the project 'Life sciences in European Society'* (2003) QL7-CT-1999-00286, 2nd edition 21 March 2003.

- European Commission, High Level Expert Group. *Foresighting the New Technology Wave: Converging Technologies—Shaping the Future of European Societies* (2004)
- Fagundes, D. “What We Talk about When We Talk about Persons: The Language of a Legal Fiction” (2001) *Notes Harvard Law Review* **114**(6), pp. 1745-1768
- Feenberg, A. “The Ambivalence of Technology” (1990) *Sociological Perspectives* **33**(1), 35-50
- Foster, C. “Autonomy in the Medico-Legal Courtroom: A Principle Fit for Purpose?” (2013) *Medical Law Review* **22**(1), pp48-63
- Galanter, M. “Why the ‘Haves’ Come Out Ahead: Speculations on the Limits of Legal Change” (1974-1975) 9 *Law & Soc’y Rev.* 95
- Gallagher, J. “UK Approves Three-Person Babies” (2015) *BBC news website*, <http://www.bbc.co.uk/news/health-31594856>
- Galligan, D. J. “Concepts the Currency of Social Understanding of Law: A Review Essay on the Later Work of William Twining” (2015) *Oxford Journal of Legal Studies* **35**(2), pp. 373–401
- Gaskell, G. “Science Policy and Society: The British Debate over GM Agriculture” (2004) *Current Opinion in Biotechnology* **15**, 241-245
- Gavaghan, C. “A whole new... you? ‘Personal identity’, emerging technologies and the law” (2010) *IDIS* 3, 423–434
- Girvan, S. D. “Nineteenth Century Reforms in Scottish Legal Education: The Universities and the Bar” (1993) *The Journal of Legal History* **14**(2), pp. 127-141
- Goni, U. “Child of Argentina's 'disappeared' fights for right to keep adoptive name” (2011) *Guardian Newspaper online*, <http://www.theguardian.com/world/2011/sep/23/child-argentina-disappeared-adoptive-name>
- Gower, C. and Visser, C. J. “Distinguishing between Dignity, Identity and Privacy: Is it Really Necessary?” (2012) *Journal of Contemporary Roman-Dutch Law* **75**, 154-162
- Greggains, G. and Lister, L. M et al “Therapeutic potential of somatic cell nuclear transfer for degenerative disease caused by mitochondrial DNA mutations” (2014) *Scientific Reports* 4 : 3844
- Groedner, V. *Who are you? Identification, Deception, and Surveillance in Early Modern Europe*, (2007) Brooklyn, NY: Zone Books
- Gupta, G. R., UNICEF Deputy Executive Director in “Press release: One in three children under-five does not officially exist” (2013) *UNICEF*, http://www.unicef.org/media/media_71508.html (accessed 13/12/2013)
- Guston, D. H. “Understanding ‘anticipatory governance’” (2014) *Social Studies of Science* **44**(2), 218-242

- Hancher, L. and Moran, M. "Organizing Regulatory Space" in R. Baldwin, C. Scott and C. Hood (eds) *A Reader on Regulation* (1998)
- Hansard 2014 HC 1st Sept vol 585 col 93
- Hansard 2015 HC 3rd Feb vol 592 col160
- Hansard HL 24th Feb vol 759 col1569
- Hansson, B. "Recent Trends in the Philosophy of Science" in A. Peczenik, L. Lindhal and G. van Roermund (eds) *Theory of Legal Science: proceedings of the Conference on Legal Theory and Philosophy of Science*, (1983) Lund, Sweden (1984; Dordrecht; Lancaster: Reidel)
- Harmon, S. "Ethical Rhetoric: Genomics and the Moral Content of UNESCO's Universal Declarations" (2008) *Journal of Medical Ethics* **34**(11), e24
- Harmon, S. and Laurie, G. "*Yearworth v North Bristol NHS Trust*: Property, Principles, Precedents and Paradigms" (2010) *The Cambridge Law Journal* **69**, pp476-493
- Harmon, S., Laurie, G., and Haddow, G. "Governing risk, engaging publics and engendering trust: New horizons for law and social science?" (2013) *Science and Public Policy* **40**, pp. 25-33
- Hart, H. L. A. *The Concept of Law* (1994; 2nd ed.) Oxford: Clarendon Press
- Hatthaway, O. "Path Dependence in the Law: The Course and Pattern of Legal Change in a Common Law System" (2000-2001) *Iowa Law Review* 86, 601-665
- Hawkins, A. K, and O'Doherty, K. "Biobank governance: a lesson in trust" (2010) *New Genetics and Society* 29:3 pp311-327
- HFEA/HGAC. *Cloning Issues in Reproduction, Science and Medicine*. (1998)
- HFEA/HGAC. *Expert group of the CMO Stem Cell Research, Medical Progress and Responsibility*. (2000)
- Hildebrandt, M. "Profiling and the Identity of European Citizens" in M. Hildebrandt, S. Gurtwirth and P. De Hert, *Implications of Profiling Practices on Democracy and Rule of Law* (2007) FIDIS Programme Deliverable
- Hillgartner, S. and Bosk, C. L. "The Rise and Fall of Social Problems: A Public Arenas Model" (1988) *American Journal of Sociology* **94**(1), pp. 53-78
- Hope, T. and MacMillan, J. "Physicians' Duties and the Non-Identity Problem" (2012) *The American Journal of Bioethics* **12**(8), 21-29
- House of Lords Select Committee on Science and Technology. *Science and society*. (2000) London: Stationery Office
- Howarth, D. "Is Law a Humanity? (Or is it More Like Engineering?)" (2004) *Arts & Humanities in Higher Education* **3**(1), 9-28

- Human Fertilisation and Embryology Authority *Mitochondria Replacement Consultation: Advice to Government*, (2013) Report of the Human Fertilisation and Embryology, March 2013
- Inayatullah, S. “Futures Studies: Theory and Methods” in Fernando Gutierrez Junquera (ed), *There's A Future: Visions for a Better World* (2013) (pp. 36-66) Madrid: BBVA
- Ishay, M. R. *The History of Human Rights: From Ancient Times to the Globalization Era*, (2004) University of California Press
- Jasanoff, S. (ed) *Reframing Rights: Bioconstitutionalism in the Genetic Age*, (2011) MIT Press Scholarship
- Jasanoff, S. (ed) *States of Knowledge: The Co-production of Science and Social Order* (2004) London and New York: Routledge
- Jassanoff, S. “Technologies of Humility: Citizen Participation in Governing Science” (2003) *Minerva* **41**, 223–244
- Jecker, N. S. “The Right Not to Be Born: Reinterpreting the Non-Identity Problem” (2012) *The American Journal of Bioethics* **12**(8), 34-35
- Jiang, L. “Robert Geoffrey Edwards and Patrick Christopher Steptoe's Clinical Research in Human in vitro Fertilization and Embryo Transfer, 1969-1980” - available at: <http://embryo.asu.edu/pages/robert-geoffrey-edwards-and-patrick-christopher-steptoes-clinical-research-human-vitro#sthash.ALbg4KWT.dpuf>
- Johnson, M. H., Franklin, S. B., Cottingham, M. and Hopwood, N., “Why the Medical Research Council refused Robert Edwards and Patrick Steptoe support for research on human conception in 1971” (2010) *Human Reproduction*, 25:9, 2157–2174
- Kahan, D. “Gentle Nudges vs Hard Shoves: Solving the Sticky Norms Problem” (2000) *The University of Chicago Law Review* 67:3, 607-645.
- Kaye, J. and Gibbons, S. “Mapping the Regulatory Space for Genetic Databases and Biobanks in England and Wales” (2008) *Medical Law International* 9, 111-130
- Knapton, S. “Three parent babies banned from knowing 'second mothers'” 23 July 2014 The Telegraph available at <http://www.telegraph.co.uk/news/science/science-news/10984068/Three-parent-babies-banned-from-knowing-second-mothers.html>
- Lang, T. “An Overview of Four Futures Methodologies (Delphi, Environmental Scanning, Issues Management and Emerging Issue Analysis)” (1998)
- Laurie, G. “Personality, Privacy and Autonomy in Medical Law” in N. Whitty & R. Zimmermann (eds), *Rights of Personality in Scots Law: A Comparative Perspective* (2009) Dundee
- Laurie, G. “Reflexive governance in biobanking: on the value of policy led approaches and the need to recognise the limits of law” (2011) *Hum Genet* **130**, 347–356

- Laurie, G., Harmon, S., and Arzuaga, F. "Foresighting Futures: Law, New Technologies and the Challenges of Regulating for Uncertainty" (2012) *Law, Innovation and Technology* **4**(1), 1-33
- Lenoble, O. d. "Introduction: Institutions Equipped to Learn." in O. d. Lenoble, *Reflexive Governance: Redefining the Public Interest in a Pluralistic World* (2010) (pp. xv-xxx). Hart Publishing.
- Levitt, M. and Weldon, S. "A well placed trust?: Public perceptions of the governance of DNA databases" (2005) *Critical Public Health* **15**(4), 311–321
- Ludwin King, E. B. "A Conflict of Interests: Privacy, Truth, and Compulsory DNA Testing for Argentina's Children of the Disappeared" (2011) *Cornell Int'l L J* **44**, 535
- MacBrayer, J. P. "Rights, Indirect Harms and the Non-Identity Problem" (2008) *Bioethics* **22**(6), pp 299–306
- MacCormick, N. "The Ideal and Actual of Law and Society" in J. Tasioulas (ed) *Law, Values and Social Practices* (1997)
- Mandel, G. N. "History Lessons for a General Theory of Law and Technology" (2007) *Minn. J.L. Sci. & Tech.* **8**, 551
- Marks, S. P. "Emerging Human Rights: A New Generation for the 1980s?" (1980-1981) *Rutgers Law Review* 33, 435-452
- Marshall, J. *Personal Freedom through Human Rights Law? Autonomy, Identity and Integrity under the European Convention on Human Rights, International Studies in Human Rights Volume 98* (2009) Kojinklijke Brill NV, Leiden
- Marshall, J. "Giving birth but refusing motherhood: inauthentic choice or self-determining identity?" (2008) *International Journal of Law in Context* **4**, pp 169-185
- Marshall, J. "Concealed Births, Adoption and Human Rights Law: Being Wary of Seeking to Open Windows into People's Souls" (2012) *The Cambridge Law Journal* **71**, pp 325-354
- Marshall, J. *Human Rights Law and Personal Identity* (2014) Routledge
- McKinnell, R. G. and Di Berardino, M. A. "The Biology of Cloning: History and Rationale" (1999) *BioScience* 49:11, 875-885
- Morrison, D. "A Holistic Approach to Clinical and Research Decision-Making: Lessons Learned from the UK Organ Retention Scandals." (2005) *Medical Law Review*, 45-79.
- McCombs, T. and Gonzalez, J. S. "Right to Identity" (2007) *International Human Rights Clinic, Berkeley School of Law*
- McCrudden, C. "Legal Research and the Social Sciences" (2006) *Law Quarterly Review* **122**, pp632-650
- Miles, I. "The Development of Technology Foresight: A Review" (2010) *Technology Forecasting and Social Change* **77**, 1448–1456

- Molitor, G. T. T. “How to Anticipate Public-Policy Changes” (1977) *A A M Advanced Management Journal*, pp1-13;
- Moses, L. B. “Recurring Dilemmas: Law’s Race to Keep up with Technological Change” (2007) *University of Illinois Journal of Law, Technology and Policy*, 7, 239-286
- Moses, L. B. “How to Think about Law, Regulation and Technology: Problems with ‘Technology’ as a Regulatory Target” (2013) *Law, Innovation and Technology* **5**(1), 1-20
- Muller, S., Zouridis, S., Frishman, M., and Kistemaker, L. (eds) *The law of the future and the future of law* (2011) Torkel Opsahl Academic EPublisher (TOAEP)
- Murray, J. E. “Understanding Law as Metaphor” (1984) *Journal of Legal Education* **34**(4), pp. 714-730
- Nabeth, T. “Identity of Identity” in K. Rannenberg, D. Royer and A. Deuker (eds) *The Future of Identity in the Information Society* (2009) Springer
- Naffine, N. “Who are Law’s Persons? From Cheshire Cats to Responsible Subjects” (2003) *Mod. L. Rev* **66**, 346
- Naffine, N *Law’s Meaning of Life: Philosophy, Religion, Darwin and the Legal Person* (2009) Oxford, England; Portland, Or
- NICE “The importance of 3 full cycles of IVF” (2014) *NICE*, <https://www.nice.org.uk/news/blog/the-importance-of-3-full-cycles-of-ivf> (accessed 30/04/2017)
- Nordmann, A. “‘If’ and ‘then’: A Critique of Speculative Nanoethics” (2007) *Nanoethics* **1**, 31–46
- Nordmann, A “No Future for Nanotechnology? Historical Development vs Global Expansion” in F. Jotterand (ed) *Emerging Conceptual, Ethical and Policy Issues in Bionanotechnology* (2008)
- Nuffield Council on Bioethics, *Emerging Biotechnologies: Technologies, Choice and the Public Good* (2012)
- Nuffield Council for Bioethics, *Novel Techniques for the Prevention of Mitochondrial DNA Disorder: An Ethical Review* (2012)
- Nuffield Council on Bioethics *Medical Frontiers: Debating Mitochondrial Replacement* (2013)
- Nuffield Council on Bioethics, *Novel Neurotechnologies: Intervening in the Brain* (2013)
- Owens, T. J., Robinson, D. T. and Smith-Lovin, L. “Three Faces of Identity” (2010) *Annu Rev Soc* **36**, pp477-499
- Papaioannou, T. “Democratic governance of genomics: the case of UK Biobank” (2012) *New Genetics and Society* **31**(2), 111–133

- Pelluchon, C. "Toward a New Philosophical Anthropology: The Limits of Human Rights in Bioethics" (2008) *Perspectives on Political Science* 3(1), 31-40
- Pino, G. "The Right to Personal Identity in Italian Private Law: Constitutional Interpretation and Judge-Made Rights" in M. Van Hoecke and F. Ost (eds) *The Harmonization of Private Law in Europe* (2000) Hart Publishing
- Posner, A. *Law and Social Norms* (2000) Harvard University Press
- Posner, E. "The Case Against Human Rights" (2014) *Guardian Newspaper online* 4th December 2014, <http://www.theguardian.com/news/2014/dec/04/-sp-case-against-human-rights> (accessed 03/03/2016)
- Priel, D. "H. L. A. Hart and the Invention of Legal Philosophy" (2011) *Osgoode CLPE Research Paper Series* 7(5), Research Paper No. 17/2011
- Rägo, L., Santoso, B., "Drug Regulation: History, Present and Future" in C.J. van Boxtel, B. Santoso and I.R. Edwards (eds) *Drug Benefits and Risks: International Textbook of Clinical Pharmacology*, (revised 2nd edition, 2008) IOS Press
- Reid, E. "Protection for Rights of Personality in Scots Law: A Comparative Evaluation" (2007) *Electronic Journal of Comparative Law* 11(4), <http://www.ejcl.org>
- Reid, E. "Delictual Liability and the Loss of Opportunity of Fatherhood: Holdich v Lothian Health Board" University of Edinburgh School of Law Research Paper Series No 2015/30, Forthcoming in Andrew Simpson, Roderick Paisley and Douglas Bain (eds), *Northern Lights: Essays in Private Law in Honour of David Carey Miller* (2016) Aberdeen University Press
- Reid, K. "Body Parts and Property" University of Edinburgh School of Law Research Paper Series No 2015/25, Forthcoming in Andrew Simpson, Roderick Paisley and Douglas Bain (eds), *Northern Lights: Essays in Private Law in Honour of David Carey Miller* (2016) Aberdeen University Press
- Report of the Working Group on a Draft Convention on the Rights of the Child*, UN Doc. E/CN.4/1986/39
- Roco, M. C. and Bainbridge, W. S. (eds) *Converging Technologies for Improving Human Performance: Nanotechnology, Biotechnology, Information Technology and Cognitive Science, NSF/DOC-sponsored report* (2001) National Science Foundation
- Rubin, E. L. "Law and the Methodology of Law" (1997) *Wisconsin Law Review*, 521
- Samuel, G. "Is Law Really a Social Science? A View From Comparative Law" (2008) *The Cambridge Law Journal* 67, pp 288-321 at 294-295
- Sang-Hyun, K. and Jasanoff, S. (eds) *Dreamscapes of Modernity: Socio-technical Imaginaries and the Fabrication of Power* (2015) University of Chicago Press
- Schauer, F. "The Social Construction of Law: A Reply to Julie Dickson" (2005) *Oxford Journal of Legal Studies* 25(3), pp. 493-501

- Schneider, J. W. "Social Problems Theory: The Constructionist View" (1985) *Ann. Rev. Sociol.* **11**, 209-29
- Science and Technology Committee, *Oral evidence: Mitochondrial Donation*, (2014) HC 730 Wednesday 22 October 2014
- Setel, P. W., Macfarlane, S. B., Szreter, S., Mikkelsen, L., Jha, P., Stout, S., and AbouZahr, C. "A scandal of invisibility: making everyone count by counting everyone" (2007) *Lancet* **370**, 1569–77
- Sheldon, S. "Only Skin Deep? The Harm of Being Born a Different Colour to One's Parents" (2011) *Med Law Rev* **19**(4), 657
- Shelley-Egan, C. "The Ambivalence of Promising Technology" (2010) *Nanoethics* **4**(2), 183–189
- Shoemaker, D. "The Insignificance of Personal Identity for Bioethics" (2010) *Bioethics* **24**(9), pp 481–489
- Siems, M. "Legal Originality" (2008) *Oxford Journal of Legal Studies* **28**(1), pp. 147–164
- Smith, M. R. and Marx, L. (eds), *Does Technology Drive History? The Dilemma of Technological Determinism* (1994) MIT Press
- Snyder, J. W. "Silicone Breast Implants: Can Emerging Medical, Legal, and Scientific Concepts Be Reconciled?" (1997) *The Journal of Legal Medicine* **18**, 133-220
- Spaak, T. "Explicating the Concept of Legal Competence" in J. C. Hage and D. von der Pfordten (eds) *Concepts in Law, Law and Philosophy Library* **88** (2009) Springer
- Special Eurobarometer 341/ Wave 73.1 – *TNS Opinion & Social, Biotechnology Report* (2010)
- Spector, M. and Kitsuse, J. I. "Social Problems: A Reformulation" (1973-1974) *Soc. Probs.* **21**, 145
- Stahn, C. "Responsibility to Protect: Political Rhetoric or Emerging Legal Norm?" (2007) *American Journal of International Law* **101**, 99-120
- Standard Note SN/SC/6833
- Stein, P. G. *Legal Evolution: The Story of an Idea* (1980)
- Sugarman, D. "Hart Interviewed: H.L.A. Hart in Conversation with David Sugarman" (2005) *Journal of Law and Society* **32**(2), 267-293
- Sullivan, C. "Digital identity, privacy and the right to identity in the United States of America" (2013) *Computer law & security review* **29**, 348-358
- Swierstra, T. and Rip, A. "Nanoethics as NEST-Ethics: Patterns of Moral Argumentation About New and Emerging Science and Technology" (2007) *Nanoethics* **1**, 3-20

- Swierstra, T., Stemerding, D., and Boenik, M. "Exploring Techno-Moral Change: The Case of the Obesity Pill" in P. Sollie, M. Düwell (eds.), *Evaluating New Technologies* (2009) The International Library of Ethics, Law and Technology
- Swierstra, T. and Waelbes, K. "Designing a Good Life: The Matrix for the Technological Mediation of Morality" (2012) *Engineering Ethics* **18**(1), 157-172
- Swierstra, T. "Nanotechnology and Technomoral Change" (2013) *Ethics & Politics* **15**(1), pp. 200-219
- Swierstra, T. "Identifying the normative challenges posed by technology's 'soft' impacts" (2015) *Etikk i praksis. Nord J Appl Ethics* **9**(1), 5–20
- Szelkey, I. "Building our Future Glass Homes – An Essay About Influencing the Future Through Regulation" (2013) *Computer Law & Security Review* **29**, 540-553
- Szreter, S. "The Right of Registration: Development, Identity Registration, and Social Security—A Historical Perspective" (2007) *World Development* **35**(1), pp. 67–86
- Taekema, S. "Relative Autonomy: A Characterisation of the Discipline of Law" in B. Van Klink and S. Taekema (eds) *Law and Method* (2011) Mohr Siebeck
- Tamanaha, B. "An Analytical Map of Social Scientific Approaches to the Concept of Law" (1995) *Oxford Journal of Legal Studies*, 501
- Tamanaha, B. *A General Jurisprudence of Law and Society* (2001) OUP
- Tamanaha, B. "The Tension Between Legal Instrumentalism and the Rule of Law" (2005-2006) *Syracuse Journal of International Law and Communication* **33**, 131
- Teubner, G. "Substantive and Reflexive Elements in Modern Law" (1983) *Law and Society Review* **17**(2)
- Theodosiou, A. A. and Johnson, M. "The Politics of Human Embryo Research and the Motivation to Achieve PGD" (2011) *Reproductive BioMedicine* **22**, 457-471
- Thomas, P. A. "Socio-legal studies: The case of disappearing fleas and bustards" in P. A. Thomas (ed) *Socio-Legal Studies* (1997) Aldershot: Dartmouth
- Tranter, K. "The Law and Technology Enterprise: Uncovering the Template to Legal Scholarship on Technology" (2011) *Law, Innovation and Technology* **3**(1), 31-83
- Twining, W. *Globalisation and Legal Theory* (2000) Butterworths
- Twining, W. *General Jurisprudence: Understanding Law from a Global Perspective* (2009) CUP
- Vaisman, N. "Relational Human Rights: Shed-DNA and the Identification of the 'Living Disappeared' in Argentina" (2014) *Journal of Law and Society* **41**(3), pp391-415
- Valier, H. and Timmerman, C. "Clinical Trials and the Reorganization of Medical Research in post-Second World War Britain" (2008) *Medical History* **52**: 493–510

- Verges, E. “Scientific and Technological Evolution through the Legal Prism: Visions of a Multi-Faceted Relationship through the Lens of French and EU Law” (2014) *Law, Innovation and Technology* 6(1), 74–93
- Waelbes, K. and Swierstra, T. “The Family of the Future: How Technologies Can Lead to Moral Change” in J. van den Hoven, T. Swierstra, B-J. Koops and H. Romijen (eds) *Responsible Innovation* (2014)
- Walker, N. and de Búrca, G. in “Reconceiving Law and New Governance” (2007) *EUI Working Paper LAW*, No. 2007/10
- Warren, S. and Brandeis, L. “The Right to Privacy” (1890) *Harv. L. Rev* 4, 193
- Wender, B., Foley, R. W., Guston, D. H., Seager, T., and Wiek, A. “Anticipatory Governance and Anticipatory Life Cycle Assessment of Single Wall Carbon Nanotube Anode Lithium ion Batteries” (2012-2013) *Nanotechnology Law & Business* 9, 201
- Westerman, P. “Open or Autonomous? The Debate on Legal Methodology as a Reflection of the Debate on Law” in M. van Hoecke (ed.), *Methodologies of Legal Research: Which Kind of Method for What Kind of Discipline?* (2011) Hart Publ. Oxford
- Wilson, D. “Creating the ‘ethics industry’: Mary Warnock, in vitro fertilization and the history of bioethics in Britain” (2011) *BioSocieties* Vol. 6, 2, 121–141
- Wheeler, S. “Socio-legal Research” in P. Cane and J. Conaghan (eds) *Oxford Companion to Law* (2008) OUP
- Whitty, N. “Rights of Personality, Property Rights and the Human Body in Scots Law” (2005) *Edin Law Review* 9(2), 194

TABLE OF CASE LAW

European Court of Human Rights (in Chronological Order)

Gaskin v UK Judgment 7 July 1989 A. 160

Christine Goodwin and I v UK (2002) 35 EHRR 18

Mikulic v Croatia App no 53176/99 , Judgment 4 September 2002

Odievre v France App no 42326/98, Judgment 13 February 2003

Godelli v Italy App no. 33783/09

Vo v. France App no. 53924/00 Judgment 8th July 2004

Evans v UK App no. 6339/05 Judgment 10th April 2007

Pretty v UK App no 2346/02 [2002] ECHR 423 29 April 2002

Von Hannover v Germany App nos. 40660/08 and 60641/08 Judgment 7th Feb 2012

England

Bolam v Friern Hospital Management Committee [1957] 1 WLR 583

Sidaway v. Board of Governors of the Bethlem Royal Hospital [1985] AC 871

McKay v Essex Area Health Authority [1982] QB 1166

Rose and another v Secretary of State for Health [2002] EWHC 1593 (Admin)

Leeds v Mr A, Mrs A and Others [2003] EWCA 259 (QBD)

Rees v. Darlington Memorial Hospital NHS Trust [2003] UKHL 52

See Campbell v Mirror Group Newspapers Ltd [2004] UKHL 22

Chester v. Afshar [2004] UKHL 41

Douglas v Hello! Ltd [2005] EWCA Civ 595

Yearworth v North Bristol NHS Trust [2009] 2 All ER 986 (CA)

In the Matter of the Baronetcy of Pringle of Stichill [2016] UKPC 16

Scotland

Micosta SA v Shetland Islands Council 1986 SLT 193

McFarlane v. Tayside Health Board [1999] UKHL 50

Stevens v Yorkhill NHS Trust [2006] CSOH 143

Holdich v Lothian Health Board [2013] CSOH 197, 2014 SLT 495.

Northern Ireland

A (a minor) and B (a minor) by C (their mother and next friend) v A Health and Social Services Trust [2010] NIQB 108

USA

Belise Du Boulay v Jules René Hermégilde du Boulay (1869) L.R. 2 P.C. 430

Pavesich v New England Life Insurance Co 50 SE 68 (1905) (Sup. Ct Georgia)

Haelen Laboratories Inc. v Topps Chewing Gum Inc (1953) 202 F 2d 866

Motschenbacher v R. J. Reynolds Tobacco 498 F 2d 821 (9th Cir. 1974)

Carson v Here's Johnny Portable Toilets, Inc. 698 F 2d 831 (6th Cir 1983)

Argentina

Corte Suprema de Justicia de la NacioÂn (Argentina's National Supreme Court) 8 November 2009, 'Gualtieri, Rugnone de Prieto, Emma Elidia y otros s/sustraccioÂn de menores de 10 anos' (11/08/2009 ± G. 291. XLIII),

Germany

Bundesgerichtshof, Urteil 9 Nov 1993, Aktenzeichen VI ZR 62/93 (reported at BGHZ, 124, 52)

European Commission

Petition No 0878/2015 by C.M. (British) on behalf of European Bioethical Research, on the alleged breach of the EU Clinical Trials Directive (2001/20/EC

TABLE OF LEGISLATION

United Kingdom

Human Fertilisation and Embryology Act (1990)

Human Cloning Act 2001

Human Fertilisation and Embryology Act (2008)

Human Fertilisation and Embryology (Mitochondrial Donation) Regulations 2015

International Human Rights

Convention for the Protection of Human Rights and Dignity of the Human Being with regard to the Application of Biology and Medicine: Convention on Human Rights and Biomedicine Oviedo, 4.IV.1997 (Oviedo Convention)

UNESCO International Declaration on Biological Human Data (2003)

United Nations Convention on the Rights of the Child (1989)

European Union Law

Directive 2001/20/EC of the European Parliament and of the Council on the approximation of the laws, regulations and administrative provisions of the Member States relating to the implementation of good clinical practice in the conduct of clinical trials on medicinal products for human use (Clinical Trials Directive)

Regulation (EU) No 536/2014 of the European Parliament and of the Council of 16 April 2014 on clinical trials on medicinal products for human use, and repealing Directive 2001/20/EC (Clinical Trials Regulations)