Some Socio-Legal and Legal Philosophical Implications of Limited Universal Holism with Special Consideration of Modern Human Rights

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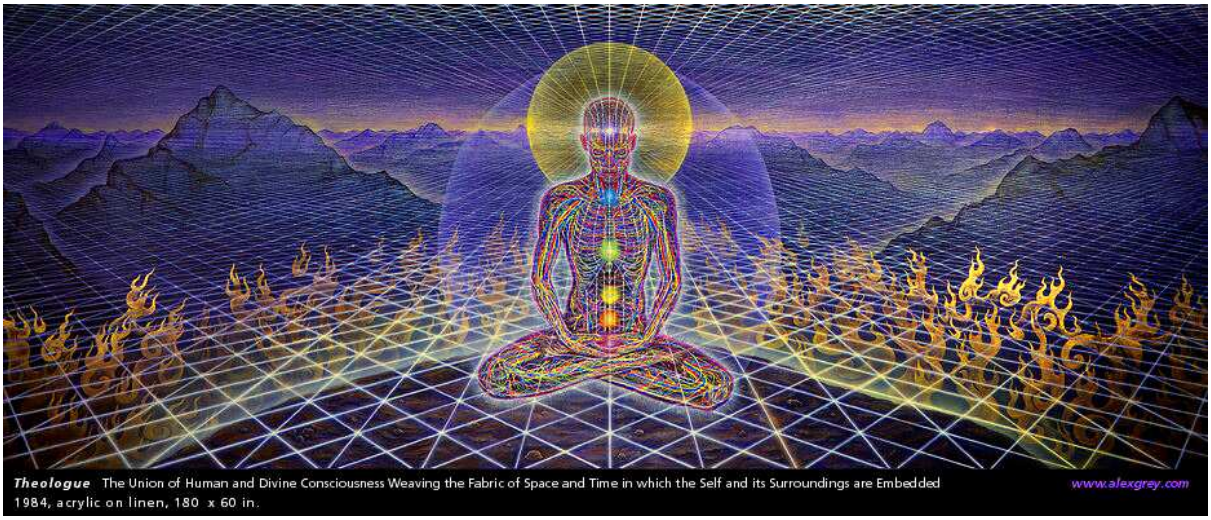
This thesis is submitted in satisfaction of the conditions required for the award of Doctor of Philosophy (Laws) from the University of Canberra, July 2015.

Alex Grey's Theologue



Abstract

This thesis considers the space of encounter between the quantum mechanical ontology of limited universal holism and the legal system. This space of encounter is identified through an examination of two premises. The first premise is that the ontological structure of limited universal holism has significant legal philosophical and socio-legal implications. The second premise is that the loci of commitment within the ontology of limited universal holism epistemologically coheres with the core ontological notions that underpin the Preamble of the Universal Declaration of Human Rights of 1948 (UDHR),[1] specifically the notions of equality, universality and inalienability.

Both premises are affirmed in the course of analysis undertaken in this thesis. In addition some novel contributions are posited. Some of the ontological elements of limited universal holism when deployed as heuristic tools show, *inter alia*, coherence between the way socio-legal constructivists conceptualise the law and the wave-particle duality of quanta. In respect of the second premise, epistemological coherence is shown between the ethos that underpins modern human rights and the loci of commitment within the ontology of limited universal holism. This coherence improves the epistemic stability of monist perspectives on which deep equality may be framed. The thesis concludes with some suggestions for future research.

Two particularly exciting areas for future research are uncovered in the course of the analysis. First is the coherence between the work in this thesis and the jurisprudential paradigm of Wild Law (also called 'Earth Jurisprudence'). Second is the potential for the monist ontology of limited universal

[1] United Nations General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, A/RES/217A(III), available at < http://www.unhcr.org/refworld/docid/3ae6b3712c.html> last viewed 20 June2012.

holism derived from scientific research to cohere with many diverse wisdom and ethno-cultural traditions and in so doing increase the epistemic standing of monist ontologies.

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Form B

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Let us build altars to the Blessed Unity which holds nature and souls in perfect solution, and compels every atom to serve a universal end…

Let us build altars to the Beautiful Necessity, which secures that all is made of one piece; that plaintiff and defendant, friend and enemy, animal and planet, food and eater, are of one kind. In astronomy, is vast space, but no foreign system; in geology, vast time, but the same laws as to-day. Why should we be afraid of Nature, which is no other than "philosophy and theology embodied"? Why should we fear to be crushed by savage elements, we who are made up of the same elements? Let us build to the Beautiful Necessity, which makes man brave in believing that he cannot shun a danger that is appointed, nor incur one that is not; to the Necessity which rudely or softly educates him to the perception that there are no contingencies; that Law rules throughout existence, a Law which is not intelligent but intelligence, --not personal nor impersonal, -- it disdains words and passes understanding; it dissolves persons; it vivifies nature; yet solicits the pure in heart to draw on all its omnipotence.

Ralph Waldo Emerson 'The Conduct of Life', 1860

Acknowledgements

Without the shadow of a doubt researching and writing this PhD is the largest project I have ever undertaken. As I come to the end this of this chapter (bad pun intended) in my life, my mind is drawn to acknowledging some of the many wonderful people around me that have enabled me in this journey.

First and foremost, huge thanks go to my parents; M & D. I cannot imagine what more any parents could do to facilitate their child's intellectual, personal and spiritual growth. They have supported me in my studies of law, bounced ideas with me, edited my work and of course, been very generous with finances, however, most clear to me is that they love me! If I can do for my (hypothetical) child's education what you have done for me, I will consider myself an outstanding and loving parent.

Next I must I thank my supervisory panel: Don Fleming, Murray Raff and Geoff Nicoll. To Don, there is so much to say! Firstly, I would like to thank you for supervising my radical honours paper all those years ago, when my supervisor at the time dropped me. I would have been in strife had you not stepped in. My mind is drawn to the years of meetings in your office over coffees – a very rewarding and enjoyable process, discussing abstract legal ideas and refining them slowly. I appreciate your support in allowing me explore such an unconventional topic in such an unconventional way. Your encouragement and guidance over the course of my studies is truly appreciated.

Murray Raff, you are (and remain) without doubt one the most generous people with your time I have found at the University of Canberra. Your comments on my last draft were thorough, thoughtful and so very valuable. I am excited by the prospect of talking about Natural law and discussing some future research ideas with you. Your knowledge of Enlightenment and post-Enlightenment Natural law is simply stunning.

Geoff, from the time of my honours onward you have always been very encouraging and supportive. Even when things looked like they were getting a bit much, you always were very kind. So, it is also appropriate to thank you also for marking my undergraduate honours back in the day – your

thoughtful comments gave me the affirmation I needed to continue and pursue a higher degree by research.

Turning now to some of my wonderful friends…

Ralph Waldo Emerson famously stated 'A friend may well be reckoned the masterpiece of nature'. This sentiment reverberates throughout my life in general, but specifically in my relationships with a few very special people. Some of them warrant special mention here.

Ali Nasseri: Dodda-jan, I remember our road trip on which I worked out that I was going to back to uni as a mature aged student to read law. As you had actual practice experience, your advice was spot on. When I would call you in a state of anguish and spend hours talking about myself, you always were gracious, generous and patient. Quitting the law to follow your passion was an inspirational action. Your burgeoning success as a truly world-class photographer is a constant reminder to me about the ability we all have to follow our passions and that when we do, we can create art. It is hilarious that we go full-circle and are planning our legal practice together. Who knows where that's going? Not me for sure, but I am stoked to be going there. I love you, dude.

Manny Satija has been in-step with me from the very beginning of my dance with this topic. From our undergraduate law classes at UC across to Nepal and even further afield to Peru – our friendship spans the globe and includes many domains of being – personal, professional, musical and Spiritual. I cannot innumerate the ways in which our friendship enriches my life. *Gracias* for your essence, brother. I am really, really, really looking forward to the next steps in our lives and you can be utterly certain that this sentiment is no floccinaucinihilipilification on my part.

Pierre Froustey, you walk your path with an impeccability of intention and integrity that is inspiring to behold. Hermano, I still remember the revelation I had during our last retreat, 'Pierre is medicine'. I cherish our friendship that began 'somewhere over there'. Even though you are far away in body, I think of you often and there is more than a little bit of you in this thesis.

Sam La Vita, Dejan Stevanovic and Tan Cremen-Khan are hilarious rogues, loyal friends and fantastically good people. I am looking forward to more shenanigans, hijinks and monkeyshines with you all. You men add colour, laughter and joy to my life. Thank-you.

Last but not least, to my two, very special women....

Shammah, my beautiful, strong, loving, intelligent, FUNNY, soulful and caring sister. You are the most amazing person. You are hugely awesome, and now that this thesis is done 'HIIISSS PAAARRRRTTTTYYYY TIIIIIME!!!!!!!!' I love you always. It is an honour to travel with you in this life and watch you step into your magnificence. You are a powerful medicine woman and symphony of all things feminine.

Last and definitely not least, to my Gypsy! Odette, you drew the pictures, bounced ideas, showered me constantly with love and nurturing and filled me with sustenance. Many thanks for your editing and assistance honing the concepts. I will always treasure the conversations that we had whilst getting ready. For several years the bathroom was my favourite room in the house for that very reason. You are a geni-ous and also an amazing yogini. I cannot wait to read your book and am ready for our next adventure – India. Now this thesis is sorted out and finally put to bed, I better sort out my visa pronto!

Thanks also go to Odette's parents, Glenys and Phil for their support and also for entrusting me with the most valuable of treasures, their daughter.

This work would not be what it is without any one of you. Thank-you.

Now the real work begins.

Dedication

This thesis is dedicated with love and humility to all my friends, family and to Pachamama.

Thank-you all for enriching me and being my sacred mirrors into infinity.

1. INTRODUCTION

This thesis draws out some ways in which the interpretation of quantum mechanics (QM) offered by Bohm and Hiley (1993) can cut across disciplinary boundaries and impact lawyers and the legal system.[1] These impacts include the formation of some heuristic insights and demonstration of epistemic coherence with some of the ontological commitments underpinning the UDHR. It is argued that this is systemically desirable as it moves the law toward reflecting the essence of that which it seeks to regulate; as QM is the most accurate and fine-grained picture we have of our universe.

The imperative for this study can be framed from another perspective: knowledge is evolving at an ever-increasing rate in the modern world. This accretion of knowledge has implications for every discipline, including law. The role of law in ensuring social, political and economic stability has long been viewed as significant and has led, among other things, to its enduring legitimacy. The interaction of these observations results in a tertiary observation: there is a building epistemic pressure. That pressure can be illustrated with a metaphor: scientific progress flows like a river, whilst the law adopting and integrating particular (and static) points of science acts as a dam wall. The dam wall can be seen as one that stems the recognition and integration of new scientific knowledge in law. In so doing, the epistemological pressure steadily builds as failure to recognise new knowledge leads to outdated knowledge remaining embedded in legal system. This pressure between law and the natural sciences has received juristic recognition in the Australian High Court in

[1] Bohm, D. and Hiley B.J. (1993) The Undivided Universe, Routledge, New York.

the past. Justice Windeyer famously stated that the relationship between law and science (referring to medicine in particular) was one in which the law was '...marching with medicine but in the rear and limping a little'.[2] As such, this thesis explores an area that seeks to relieve some of the epistemological pressure that has been identified.

In its broadest formulation, this thesis is studying the interaction of a relatively new scientific paradigm with the well-established discipline of law. Specifically, this thesis engages in an investigation of the validity of two premises. The first premise is that the ontological structure of limited universal holism (LUH) has significant legal philosophical and socio-legal implications. The validity of this premise is explored and affirmed via several findings. Firstly, there are a number of heuristic insights for law that stem from applying several of the loci of commitment within LUH in a socio-legal context. Secondly (and of greater profundity) is the observation that the LUH espoused by Bohm and Hiley (1993) reveals an ontological structure that challenges some deeply embedded concepts in law. For example, they showed that the quantum realm displays ubiquitous nonlocality. This nonlocality can be understood as the interconnectedness and inseparability between everything in the entire manifest universe. It is argued in this dissertation that universal nonlocality may be conceptualised as a form of 'essential equality'. One of the legal implications of 'essential equality' is that it posits a different ontological structure to the encultured norms present in many legal

[2] *Mount Isa Mines v Pusey* (1970) 125 CLR 383 at [3]. Whilst Windeyer J made this statement specifically referring to tortuous liability for nervous shock, the observation he was making was that at the time of this case, modern medicine had come to accept that '...severe emotional distress can be the starting point of a lasting disorder of mind or body' (Ibid, [2]). Whilst this was a well-established principle of medicine, there had been limited judicial recognition of this point. Juristic recognition of nervous shock as a legitimate ground of tortuous liability allowed the court to move from established cases where it had not been recognised. Justice Windyer cited the case of *Victorian Railways Commissioners v Coultas* (1888) 13 App Cas 222 as a specific example.

systems. It will be shown that there is a prima facie epistemological coherence between LUH and the ontological loci of commitment in the paradigm of 'Wild Law' (also referred to as 'Earth Jurisprudence').

Whilst the position advocated in this thesis is that 'essential equality' is a fundamental aspect of physical reality, it is also recognised that inequality and polarity are pervasive throughout manifest reality. To give four examples, there is strong and weak; rich and poor; predator and prey and finally one may consider and contrast the type of intelligence that has allowed human beings to evolve technology with the intelligence of other living organisms which are led only by instinct. All these (and many other) considerations must properly be balanced. Whilst this thesis is the result of an earnest attempt to engage with Bohm and Hiley's (1993) ontological structure in a socio-legal and legal philosophical context, one of the conclusions of this analysis is that a multi-disciplinary team of specialists is necessary to fully engage with the subject matter on account of its subtle and highly complex nature. At the very least this team should consist of a legal scholar and a suitably informed theoretical physicist. Thus, the nuanced consideration of the legal implications of LUH will require a great deal of further consideration and is a research project far greater than a single doctoral dissertation.

The second premise examined in this thesis has two limbs; firstly that the loci of commitment within the ontology of LUH epistemically coheres with three of the core ontological notions that underpin the Preamble of the Universal Declaration of Human Rights of 1948 (UDHR),[3] specifically the notions

[3] United Nations General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, A/RES/217A(III), available at < http://www.unhcr.org/refworld/docid/3ae6b3712c.html> last viewed 20 June2012.

of equality, universality and inalienability. The second limb to this premise is that while modern human rights attempt to embed these three ontological commitments into a system of law (albeit one that only applies to a single species), the implications for law extend beyond *Homo sapiens*. The modern human rights project will be used to demonstrate the difficulties that will be faced trying move the theoretical ideas in this thesis from into the practical legal domain. That is to say, the modern human rights project acts as a case study to demonstrate that notwithstanding the clarity of intention drafted into the preamble to the UHDR, there are many aspects of the manifest world that interfere with the realisation of those ontological commitments.

It is also necessary to acknowledge that whilst it may be argued that other values, such as 'dignity',[4] are also embedded in the modern notion of human rights, they are not germane to the discussion at hand and are hence beyond the purview of this dissertation. That being said, 'dignity' is an implicit value that informs the intention underpinning this thesis. For example if one adopts a functionalist view of modern human rights, such as that of Luhmann, then one may say that the function of human rights is to 'protect the dignity of the individual'.[5] For this reason it can be argued that a system of law connecting more deeply to the values of inalienability, equality and universality is inherently dignified.

Several steps will be made in order to draw out some socio-legal and legal philosophical implications of LUH. The first step is to look at the points of contact between law and science. The second step is to abstract the ways the two disciplines interact in order to frame the type of influence that is

[4] Verschraegen, G. (2002) 'Human Rights and Modern Society: A Sociological Analysis from the Perspective of Systems Theory, 29, 2, *Journal of Law and Society*, 258-281, 263.
[5] Ibid.

epistemically permissible. This is assisted by looking at the law through the broadly similar lenses of analysis created by Pierre Bourdieu and Gunther Teubner. . The third step is a critical review of the work of scholars who have applied quantum mechanics to legal and socio-legal scholarship as they have contextualised the way the scientific paradigm of quantum mechanics can influence the law. The fourth step is to identify those aspects of limited universal holism that are consistent with the epistemic imperatives detailed in the preceding steps. The final step is to move outside doctrinal legal research in order to tease some of the latent assumptions embedded into the legal system.

The epistemic structure used in this thesis is 'coherentism'. Epistemic coherentism stands out as the best candidate for justifying beliefs when compared with the two alternatives, infinitism and foundationalism, as Pritchard (2010) observes:

> A plausible and… popular response to Agrippa's trilemma…holds that a circular chain of reasoning supporting grounds *can* (emphasis original) justify beliefs….The motivation for coherentism isn't just practical, however, since part of the story involves pointing out that given the implausibility of alternative theories, it is essential that we can understand justification this way.[6]

The essence of coherentism is that the epistemic status of a given belief or proposition is strengthened when that belief is supported by a '…general network, or 'web' of beliefs that we hold. One way of expressing this idea is by saying that the particular beliefs we hold reflect a general world-view that we have.'[7] The caveat to this epistemic approach is that the circle of justification

[6] Pritchard, D. (2010) *What is This Thing Called Knowledge?*, Routledge, Oxon, 35, 40.
[7] Ibid, 35,

needs to be large.[8] For that reason this dissertation uses an ontological structure derived from mathematics and theoretical physics, as mathematics in particular is one of the most rigorous areas of knowledge known to man. However, there is an important caveat. Pritchard (2010) goes on to state that 'Coherentism….holds that a circular chain of grounds, so long as it has the right sort of properties…*can* justify a belief'.[9] Thus, the critical component of the extract above is that there must a robust process used to determine whether the beliefs in question cohere. Kim (1993) is used to determine whether LUH coheres with the three values of equality, universality and inalienability.[10] Kim's (1993) paper provides an excellent set of criteria to determine how the process of justification works. Rather than present an ideological argument of any kind Kim's paper acts as a useful platform for evaluating coherence between the two propositions in question.

The impetus for exploring this area is that paradigms of natural science have had a clear impact on lawyers and the legal system at both ontological and epistemological levels. This may be articulated from a number of perspectives. Thomas Kuhn (1986) in the seminal work *The Structure of Scientific Revolutions* constructed the notion of a scientific 'paradigm'.[11] This work adopted the view that science can progress in non-linear leaps of understanding called 'paradigm shifts'. Such changes bring about a fundamental change in ontology and epistemology. In a similar vein, yet applied across various disciplinary spaces, Michel Foucault (1970) posited that there is an 'epistemological space

[8] Ibid, 36.
[9] Ibid, 40.
[10] Kim, K. (1993) 'Internalism and Externalism in Epistemology', 30, 4, *American Philosophical Quarterly*, 303-316.

[11] Kuhn, T.S. (1976), *The Structure of Scientific Revolutions,* 3rd Edition, The University of Chicago Press, Chicago.

specific to a particular period'.[12] Consequently one the exemplars used in this thesis, Lawrence Tribe (1989) took the view that '…tacit positive rules of discourse cut across and condition different disciplines in any given period'.[13] Tribe (1989) provides some clear examples of how and why paradigms of natural science have impacted on lawyers and the legal system at both ontological and epistemological levels. This perspective is picked up in this thesis and applied in further steps by engaging the paradigm of structural functionalism. This analytical paradigm:

> …throw[s] light on the normative features of…[the legal system]…by examining the relationship between the micro elements of social systems such as norms, roles, human relationship agency, practices, or communicative action and their macro manifestations such as institutions, structures, systems or fields.[14]

Thus, this thesis examines some ways in which the interpretation of QM offered by Bohm and Hiley (1993) can 'cut across' and impact lawyers and the legal system by looking at some of the micro-elements within that system and considering the way they may manifest. As noted, these impacts include the formation of some heuristic insights, as well as epistemic coherence with some of ontological commitments underpinning the UDHR. They also provide a platform for deepening the engagement with the essence of manifest world that law seeks to regulate. It is important to clarify this last point a little, as it is one of the key findings of this area of research and potentially a little abstruse as the language used in the discussion is interdisciplinary.

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[12] Foucault, M. (1970) *The Order Of Things: An Archaeology Of Human Sciences*, Pantheon Books, xi

[13] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review,* 2-3.

[14] Banakar, R., Travers, M. (2005) 'Structural Approaches', in Banakar, R., Travers, M. (eds), *Theory and Method in Socio-Legal Research*, Hart Publishing, 196.

One of the key heuristic insights for law that may be abstracted from Bohm and Hiley's (1993) epistemological stance is their discussion of 'appearance' and 'essence'. Specifically, it is argued that there is a neat epistemic coherence between juridical consideration when resolving a dispute or engaging in legal scholarship and their discussion on the way scientists work to align essence and appearance. Bohm and Hiley (1993) note:

> …as we go around a circular table, we see an ever-changing elliptical shape. But we have learned to regard this changing shape as a mere *appearance*, while the *essence*, i.e. the true being, is considered to be a rigid circular object. This latter is known first and is projected into our immediate experience so that the table even *appear*s to be circular (emphasis original). But further investigation shows that this object is not solid and eventually discloses an atomic structure. The solid object now reverts in our though to the category of an appearance and that the essence is a nucleus surrounded by moving planetary electrons… And later still even these particles were seen to be appearances, while the essence was a set of yet more fundamental particles… But in all of this development in our knowledge, it seems whatever we have thought of matter is turning more and more into empty space with an ever more tenuous structure of moving elements…What has been constant in this overall historical development is a pattern in which at each stage, certain features are regarded as appearance while others are regarded as an essence which is explained on a qualitatively different basis. But what is taken as essence at any stage, is seen to be appearance of a still more fundamental essence. Ultimately everything plays both the role of appearance and essence. If, as we

> are suggesting, this pattern never comes to an end, then ultimately all of our thought can be regarded as appearance, not to the senses but to the mind.[15]

Thus it can be seen that Bohm and Hiley (1993) are of the view that '...science is aiming for… appearances to be correct, i.e. that the actions flowing from [the sciences], such as experiments, be coherent with what appearances would imply'.[16] That is to say that as we move toward deeper levels of understanding, we find what was formerly 'essence' becomes 'appearance' as we move ever deeper. Accordingly applying this to law, the law should evolve in a manner such that the ever-deepening layers of essence are woven into it. Further that this essence acts as an 'appearance' of yet deeper levels of juridical consideration and content.

Since it is widely accepted that it is systemically desirable that rule of law is strengthened, it is evident even at this early stage that the appearance/essence has a readily apparent insight for law. As noted above, the dance between appearance and essence provides heuristic insight for the very nature of legal process itself, as this can be analogised to the process of conducting a trial in which a judge must sift through mountains of evidence to reach a conclusion. Sometimes that reasoned conclusion is at odds with a decision that would 'appear' to be correct without delving to a deeper analysis. For example, if one were to rely solely upon appearances, an allegation of impropriety would result in a finding of guilt. However, a deeper examination of all evidence may result in finding that the allegation was itself false. To reflect the systemic rejection of such cavalier treatment of legal issues, the notion of 'innocent until proven guilty' is a fundamental pillar of judicial process. Indeed, the recognition of the limited value of appearances in legal disputes is reflected in the

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[15] Bohm, D. (1980) *Wholeness and the Implicate Order*, Routledge, London, 322.
[16] Ibid.

commonly used Latin phrase '*prima facie*'; which means 'at first sight; on the face of it'.[17] This phrase is explicit systemic recognition by the legal academy of the accepted bifurcation between the notions of appearance and essence, as a *prima facie* advice is subject to revision after further and deeper consideration. Reflecting these ideas, the perspective adopted in this thesis is that laws that are formulated with consideration of the essence of their subject matter are better than laws that do not. The former reflect a more correct understanding as they remove arbitrariness from the legal system.[18] As a result, laws that reflect the essence of their subject matter are good for rule of law.. It then follows that a system of law that reflects the essence of that which it seeks to regulate is epistemically desirable and conforms to one of the central tenants of rule of law.

Moving now to the texture and placement of this dissertation; since this thesis seeks to use an ontological construct derived from outside the disciplinary boundaries of law this thesis has to employ a paradigm of legal research that is open to interdisciplinarity. Such a paradigm resides within the broad classification of realism. Openness to interdisciplinarity in legal scholarship cannot be assumed as there is a dynamic tension between the view that the law should not be influenced by other disciplines (legalism) and the view that law needs to be considered in context (realism). These observations are particularly noteworthy of note as the law occupies a unique social, cultural and intellectual space and often displays a measure of encultured xenophobia when confronted with interdisciplinary research. This xenophobia is attributable to legalists who emphasise a cognitive closure of legal method. For a considerable time the dominant view within common law countries

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[17] Nygh, Dr. P.E., Butt, P. (eds) (1998) *Butterworths Concise Australian Legal Dictionary 2nd ed* , Butterworths, Sydney, 345.

[18] Gleeson, M. (2001) 'Courts and the Rule of Law', The Rule of Law Series, available at <http://www.hcourt.gov.au/assets/publications/speeches/former-justices/gleesoncj/cj_ruleoflaw.htm#_edn1> last viewed 12 June 2014.

was that students can learn everything they need to know about the legal system and legal method from exegetic analyses of cases. Priest notes that the dominant perspective during the 1930s was that '...future specialisation in legal scholarship...suggests increasingly detailed and narrow treatises addressing traditional legal subjects.'[19] Indeed this standpoint is supported by the consensus view in the early 20th century when the law was classified as a 'technology' rather than as a social science. This is exemplified by Cairns (1935), who observed: 'The characteristics exhibited by modern legal study are not characteristics of the principal social sciences. Contemporary legal study is a technology; but the social sciences are not technologies'.[20] Cairns drew this distinction on the basis that '...every technology... involves [to] an exclusive or considerable degree the application of principles or laws formulated by a "pure" science.'[21] The reference to a 'pure' science' may be construed as adhering to the legalist view; namely that the law is a closed, autonomous discipline.

However, it is hard to sustain an argument that the law is not one of the social sciences, in which case the legal academy should adopt a more broadminded approach to social scientific research methods and findings. Priest (1983) notes a shift toward a realist position in which 'legal scholarship has become specialised according to the separate social sciences...[which] has broken down older conceptions of distinctive legal categories'.[22] Indeed Priest notes that lawyers who ignore social scientific perspectives of law and '...convince themselves that extensive knowledge of the intricacies of legal doctrine and legal argument and legal tradition will perhaps make possible some deep

[19] Ibid, 437.
[20] Cairns, H. (1935) 'Law as a Social Science', 2, 4, *Philosophy of Science*, 484-498, 487.
[21] Ibid, 488.
[22] Priest, G.L. (1983) 'Social Science Theory and Legal Education: The School as University', 33, Journal of Legal Education, 437-441, 437.

theoretical discovery... [nurture] false hope. It is equivalent to the belief that Einstein would finally have discovered a unified force theory if only he had stayed a few more years at the patent office'.[23]

This changing position explains the basis for one dynamic tension that still exists within the law. That tension may be conceived of as a xenophobic relationship existing within the legal discipline in respect of the role other disciplines can and should have in shaping the law. On the one hand the traditional view is that law is an autonomous and closed discipline (which is referred to as 'legalism'). On the other hand there is the view that law is not what men in black robes say, but rather what happens in practice.[24] Therefore in order to understand law in practice, one must look to, *inter alia*, other disciplines. This 'realist' perspective seeks to understand the law through a study of how it functions and thus this point of view is classified as 'pragmatic' in the minds of adherents and has been referred to as 'realism'. Engle (2008) clarified the nature of both legalism and realism when he noted that 'Realism is a functionalist theory. According to functionalism, the form of ideas and institutions are best understood as a function of their roles'.[25] Of 'legalism' Engle noted 'legalism is the rigid inflexible application of black letter law without regard to practical consequences'.[26]

Priest (1983) referred to the emergence of the newer 'realist' perspective as the 'realist revolution'.[27] The 'realist revolution' occurred between the 1930s and 1960s.[28] The cause of this 'revolution' is not relevant to this thesis, but the residual consequences of it are of direct relevance. The term 'revolution' implies a fundamental and total change in perspective; a *gestalt* switch.

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[23] Ibid, 439.
[24] DeLong, S.W. (2001) 'Placid, Clear-Seeming Words: Some Realism about the New Formalism (With Particular Reference to Promissory Estoppel);, 13, *San Diego Law Review*, 19-20.
[25] Ibid, 659.
[26] Ibid, 661.
[27] Above, n 4.
[28] Engle, E. (2008) 'The Fake Revolution: Understanding Legal Realism', 47, *Washburn Law Journal*, 653-674.

However, when the term 'revolution' is applied in a political or social context it connotes a complete shift in governance. For example, the French Revolution of 1789-1799 saw the traditional sources of authority, the monarchy, aristocracy and religious authority violently overthrown, resulting in the execution of King Louis XVI. The 'realist revolution' in law was not so binary. In support of this Engle (2008) notes 'realism never completely replaced formalism, luckily, because formal logic is the foundation for the rule of law'.[29] The effect of these differing views is that a dynamic tension, noted above, is still apparent within legal scholarship; a tension between the traditional paradigm of legalism and the relatively recent paradigm of realism (and its offshoots). These frames of analysis coexist but they are locked in an uneasy embrace and are the fuel to the uncultured xenophobia is already identified earlier in this thesis.

This tension presents one methodological issue that must be addressed in order to explore the premises of this thesis. LUH is an ontological structure derived from theoretical physics and mathematics (i.e. outside the law). In order to consider any legal philosophical or socio-legal implications of this ontological construct, one must appreciate how fundamentally this thesis challenges the legalist conception of legal research. That said, this thesis does not concern itself with assessing the merits of the legalist and realist positions, rather it places emphasis is on how the two interact. As this thesis is looking at, *inter alia*, an ontological structure derived from theoretical physics and mathematics it is necessary to identify a paradigm of legal research that is open to interdisciplinarity, and which is in contradistinction to the disciplinary focus of legalism. From the preceding discussion it follows that a suitable paradigm of analysis resides within the broad category of realism.

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[29] Ibid, 674.

One paradigm that enables this analysis to be undertaken is the socio-legal paradigm of 'structural functionalism'. Adopting this paradigm countenances the view that autonomous spaces are created by different disciplines and these spaces interact with each other. Whilst this may seem paradoxical as the notion of autonomy may appear undermined by the notion of interaction; this is not the case. Disciplines create their own language and logic. Quantum physics has a particular lexicon, as do law, medicine and automotive mechanics. Each of these discourses interacts with (i.e. couples with) other fields, and such an interaction changes the discourse within both of those fields. The notion of 'autonomy' is best understood in terms of an autopoietic discourse, i.e. the legal discipline is autonomous in the sense that it is a self-reproducing mechanism for information processing.[30] That is to say that disciplinary space is defined autopoietically. This can take the form of a shared 'code' within that disciplinary space. Baxter (2013) notes that 'code' is the distinction between the two opposed values; in the legal system this is legal/ illegal; in science it is true/ false. He goes on to state that 'all subsystem communication is organised with respect to this code'.[31] It is these disciplinary spaces that interact with other disciplinary spaces. Thus, the paradigm of structural functionalism endorses the notion that legal discourse is recursively self-defining through these various interactions. The effect of applying the paradigm of structural functionalism in this dissertation opens up several analytical spaces. First is the space to consider an ontological construct beyond the boundaries of the legalist universe. Second is a space to evaluate the capacity of the modern human rights to manifest some of the key ontological commitments in practice. Such analyses are possible

[30] Cornell, D. (2013) 'Time, Deconstruction, and the Challenge to Legal Positivism: The Call for Judicial Response', 2, 2, Yale Journal of Law & the Humanities, 272.
[31] Baxter, H. (2013) 'Niklas Luhmann's Theory of Autopoietic Legal Systems', 9, *The Annual Review of Law and Social Science*, 167-184, 170.

due to the nature of the analytical spaces: they enable a pragmatic (i.e. realist) evaluation of the impacts of other disciplinary spaces when they interact with modern human rights.

Whilst the interaction between discourses is readily apparent in the interdisciplinary area of, *inter alia*, criminology,[32] one novel heuristic contribution in this thesis is to clarify the nature of the between science and law interaction using one ontological element of the orthodox interpretation of quantum mechanics as a heuristic tool. Essentially, it is asserted that the interaction between two disciplinary fields creates a third field that is a hybrid disciplinary space. This interaction occurs in much the same manner in which two quantum wavefunctions (in the orthodox interpretation of the formalism) interact to create a third wavefunction.

There is a supplementary ontological argument affirming the area of inquiry in this thesis. Gibbons (1981) noted that many assumptions underlying law are incorrect and outdated in light of modern science. This is exacerbated by the autopoietic nature of the legal system. Any normative system based upon a set of descriptive assumptions about the nature of man and society must change as newer scientific paradigms emerge as humanity gains a different view of the nature of reality.[33] Science is able to assist law in the process of reviewing out-dated knowledge. Gibbons posits that this is because law and science are 'different manifestations of the same thing'.[34] Gibbons advances the view that both the science and law deal with laws, albeit those laws inhabit two different worlds; scientific laws are descriptive statements of observed regularities in phenomena, whilst legal laws

[32] Criminology is interdisciplinary field drawing from law, sociology, behavioral science, social anthropology, psychology and psychiatry.

[33] Gibbons H. (1981) 'The Relationship between Science and Technology Part III', 22, 3, *IDEA: The Journal of Law and Technology*, 227-242.

[34] Gibbons H. (1981) 'The Relationship between Law and Science Part II, 22, 2, *IDEA: The Journal of Law and Technology*, 159-188, 185.

are normative statements of desired regularity in human behaviour.[35] The argument that the two disciplines should be considered together arises from the observation that theoretical physics is at the cutting edge of human scientific inquiry into the nature of physical reality. As such, both theoretical physics and mathematics draw some of the most fundamental pictures humankind has of the world through which we move and with which we interact. As it has already been noted in the introduction, the knowledge produced in these two disciplines has a direct bearing on our understanding of the essence of that which the law seeks to regulate. Thus, the valid knowledge articulated in these two disciplines is creates an epistemological pressure on law; the law must consider this new and valid knowledge in order to remain relevant to the world it attempts to regulate. The more pertinent questions are those that ask how and in what ways the proposed ontological construct will influence the law.

Significant complexity arises when one considers the two corollary questions raised earlier; how and in what ways can and should an ontological construct articulated in the fields of mathematics and theoretical physics influence the law? The answer to the question of how such an ontology can influence the law is explicated by considering both law and science as autopoietic systems and then determining their points of structural coupling and epistemic coherence. This methodology is appropriate as the process of legal autopoiesis is predicated on the recognition that the law is caught between the counterpoised forces of legalism and realism identified earlier. Indeed, Teubner notes that 'legal discourse is caught in a trap. The simultaneous dependence on and independence from other social discourses is the reason why modern law is permanently oscillating between

[35] Ibid.

positions of cognitive autonomy and heteronomy.'[36] This is illustrated by using modern human rights as a case study. By virtue of drawing out some practical hurdles moving from theory to practice and having a focus on ontological and epistemological commitments in law avoids one potential problem of employing an exclusively structural methodology. Banakar and Travers (2005) note:

> The problem with taking purely structural descriptions of law as the starting point… is that one might, unwittingly be (mis)led into reproducing the ideology of law, which underpins law's self descriptions and self-presentations, as empirical (objective) observations. Paradoxically Structural functional analysis can be become an effective tool for uncovering this ideology when law's self-descriptions and claims are treated as the objects of analysis.[37]

An analysis of the ways in which LUH can and should influence the law is determined via a three-step process. The first step is to engage in a paradigmatic examination of the interaction between the disciplines of science and law to determine the points of coupling. The second step is to engage in a review of socio-legal research that has considered and applied quantum mechanics. From these steps a successful methodology is exegetically identified and analysed. Namely there are hermeneutic insights, ontological and epistemological commitments and metaphysical borrowings.

The third step is to apply this method to an exploration of one *de novo* area. In this research that area is an aspect of the modern human rights project. As noted elsewhere, the modern human rights project is analysed in order to identify some types of structural coupling that interfere with the

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[36] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 730.

[37] Above n 6, 197.

clarity by which some of the unambiguous ontological commitments underpinning the UDHR are able to manifest.

The phrase 'modern human rights' finitises the focus and scope of the second premise slated for examination in this thesis. That focus is specifically centred on some of the ontological commitments that underpin the Preamble to the United Nations instrument, the Universal Declaration of Human Rights 1948 (UDHR namely universality, inalienability and equality. Identifying these particular values is not problematic, as many scholars have previously discerned these values as central and fundamental to modern human rights.[38] That is to say, the UDHR aspires to create an inalienable suite of interlocking rights that are predicated on, *inter alia*, *equality*, *inalienability* and the *universality* of application to all persons. Whilst other values (such as dignity) have been identified,[39] this dissertation is focussed on only those three values, as they are coherent with the values abstracted from the ontology of LUH. It also may be contended that these three tenets are thought to reflect a core aspect of human nature and hence are central to human rights. Furthermore it is patent that to be effective, the philosophical foundations of human rights law must cogently, convincingly and legitimately uphold these principles as they manifest in practice. To fall short in this endeavour, as this thesis asserts the current foundational basis for human rights law does, inevitably results in a human rights law system that fails to deliver the key elements that it purports to establish and protect. This is significant, as in failing to do so, the modern human rights project

[38] Glendon, M. (2004) The Rule of Law and the International Declaration of Human Rights, 2, 5, *Northwestern University Journal of International Human Rights Law*, 66; Hunt, L. (2007) *Inventing Human Rights*, Norton Publishing, New York, 20.

[39] For example, Verschraegen, G. (2002) 'Human Rights and Modern Society: A Sociological Analysis from the Perspective of Systems Theory, 29, 2, *Journal of Law and Society*, 258-281, 263.

demonstrates the difficulties of moving an unambiguous set of values articulated in a foundationalist legal document from theory to practise.

In order to gain a nuanced understanding of the dissonance between the theory and the practice of human rights, the paradigm of structural functionalism is invoked for a second time in this thesis. This analytical paradigm reveals some practical failures of modern human rights in spite of the aforementioned clear and unambiguous ontological commitments. It is argued that the ontological structure of limited universal holism epistemically coheres with those key commitments in the Preamble to the UDHR. It is also argued that such coherence could act as a platform from which to redefine the autopoietic discourse in all disciplines which structurally couple with the field of modern human rights.

It is acknowledged that the development of modern human rights law has been affected by a number of other influences including utilitarian empiricism, economic rationalism, political expediency, Rawlsian and Lockean political theory and Kantian deontology to name but a few. Indeed one of the fathers of an autopoietic theory of law, Niklas Luhmann, specifically gave explicit attention to the structural coupling of both economics and politics with law.[40] This thesis does not consider these fields when evaluating modern human rights; rather the focus is on some of the ontological commitments underpinning the Preamble to the UDHR and the clarity with which those commitments manifest in practice. Two particular autopoietic fields are studied; international law and dialectical entho-cultural dualism. These two fields have been chosen as they represent two disciplinary spaces that have rebuffed the modern human rights project. Furthermore, the attitude

[40] Above n 25, 178-81.

with law has simply been to accept these two fields as 'trumping' the move of modern human rights from theory to practise. It is further noted that this analysis picks up on the terminology-laden area of socio-legal human rights commentary and grounds it with several practical examples; such as several issues relating to the War on Terror. In so doing, complex socio-legal ideas are contextualised in a manner more suitable for assimilation by lawyers unfamiliar with socio-legal analysis and related types of abstract cognitive processes. Finally, the two fields international law and dialectical ethno-cultural dualism are used to show the type of interference that autopoietic fields may create for each other when they couple. These illustrate some of the complexities that face any paradigmatic reform that seeks to move ontological commitments from theory to practise.

Thus, it is contended that consideration of the ontological structure of LUH can yield loci of commitment that can epistemically cohere with the ontological commitments of the UDHR and in so doing can enhance the argument in favour of an enforceable human rights regime. It is acknowledged that simply providing a stronger epistemological footing for human rights does not negate the complexity of the environment in which they operate; rather it provides a lever to argue in favour of a rational ontological foundation for human rights that is currently absent or faulty. This may recast areas of the human rights debate that are currently mired. At the very least this dissertation highlights the challenges faced when moving the ontological commitments of equality, universality and inalienability from theory to practise in law.

A final point which needs attention in this introduction is that employing quantum mechanics and the ontological structure of limited universal holism in any piece of interdisciplinary scholarship or thesis may pose a significant challenge. This thesis employs the ontological structure of LUH, which itself challenges the default perception that Cartesian duality ordinarily defines human reality. That

is to say, the essence of manifest reality is different from its appearance. Addressing the systemic cultural issues raised by the misperception and misinformation rife throughout the world is beyond the purview of this legal thesis. However an attempt has been made to include a non-technical and non-scientific description of the significant and relevant aspects of reality that exist at the level of quanta. Nonetheless, the point remains that there is a significant ideological hurdle to be overcome. Marcin's (2006) reference below to duality may be construed as reference to the orthodox Copenhagen ontological structure, but the reference to different laws operating at the microphysical and manifest levels of reality is insightful:

> What we have learned in recent years, with the now well accepted principles that flow from the special and general theories of relativity and the theory of quantum mechanics, is that we do indeed live in a dual world: the world of ordinary perception in which we experience things and events as discrete and concrete "realities", and another world, a world in which space and time are one, in which the concept of causality is jettisoned along with the concept of simultaneity, and in which the "building blocks" of matter are nothing but tendencies and potentialities.[41]

Marcin (2006) astutely identifies that quantum holism presents a perceptual difficulty that emanates from the ontological structure described above; why is plurality and individuation perceived if ontological oneness pervades physical reality?[42] Marcin refers to David Bohm, who stated 'Fragmentation is continually being brought about by the almost universal habit of taking the

[41] Marcin, R.B. (2006) *In Search of Schopenhauer's Cat: Arthur Schopenhauer's Quantum-Mystical Theory of Justice*, Catholic University Press, 46.
[42] Ibid, 52.

content of our thought for a description of the world as it is... Wholeness is what is real'.[43] This does little to resolve the perceptual conundrum for the individual, as at the end of the day it is challenging and confronting for people to doubt the ultimate truth of their perception and Bohm is implicitly pointing out the failure of Cartesian duality. The enculturation of Cartesian duality has the systemically undesirable consequence of embedding an ontology that is known not to reflect the essence of manifest reality; and this, as has already been shown, is epistemically unjustifiable.

[43] Bohm, D. (1980) *Wholeness and the Implicate Order*, Routledge, London, 3, 7.

2. A Brief Word on Functionalism and the Law

2.1 Structural Functionalism and Law

Between 1984 and 1998 Niklas Luhmann posited a comprehensive theory on 'self-referential' or 'autopoietic' systems.[1] The essence of his view is that the world can be divided into systems; living, social and psychic systems. Law is one of the social systems that Luhmann identified and studied. Baxter (2013) observes that Luhmann adopted the view that the '…world society is primarily differentiated into various subsystems that perform some unique function…[and] we can speak of a global legal system – albeit one largely without centralised legislation or decision-making capacity'.[2] This position is valuable as it provides a platform from which to separate the study of law without being drawn into the differences between common law and civil law systems. As such this thesis uses the socio-legal episteme of 'structural functionalism'. Banakar and Travers (2005:II) posit:

> Within structural functionalism, the constitutive elements of a system are never considered in isolation from each other or from the *totality* of the system, which in turn is regarded as more than the sum of its constitutive parts...[structural functionalism]...shed light on the normative features of social life by examining the relationship between micro-elements of social systems such as norms, roles, human agency, practices or communicative action and their macro manifestations such as social institutions, structures, systems of fields... Legal forms of behaviour or

[1] Baxter, H. (2013) 'Niklas Luhmann's Theory of Autopoietic Legal Systems', 9, The Annual Review of Law and Social Science, 167-184, 167.
[2] Ibid, 169.

> organisation are, thus, explained as the "result of the structure of the relationships existing in the larger society and the legal system itself".[3]

The methodological perspective of structural functionalism is deployed twice in this thesis, at two different levels. Firstly, it is deployed to explore the nature of interaction between the field of science and the field of law; secondly it is deployed in the study of modern human rights in chapter 6, specifically in relation to the interactions between a legalist interpretation of the Preamble to the UDHR, and the fields of enthno-cultural dualism and international law norms. The purpose of the second application of the paradigm of structural functionalism is to contrast the way society at large interacts with the institutions created to administer modern human rights. In order to ascertain the nature and scope of the interaction, a hermeneutic analysis of the Preamble to the UDHR is undertaken to identify the core ethos of human rights. This is then contrasted with the level of protection that modern human rights law practically offers. In so doing this analysis is able to act as a case study; one that identifies some the pragmatic issues that beset moving a set of unambiguous ontological commitments from theory to practice.

The views of two particular theorists are utilised; Pierre Bourdieu and Gunther Teubner.[4] Both these theorists are structural functionalists. However, there are certain similarities and differences between the positions held by them that warrant clear distinction at this juncture. Firstly, Banakar and Travers (2005:II) clarify an important issue of terminology. They observe that Bourdieu's notion

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[3] Banakar, R. and Travers, M. (2005) 'Structural Approaches', (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 196.

[4] Scholars view Pierre Bordieu and Niklas Luhmann as articulating of the main strands of thinking in structural functionalism. Gunther Teubner is seen as building on the ideas of Luhmann, and as such this thesis does draw from both the strands in the course of examining the two premises: Teubner, G., Bankowska, A., Adler, R. (1993) *Law as an Autopoietic System, The European University Institute Series*, Blackwell Publishing, Oxford.

of the traditional legal discipline constituting a 'field' is compatible with the term 'system' used by Teubner (and also in a combined paper written by Teubner and Paterson[5]) as both regard the legal discipline as a 'socially constructed space consisting of set of objective relations'. That is to say that the legal disciple is a demarcated abstract social space. The content of this space is defined by the unique communications between the actors within that space. Whilst this is explained shortly, it is noted that the two approaches diverge at a few points. The first point of divergence is in the different view of the constitutive elements of that social space. A second point of divergence is that whilst the systems theory approach adopted by Teubner is focussed on the '*functional* stability of social systems [i.e. the legal system], Bourdieu focuses on the power relations'.[6] Teubner's view is the perspective adopted in this thesis for the most part. However Bourdeiu's perspective offers some insights during the discussion in chapter 5.

Banakar and Travers (2005:II) go on to note that: '...both approaches are concerned with objectivity and claim to be scientific... Paterson and Teubner go further...by categorically maintaining that the researcher cannot select his or her 'system' arbitrarily to satisfy a research interest or certain theoretical assumptions. Researchers can treat an entity as a 'system' only if it demonstrates an 'objective' empirical reality of its own. To put it differently, 'autopoietic systems are produced by self-organising processes in the social world and not by scientific observers'.[7]

Notwithstanding the value of this perspective in postmodern socio-legal thinking, the notion of objectivity, scientific or otherwise, is challenged in this thesis through the citation of the work of

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[5] Paterson, J. and Teubner, G. (2005) 'Changing Maps: Empirical Legal Autopoiesis' (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 215 – 237.
[6] Above n 33.
[7] Ibid.

post modern Feminist scholar, Emily Martin. Martin debunks the notion of 'value-free' or 'objective' science, and shows that scientists create a narrative to describe their perceptions, and those descriptions are as encultured as any other cognitive or descriptive process that a human can engage in.[8] Whilst this is expressly considered in chapter 3.5, it creates one seemingly paradoxical position highlighted in this thesis; 'objectivity' is a central concept in the methodological paradigm adopted, whilst elsewhere the notion is expressly debunked. This paradox is resolved through the position that engagement with 'objectivity' is a necessary aspect of structural functionalism that enables a focus on the functional aspect of the definition of a 'system'; namely that a discipline will be conceptualised as a 'system' if it creates a reality of its own, **independent** of a scientific observer. Thus, the term 'objectivity' is replaced with 'independent'. This view is pragmatic, and is related more to precision of terminology than to any issue with the framing of the paradigm itself. It is logical *a priori* that if all humanity were beset by some calamity and the entire species was rendered extinct, then the law and its 'own' reality would also cease to exist. This renders the notion of a truly objective social reality in the field of law as impossible.

Irrespective of terminology, the question remains - what attributes does an 'independent' or 'objective' social reality need to demonstrate in order for it to be conceived as 'independent'? Paterson and Teubner (2005) address this question by referring to the notion of 'self-organisation', which they correlate with 'autopoiesis'.[9] They define 'autopoiesis' as 'the transformational dynamics

[8] Martin, E. (1991) 'The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles', 16, 3, *Signs*, 485-501.

[9] Above n 51, 215.

of recursive meaning processes'.[10] Michailakis (1995) provides a simpler definition when he states that:

> The concept of autopoiesis connotes the idea that the constituent elements of social systems are communications. This makes society a self-reproducing system of communication. Particular modes of communication crystallise within the social system and form autonomous subsystems. A system's specific mode of communication makes it a normative closed system against the environment. Law is one such self-reproductive system which organises and conceptualises influences and demands from the environment in terms of its norms legal/ illegal.[11]

Paterson and Teubner propose that the autopoietic process in a socio-legal context consists of '...a multitude of autonomous but interfering fields of action in each of which, in an acausal and simultaneous manner, recursive processes of transformation take place'.[12] Each of these fields constructs information internally; thus each of the fields is self-organising. As a result, Paterson and Teubner note that the traditional linear sense of causal influence needs to be reconceived as '...simultaneous events of structural coupling'.[13] The effect of this position, when applied to the process of determining the validity of the two premises in this thesis, is to provide an analytical framework for conceptualising how science and law interact.

One question raised by Paterson and Teubner, which addresses an important methodological issue, asks, 'How can we identify the different types of mutual recontextualisation that are responsible for

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[10] Ibid.
[11] Michailakis, D. (1995) 'Law as an Autopoietic System' 38,4, *Acta Sociologicia*, 323 – 337 at 323.
[12] Above n 51, 221.
[13] Ibid, 222.

the meeting of these closed discourses?'[14] The answer to this question is determined, according to Paterson and Teubner, by analysing whether the operations within the different fields are 'recursively linking up to other operations in our field so that in their concatenation they gain the autonomy of an autopoietic system'.[15] This is achieved by looking at the attempts made within the system to minimise differences between the two fields. At a disciplinary level this is undertaken in chapter 4 part A where the relationship between law and science is explored in some detail and in so doing their points of contact are exposed.

In chapter 6 the data theory used to identify some specific legal philosophical implications and socio-legal implications of limited universal holism is identified as the paradigm of 'socio-legal constructivism'. An interdigitation between these two fields is achieved through a process described by Teubner (1989). He identifies three key methodological points in socio-legal constructivism:

> 1. Under a constructivist social epistemology, the reality perceptions of law cannot be matched somehow to a corresponding social "out there". Rather, it is the law as an autonomous epistemic subject that constructs a social reality of its own.
>
> 2. It is not human individuals by their intentional actions that produce law as a cultural artefact. On the contrary, it is law as a communicative process that by its legal operations produces human actors as semantic artefacts.
>
> 3. Since modern society is characterised on the one side by fragmentation into different *epistemes*, and by their mutual interference, legal discourse is caught in a trap. The simultaneous dependence on and independence from other social discourses

[14] Ibid, 223.
[15] Ibid.

> is the reason why modern law is permanently oscillating between positions of cognitive autonomy and heteronomy. [16]

This constructivist process is entirely consistent with the analytical process of structural functionalism as there is a significant conceptual overlap. As noted, this methodological process is undertaken in chapter 6 in relation to modern human rights. However, at this stage it is opportune to identify exemplars who have applied this methodology in socio-legal scholarship. It should be noted that whilst the following exemplars may not have expressly referred to either 'structural functionalism' or 'socio-legal constructivism', the point remains that their methodologies can be identified as falling into these categories.

In the first instance, Murray (2008) uses the socio-legal methodology described above by Teubner to show the interaction of complexity theory and law and acts as an exemplar of this methodology.[17] The methodology, when applied by Murray has three limbs. Firstly he describes the relevant scientific paradigm, in this instance complexity theory. Secondly Murray examines the first sustained consideration of complexity theory in socio-legal studies. In that study J.B. Ruhl[18] was the research exemplar. Thirdly Murray introduces some further implications and opportunities for the law and socio-legal scholarship. Murray's engagement with Teubner's methodology is similarly applied in this thesis; firstly it is utilised to abstract the main aspects of the paradigm of quantum mechanics, secondly to examine Tribe (1988) as the socio-legal exemplar who first considered some potential legal heuristic insights from quantum mechanics, and thirdly to posit some further legal

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[16] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 732.
[17] Murray, J. (2008) 'Complexity Theory & Socio-Legal Studies', 29, 2, *Liverpool Law Review*, 227-246.
[18] See above Chapter 3B, n 94.

philosophical and socio-legal implications of the paradigm of quantum mechanics, specifically the ontological structure of limited universal holism.

Affirming Murray (2008); Kellert (2008) observed that Ruhl (1996) and Tribe (1989) both have many methodological similarities.[19] Kellert notes that the argument advanced by Tribe (1989) consists of, *inter alia*, '...legal scholars drawing metaphorical conclusions from... quantum mechanics',[20] as does the work of Ruhl in respect of complexity theory.[21] Whilst Rudd (2005) makes the critical observation that there is a mismatch between natural systems and socio-legal systems in the sense used by Ruhl, he concedes that the perspectives offered by Ruhl have numerous merits.[22] As this thesis is not concerned with exploring complexity theory in socio-legal scholarship, Rudd's comments are not directly applicable. Furthermore, the scholarly discussion critical of Ruhl explores the minutiae of the argument rather than the form of his methodology. The most salient and most relevant observation to this thesis is that both Ruhl (1996) and Tribe (1989) successfully deployed knowledge taken from the natural sciences in socio-legal scholarship with considerable success. Such a methodology has been accepted and validated; Kellert (2008) shows that whilst the particular aspects and metaphors of natural science utilised are open to critique (as shown with Rudd's critique of Ruhl's work), the methodology itself is important, as he asserts:

> One of the main lessons of this book is that metaphorical borrowings from the natural sciences [in socio-legal scholarship] should not merely be dismissed without argument.

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[19] Kellert, S. H. (2008), *Borrowed Knowledge: Chaos Theory and the Challenge of Learning Across Disciplines*, The University of Chicago Press, Chicago.
[20] Ibid, 7.
[21] Ibid, 131 and188-189.
[22] Rudd, J. (2005) 'J.B. Ruhl's "Law and Society System": Burying Norms and Democracy under Complexity Theory's Foundation." 29, *William and Mary Environmental Policy Review*, 551-632.

> Any attempt to portray such cross-disciplinary forays as simply misunderstandings of the sciences rules out the possibility of exploring the impact that science can have on the practice of other disciplines.[23]

The phrase 'metaphorical borrowing', refers to '...the attempt to transfer concepts, methods and results [from the natural sciences] to other disciplines'.[24] Thoren and Persson (2011: In press) expressly cite Kellert (2008) when they assert:

> ...[interdisciplinary] borrowings...may serve an important role in structuring a domain that lacks structure, or restricting one that already has structure. The newly imposed structure may invite further enquiries in ways that were not imagined before.[25]

These excerpts show the epistemic value of the methodology used in this thesis. Furthermore, publication by Murray (2008) examining the intersection between complexity theory and socio-legal scholarship shows that exploring the intersection of quantum mechanics and socio-legal scholarship is academically defensible. Having established that Murray is a suitable methodological exemplar in the broader sense, and Tribe (1989) is the substantive exemplar, there are finer methodological points to be distinguished in this thesis.

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[23] Above n 65, 236.
[24] Ibid, 2.
[25] Thoren, H. Persson J. (2011), 'Philosophy of Interdisciplinarity: Problem Feeding, Conceptual Drift and Methodological Migration', in press, available at < http://philsci-archive.pitt.edu/8670/1/Thoren_Persson_Philosophy_of_interdisciplinarity_draft_June2011.pdf> last viewed 14 July 2011, 12.

As noted in Kellert (2008), Tribe (1989) posits that 'the metaphors and intuitions that guide physicists can enrich our comprehension of social and legal issues'.[26] Tribe continues with the assertion that his analysis identifies 'heuristic ramifications' for the purpose of exploring 'concepts we might draw from physics [that] promote illuminating questions and directions'.[27] Whilst Tribe expressly acknowledges that Kuhn's formulation of the 'paradigm' has been criticised on a number of levels,[28] it is apparent that Kuhn is a methodological exemplar for the work.

Tribe's methodological stance is the creation of a heuristic model that uses the ontological structure espoused in scientific paradigms for critiquing the interaction of bodies in the socio-legal and legal universe. In order to undertake his analysis Tribe isolates and abstracts the ontological structures and then applies them as models of analysis. This analysis implicitly treats ontological structures as 'loci of commitment'. He then uses the model as the lens through which he frames his socio-legal analysis. In order to construct this model Tribe looks at science as having Modern and pre-Modern paradigms. Whilst the paradigm of quantum mechanics is the methodological cornerstone of this socio-legal thesis, Tribe demonstrates the effectiveness of his methodology by using the paradigms of Newtonian Mechanics, Einstein's General Relativity and Quantum Mechanics in order to show the living relationship between science and law.

One important methodological point has been raised by Barondes (1995). He notes that the tendencies of scholars, such as Tribe, to use the term 'Newtonian' pejoratively leads 'to an enticingly

[26] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38 at 2.
[27] Ibid.
[28] Ibid, 5.

easy conclusion that any analysis labelled "post-Newtonian" is preferable.[29] The best integration of this observation is to view the perspectives raised from differing paradigms as complementary rather than supplementary. That said,an epistemological analysis should be conducted to evaluate the specific merit of utilising the quantum mechanical theory of limited universal holism in socio-legal research.

A final methodological concern must also be briefly examined. Thoren and Perrson (2011) follow Kellert (2008) and pick up on a concern first raised by Sherif and Sharif (1969);[30] the tension between the depth and the breadth of knowledge in cross-disciplinary works. Thoren and Perrson noted that individuals who create cross-disciplinary work have to digest a large amount of information, and as a result, prioritise breadth of knowledge over depth.[31] This raises the concern expressed by Alan Sokal when he wrote a paper that has become known as the 'Sokal Hoax',[32] namely that the science in question be correctly applied. In this thesis the ontological construct is not a *de novo* work, rather the scientific knowledge has been digested and synthesised into an ontological construct by Bohm and Hiley (1993). In this thesis, Bohm and Hiley's (1993) ontological construct of 'limited universal holism' (itself described in chapter 4.4.) is examined for it legal philosophical and socio-legal implications using human rights as a test bed in chapter 6.

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[29] Barondes, R. de R. (1995), 'The Limits of Quantitative Legal Analyses: Chaos in Legal Scholarship and FDIC v. WR Grace & Co', 48, *Rutgers Law Review*, 161-225, 176.
[30] Sherif, M. & Sharif, C.W. (1969) *Interdisciplinary Relationships in the Social Sciences*, Aldine Publishing Company, Chicago.
[31] Above n 13, 16.
[32] The 'Sokal Hoax' is fully discussed in chapter 3.2. It was a paper written in 1994 which was published in 1994. This paper deliberately obfuscated aspects of quantum mechanics and drew unjustified conclusions.

3A. A Whistle-stop Tour of the 'Formalism' in Quantum Mechanics

Limited universal holism (LUH) is situated firmly within the disciplinary bounds of theoretical physics, mathematics and the philosophy of science. Traditional scientific epistemology cannot be successfully be applied at the level of quanta as this manifests as the 'measurement problem'. This in simple terms, is the question of whether and how the wavefunction collapses. Consequently, it is impossible to avoid aspects of philosophy of science when describing quantum mechanics. For this reason there are a number of different interpretations of this puzzling area, as Wallace (2008) on which observes:

> The great bulk of philosophical work on quantum theory over the last half-century have been concerned with either the strengths and weaknesses of particular interpretations of QM… one cannot long discuss the ontology of the wavefunction, or the nature of locality in relativistic physics without having to make commitments that rule out one interpretation or another.[33]

This controversy is attributable to the fact that direct observation (as ordinarily understood) is impossible at the level of quanta and the descriptions of phenomenon at the quantum level conflict with those at the gross level of ordinary experience. As will be briefly discussed, it became clear at a very early stage in the development of quantum mechanics that a thorough reconsideration of the nature of scientific epistemology was required. The basic distinction between the ontological

[33] Wallace, D. (2008) 'Philosophy of Quantum Mechanics' in Rickeles D (ed), *The Ashgate Companion to Contemporary Philosophy Of Physics*, Ashgate Publishing, Aldershot, 17.

positions adopted within the orthodox view of the formalism and the model espoused by Bohm and Hiley (1993) is that the orthodoxy views indeterminism as a fundamental aspect of nature. Bohm and Hiley (1993) regard nature as deterministic, however there is a limit to the horizon of understanding that humans possess and this is responsible for the perception of indeterminism. Such divergent descriptions of the quantum realm blur the boundary between science and philosophy of science. Irrespective of the preferred interpretation, the quantum realm presents a radically different picture of the universe than that supported by Newtonian mechanics and General Relativity. This poses a significant cognitive challenge. In order to engage with LUH, one must first have an understanding of the key ontological commitments offered by the formalism and some corollary points. This serves several purposes. Firstly, the formalism as the described below forms the basis of all socio-legal literature in which QM has been considered. Secondly, it also describes the most widely accepted ontology when framing our understanding of the essence of physical reality. Thirdly, many encultured and deeply held beliefs about the nature of the world of ordinary experience do not abide at the microphysical level. These encultured beliefs have made their way into law and legal method through people that held those beliefs have developed the law. Fourthly, it provides a platform from which an appreciation of ways in which LUH, specifically the interpretation offered by Bohm and Hiley (1993), can be differentiated from the orthodox view of quantum mechanics and in so doing identifies the novelty of this thesis.

The discrete attributes of the quantum mechanical paradigm discussed in this section gain their proper context only when viewed together. It is not possible to understand the ontological construct of LUH without a basic understanding of the quantum level of physical reality. Indeed, failure to do this has led many socio-legal scholars to make significant errors in both their description of the

quantum realm and also in the heuristic tools they have developed and deployed. Several preliminary points need to be clarified before the key ontological aspects of quantum mechanics can be described.

Firstly, it must be said that quantum mechanics deals with physical reality at the scale of atoms and subatomic phenomena and particles.[34] According to the orthodox view of the formalism he rules that operate at this level of physical reality have been described as 'magical', 'weird', 'strange' and 'mysterious'.[35] Neils Bohr, a quantum physicist who won the 1922 Nobel Prize famously stated 'Anyone who is not shocked by quantum theory has not understood it'. In a letter to Max Born in 1926 Albert Einstein articulated his unease with quantum mechanics and is famously quoted as stating 'God does not play dice with the universe'.[36] This sentiment can be attributed to the concern Einstein had with the notion of indeterminacy that is at the heart of the orthodox Copenhagen interpretation, which is best understood in the context of the wave-particle duality of light.

Secondly, the challenge is to describe this scientific paradigm in a manner that creates context for lawyers. It should be clearly stated that rather than being confined exclusively to the microphysical realm, quantum mechanics has scores of applications in the technology that is ubiquitous throughout modern life. Al-Khalili (2003) observes that quantum mechanical processes are central to the functioning of transistors; light emitting diodes such as those in modern car lamps and traffic lights;[37] lasers, such as those used in supermarket checkout scanners; cutting tools, welders and

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[34] Gribbin, J (1984), *In Search of Schrödinger's Cat: Quantum Physics and Reality*, New Sciences, New York, 1.
[35] Al-Khalili, J. (2003) *Quantum*, Weidenfield and Nicolson, London, 12.
[36] Einstein, A. (1971) *The Born-Einstein Letters*, translated Irene Born, Letter to Max Born (4 December 1926), Walker and Company, New York.
[37] Above n 3, 217-8.

compact disc players.[38] Quantum mechanical processes are also used in medical technologies such as X-rays, Magnetic Resonance Imaging (MRI) and Positron Emission Tomography (PET).[39] Thus, whilst quantum processes themselves exist in microphysical spaces and timescales the applications of those processes are infused throughout ordinary modern life. Thus despite the serious intellectual challenge, there is a pressing need to understand quantum mechanics as this relatively new science is fundamentally (re)structuring our understanding of the cosmos and our relationship to it.

Thirdly, the phrases 'quantum theory' and 'quantum mechanics' should be distinguished clearly. In the phrase 'quantum mechanics', the meaning of 'quantum' connotes 'quantity' or 'amount'. Al-Khalili (2003) disambiguated 'quantum theory' and 'quantum mechanics' when he examined the state of affairs in this area of science during the period 1900 – 1920, when he stated:

> ...everything was at the level of simple postulates and formulae that helped clarify some issues surrounding the nature of light and the structure of atoms. It wasn't until the 1920s that the real revolution took place, and a completely new worldview (quantum mechanics) replaced Newton's mechanics when it came to describing the underlying structure of the subatomic world.[40]

Fourthly, the structure of microphysical reality is fundamentally different to the picture painted in secondary education throughout the world.[41] The commonly understood model of a universe as ultimately consisting of ball-like atoms that are themselves made of solid nuclei (consisting of

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[38] Ibid, 219.
[39] Ibid, 229.
[40] Ibid, 30.
[41] Niaz, M. *et al*, (2002) 'Arguments, Contradictions, Resistances and Conceptual Change in Students' Understanding of Atomic Structure', 86, 4, *Science Education*, 505-525.

protons and neutrons) with smaller ball-like electrons orbiting around the nucleus, like a planet (the nucleus) with moons orbiting around it (the electrons), is fundamentally incomplete. Al-Khalili observes 'Physicists today rightly complain that Bohr's model of the atom is still taught to schoolchildren. This is not what atoms look like.'[42] Thus the consequence of this is a *status quo* in which students are taught an incorrect picture of the essence of the matter. This is one important reason why an incorrect view (and its corollary commitments and assumptions) have become encultured and have been implicitly and explicitly been integrated into the fabric of legal regulation. These preliminary points give a glimpse of the conceptual challenges posed to laypeople (and lawyers) by the descriptive picture of the quantum level of physical reality. The following description of the quantum mechanical level of physical reality begins with the so-called wave-particle duality of both light and matter.

3.1.1: The Double-Slit Experiment

Gribbin (1984) observes that '...the behaviour of the quantum is not like anything familiar... [A]s Feynman[43] has put it, there is only one mystery. If you can come to terms with the double-slit experiment then the battle is half over'.[44] This statement gains its significance from an aspect of physical reality at the level of quanta revealed by the findings of the double-slit experiment. As already mentioned, the popular view is that quanta, such as electrons, protons and photons of light

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[42] Above n 3, 47.

[43] Richard Feynman was a famous and influential quantum physicist. He was born in 1918 and died in 1988. He was awarded the Nobel Prize in Physics 1965 for 'fundamental work in quantum electrodynamics, with deep ploughing consequences for the physics of elementary particles'. As may be expected of any Nobel laureate, he was received numerous prestigious awards for many noteworthy achievements in his field. See: Nobel, Lectures (1972) *Physics 1963-1970*, Elsevier Publishing Company, Amsterdam; Nobelprize.org (2012) 'The Nobel Prize in Physics 1965', available at <http://www.nobelprize.org/nobel_prizes/physics/laureates/1965/> last viewed 30 September 2012.

[44] Above n 2, 165.

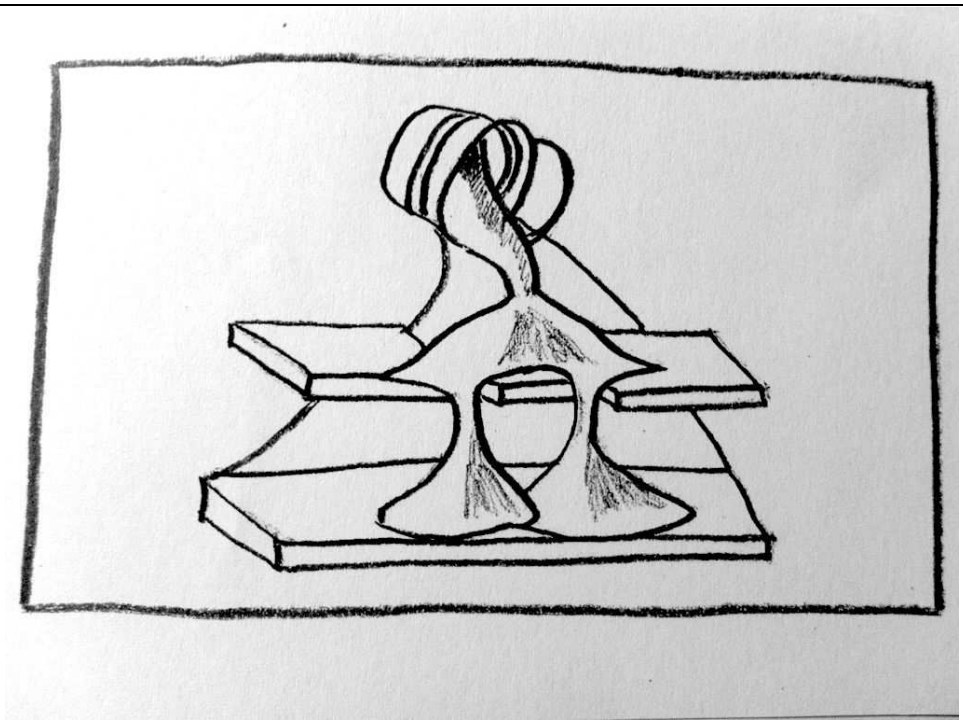
exist in the form of 'little balls'. According to the orthodox view, the double slit experiment shows that this is not the case all the time. According to this view, our perception of the duality reflects the ontological structure; that is to say sometimes quanta exist *as* particles, but sometimes they also exist as *waves*. This dualistic nature of quanta is called 'wave-particle duality', and it applies to both light and matter. This concept in quantum mechanics has been deployed in socio-legal scholarship, which is reviewed in chapter 4.

See figure on next page:

First imagine a horizontal screen with two fine slits in it. If a small pile of sand were placed on top of the screen then we would see that two piles of sand would form under each of the slits. In this experiment we are passing *particles* of sand through the double slits.

Fig 1: Sand passing through two slits[45]

[45] All figures are drawn by Odette Gibbs.

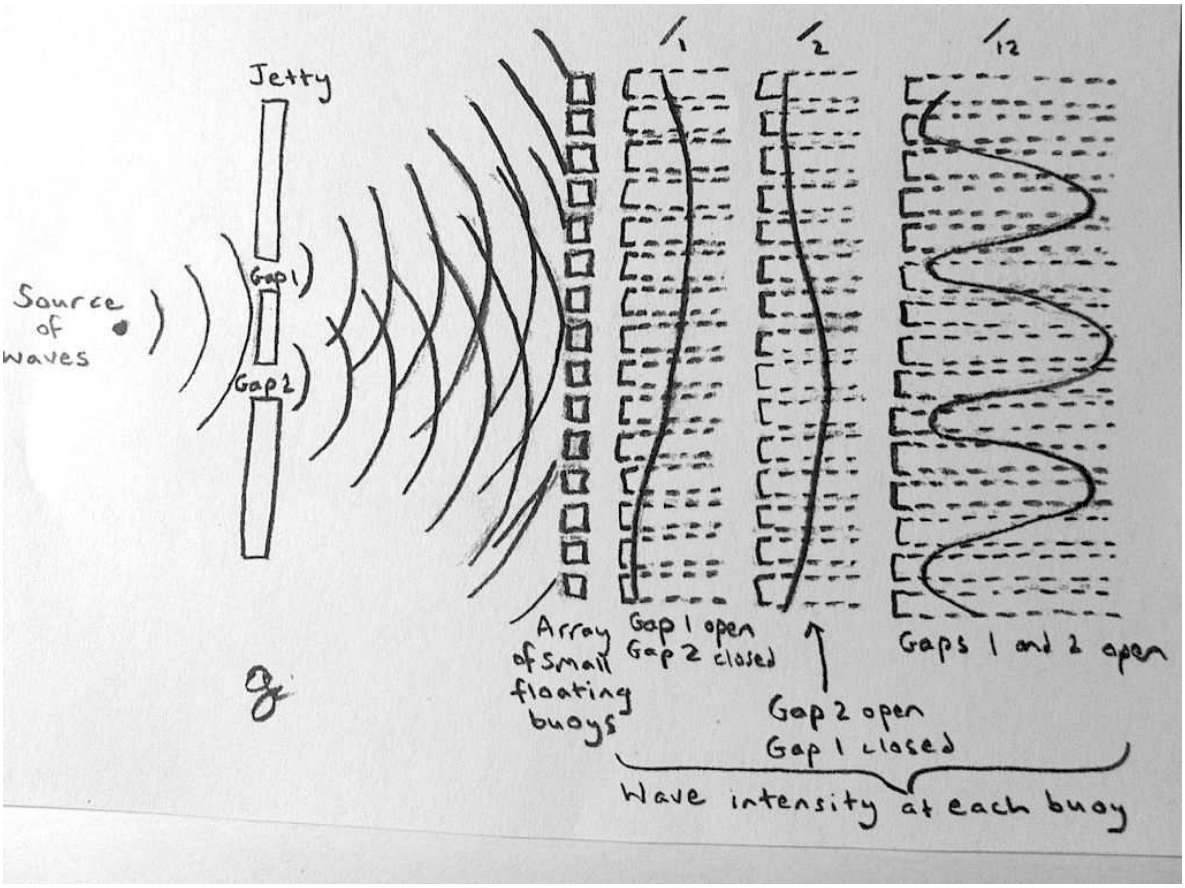


Here we see two piles of sand forming under the open slits, demonstrating the behaviour of *particles* of sand.

Let us now imagine a jetty across a portion of an otherwise still lake. The jetty has two slits in it. Just outside the jetty sits a wave generator. If we activate the wave generator and waves propagate toward the jetty. We would see an 'interference pattern' develop as the waves pass through the slits in the jetty. The interference pattern in this example is determined by adding the two displacement values of the wave as it passes through the two slits. The wave passing through the two slits is phase coherent; as a result where two crests meet there is 'constructive interference'. This means crests interfere with each other constructively and the height of the wave (amplitude) is increased. Similarly, when two troughs meet they create a deeper trough. These two examples are of 'constructive interference'. However, if the two waves were 180^{o} out of phase, a trough and a crest

would meet and cancel each other out (i.e. reduce amplitude). This is 'deconstructive interference'. In the example of the jetty we get the pattern shown below. This experiment shows the effect of passing a *wave* through the double-slits.

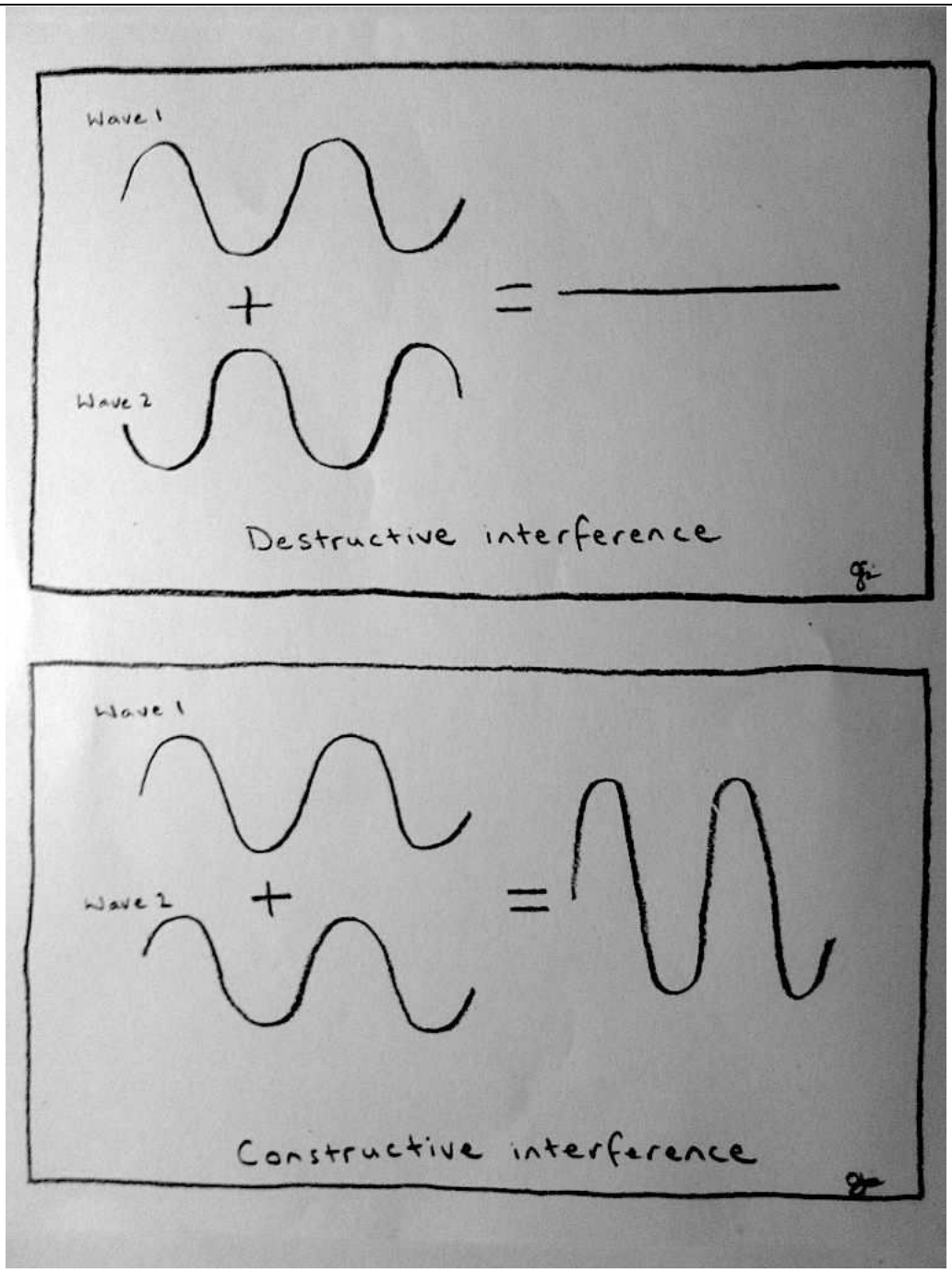
Fig 2: Jetty double-slit experiment



At the left most point in the above diagram is the wave generator. Moving left, the jetty with two gaps in its length is adjacent to the wave generator. In the centre of the page is the array of buoys, which are going to measure the intensity of the waves that arrive at them. The next three columns show the results that would be measured at those buoys. The third column from the right is a graph that shows the intensity of the wave at the array of floating buoys if only gap 1 in the jetty is open.

Conversely, the second to right column shows the intensity of the wave at the array of buoys if only gap 2 in the jetty is open. The column furthest right shows the intensity of the wave at the array of buoys if both slits gaps were open.

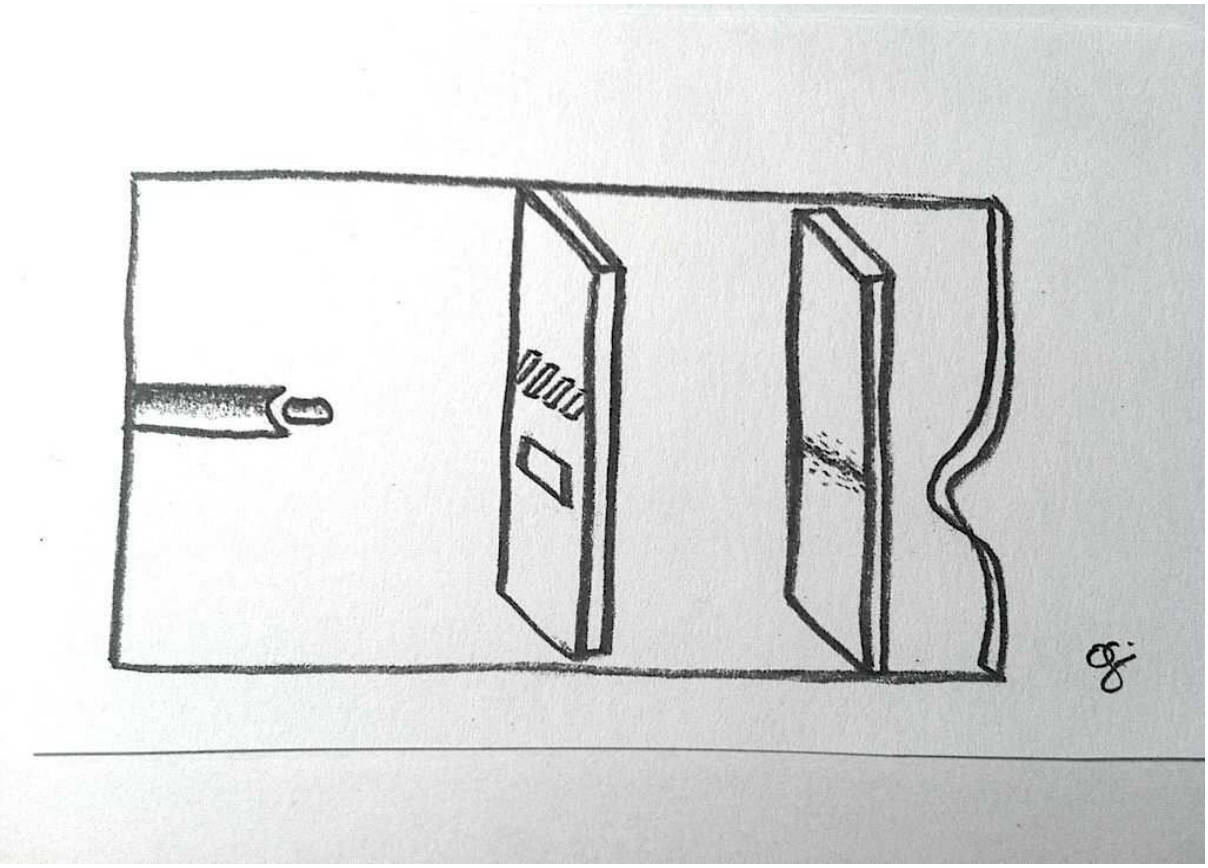
Fig 2A: Constructive Interference and Deconstructive Interference



One can now conduct the same experiment with atoms to explore quantum phenomena. In this version of the experiment an 'atomic gun' fires single atoms at a thin screen with appropriately narrow slits. In this experiment if one slit is closed and one slit is open the atoms pass through the

open slit. A distribution pattern forms that is consistent with atoms-as-particles passing through the slit.

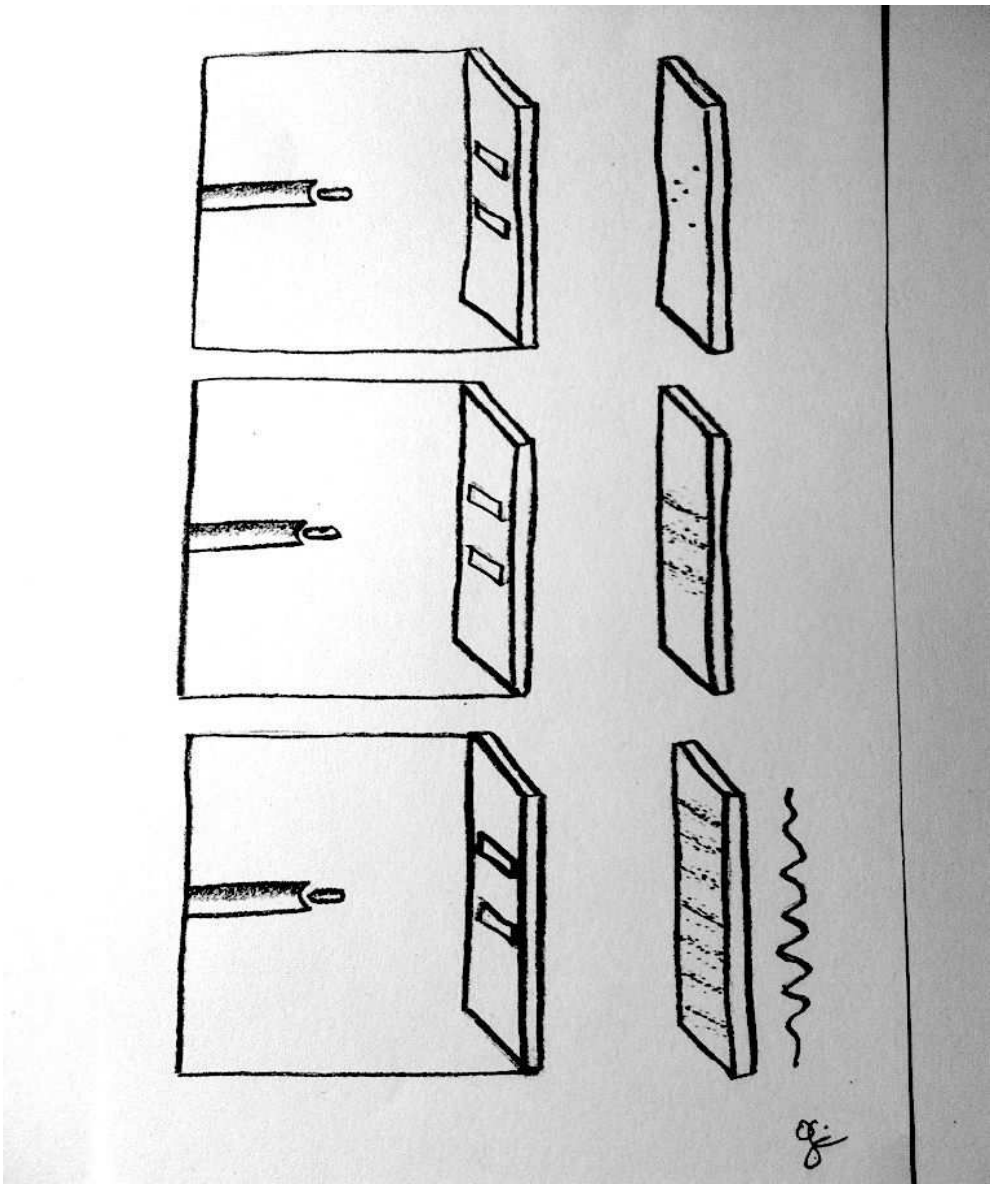
Fig 3: One slit open



On the left we see an atomic gun firing *quanta* at screen. That screen has a single opening that allows the *quanta* to pass through. The *quanta* that have passed through the opening hit a screen behind the opening. The distribution of the registered 'hits' is recorded in the far right-hand column. Note that the distribution of hits is at its highest closest to the opening. This is behaviour akin to the particles of sand shown in Figure 1, above.

If the second slit is opened then one would expect a distribution of atoms akin to the distribution pattern shown in Figure 1, namely the atoms would pass through one or the other slit and form two 'piles'. *This does not happen*. Instead one sees that an interference pattern develops, as shown in Figures 2 and 2A. In point of fact, the heaviest distribution of atoms is mid-way between the two slits, where the atoms would not be able to reach if they were particles.

Fig 4: Two slits open



As with Figure 3, the gun firing *quanta* is on the left side of the diagram. This time we have two slits open that allow the *quanta* to pass through. The second screen, shown on the right is records the position of where the *quanta* land. The column furthest right shows the distribution of strikes. This distribution is similar to that shown in Figure 2. This indicates that the quanta are behaving as a

wave upon reaching the slits. The distribution pattern indicates that they appear to pass through both slits simultaneously. If the quanta behaved as particles, then the distribution would be identical to that shown in figure 1.

In the orthodox view of the formalism, the results of this experiment have been interpreted to indicate that with one slit open the atoms leave the atom gun as localised particles, they pass through the slit and arrive at the screen as localised particles. When both slits are open the atom leaves the gun as a localised particle, then upon encountering the two slits the atom no longer behaves as a particle. Rather the atom behaves as a wave that passes through both slits which then causes an interference pattern on the other side of the slits. The conceptual difficulty begins to deepen as one accepts that sometimes atoms behave as balls and sometimes they behave as waves. Thus, in the orthodox view the ball-like picture of the atom is incomplete. This raises deeper (and unresolved) questions about the nature of physical matter and, as a consequence, that of physical reality.

At this juncture lawyers may legitimately ask whether this aspect of the orthodox view of quantum mechanics can offer some heuristic value to the law and legal scholarship. In the first instance, the autopoietic nature of law is such that concepts must be defined in legal terms to have juristic recognition. As Baxter (2013) notes '…law has an internal culture, based in a specific form of argumentation. For a question to count as a legal question…it must take on a particular form. Such is the function of ideas such as justiciability'.[46] This is significant as the changing face of technology

[46] Baxter (2013), 'Niklas Luhmann's Theory of Autopoietic Law', 9, The Annual Review of Law and Science, 167-184, 181.

necessitates that both lawyers and the law deal with a multi-faceted notion of identity, for just as matter has a dual nature so does the heavily regulated meme that is money. This pressure to adapt to changing circumstances can be demonstrated in the way lawyers and the law have had to adapt to the changed nature of money.

Consider how the traditional view of a felon entering a bank, subduing staff and then making off with sacks filled with legal tender has now become obsolete. In the modern age, online bank fraud has become commonplace. In this type of crime, computers are used to make fraudulent transactions. The physical action of the perpetrator consists of creating a series of electrical impulses which are themselves a flow of electrons (or photons if fibre optic cables are involved); thus the juristic recognition of 'money' has come to extend beyond physical legal tender to include the legal regulation of money in the form of electrical impulses that can transact the transfer of funds. Whilst this is not necessarily problematic in itself, it does raise the issue that in order to maintain an understanding of the bounds of the law the notion of identity is of vital importance. To that end, the dual nature of matter could be acknowledged by lawyers as it reflects the notion that the ordinary perception of matter does not describe its essence. Similarly, the traditional view of physical legal tender no longer completely describes money. In point of fact money in the virtual realm is nothing more than organised electronic data.

Whilst it has already been noted that according to the orthodox model of QM, the behaviour of atoms is in itself paradoxical, the experimental results change with further experimentation concerning the wave-particle duality of *quanta*. The results of the double-slit experiment change dramatically when an electron detector is placed next to one of the slits in order to determine the path (and hence behaviour) of *quanta*. When that detector is switched on, the interference pattern

disappears and suddenly the atoms pass through either one slit or the other and form a distribution pattern akin to Figure 1 above. If the detector is switched off the interference pattern suddenly reappears. The results of these experiments have led proponents of the orthodox interpretation to several conclusions; firstly that the nature of matter is not exclusively particle-like, it is also wave-like, but never at the same time. Secondly, these results lead to one of the key heuristic tools used by socio-legal scholars deploying the quantum mechanical paradigm, namely that the act of observation affects the system observed in some profound yet not understood fashion. It will be shown when explicating the version of the QM of Bohm and Hiley (1993) that there is an alternative (and empirically equivalent) approach to QM that is able to address these paradoxes. However, the orthodox interpretation of QM is widely accepted in the scientific community (due to cultural, rather than empirical reasons), notwithstanding the unsatisfactory nature of paradox entailed in the wave-particle duality of nature.

3.1.2: Indeterminism and the Heisenberg Indeterminacy Principle

Another central aspect of the formalism that has been utilised by socio-legal scholars is the Heisenberg Indeterminacy Principle (also referred to as the Heisenberg Uncertainty Principle). It is essential to distinguish between 'indeterminacy' and 'indeterminism' as both terms are used in the in the quantum mechanical paradigm. Indeterminacy speaks to the limits of human knowledge. Indeterminacy is one of the foundational elements of the quantum mechanical paradigm and is at the heart of the current discourse in philosophy of science related to quantum mechanics. As Wallace (2008) observes '…despite amazing successes, we have no satisfactory physical theory at all – only an ill-defined heuristic which makes unacceptable reference to primitives such as

"measurement", "observer" and even "consciousness". This is the measurement problem and it dominates philosophy of quantum mechanics'.[47]

Indeterminism can be framed against the contrasting description of 'determinism', as Al-Khalili notes:

> Isaac Newton believed every particle in the Universe should obey simple laws of motion subject to well-defined forces. This mechanistic view – one that is shared universally by scientists and philosophers more than two centuries later – states that no matter how complex the workings of nature are, everything should be ultimately reducible to interactions between the fundamental building blocks of matter. A natural process, such as a stormy sea or the weather, may look random and unpredictable, but this is just a consequence of its complexity and the huge number of atoms involved.[48]

The logical extension of determinism is that the future of any system is knowable provided one knows the precise position and state of motion of every particle in that system. This notion led to the idea of a 'clockwork universe'. Thus, the Newtonian worldview is entirely deterministic as the future could be completely worked out with complete knowledge of the present.[49] This determinism spans everything; from the internal workings of the human brain to the scale of the entire universe, the only caveat being that there must be full knowledge of the atoms and forces in the system at hand.

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[47] Above n2, 16.

[48] Above n 3, 54.

[49] Above n 14, 17.

Two examples of indeterminacy evident at the quantum level are given below in order to highlight the conundrum faced when moving from the classical level to the quantum level in the orthodox view of QM. The first example is the use of the term 'half-life'. Half-life refers to a time period in which half the radioactive nuclei will decay. No one can ascertain *when* during the half-life any given nuclei will decay; rather one can only calculate the probability that any given nuclei will have decayed. The second example is the impossibility of knowing the precise and localised interaction of quanta and forces in natural interaction. This is in contradistinction to Newtonian mechanics, which is precisely able to forecast the effect of applying a force to a classical object.

The indeterminacy displayed at the quantum has become the centre point for two differing views. The orthodox view of quantum mechanics holds that indeterminacy at the quantum level cannot be explained on the basis of incomplete knowledge;[50] rather indeterminism is a feature of nature itself. The perspective adopted by Bohm and Hiley (1993), is that indeterminacy at the quantum level is a function of the limited knowledge of human beings and is not an aspect of the quantum realm itself.[51] Whilst a non-mathematical description of the limited universal holism espoused by Bohm and Hiley (1993) is provided in chapter 4.3 and 4.4, a little further description of their position is warranted at this stage. The essence of their view, derived from theoretical physic and mathematics is that we inhabit an infinite reality, one in which our universe is bounded by what we perceive as a

[50] Above n 3, 59.
[51] Bohm, D. and Hiley B.J. (1993) The Undivided Universe, Routledge, New York, 13 – 26.

'horizon'.[52] The area within that horizon has an implicate order enfolded into it. This implicate order consists of an infinite number of 'horizons'.[53]

> [W]hat we can say is "where ever you are" you may represent this as an "ordinary local space" but that there will be a point at which this space "dissolves" into an implicate order. Such a "universe" would not have a definite boundary, but would simply fade into something that does not manifest to us beyond its horizon. Nor would it have a beginning or an end. But rather it would similarly fade in the distant past and in the distant future…to anyone beyond our horizon everything would be as definite (or indefinite) as it is to us. That is to say that there is a kind of relativity of the implicate order.[54]

Bohm and Hiley assert that the indeterminacy we perceive (using scientific instruments) at the quantum level is a result of the limitations inherent in our perception. Consequently, Bohm and Hiley (1993) posit a theory that is deterministic, as '…particles evolve via a deterministic motion that is choreographed by the wavefunction'.[55] This is the position adopted in this thesis.

To m explain the issue of indeterminacy more fully it is necessary to touch briefly upon the 'Schrodinger Equation'. Physicist Erwin Schrodinger devised a mathematical formula to describe quantum behaviour: the Schrodinger equation. This equation yields a mathematical quantity called the 'wavefunction' and is referred to as the symbol 'ψ'.[56] The wavefunction provides the probability

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[52] Ibid, 337.
[53] Ibid.
[54] Ibid.
[55] Goldstein, S. (2013) 'Bohmian Mechanics' *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2013/entries/qm-bohm/>
[56] Ibid, 64.

of a quantum entity being in a particular location at a given time.[57] For example, the probability of an electron being close to the point it was released in a short time period its release is high. As time passes, the probability of the electron being in other spaces increases and the likelihood of it being close to the original point of release decreases; the wavefunction is spread out over space. This is called a 'position wavefunction'. The smearing of location is responsible for the term 'wave' in wavefunction. In contradistinction, the classical description of a ball-like particle has a predictable localised position that can be ascertained with a high level of certainty. The paradigmatic significance of this cannot be overstated. Adopting the view that matter is described as a wave means accepting that physical reality is not as we ordinarily perceive it. To use an analogy, think of a mug sitting on the table. It has a precise location, however a wavefunction describes the atoms that comprise the mug as themselves not localised, rather they are smeared out over a larger space. This is a paradox which science attempts to describe, but a way of explaining it has yet to be devised.

According the orthodox view, the wavefunction is an abstract mathematical entity that *describes* the behaviour of the atom in the double-slit experiment. Applying this view one takes the position that when a particle is not being tracked, the wavefunction is the only justifiable description of the packet of quanta in question.[58] Thus, quanta have their influence spread out over space until measurement or observation. At this point the wavefunction is said to 'collapse' and we observe a classical particle localised in space. The inability to observe a quantum wavefunction is one aspect of 'measurement problem' as described at the beginning of this chapter. To return to the mug analogy previously articulated: In that example the mug would be smeared out over a large space and only

[57] The Schrodinger equation does not itself provide the probability; the wavefunction assigns two numbers to each point of space and the probability is calculated by summing the square of those numbers.
[58] Above n 3, 67.

appear in the place it was put when it is measured (or observed). The rest of the time it is smeared out over a large space.

Bohm and Hiley (1993) have a different view of the wavefunction and its place in nature. The first point to note their assertion that there is always a position and momentum for every particle but that humans are unable to measure the two simultaneously. They then posit that there is one single wavefunction (the guiding condition)[59] that governs every particle in the entire universe. This wavefunction directs any and every particle in the universe and is a physical entity. The effect of the wavefunction is that each particle is connected to and affects the whole and the whole is connected to and affects the individual particle. As a result, Bohm and Hiley (1993) posit that collapse of the wavefunction never occurs as the wavefunction guides every particle in the universe. Rather the situation is that there is only the appearance of collapse (i.e. collapse is phenomenological only). This idea demonstrates the point made at the start of this section; Bohm and Hiley (1993) suggest that indeterminacy is epistemological rather than ontological. When viewed as whole, the aforementioned aspects of Bohm and Hiley's (1993) version of LUH goes some way to explaining the architecture of ontological wholeness and the perception of individualised particles (which will be described more fully in chapter 4.3 and 4.4).

> When we come to the underlying quantum world, we find that it has a radically different nature. To be sure we still assume a particle, which at first sight would appear to be what is also done in classical physics. But now we say that that this particle is

[59] The 'guiding condition' is also called the 'guiding equation'. It is an expression of '…the particles velocity in terms of the wavefunction.': Goldstein, S. (2013) 'Bohmian Mechanics' *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition), Edward N. Zalta (ed.), URL = <http://plato.stanford.edu/archives/spr2013/entries/qm-bohm/>

> profoundly affected by the wave function i.e. through the quantum potential and guidance condition… This implies the possibility of a strong nonlocal connection of distant particles... The forces between particles depend on the wave function of the whole system, so that we have what we may call 'indivisible wholeness'…. There is a kind of objective wholeness, reminiscent of the organic wholeness of a living being in which the very nature of each part depends on the whole. All this behaviour is very different from what can be expected classically.[60]

An important corollary of Bohm and Hiley's (1993) position is evinced in their materially different explanation of the behaviour of particles seen in the double-slit experiment. In their view the particle is always localised and always passes through just one slit, irrespective of whether or not both slits are open. The interference pattern that is perceived when both slits (in the double-slit experiment) are open is attributable to the wavefunction passing through both slits and interfering with itself.

As noted previously, indeterminacy is a central feature of the orthodox view of the formalism. This indeterminacy assumes two different forms in the orthodox and in Bohm and Hiley models. In the orthodox view the indeterminacy exists in nature. In the Bohm and Hiley model, indeterminacy is essentially a limit imposed on our knowledge of physical systems. In both interpretations indeterminacy means that we can never know at the same time, and with total precision, everything about a quantum system, even if we try to measure it.[61] Warner Heisenberg articulated the uncertainty relation that has become known as the Heisenberg Uncertainty Principle or the Heisenberg Indeterminacy Principle, which as noted in the introduction of this section, has become

[60] Abive n2, 177.
[61] Ibid, 68.

known to be a central aspect of the quantum mechanical paradigm.[62] It is this facet of the quantum mechanical paradigm that has been most heavily employed by socio-legal scholars. In the orthodox view, quantum mechanical indeterminacy is predicated on the fact that in addition to the position wavefunction described above there is another type of wavefunction, a 'momentum wavefunction'. Al-Khalilli posits:

> ...the momentum wavefunction...tells us the probability that the electron has a certain momentum, or velocity, at any given moment. If we know the position wavefunction we can work out the momentum wavefunction, and *vice versa*, using a mathematical procedure known as the Fourier Transform. A localised position wavefunction will always give rise to a spread out momentum wavefunction, and *vice versa*. So, an electron that has a localised position wavefunction, and thus a small uncertainty in its position will always have a large uncertainty in its momentum (or velocity). Likewise, an electron whose velocity is pretty well known (though a localised momentum wavefunction) will necessarily have a spread out wavefunction giving rise to a large uncertainty in its whereabouts.
>
> This is the essence of the Heisenberg Uncertainty Principle. In its mathematical form, it says that we can never know at the same time the precise location and velocity of an electron (or any other quantum entity).[63]

Several socio-legal scholars have over simplified this aspect of quantum mechanics as they simply assert that the process of observation affects the system observed (i.e. measurement affecting position and momentum in the quantum world is a heuristic tool that describes how legal

[62] Above n 14, 21.
[63] Above n 3, 69.

adjudication affects the 'position and momentum' of the society in which the observation occurs). The heuristic position adopted by socio-legal scholars (such as Tribe (1989)[64]) is overly simplistic as it essentially states that in order to see something, such as a photon, another photon must be reflected from the object. This ontology is essentially the image of two ball-like photons bouncing off each other; one photon bounces down the barrel of a microscope to be seen by the scientist whilst the other photon is disturbed in its original trajectory after the collision. This conjures the image of classical ball-like particles bouncing off each other. Whilst the notion that observation affects the system being observed is correct, the particular conceptualisation of both *quanta* and their behaviour adopted by some socio-legal scholars shows a somewhat confounded understanding of the quantum realm.[65]

A better description of the measurement problem in orthodox quantum mechanics arises from the notion that wavefunctions describe the electron's possible location and state of momentum prior to observation; the particles themselves are not necessarily in any particular location and state of momentum. It must be noted that state-of-the-art physics is unable to definitively determine if quanta even possesses definite location and momentum at any fixed point in time prior to observation (e.g. In the Bohm and Hiley model there is a fixed position but no actual collapse of the wavefunction; in the orthodox view there is collapse of the wavefunction, but it is unknown whether particles even have a fixed position and momentum). This ambiguity is the basis of for the different views on the formalism. Al-Khalili encapsulates the orthodox view of the formalism when he states, 'The truth of the matter is that the uncertainty relation is a consequence of the relation between the

[64] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38, 18.
[65] Above n 3, 109.

two types of wavefunctions, and since the wavefunctions tell us all we can know about [quanta] we simply cannot say more about it. The uncertainty principle gives us a limit on what we can predict about a quantum state, and hence what we can know about it when we do look'.[66]

Rather than predict the outcome of quantum interactions using Newton's equations of motion, orthodox quantum mechanics is only able to predict probabilities of different outcomes.[67] In the Bohm and Hiley (1993) model, human beings cannot access the full information available.

3.1.3: Superposition

Superposition is another key attribute of the orthodox description of the quantum level of reality; one which is not reconcilable with ordinary human perception. It should be noted that superposition is a classical as well as a quantum phenomenon. Classical superposition occurs when different waves are added together, such as the way the surface of a swimming pool appears when many people are swimming in it. Superposition at the quantum level of reality is the same type of process; e.g. two (or more) different wavefunctions added together to produce a third wavefunction. However, in the orthodox view, quanta in question occupy *all* states simultaneously. For example, consider a wavefunction that describes an atom of a particular energy. If that atom were sped up such that its energy level doubled, then it follows that its wavefunction will be altered. In this instance there will be a third wavefunction that consists of the original wavefunction added to the new wavefunction describing the atom with a higher energy. In this example the atom would not be described by one of the wavefunctions, it would be described by *all* the wavefunctions. Thus the atom exists in

[66] Ibid, 69.
[67] Ibid, 113.

multiple states simultaneously. Superposition can apply to both position and momentum wavefunctions, so it is also possible for the atom to be in more than one place at once. It should be remembered that upon observation or measurement the wavefunctions collapse such that we see the atom in only one place.

In order to reconcile the orthodox interpretation of the double-slit experiment we must understand the difference between direct and indirect knowledge. Brown (1992) defines 'direct knowledge' as knowledge of the external world derived from an immediate perception of external objects.[68] 'Indirect knowledge' is defined by Brown (1992) as a triadic relation between perceiver, external object and some third entity – which is sensory experience or *quale*.[69] This third entity is the object of direct awareness (i.e. the experience of perception) that mediates between perceiver and the external object.

In the orthodox interpretation of QM the wavefunction is not a physical entity, rather it is a *description* of that quanta. As such it is indirect knowledge as the wavefunction is the intermediary between the object and the perception. This categorisation is complicated by the non-observability of the wavefunction itself. As noted when observation or measurement is attempted the wavefunction collapses and we see the atom in one place or another, i.e. passing through one slit or the other. The wavefunction *describes* the atom when it is not measured or observed, rather than *being* the atom itself. Thus, the orthodox view of the wavefunction is that it describes the atom

[68] Brown, H.I. (1992) 'Direct Realism, Indirect Realism and Epistemology', LII, 2, *Philosophy and Phenomenological Research*, 341-363, 341.
[69] Ibid.

when it is not observed because of the interference pattern that develops when the experiment is conducted.

In the double slit experiment, the orthodox view of QM is that it appears as though the wavefunction travels through both slits. The atom is in a superposition travelling through both slits, that is two say that there is equal likelihood of it travelling through both slits. On the other side of the slits the wavefunction interferes with itself, creating the interference pattern that is consistent with two physical waves interfering with each other. Thus it appears that some kind of wave is passing through the slits, if not a physical wave as ordinarily perceived by humans. As noted however, if a detector is placed next to one of the slits and switched on, then according to the orthodox view of QM, the wavefunction collapses and a classical particle is observed. Al-Khalili notes:

> The problem here is that you want me to explain to you how the atom goes through both slits by using images and concepts familiar to you from everyday experience. Unfortunately this is not possible. Whether we like it or not, such weird behaviour is a feature of the quantum world that we must accept, no matter how hard it is to believe. It does happen, and although we have a right to expect a rational explanation, none has yet been found. Many physicist make statements such as: the world of atoms and below is so far removed from our own experiences in the macroscopic world that we have no right to expect things to behave in a way we can describe using everyday concepts...We should be disturbed by the way the atom behaves. But many great physicists believe this to be a dangerous and futile pursuit, and that worrying is best left to philosophers...My response to physicists: those physicists who claim not to be

> disturbed by quantum mechanics is to insist that they have simply become desensitised to its implications through over familiarity with the subject![70]

It is important to note that in the double slit experiment the two pathways the wavefunction took were located within a short space. However the orthodox interpretation of quantum mechanics is that quanta can exist in superposition even when separated by vast amounts of space, e.g. on opposite sides of the universe. Another noteworthy feature is that unlike interference caused by classical waves, the interference in the double-slit experiment is caused by a *single* wavefunction, rather than two separate waves. This in itself is not reconcilable with the perception of stable locality that characterises the macroscopic world.

The model of QM espoused in Bohm and Hiley (1993) explains the results of the double-slit experiment simply as a packet of quanta that is defined by both a particle and the guiding wavefunction. As a deterministic theory, the particle will pass through only one slit, while the wave passes through both and creates the interference pattern.[71]

The significance of this to lawyers is to be totally clear in their understanding and in their acceptance that the ball-like picture of particles does not convey the complete picture of physical reality. The ontological structure indicated by ordinary perception is fundamentally incomplete and more importantly, incorrect. Whilst the quantum nature of the physical world does not ordinarily impinge on the world we ordinarily perceive, the point remains that there are more accurate ways of describing reality that take into account the deeper essence of the world. Furthermore, there already have been attempts to deploy various aspects of the quantum mechanical paradigm in socio-

[70] Above n 3, 86.
[71] Above, n 26.

legal research and each of these ontological aspects may serve an analytical or heuristic purpose when properly understood by legal scholars.

3.1.4: Nonlocality and Entanglement

The existence of nonlocality has been shown as a feature of the quantum world, where it is referred to as 'entanglement' and/or 'coherence'.[72] Bub (2010) defines quantum entanglement as the possibility of non-classical correlations between separated quantum systems.[73] This means when two packets of quanta interact such that their properties become entangled then on measuring a property of one of the packets of quanta (even if spatially separated) we find that the other *instantaneously* assumes an identical (or correlated) property.

Once quanta are entangled they are correlated. The correlation occurs instantaneously and results in the inability to describe the particles individually; the system becomes a whole. This is described mathematically in the orthodox interpretation of QM as the elements becoming parts of a unified wavefunction.[74] This unification occurs when two quanta interact with each other. It will endure any amount of separation in space, and will end when the system decoheres.

The effect of entanglement is that if two quanta are entangled and one of them is forced into superposition (i.e. as described in chapter 3.1.3), for example as a result of encountering a double slit; then the other quanta will be forced into a superposition with states that are correlated with the

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[72] Ibid, 91.
[73] Bub, J. (2010) 'Quantum Entanglement and Information' The Stanford Encyclopaedia of Philosophy, (Winter 2010 Edition), Edward N. Zalta (ed), available at <http://plato.stanford.edu/archives/win2010/entries/qt-entangle/> last viewed Wednesday, March 28, 2012.
[74] Above n 3, 94.

two alternatives of the first particle. This aspect of entanglement was the subject of the famous EPR experiment.

Entanglement is not a classical phenomenon that involves the transmission of information between the packets of quanta, for it were, it would violate Einstein's Special Theory of Relativity, according to which nothing can travel faster than the speed of light. Specifically, Einstein's theory of relativity posits that if two events, one of which causes the other, are separated by some distance then they must also be separated in time subject to the speed of light.

3.1.5: The EPR Paradox and the Bell Experiment

The 'Einstein, Podolsky and Rosen paradox', also known as the 'EPR experiment', is a thought experiment named after the three physicists who devised it. The thought experiment was devised in 1935, soon after Einstein had moved from Germany to the US. It was designed to highlight some of the stranger elements of the quantum mechanical paradigm. The EPR paradox attempts to show that whilst quanta can have correlated positions and momenta, they do not exist as a singular entangled pair *per se*. The experiment focuses on studying a pair of entangled quanta, in this case a pair of photons.

In the first instance the two photons of light (P1 and P2) are fired off in opposite directions. After some time one (P1) is measured for either position or momentum. It is at this juncture, according the EPR paradox, that the second photon (P2) is of interest. Taking a measurement of the momentum of P1 will inform the observer of the momentum of P2, given that they were travelling in opposite directions as an entangled pair. It is possible to calculate wavelength from a measurement

of momentum (using the de Broglie formula). This amounts to identifying the wave-like properties of P2 without a direct measurement.

On the other hand, the EPR paradox indicates that had the precise position of the photon (P1) been measured then P1 would appear as a localised particle. As a result, we would also know the precise location of P2, as it would have travelled exactly the same distance (in the opposite direction) from the point of origin. The point of this thought experiment was to show that depending on the measurement conducted it is possible to know either the precise momentum of the unmeasured photon (P2) or the precise location of P2 at any given time without looking at it. It is immaterial that these measurements could not both be carried out at the same time, rather the significance is that P2 must have a definite position and momentum all along, and that the position and momentum could be discovered by measurement of P1. This thought experiment was designed to support Einstein's notion of an objective reality, one in which measurement need not have been made to make that property real. That is to say, measurement did not create the values as is the accepted view in orthodox quantum mechanics, rather the view of Einstein *et al* was that the values existed all along and measurement simply quantified them.

This paradox was finally resolved in 1982 when a French experiment (which will be referred to as the Bell experiment) demonstrated that there was an instantaneous interaction between P1 and P2. The first step to testing the EPR paradox was the articulation of Bell's Theorem, derived approximately 30 years after the paradox was posited. Bell's Theorem states that in order for Einstein to be right there would have to be a limited correlation between P1 and P2, the argument being that since P2 would not 'know' the type of measurement made on P1, the amount of correlation between the two quanta would be limited. If, on the other hand, the orthodox view of

quantum mechanics was correct, then the two quanta would be described by a single wavefunction and the amount of correlation between P1 and P2 would exceed the amount allowable without violating Bell's Theorem.

The 1982 experiment proved that P1 and P2 were entangled and in so doing disproved the argument put forward in the EPR paradox. Essentially it was shown that P1 and P2 will remain entangled irrespective of the distance between them. Upon measuring either the position or the momentum of P1 the wavefunction collapses and P2 is *instantly* endowed with the appropriate and corresponding attributes of P1. Prior to collapse of the wavefunction, P2 remains in a superposition of all possibilities.

It is worth noting that since the Bohm and Hiley (1993) interpretation of QM is explicitly nonlocal the results of the Bell experiment are fully accounted for. That is to say that that through the guidance condition, which guides every particle in the universe, there is the possibility for particles to display correlated behaviour (this is described in chapter 4.3). However, the salience of this finding according according to this interpretation of QM, is that both P1 and P2 would have a precise location at all times; the issue is one of limited human knowledge.

3.1.6: Schrodinger's Cat, the Measurement Problem and Decoherence

Another aspect of orthodox QM used by socio-legal scholars is the thought experiment coined by Erwin Schrodinger, called 'Schrodinger's Cat'. In the same year the EPR paradox was posited to highlight the absurdity in the orthodox quantum mechanical paradigm, Erwin Schrodinger posited the following thought experiment to highlight other absurdities that arise from the measurement problem (see 3.1.2 above). It is important to note that the model of QM described by Bohm and

Hiley (1993) is deterministic and hence is not susceptible to the type of concern raised in this thought experiment. The essence of this experiment is to query what would happen if we were to shut a cat in a box with a device containing lethal poison connected to a particular type of mechanism and a radioactive nucleus. When the nucleus decays it will emit a particle that will trigger the mechanism to release the lethal poison and kill the cat instantly.

Schrodinger noted that since quantum mechanics can only give the probability of decay after a certain period, once the lid is closed (and observation or measurement becomes impossible), the nucleus exists in a superposition of having decayed and not yet decayed. Schrodinger argued since the cat comprises atoms and hence is described by a wavefunction, then the cat's wavefunction is correlated with the wavefunction of the radioactive nucleus. Hence the cat exists in a (somewhat gruesome) superposition of both being dead and alive. In this instance the cat's superposition corresponds with the decayed and not-yet decayed state of the nucleus. This is picking up on one aspect of the double-slit experiment; specifically, when the atom passes through *both* slits. In this experiment the cat would be *both* dead and alive. The purpose of this thought experiment was to create a scenario in which the atoms that constitute the cat and the radioactive nucleus have become entangled. Accordingly, once the box is opened the wavefunction collapses and the cat is *either* dead or alive. More correctly, quantum probability would, for any given time, yield a probability that the cat is dead, a probability that the cat is alive and a probability that the cat is both dead and alive simultaneously.[75]

[75] Ibid, 119.

The point of this thought experiment was to highlight an absurdity; opening the box could not possibly influence the outcome, and the lack of knowledge about the cat's state relates to human ignorance of the happenings in a closed box rather than a superposition of live and dead states. In practice, quantum mechanics allows only 'sensible' results and the simultaneous dual states of dead and alive is not such a result. However, there still is no definite and concrete understanding of how to deal with the in-between states now known as 'Schrodinger Cat States'. One suggestion is that the flaw with Schrodinger Cat States is that classical phenomena simply do not depend on quantum phenomena in this way.

There are two substantive issues for the orthodox view of QM and these relate to the measurement problem that stem from the Schrodinger's Cat thought experiment. The first is to identify logical problems that arise from the non-observability of superpositions in macroscopic physical systems.[76] The lack of observability of the superposition itself exists in spite of the ability to see the consequences of the superposition, such as the interference pattern in the double slit experiment. It must be acknowledged, however, that the double slit experiment relates to microscopic quanta. The second issue extends the process of collapse from a superposition wavefunction in the Schrodinger's Cat thought experiment to include a state in which the cat is both dead and alive. Upon opening the box one would see that the cat is *either* dead or alive – it is logical to ask why the particular outcome was the resultant, e.g. if the cat is alive then the superposed state in which the cat was dead was collapsed and *vice versa*. This issue raises the question why one particular state is given a preference over the other and is observed.

[76] Ibid, 125.

The first issue identified above was resolved in the 1980s and 1990s, when it was discovered that large quantum systems involving billions or trillions of atoms (and an even greater number of superpositions) are unstable and decohere quickly. That is to say that large and complex superpositions simply cannot be maintained over very long time scales. Decoherence is a physical process that occurs when a quantum system is no longer isolated from its environment, in fact decoherence is one of the fastest and most efficient processes in physics.[77] Thus, the reason why we can never see the cat in a state of being both dead and alive is a result of rapid decoherence of the large quantum system that comprises the cat and the nucleus. In contrast the double slit experiment is a very small and hence very stable system. Decoherence does not provide an explanation for the second issue posed above, the orthodox view of QM remains probabilistic and the unpredictability of individual measurements does not go away.[78]

3.1.7: Conclusion

It is clear that many of the ontological elements that define the quantum world when viewed through the prism of the orthodox interpretation point to an indeterminate world. This has created a number of problems and paradoxes that must simply be accepted as they flow from an epistemic commitment to the perception that our interaction (via the orthodox view) with the quantum realm is indicative of what is. Having said that, it is emphasised that this chapter offers a very brief description of a highly complex area of science.

[77] Ibid, 126.
[78] Ibid, 127.

It is also clear that differing interpretations of QM posit widely differing ontologies. This thesis touches on only two, and even then, what is generally labelled as the 'mainstream position' is actually not a unitary set of views. The whole field could be studies in the future in a more nuanced manner.

The entire area of QM is subject to further future evolution as there remains a vast scale of matter that has not yet been investigated. Bohm and Hiley (1993) note that the shortest distance measureable in physics is 10^{-16} cm, while the shortest distances in which it is thought that the current notions of space-time have meaning is 10^{-33} cm. The effect of this is that there is a '…vast range of scale in which an immense amount of yet undiscovered structure could be contained. Indeed, this range of scale is comparable to that which exists between our own size and that of the elementary particle'.[79]

One corollary of the discussion in this chapter is that many aspects of the quantum world carry deep philosophical (and legal) implications. Whilst common sense would suggest that finding our place in the universe is one of the most important areas of endeavour, the reality is that many physicists would rather focus on producing science than engaging in fundamental research and the related philosophical discussions. This lack of engagement with the relevant philosophy places the orthodox view in a dominant position in society reflects only vagaries of scholarly discourse. Whatever the future of this area of endeavour holds, Bohm and Hiley (1993) present an interpretation of QM that is empirically equivalent, but distinct from the orthodox view. It resolves many of the paradoxes that flow from the orthodox view, thereby making their model arguably superior..

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[79] Ibid 38.

Few, if any, lawyers would argue that legal philosophy is a pointless aspect of the discipline; moral and ethical debates rage in all areas of legal, social, political and economic policy. QM provides us with deepened insight into the world; albeit insight that is still subject to evolve. Perhaps it is for this reason that legal (and socio-legal) scholars have belatedly begun to consider QM in their work.

As noted in the introduction, considering and integrating our understanding of the essence of manifest reality will improve rule of law in the long run. QM is one avenue for engaging with this process. It may be argued that in its present state that QM is unsuited to this process as it still subject to significant refinement. This is not a problem. In the event that QM is replaced and our understanding of the world is changed the discourse around the process of paradigmatic reform will have already been commenced. Further, this type of discussion introduces the idea that ontological and epistemological commitments reverberate throughout our legal system. Finally, remaining wilfully blind to ontological and epistemological developments does not stop them cutting across disciplines. This was posited by Foucault (1970) when he observed that there is an 'epistemological space specific to a particular period'.[80] In any event, understanding QM is exceedingly complex, and whilst this may be a dissuasive factor that stifles scholarly discourse within legal scholarship, it is necessary that the process continue in order to align the legal system with our most accurate picture of the universe. That said, discussing on some socio-legal implications of quantum mechanics is an undertaking that has already begun.

[80] Foucault, M. (1970) *The Order Of Things: An Archaeology Of Human Sciences*, Pantheon Books, xi

3B. An Evaluation of the Suitability of Quantum Mechanics for Inclusion in Legal Scholarship

Quantum mechanics is one of three major scientific paradigms identified in the evolution of scientific knowledge.[81] In chronological order they are Newtonian mechanics, general relativity and quantum mechanics. When the ontology and/ or epistemology of quantum mechanics are utilised in legal or socio-legal scholarship their suitability for such a use should be evaluated, and legitimate concerns addressed. While questions regarding the suitability of using quantum mechanics for legal and socio-legal scholarship are addressed in chapter 4, this section addresses one particular epistemic concern that may be raised specifically at quantum mechanics in respect of its suitability for incorporation into sociological, legal and socio-legal scholarship.

Since the paradigm of quantum mechanics began to emerge in the mid 19th century,[82] very little socio-legal scholarship has considered its application to legal studies. One reason for the dearth of scholarship is that there appears to be resistance to the idea that the microphysical realm of physical reality has anything to do with either the law or with socio-legal scholarship. This is illustrated by Arnold (2010): 'For myself, I'll skip the subatomic particles and reread John Rawls or Dyson Heydon, arguably more useful in effecting law reform on a day by day basis'.[83] There is an irony to this position, as it was noted in the introduction that at a disciplinary level both law and science are involved in uncovering the essential aspects of their subject matter. This is apparent in both

[81] McIntyre, D. Manoque, C.A., Tate, J. (2012) *Quantum Mechanics: A Paradigms Approach*, Addison-Wesley.
[82] Kragh, H. (2002) Quantum Generations: A History of Physics in the Twentieth Century, Princeton University Press, New Jersey, 58.
[83] Arnold, B. *Zeizek, Parapsychology and Quantumbabble*, Barnold Law Blog, available at <http://barnoldlaw.blogspot.com/2010/03/zizek-parapsychology-quantumbabble.html> last viewed 29 June 2011.

disciplines and thus forms an important area worthy of consideration particularly as it has been raised that laws that integrate both appearance and essence into their content are systemically desirable as they affirm the rule of law.

3.1: Scientific Epistemology as the Next Cultural Imperialism and the Is/ Ought Conundrum

Lawrence Tribe is a widely respected law professor at Harvard University and Tribe's (1989) paper was the first piece of socio-legal scholarship to successfully apply all three scientific paradigms to law. He used an epistemically sound methodology and his paper was published in the prestigious Harvard Law Review (the disciplinary aspects of his methodological approach are discussed in detail in chapter 4.1). However, his successful analysis does not grant an open licence to apply quantum mechanics to law nor does it imply that a measure of circumspection is unwarranted.

It has been raised during this research is that any epistemological coherence between a scientific ontology and a legal ontology is simply adding together two dogmas. This is of concern because it implies that any argument that establishes coherence between legal ontology and a scientific ontology may be used as an argument to impose such a view on others. To wit, Tullberg and Tullberg (2001) advance the view that a legal ontology, once bolstered by a scientific ontology may potentially be imposed on people on the basis that scientific knowledge is thought to be 'objective'.[84] Whilst the notion of 'objective' scientific knowledge has been comprehensively debunked by scholars such as Emily Martin, (this is looked at later in this section), other scholars have identified the short-sightedness of this concern.

[84] Tulberg, J., Tulberg B.S. (2001) 'Facts and Values: A Critique of the Naturalistic Fallacy Thesis', 20, 2, *Politics and the Life Sciences*, 165 – 174.

From the outset Tullberg and Tullberg assert that it is not '...possible, desirable or even necessary' to argue normative ethical or legal positions on the basis that they are bolstered with scientific data.[85] They advance their view on the basis that a level of subjectivity is unavoidable as it is an existential condition of human life. Anthropomorphisation is unavoidable as human beings will always have human perceptions and thus cannot transcend their subjectivity. It then follows that whilst there may be a measure of objective merit in a particular position, there is also an essential dimension of subjectivity that enters when implementing that position. To illustrate this point Tullberg and Tullberg (2001) draw upon the concept of nutrition:

> What constitutes good food for man is not necessarily good for all rational beings. Substantial variations in nutritional habits are found among human cultures, but underlying the surface are common elements and behaviours: the fork and the chopstick may not be fundamental. Many feeding habits are linked to environmental resources, but much variation is purely cultural. But this does not make nutrition a subjective field, where any statement or habit is as good as another...The argument is that only in nutritional sense, and not in the mathematical sense, can ethics be viewed as objective. [86]

Tullberg and Tullberg espouse a 'medium universal view'. They assert it is justified '...to take an anthropocentric view, [when] asking questions like "what is a good life for man?" and "how do we construct a fair society?"',[87] and 'what kind of law should be followed by a given society?' The key to the medium view is that whilst a legal argument with a measure of objective merit may be

[85] Ibid, 169.
[86] Ibid.
[87] Ibid.

advanced, there must be a permissible measure of cultural subjectivity in understanding and implementing the practical legal aspects of that argument, rather than solely using coherence with scientific data as a lever to impose the norm in question.

The essence of the concern discussed above is that science has often been touted as objective and value-free as a function of its reliance upon empiricism. This has been used as a lever to assert that natural science is better able to ascertain correct answers to problems than social sciences alone. Tellingly, Gibbons (1981) posits that science reveals many of the assumptions underlying law to be wrong, as is the case with any normative system based upon a set of descriptive assumptions about the nature of man and society. Thus as scientific paradigms emerge, and humanity gains a different view of the nature of reality, science is able to assist law in this process. He posits that law and science are 'different manifestations of the same thing'.[88] He further claims that both the science and the law deal with laws, however those laws inhabit two different worlds; scientific laws are descriptive statements of observed regularities in phenomena, whilst legal laws are normative statements of desired regularity in human behaviour.[89] This gap has led Cranburg (1968) to note that the methodological premise of using facts obtained from science to assist in setting legal standards raises a concern in some minds. He advances the view that 'science is concerned with what "is", in the sense of rendering a description of experience, while juridical law is concerned with what "ought" to be in the sense of furnishing prescription for action'.[90] As such, this is an attempt to derive a moral/ legal 'ought' from a physical/ scientific 'is'. The process of deriving an 'ought' from

[88] Ibid, 185.
[89] Gibbons H. (1981) 'The Relationship between Law and Science Part II, 22, 2, *IDEA: The Journal of Law and Technology*, 159-188, 185.
[90] Cranburg, L. (1968) 'Law – Scientific and Juridical', 56, 3, *American Scientist*, 244-253, 249.

an 'is' has been widely critiqued in philosophical literature, with the origin of the 'is/ ought problem' stemming from the seminal work of Scottish philosopher David Hume. In book III part I section I of *A Treatise of Human Nature*, Hume states:

> In every system of morality, which I have hitherto met with, I have always remarked, that the author proceeds for some time in the ordinary ways of reasoning, and establishes the being of a God, or makes observations concerning human affairs; when all of a sudden I am surprised to find, that instead of the usual copulations of propositions, *is*, and *is not*, I meet with no proposition that is not connected with an *ought*, or an *ought not*. This change is imperceptible; but is however, of the last consequence. For as this *ought*, or *ought not*, expresses some new relation or affirmation, 'tis necessary that it should be observed and explained; and at the same time that a reason should be given; for what seems altogether inconceivable, how this new relation can be a deduction from others, which are entirely different from it. [91]

The effect of this paragraph has been to sever 'is' from 'ought' and has become known as 'Hume's Guillotine' or 'Hume's Law'.[92] In a similar vein, G.E. Moore coined the phrase 'Naturalistic Fallacy' in 1903 when he articulated a discrete yet related position;[93] namely that an error of logic is committed whenever a philosopher attempts to prove an ethical claim by appealing to a definition of 'good' in terms of one or more natural properties. In its loosest formulation it is attached to any arguments that draws ethical conclusions from natural facts. The similarity between the two theses leads to

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[91] Hume, D. (1749) *A Treatise of Human Nature: Being an Attempt to Introduce the Experimental Method of Reasoning into Moral Understanding*, DOI: 10.1093/ acprof:oso/9780199243365.003.0010, Oxford University Press, Oxford.

[92] Black, M. (1964) "The Gap Between 'Is' and 'Ought'", 73, 2, *The Philosophical Review*, 165-181; Hare, R.M. (1963) *Freedom and Reason*, Oxford University Press.

[93] Moore, G.E. (1903) *Principia Ethica*, Prometheus Books.

these two methodological points of view being confused with one another or the terms being used interchangeably.

Hume's Guillotine and the broad formulation of the Naturalistic Fallacy appear to present arguments that raise significant methodological concerns, since it appears on a superficial reading that science and law do indeed deal with two different sides of a methodological coin, and are hence incompatible. From the default position assumed by proponents, namely that science makes statement about what 'is' and law via its regulatory function establishes what 'ought' to be, Cranburg (1968) has shown this to be an arbitrary distinction.[94]

This is asserted on several bases. Firstly he argues that a piece of legislation describes the law as it 'is'. Secondly, Cranburg asserts that there is no precise way to define what a legal 'ought' is; the 'ought' of law could be defined by 'social authority', or a formalistic legal interpretation, or legislative intent. He further notes that determining the ambit of the legal 'ought' is fraught with 'vested economic and social interests [which] exert greater sway on human action than vested intellectual interests'.

Cranburg also avers that science, like law, has a 'social existence', a 'procedure' and 'methodological content' and that it could only be limited to what 'is' if the scientist were a 'pure robot'.[95] He focuses on the notion of following a procedure or established methodological content because it is established that such practices are what 'ought' to be done to produce valid statements of what 'is'. That is to say, scientific method itself produces statements of what 'is' by following a procedure that

[94] Above n 80.
[95] Ibid.

'ought' to be followed. Indeed, Wilson (1975) asserts that human beings are neuro-physiologically engineered to move from 'is' to 'ought' on account of their capacity for empathy.[96]

Having established that concerns raised as a function of the perceived 'objective' nature of science are of limited validity, we can now turn to the nature of science itself. Martin (1991) exemplifies this intellectual movement as she powerfully demonstrates the myth of value-free science.[97] The drive behind this area of scholarship is:

> ...to wake up to the sleeping metaphors in science...Although the literary convention is to call such metaphors "dead", they are not so much dead as sleeping, hidden within the scientific context of texts – and are all the more powerful for it. Waking up such metaphors by becoming aware of when we are projecting cultural imagery onto what we study, will improve our ability to investigate and understand nature.[98]

Martin (1991) shows that beliefs and cultural biases generate the context for creating scientific narrative and that those scientific narratives tend to be created to reinforce those same beliefs and stereotypes. The example used in Martin's study is the narrative of human conception. She contrasts the traditional narrative of conception; namely that the egg is 'large and passive' as it 'drifts along the fallopian tube',[99] with the scientific reality, namely that '...this description was rewritten in a

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[96] Including a robust neurophysiological argument that follows Wilson (1975) in asserting that the human brain is engineered (via the limbic system and hypothalamus) for the capacity to feel emotions (such as empathy) which act to motivate human behaviour (e.g. move us from 'is' to 'ought'). An essentially similar argument, Tullberg and Tullburg note, is made in a basic sense in Hume's original text and contradicts Hume's Guillotine: at 168.

[97] Above n 44.

[98] Ibid, 501.

[99] Ibid, 489.

biophysics lab at Johns Hopkins University – transforming the egg from the passive to the active party'.[100]

The important point to be taken from this shift in scientific understanding is that the language that describes the chemical/ molecular phenomena did not change; the language used to describe the process of fertilisation affirms the gender stereotypes; the sperm continues to be described as penetrating the egg wall, fertilising the egg and then producing the embryo. Martin cites research that shows that the sperm is the protein receptor to a molecule (called ZP3) that is on the wall of the egg.[101] Thus, the better description is that the sperm is the 'lock' and the egg produces the 'key', a better description still, '...two halves of a locket matching, and [to] regard the matching itself as the action that initiates the fertilisation'.[102]

From Martin's analysis, it is clear that there is no such thing as value free science. Martin follows Fleck[103] when she notes:

> "the self contained" nature of scientific thought. As he [i.e. Fleck] described it is "the interaction between what is already known, what remains to be learned, and those who apprehend it, go to ensure harmony within the system. But at the same time they also preserve the harmony of illusions, which is quite secure within the confines of a given thought style". We need to understand the way in which the cultural content in

[100] Ibid, 492.
[101] Ibid, 495 -6.
[102] Ibid, 496.
[103] Fleck, M. (1979) *Genesis and the Development of Scientific Fact*, University of Chicago Press, Chicago, 38.

> scientific descriptions changes as [scientific] discoveries unfold, and whether that cultural content is solidly entrenched or easily changed.[104]

There are several key points to be derived from this analysis; firstly, that scientists create narratives to describe the facts based on their observation and that those narratives are intrinsically affected by the culture and values held by those scientists. This observation explodes the myth of value-free science and also of its objectivity.

The effect of Martin's (1991) work is to ensure that the ontology of limited universal holism is not taken to be objective or absolute; rather it is a discipline furthering the ongoing development of knowledge. Additionally, it is also acknowledged that the narrative behind the ontology of limited universal holism is itself not value free. This is not detrimental to the case for using the ontology in socio-legal scholarship, because at the level of analysis in Martin it is clear that there is no human endeavour that can be value-free in the strict sense as all human beings are subjective and encultured entities.

3.2: Conclusion

Whilst this section has touched on some *prima facie* salient points, it has been shown that science and law both share a common goal; namely to move beyond appearances and to identify an essence germane to the enquiry. Legal scholarship considers the essential nature of 'that which the laws seek to regulate' (i.e. people, relationships and objects) and is predictable (if not unavoidable) that legal scholars will incorporate the best quality knowledge at their disposal. Furthermore it seems unlikely if not impossible for any legal philosopher to detach entirely from their moral position when

[104] Above n 49, 492.

formulating their views. These two reasons alone diminish the relevance of the concerns discussed in this section of the thesis;legal norms cannot be formulated completely isolated from the moral views of their proponents any more than scientist can formulate their theories totally independently of their beliefs and cultural biases.

However, it is important that any cross-disciplinary borrowing from science into law be undertaken with mindfulness of two caveats; the first is that scientific knowledge is subjective is continuously revised and replaced with new knowledge. That is to say, scientific knowledge is neither objective nor permanent. If these two caveats are encultured then we will establish a legal system that is adaptable and open to evolve. The alternative is to try and quarantine scientific knowledge from law. This is a futile exercise on two counts. First, there will be an osmotic bleed of ontological and epistemological concepts across disciplines as indicated by Foucault (1970) when he stated that there is an 'epistemological space specific to a particular period',[105] and affirmed by Tribe (1989) when he observed that '…tacit positive rules of discourse cut across and condition different disciplines in any given period'.[106] The second caveat is that those concepts will become embedded into the legal system without explicit consideration and become all the harder to identify when the time for such a review comes. A corollary of this is that the legal profession will (incorrectly) strengthen the view of itself as an autonomous discipline (as per the 'legalist' view mentioned in chapter 1). For these reasons the onus shifts to a more deliberate engagement with the pragmatic consideration of the form any cross-disciplinarity assumes in order to create a culture of on-going

[105] Foucault, M. (1970) *The Order Of Things: An Archaeology Of Human Sciences*, Pantheon Books, xi
[106] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review,* 2-3.

reform as well as to identify the ways in which ontological and epistemic commitments are embedded into law.

4. Science, Law and the Quantum

4.1: The Relationship between Science and Law

In 1895 American jurist Oliver Wendel Holmes asserted that the law, lawyers and legal scholarship needed to look to science for valuable input. He stated: 'An ideal system of law should draw its postulates and its legislative justification from science'.[107] In more recent times the relationship between the discourses of science and law has been explored in some detail, e.g. Hugh Gibbons engaged in a fulsome and nuanced analysis of the interaction between the two. He observed in four papers in 1981-1982 published in the *Law and Society Review*, that the discourse between these two disciplines occurs in many forms.

Noting a bilateral relationship between the two discourses, Gibbons stated that while science and technology provide the means to measure and apply legal standards such as the level of intoxication in motor vehicle drivers, the law guides the development of technology in areas such as electronic banking in commercial law, electronic surveillance in criminal law and amniocentesis in the law of torts.[108] Gibbons claimed that an important systemic attribute of this relationship is that a third stakeholder manipulates the interaction. He posited that society at large is the third actor, and that it uses the law to shape science and technology. This trinity of stakeholders have been integrated into the *status quo* in the last 60 years. According to Gibbons since World War Two 'science and

[107] Holmes, O.W. Learning and Science, speech delivered at a dinner of the Harvard Law School Association, June 25, 1895, in Loevinger, L. (1963) 'Jurimetrics: The Methodology of Legal Inquiry', 22, 3, *Law and Contemporary Problems*, 5-45 at 6.

[108] Gibbons H, (1981) 'The Relationship Between Law and Science' 22, 1, *IDEA: The Journal of Law and Technology*, 43-62 at 44.

technology have *themselves* become public good [emphasis in original]',[109] and thus the law is used to control people and their objectives.[110] Gibbons notes, however, that this regulatory role of law is stymied because 'lawyers don't understand the scientific process and, as a result, are suspicious of it.'[111] This, Gibbons argues in favour of the need for a cultural shift such as the:

> Law should be used positively to adapt society to technological and scientific changes. The problem is that lawyers don't see themselves as innovators, assertively changing law to fit society and new realities...One form of social innovation is legal innovation. The advent of new technology requires that laws be changed to fit the technology into society. The introduction of the automobile, for instance, resulted in great legal innovation. [112]

This view leads Gibbons to observe that the law in practice is an 'adaptive mechanism', passive and reactive to changes in science as lawyers are 'neo-Luddite' and he regarded legal education as 'outmoded'.[113] He notes that the need for specialised understanding when confronting issues of science and technology is at odds with the generalised skill set of lawyers.[114] Consequently, science and technology have the ability to shift the power balance away from 'judges...and legislators' to 'technocrats'.[115] The problem, Gibbons asserts, is that 'the pace of technological change is too rapid

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[109] Gibbons H. (1981) 'The Relationship between Law and Science Part II, 22, 2, *IDEA: The Journal of Law and Technology*, 159-188.
[110] Ibid, 171.
[111] Above n 2, 47.
[112] Ibid, 48.
[113] Ibid, 49.
[114] Gibbons H. (1981) 'The Relationship between Science and Technology Part III', 22, 3, *IDEA: The Journal of Law and Technology*, 227-242.
[115] Above n 2, 54.

for the normal evolutionary processes of the law to work well'.[116] He identifies an irony in the current situation as he asserts that the law itself is a form of technology, '...a technology that is 'one of the many ways that human behaviour is altered by the application of technique'.[117]

Tellingly, Gibbons advances the view that many assumptions underlying law are incorrect and dated because the law has failed to keep pace with scientific advances. Gibbons contends that in order to remain current every normative system based upon a set of descriptive assumptions about the nature of man and society, must evolve *pari passu* with emerging scientific paradigms, and with humanity as it gains a steadily evolving view of the nature of reality. Science is able to assist law in this process as he posits that law and science are 'different manifestations of the same thing'.[118] Both science and law deal with laws, albeit those laws inhabit two different worlds; scientific laws are descriptive statements of observed regularities in phenomena, whilst legal laws are normative statements of desired regularity in human behaviour.[119] Gibbons asserts that 'science is a gigantic social construct, a means of communication between people, not a source of truth. Scientific laws are descriptive only because we agree to describe things in that way'.[120] This attribute is common to the law as Gibbons notes that 'no judge can kill a law for good. It will reappear...pressed into different forms, if others want it'.[121] Good legal law, according to Gibbons, is 'durable and effective' and he cites the persistence of natural law as an example of this.

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[116] Ibid, 56.
[117] Above, n 3, 181.
[118] Ibid, 185.
[119] Ibid.
[120] Ibid, 186.
[121] Ibid, 187.

It follows then that one of the key methodological questions becomes concerned with ascertaining *how* other social discourses, such as natural science affect legal thinking. Gibbons (1981) looks at the points of contact between science and law in some detail and formulates his analysis under two broad heads: The first head is 'Science and Technology Affecting Legal Institutions'. This section engages in an exploration of 'Judicial Process', and examines the ability of science to 'force' a reconsideration of judicial decisions. It covers the effect of new technologies, and finally deals with science as a heuristic tool. The second large head of analysis is 'Political Process'. This section spans technology in the political process, scientific information in law making, the administrative process, technology in law enforcement, scientific studies on the effects of laws, and it deals with developments in science and technology necessitating legal reform.

Gibbons asserts that science and technology affect legal institutions at large as they provide 'new' adjudication aids such as video and long distance communication[122] as well the digitisation and electronic storage of legislation and case law. Science and technology have the ability to provide scientific information for the court such as in crash investigations, ballistics, and psychiatrist's reports. [123] He notes also that advances in technology provide new sources of evidence. Whilst this theme is picked by many scholars, an apt example is the use of DNA evidence in criminal proceedings. The import of scientific evidence leads Breyer (1998) to oberve that '...the scientific validity...of DNA sampling...can lead courts or juries to authorise or withhold the death penalty'.[124] DNA evidence is also an example of Gibbons' argument that scientific information can force a re-examination of law. Gibbons cites older examples on the effects of educational segregation

[122] Above n 8, 228.
[123] Ibid, 229.
[124] Breyer, S. (1998), 'The Interdependence of Science and Law' 280, 5363, *Science*, 537.

submitted to the US court in the case of *Brown v. Board of Education* which led to the reversal of the 'separate but equal' doctrine.

Under the somewhat ambiguous heading of 'scientific ideas, thought processes and investigatory techniques in law',[125] Gibbons asserts that science leads to the creation of both new theories *about* law and theories *of* law. He posits that 'theories about law' are the result of the systematic application of social scientific research techniques to the law and cites 'jurimetrics' as an example. Loevinger (1963) succinctly defines jurimetrics as '...a designation for the activities involving scientific investigation of legal problems'.[126] 'Theories about law' is abstrusely defined by Gibbons, as that which occurs when natural or social science have theories of law based upon them, such as Hayek's (1978) application of an evolutionary model to law, or Posner's (1978) engagement in an economic analysis of law.[127]

Gibbons notes that science affects the administrative process as legislation needs to be drafted in response to changes in science and technology.[128] In this context he observes that scientific studies can provide legal standards when the results of such studies are utilised. He notes that the administration of law is enhanced through the use of technology to enforce laws for example, with the use of surveillance and also with scientific studies that analyse the effect of laws.[129] Gibbons identifies another broad area in which science impacts on the law when developments in technology create opportunities and social change – such as the many issues relating to privacy emerging from

[125] Above n 8, 231.
[126] Loevinger, L. (1963) 'Jurimetrics: The Methodology of Legal Inquiry', 22, 3, *Law and Contemporary Problems*, 5-45 at 8.
[127] Hayek, F.A. (1978) *Law, Legislation and Liberty*, University of Chicago Press; Posner, (1979), *Economic Analysis of Law*, 2nd Ed, Economic Analysis of Law, Little Brown and Co.
[128] Above n 8, 232.
[129] Ibid, 234.

the development of social networking sites such as Facebook. Gibbons concludes his analysis by looking at the effect of law on science.[130] However this area is not directly relevant to this thesis and hence will not be explored.

An important conclusion that can be drawn from Gibbons' analysis is that the interaction between law and science is an undeniable aspect of both discourses – the interaction and effect are mutual. There are several aspects of this relationship that warrant further comment. Firstly, there is a level of interaction between science and law in which substantive scientific knowledge is imported into the law and set as legal standards. This observation from his robust analysis is the greatest strength of Gibbons' work. Secondly, he demonstrated the importance of science to law in forming relevant and good law. Thirdly, he highlighted the complementarity of law and science in order for the discipline of law to construct a viable worldview. In this respect Gibbons teased out the importance of consensus in that process and in so doing showed the centrality of constructivism in professional discourse. Fourthly, Gibbons identified a second level of interaction between law and science at which one sees 'scientific ideas, thought processes and investigatory techniques in law'. This level of analysis is of methodological significance in this thesis. Despite the many significant observations Gibbons' exploration of this area was somewhat simplistic. Gibbons bifurcated this level of analysis into 'theories of law' and 'theories about law'. This area of scholarship seems to have received cursory attention, but is of great interest to socio-legal scholars. Gibbons' concept of 'theories about law' correlates with the notion of science providing 'heuristic tools of analyses' articulated in other scholarly research. As such, this area of socio-legal scholarship is explored with far greater acuity in

[130] Ibid, 238-241.

Tribe (1989). Thus, whilst Gibbons' analysis has demonstrated an incontrovertible relationship between science and law his analysis focussed mainly on the breadth rather than the depth.

Tribe (1989) undertakes a deeper level of analysis and highlights how paradigmatic shifts in science interact with law. He refers to the notion of both the 'legal paradigm' and the 'scientific paradigm' in his analytical framework. The etymology of the term 'paradigm' can be traced back to the ancient Greek expressions '*paradeigma*', meaning 'pattern, example or sample' and the verb '*paradeiknumi*', which means 'exhibit, represent and expose'.[131] However the modern concept of scientific paradigms was articulated by Kuhn (1976) in his seminal work, *The Structure of Scientific Revolutions*.[132] Kuhn showed that a 'paradigm' in the modern sense is the emergence of novel and interlinked set of rules, values and beliefs that share a common ontology and/ or epistemology, and that the new theories are sufficiently open-ended to leave an entirely new set of problems to be resolved by the academy.[133] New paradigms emerge to find solutions to problems that are irreconcilable within the accepted paradigm of the time – e.g. a crisis of normal science. Kuhn referred to the emergence of a new paradigm in natural science as a 'scientific revolution'.[134]

Aside from defining a 'paradigm', Kuhn's work explains how to distinguish a paradigm and the corollary commitments that emanate from its adoption. Kuhn showed that a paradigm can be discerned by studying the 'loci of commitment' in a given community or discipline.[135] The 'loci of commitment' includes the '...isolable elements, explicit or implicit, [that] the members of that

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[131] Liddell, H.G. Scott, R. (1889), *An Intermediate Greek-English Lexicon*, Clarendon Press, Oxford.
[132] Kuhn, T.S. (1976), *The Structure of Scientific Revolutions,* 3rd Edition, The University of Chicago Press, Chicago.
[133] Ibid, 10.
[134] Ibid, 12.
[135] Ibid, 43.

community have *abstracted* from their more global paradigms and deployed as rules in their research' [emphasis added].[136] One type of abstraction from a 'loci of commitment' in paradigms of natural science is shown by Tribe (1989) to manifest as a heuristic model in socio-legal discourse. This notion traces a clear line of effect between paradigmatic shifts in the natural sciences and their correlative effect in law.

To embrace a new paradigm entails the observer making a *gestalt switch*, which is to see the same old objects in a new and different manner.[137] This may be explained by way of analogy; after arriving home late one evening and walking down a dimly lit garden path at night one sees a serpentine form draped across one's path. The ensuing state of panic is entirely dispelled the instant a garden light is triggered. With more light, one realises that that the object in question is a garden hose rather than a snake, as first thought. Such a change in perspective is a *gestalt switch*. To use this example, this paradigm shift carries with it a unique ontological commitment, one in which the serpentine form is a garden hose in light of new information. The new information in this example is sensory (sight) data perceived with increased light levels.

Whilst some elements of Kuhn's work have been criticised appropriately,[138] it established three essential and valid attributes in the development of natural science. These are valuable to socio-legal commentators: firstly, that paradigms carry unique ontological and epistemological commitments; secondly that exploring the full 'loci of commitment' includes looking at isolable elements that have been abstracted from global paradigms; and thirdly that embracing new paradigms entails the

[136] Ibid.
[137] Above n 33, 111-15.
[138] Tipler, F.J. (2008) 'The Obama-Tribe "Curvature of Constitutional Space" is Crackpot Physics', *Social Science Research Network*, available at: < http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1271310> last viewed 27 June 2011.

observer making a g*estalt switch*. All these elements have been integrated into social scientific and socio-legal scholarship.

The most intriguing and enigmatic assertion made by Kuhn is the reference to the full 'loci of commitment' as including the study of the 'isolable elements abstracted from global paradigms'. In this thesis the phrase 'global paradigms' can be applied to both paradigms of jurisprudence and the scientific paradigms *viz* the paradigms of Newtonian Physics, General Relativity and Quantum Mechanics. The notion of 'isolable elements abstracted from...' refers to a number of processes and methodologies evident in socio-legal scholarship. Some specific examples shall be given after one preliminary observation is made.

Whilst an application of the paradigm of quantum mechanics is the methodological cornerstone of this socio-legal thesis, much of the relevant literature is concerned with the application of all three scientific paradigms (i.e. Newtonian Mechanics, Einstein's General Relativity and Quantum Mechanics) in order to tease out the relationship between science and law. An exploration of all three scientific paradigms is unnecessary and beyond the scope of this thesis as the focus of this thesis is on quantum mechanics. Only the literature that looks specifically at the scientific paradigm of QM is critically evaluated. The other two scientific paradigms are only referred to in order to highlight key differences between the treatment and understanding of scientific paradigms in socio-legal scholarship. Having made this important point, one can now turn to the examples alluded to in the preceding paragraph.

Formulated broadly, Tribe (1989) posits that 'the metaphors and intuitions that guide physicists can enrich our comprehension of social and legal issues'.[139] He identifies 'heuristic ramifications' for the purpose of exploring 'concepts we might draw from physics [that] promote illuminating questions and directions'.[140] Whilst Tribe expressly acknowledges the validity of some of the criticisms applied to Kuhn's formulation of the 'paradigm',[141] he embraces the three elements previously identified: firstly, that paradigms carry unique ontological and epistemological commitments; secondly that exploring the full 'loci of commitment' includes looking at isolable elements that have been abstracted from global paradigms; and thirdly that embracing new paradigms entails the observer making a g*estalt switch.* Tribe's primary analytical perspective is the creation of a heuristic model that uses the ontological structure espoused in scientific paradigms. He advocates this as a model for critiquing the interaction of bodies in the socio-legal and legal universe. In order to construct this model Tribe looks at science as having Modern and pre-Modern paradigms. His analysis implicitly treats ontological structure as 'loci of commitment'.

Tribe defines the Newtonian scientific paradigm as 'pre-Modern' scientific paradigm. This ontological structure is one in which discrete and totally separate bodies act upon one another. He describes this structure as akin to that 'in a game of marbles, [in which] objects might collide with one another, but they could not alter the field of play'.[142] Tribe posits that the American Constitution is Newtonian in design, '...with its carefully counterpoised forces and counter forces, its checks and

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[139] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38*,* 2.
[140] Ibid.
[141] Ibid, 5.
[142] Ibid, 4.

balances, structured like a machine that would go of itself to meet the crises of the future'. This is an example of a legal structure embodying the Newtonian ontological structure.[143]

Tribe's 'Modern' scientific paradigm consists of the ontological structure of general relativity and Quantum Mechanics, and is one in which the observer cannot be separated or abstracted from the system observed. This ontological construct draws on General Relativity in which objects warp space itself:

> Einstein's brilliance was to recognise that in comprehending physical reality the "background" could not be abstracted from the "foreground". In the paradigm inspired by Einstein, "space and time are now dynamic quantities: when a body moves, or a force acts, it can, it affects the *curvature* of space and time – and in turn the structure of space-time affects the way in which bodies move and forces act".
>
> A parallel conception in the legal universe would hold that, just as space cannot extricate itself from the unfolding story of physical reality, so also the law cannot extract itself from social structures; it cannot "step back", establish an "Archimedean" [or Newtonian] reference point of detached neutrality, and selectively reach in, as though from the outside, to make fine-tuned adjustments to highly particularised conflicts. Each legal decision restructures the law itself, as well as the social setting in which the law operates, because like all human activity, the law is inevitably embroiled in the dialectical process whereby society is constantly recreating itself.[144]

[143] Ibid, 3.
[144] Ibid, 7.

Tribe uses Pre-Modern and Modern heuristic perspectives to analyse the relationship between the State and Citizen using the American case of *DeShaney v Winnebago County*.[145] Joshua DeShaney was the infant son to a father who repeatedly beat him severely. After being subjected to this treatment, Joshua now lives in a persistent vegetative state, beyond the potential of recovery. The social service authorities of Wisconsin recorded with clinical and detached bureaucratic efficiency the treatment to which Joshua was subject yet did nothing to help him. Carers for Joshua unsuccessfully attempted to obtain compensation arguing that there had been a breach of the 'due process' clause in the fourteenth amendment. The majority rejected this argument, and according to Tribe, employed a Pre-Modern ontology in defining the State/ Citizen relationship. Tribe argued:

> '...[T]hat the majority had a primitive vision of the state of Wisconsin as some sort of distinct object, a kind of machine that must be understood to act upon the pre-political, natural order of private life. From the majority's view, the state of Wisconsin operates as a thing; its arms exerting force from a safe distance upon a sometimes unpleasant natural world, in which the abuse of children is an unfortunate, yet external, ante-legal and pre-political fact of our society....
>
> Within the majority's stilted pre-modern paradigm, there is no hint that the hand of the observing state may itself have played a major role in shaping the world it observes. This occurred when the Supreme Court majority looked out at one of the most defenceless persons in the universe that we know – an abused child – it did not inquire whether the hand of the state may have altered an already political landscape in a way that encouraged such child beating to go uncorrected. The majority's question in DeShaney

[145] *Deshaney v. Winnebago County Dep't of Social Servs*., 109 S Ct. 998, 1002 (1989).

> was simply "Did the State of Wisconsin beat up that child?" and not "did the law of Wisconsin, taken in its entirety, warp the legal landscape so that it in effect deflected the assistance otherwise available to Joshua DeShaney?"'[146]

Tribe also argued that the minority judgment of Brennan J displayed 'admirably post-Newtonian insight' by arguing that by doing nothing Wisconsin's child protection program had actively intervened in Joshua's life.[147] Tribe extended this heuristic analysis by framing the distinction between Newtonian and post-Newtonian judges as follows:

> The Newtonian judge, viewing those whose fate she determines as though from a removed, objective vantage point, can easily absolve the State of responsibility for their plight. But her post-Newtonian counterpart, viewing the perspectives of those whom her ruling affects as no less legitimate than her own, and asking what social space the body of legal rules helps to define, may find it more difficult to distance the State from the helplessness of the most vulnerable....A post-Newtonian heuristic does not force answers upon us; rather it pushes us to more probing questions.[148]

Whilst Tribe separated the paradigm of quantum mechanics from general relativity in the course of his analysis, he espoused a similar ontological structure for the two: one in which the legal institutions are a *part* of the system observed. Tribe extracted two heuristic maxims from quantum indeterminacy, firstly '...that any observation necessarily requires intervention into the system being studied; and secondly, that we never can be certain that the intervention did not change the system

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[146] Above n 31, 10.
[147] Ibid, 11.
[148] Ibid, 13.

in some unknown way'.[149] The thesis drawn from this heuristic is that post-Newtonian or Modern paradigms mandate that the process and result of a court's judgment include the effect of the judgment on both the society at large and the actors themselves.

To illustrate this heuristic perspective Tribe looked at the development of the case law that led to desegregation in the United States. The relevant precedent is *Brown v Board of Education*[150] which abolished the practice of establishing separate schools for black and white students. Post *Brown*, the District Court case of *Pasadena City Board of Education v Spangler*[151] followed the finding of US Supreme Court, without expressly citing *Brown*. The effect of *Brown*, Tribe argues, effectively reshaped the legal and cultural landscape in United States so that judges could justifiably strike down segregation without referring to precedent. Tribe contrasted *Spangler* with another case seeking desegregation that was prior to *Brown*, *Piece v Society of Sisters*.[152] Counsel for Piece presented arguments that were rejected by the court. Tribe demonstrated that an analysis of case law shows that prior to *Brown* any decision that eliminated segregation was not justifiable; however, subsequent to *Brown* such decisions were sustainable. Thus, the act of determining the case changed both the system being judged and the broader environment in which the system operates, thus showing the suitability of the Heisenberg Indeterminacy Principle as heuristic model in socio-legal analysis.

Whilst not the first socio-legal scholar to propose a multi-faceted and nuanced relationship between science and law, Tribe (1989) published the first piece of socio-legal scholarship that embarked upon

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[149] Ibid, 18.
[150] *Brown v Board of Educ*., 347 U.S. 483 (1954).
[151] *Pasadena City Board of Education v Spangler* 427 U.S. 424 (1976).
[152] *Piece v Society of Sisters* 268 U.S. 510 (1928).

an analysis that recognised the three discrete scientific paradigms of Newtonian mechanics, general relativity and quantum mechanics. Tribe (1989) also articulated discrete heuristic perspectives that emerged from these paradigms and deployed them in a socio-legal analysis. It is a measure of Tribe's intellectual stature and rigorous methodology that his article was published in the prestigious *Harvard Law Review*, notwithstanding the cloistered view of the law and legal scholarship held by many lawyers. Far from opening the floodgates and initiating a deluge of socio-legal commentary on the implications of quantum mechanics, there has been only a small trickle of published scholarly work examining this emerging area of legal scholarship.

In contrast to the conceptually ambiguous albeit purposive classification system used in Gibbons (1981), in other work I have espoused in previous work a socio-legal analysis that deploys a multi-level analytical framework.[153] In this framework the levels of analysis correlate with levels of abstraction in legal scholarship. The methodology applied in that paper was a refinement that filled an analytical gap in the methodology first articulated by Tribe (1989).[154] The gap identified was that the process of integrating law and science occurs at three levels: substantive, legal theoretical and legal philosophical.[155] As such each of these levels of integration warrants specific albeit brief consideration.

The first and least abstract interaction between science and law is at the level of 'substantive' integration. This occurs when the scientific research provides a direct legal standard. This can also occur with when legal standards are the set standards in science. I cited the admissibility of evidence

[153] Dhall, A. (2010) 'On the Philosophy and Legal Theory of Human Rights in Light of Quantum Holism', 66, 1, *World Futures: The Journal of General Evolution,* 1-25 at 11.
[154] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38
[155] Above n 47.

as an example[156] The Australian Law Reform Commission (ALRC) commissioned psychological research into human memory. The results of that research stated that memories deteriorate rapidly within the first few hours following the experience of an event. The ALRC report found that after a few hours memory may be reliable, but it is not 'fresh'. Further the report, drawing from psychological research, noted that 'post event contamination' changes the memory of an event by filling in gaps arising from the rapid process of 'forgetting'.[157] I cited the majority judgment in the Australian High Court case report of *Graham v The Queen*[158] to show that the Court adopted 'almost verbatim' the wording of the ALRC report.[159] This example illustrates that substantive scientific research can provide a direct legal standard. With one exception, the notion of 'substantive' integration is also indicated in the majority of examples cited in Gibbons (1981).

The second level of analysis, according to my earlier paper (Dhall, 2010), is 'legal theoretical'.[160] Legal theoretical scholarship occurs when scientific concepts are applied at paradigmatic level, without being expressly considered as subjects in themselves. For example, I posited that this level analysis is evident when the law adopts the Newtonian jurisprudential perspective of 'checks and balances', which was identified by Tribe (1989). Similarly, the jurisprudential paradigms of post-modernism and Critical Legal Studies are at the second level (i.e. legal theoretical) as they implicitly adopt the position of relativity and reject the notion of objectivity. Any scholarship that simply applies these ideas is legal theoretical. However, ontological and epistemological concepts as *subjects in themselves* would be classified in the third level of analysis (i.e. as 'legal philosophical'). It follows

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[156] Ibid, 9.
[157] Australian Law Reform Commission, (1984) *ALRC 26: Evidence (Interim)*, Australian Government, Canberra.
[158] (1998) 195 CLR 606.
[159] Above n 47.
[160] Above n 47, 13.

that socio-legal scholarship expressly exploring the ontology and epistemology described by general relativity as *concepts in themselves* (which espouses ontological subjectivity) resides in the third level of analysis; 'legal philosophy'.

The third level of analysis is defined as 'legal philosophical'. This refers to express consideration of the constitutive elements of legal paradigms, such as ontology and epistemology.[161] The importance of this taxonomy is that it reflects the Kuhnian position reviewed earlier; that each paradigm has its own 'loci of commitment'. This is manifest in each scientific paradigm as has its own distinct ontology and epistemology. Thus Newtonian mechanics, general relativity and quantum mechanics each posses their own unique 'loci of commitment'. It is apparent that the levels of analysis I posited do not directly correlate with Gibbons' notion of 'theories about law' and 'theories of law', but rather classify the interaction of science and law slightly differently. Applying the taxonomy I had previously derived for socio-legal research, it becomes evident that each scientific paradigm has its own discrete 'theory of law' as a function of having unique loci of commitment. This classification is significant because it highlights one key methodological issue with the analysis undertaken in Tribe (1989) that becomes evident through critical reflection.

With this analytical framework, it can be seen that while Tribe (1989) is an example of both legal theoretical and legal philosophical scholarship, a problem is evident. Tribe (1989) conflated the paradigms of quantum mechanics and general relativity together under the label of 'modern' science. This creates a problem as each scientific paradigm has unique loci of commitment which would, in turn, create unique 'theories about law'. It then follows that both the scientific paradigms

[161] Ibid.

of general relativity and quantum mechanics should create their own unique 'theories about law'. A single grouping that does not distinguish between these two negates the uniqueness of these scientific paradigms. This is not fatal to argument advanced by Tribe (1989) as the examples used in that paper were thoughtfully chosen; however there is a concern about the way a particular heuristic tool derived from the Heisenberg indeterminacy principle was employed. This concern is expressly examined in chapter 5.3.1.

Prior to exploring the rejoinders that have affirmed and applied Tribe's methodology, it is appropriate to mention the one piece of literature that is expressly critical. Tipler (2008) sets about a vitriolic critique of Tribe and rejected the formulation of paradigms used by Tribe (1989). He contended that general relativity and quantum mechanics are both extensions of the Newtonian paradigm and distinct scientific paradigms in themselves.[162] Tippler argued that 'all physics is nothing but a series of footnotes to Newton'.[163] His position is marginal at best. His views are at variance with the accepted position of the majority of scholarship on the subject, as well as with the consensus position in the philosophy of science. Kuhn (1976) himself identified Newtonian physics and general relativity as scientific paradigms. Later he also acknowledged quantum mechanics as a discrete scientific paradigm.[164] Typifying the normative position, Kuhn's view is strongly endorsed by Beichler (2008), and Bussard (2005) and both support the accepted view deployed by Tribe (1989) and Dhall (2010); specifically, that Newtonian physics, general relativity and quantum mechanics are

[162] Above n 32.
[163] Ibid, 5.
[164] Kuhn, T. (1987) *Black-Body Theory and Quantum Discontinuity: 1894-1912*,

three discrete scientific paradigms.[165] Emphasising the notion that quantum mechanics is a discrete scientific paradigm, Beichler powerfully asserts that during the rise of quantum mechanics between 1900 and 1927: 'A scientific revolution occurred... No one would dare disagree with this fact'.[166]

The ultimate undoing of Tipler's argument is in his construction of perception in science and the impact this has on the law. Tipler states that 'Experiment and only experiment determines truth',[167] whilst Kuhn (1976) and Tribe (1989) adopt the more pragmatic view that scientists interpret the results of observations based on scientific instruments and then construct theories to account for those observations. Those theories describe 'fact' not 'truth'. As one who accepted scientific instrumentalism and constructivism in describing scientific epistemology, Kuhn (1976) demonstrated that consensus among experts about the interpretation of data leads to the formation of paradigms.

Teubner (1989) strongly affirms the methodological stance of Kuhn (1976), Gibbons (1981), Tribe (1989), and Dhall (2010). Teubner followed and further developed the work of Habermas, Foucault and Luhmann[168] to posit a social constructivist epistemology of law. He advanced the view that legal constructivism is the pragmatic result of acknowledging that law has a '... simultaneous dependence on and independence from other social discourses'.[169] Teubner expressly included natural science in his construction of 'social discourse' stating that 'If the normative context of law requires cognitive statements on specific matters, then it is true that the law may start its operations with .... reference

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[165] Beichler, J.E. (2008) 'Relativity, the surge and a Third Scientific Revolution, paper presented P.I.R.T. Conference, Imperial College, September 2008; Busard, A.E. (2005) 'A Scientific Revolution?', 6,8 *Science and Society*, 691-694.

[166] Ibid, 1-2.

[167] Above n 55, 19.

[168] Refer to discussion in Above chapter 2, n 50.

[169] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 730.

to science'.[170] Teubner defined the law as the '... autonomous construction of legal models of reality under the impressions of environmental perturbations'.[171] The 'environmental perturbations' Teubner refers to is 'social discourse'. This definition leads Teubner to the neat statement that the result is 'legal order from social noise'.[172] To this end Teubner posits '...juridical constructs are exposed to the constructs of other discourses in society, particularly to the constructs of science. They are exposed to a test of 'social coherence'[173] that replaces the old fiction of a test of correspondence with outside reality'.[174] Affirming the epistemic desirability of the methodological approach of Tribe (1989), Teubner posits the need for integrating law and science; he states: '[i]nstead of clearly separating the realms of juridical cognition from those of scientific cognition, the legal discourse is supposed to incorporate social knowledge into its world constructions and permanently revise legal models of social reality according to the knowledge in the social sciences' noting that 'this has been the most challenging adventure of modern legal thought'.[175]

4.2: The Formalism in Legal Scholarship

As noted previously, Tribe (1989) articulated the first socio-legal analysis that deployed the paradigm of quantum mechanics as a heuristic tool of analysis. Zvosil and Wright (2005) exemplify the gradual and belated beginnings of sociologists using the scientific paradigm of quantum mechanics as a

[170] Ibid, 746.
[171] Ibid, 740.
[172] Ibid.
[173] The phrase 'social coherence' should be considered in light of both 'epistemological coherence' and 'legal coherence' undertaken in chapter 5.2.1.
[174] Ibid, 745. The reference to 'outside reality' could be referring to the now defunct notion of an 'objective' scientific fact, as discussed in chapter 3.5.
[175] Ibid, 747.

heuristic tool of analysis.[176] The following analysis of literature focuses on how various ontological elements from the formalism of quantum mechanics have been successfully deployed as heuristic tools in socio-legal commentary. This analysis highlights the acceptance of both the value and the methodological rigor of such socio-legal analyses by the legal academy.

Winters (1992) expressly affirmed Tribe's argument of the heuristic import offered by scientific paradigms.[177] Winters (1992) focused on the discussion of workplace privacy and observed a congruity of ontology and epistemology between the level of sub-atomic quanta and digital communication. This socio-legal analysis begins with the observation that '...cyberspace, similar to the cosmos and subatomic world is difficult to "know" directly through the five senses'.[178] Winters further notes that the types of invasion that occur in the digital domain are quite different to the traditional legal wrongs, as courts have traditionally focussed on 'physically observable' intrusions. However, intrusions via computers are difficult to observe.[179] The diversion or recording of data in locations separate from the victim poses an epistemological question to the courts; the type of space invaded is different to the space protected by traditional law; no needle has punctured the skin, no ear has aurally monitored a sound. This thus creates a problem of defining the act of 'knowing' for the courts. Winters engaged in a socio-legal analysis from a Tribean-type Modern paradigm – one in which relativity is a significant ontological attribute. In this critique, Winters, like Tribe (1989), was able to identify legal problems emanating from a judicial paradigm that could be classified as Pre-Modern. Winters claimed that the prevalent paradigms were unsuited to

[176] Zvosil, K. Wright, R. (2005) 'Statistical Structures Underlying Quantum Mechanics and Social Science', 44, 7, *International Journal of Theoretical Physics*, 1067-86.
[177] Winters, S.B. (1992) 'Do Not Fold, Spindle or Mutilate: An Examination of Workplace Privacy in Electronic Mail', 1, *Southern California Interdisciplinary Law Journal*, 89- 92.
[178] Ibid, 93.
[179] Ibid.

understanding the finer nuance of contemporary problems being presented to the courts. For example:

> [A]...concern... [is] under what rationale a court can allow a privacy cause of action when: (1) a new technology like E-mail is created; (2) an employee believes his right to privacy has been invaded on this technology by his employer; (3) no new law been legislated to address new privacy issues associated with the technology; and (4) old law does not clearly cover the area of privacy in question.[180]

Winters' primary assertion in his article is that new scientific paradigms can assist lawyers in conceptualising and understanding that privacy in the modern age mandates protecting both physical and virtual spaces. Winters' secondary assertion is that virtual spaces are conceptually distinct from spaces traditionally protected by the law.

Judges (1991) also uses an aspect of the formalism as a heuristic tool; the wave-particle duality[181] of light.[182] Judges engages in fulsome exploration of the current debate in relation to the concept of 'justice' and how this applies to affirmative action. He observes that the traditional view of affirmative action is divided into two very clear sides, which he likens to fans in a college basketball game.[183] His discussion is reducible to the notion that on one side of the debate are people who advocate for the strictly meritocratic allocation of resources. On the other side are those who

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[180] Ibid, 130.
[181] The wave-particle duality of quanta is revealed by the double-slit experiment and is discussed in chapter 3.1.1.
[182] Judges, D.P. (1991) 'Light Beams and Particle Dreams: Rethinking the Individual vs. Collectivist Paradigm in Affirmative Action', 44, *Arkansas Law Review*, 1007- 1061.
[183] Ibid, 1007.

advocate that positive action is required to remedy the systemic causes of the inequality.[184] These two sides he correlates with individualistic and collectivist paradigms respectively.[185] Judges continues his heuristic analysis by positing that the 'ethic of justice' when framed by feminist writers tends toward masculine traits as a function of engaging in abstraction, autonomy, separateness, individuality, formality and neutrality. The 'ethic of care', Judges states, is sometimes referred to as a feminine trait and emphasises human relationships and caring in legal problem solving.[186] Judges asserts that this bifurcation is inadequate to resolve many legal issues as they are blunt instruments.[187] He boldly states '[w]e need a quantum mechanics of political morality to inform our conception of equal protection. In the affirmative action context, this view would recognise that both the individualist and collectivist approaches prove too much, while accomplishing very little'.[188] Judges then engages in a fulsome discussion showing the failings of affirmative action, such as disadvantaging those who may not be racist. His argument is best illustrated with a thought experiment. Let us presume that a university course offers enrolment to 100 students. Let us also assume that 10 of those places are earmarked for affirmative action, and 90 places are allocated on the basis of merit. Judges proposes that the applicants ranked 91-100 may themselves not actually be racist. Furthermore, those candidates may find out about their ranking and may become racist for knowing the policy of the university, particularly if they faced some other type of adversity that was not recognised during the admissions process. The effect of affirmative action, according to Judges'

[184] Ibid, 1007-1017.
[185] Ibid, 1011.
[186] Ibid, 1018.
[187] Ibid, 1017-1018.
[188] Ibid, 1018-1019.

thought experiment, may well be the cause of increasing prejudice directed at those whom the affirmative action policy is intended to benefit.

Judges posits that the quantum mechanical understanding of light as both wave and as a particle is of relevance as a heuristic model to resolve the problems created with the current paradigms. Thus, Judges proposes an ontological footing based on quantum mechanics to frame affirmative action. Such a paradigm, he argues, would reframe the debate fundamentally, both at the level of perceived issues and possible solutions. It would also offer a fluidity of perspective, manifest as a jurisprudential paradigm that allows sufficient flexibility for the appropriate action to be taken at any given time. Judges ends on a poetic note:

> [This quantum mechanical heuristic in socio-legal scholarship] ...would form a much sounder basis for accomplishing the goal of racial justice that affirmative action promises but doesn't deliver. We could stop twisting our dreams between visions of particles and beams and just see the light.[189]

Bickers (2009) discusses the scope and application of the First Amendment to the United States constitution, particularly the application of the Establishment Clause.[190] The Establishment Clause codifies the Constitutional prohibition of Congress from establishing an official religion in the United States. Bickers' discussion focuses on issues surrounding the practical legal manifestations of the need for neutrality when resolving legal disputes involving religious and non-religious or secular arguments, and also the effect of observation undertaken by the Courts. Disputes classified by

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[189] Ibid, 1060-1061.
[190] Bickers, J.M. (2009) 'Of Non-Horses, Quantum Mechanics and the Establishment Clause', 57, *University of Kansas Law Review*, 371-407.

Bickers as a Classical paradigm of socio-legal critique consist of a party alleging that the government has breached the Establishment Clause, and the government actor asserting that they have not. A Court determines whether or not a breach has occurred after applying one or a series of tests. The result often leaves many questions open, such as whether or not neutrality is even possible.

Bickers (2009) utilises several distinctive features from the orthodox interpretation of the formalism of quantum mechanics; the wave-particle duality of light; the phenomena of quantum spin; and the Copenhagen interpretation of quantum mechanics as his heuristic tools (these phenomena have been described in chapter 3A).[191] Bickers begins his socio-legal commentary with the observation that the mechanics of measurement cannot be removed from questions about reality.[192] He asserts that a court 'measures' the action in question and in so doing is part of the system; in this respect Bickers heuristically correlates the court's role with the measurement of quantum spin and the Copenhagen Interpretation.[193] Extending his analysis, Bickers offers the view that the Classical paradigm frames judicial process as the Court is deciding the law, not '...announcing an underlying and inevitable reality'. Thus the Court *is* the law it decides and neutrality is an illusory standard; either the verdict will, in a teleological sense, favour religion or non-religion.[194] Such an approach, Bickers argues, would mandate that instead of applying rigid tests, a court would focus on the effect its decision would have on the community.[195]

[191] Ibid, 387-393.
[192] Ibid, 393.
[193] After a reading of chapter 3 it is clear that the Heisenberg Indeterminacy Principle would have been a simpler and equally applicable heuristic model.
[194] Above n 84, 394.
[195] Ibid, 403.

Blocher (2011) also uses aspects of the formalism of quantum mechanics as a heuristic tool to discuss the Establishment Clause.[196] Blocher expressly affirms the methodology and socio-legal analysis of both Tribe (1989) and Bickers (2009).[197] However, Blocher adds an additional heuristic; the Schrödinger's Cat thought experiment. Whilst the details of thought experiment were explained previously in chapter 3.1.6, in simple terms the thought experiment sought to demonstrate the absurdity of applying quantum processes to object dependent Classical phenomena. It may be recalled that the Schrödinger's Cat thought experiment is built on the premise that a hypothetical cat is placed into a sealed box. Aside from the cat, the box also contains a radioactive nucleus and a detector. Once the detector registers a particle released from the decaying isotope, poison will be released which will kill the cat. Schrödinger argued that since quantum mechanics can only state the probability that the nucleus will decay at a particular time, the nucleus exists in superposed state; having both decayed and not decayed. He postulated that since the release of the poison is contingent on a quantum phenomenon, e.g. an unobserved particle existing in superposition, the poison is both released and not released, and more gruesomely, the cat is both dead *and* alive until such time as the box is opened and the cat is seen as *either* dead or alive. This, Schrödinger argued showed the absurdity of applying quantum mechanical process to ordinary objects.

Blocher's scholarly application of the Schrödinger's Cat thought experiment rejects the notion that social and legal reality can exist in a permanent state of superposition.[198] This perspective embraces the idea that the court's decision acts to collapse the superposition into the binary categories of

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[196] Blocher, J. (2011) 'Schrodinger's Cross: The Quantum Mechanics of the Establishment Clause', In Press Virginia Law Review, 1-7.
[197] Ibid, 6-7.
[198] Ibid, 4.

'legal' or 'not legal'. Furthermore, Blocher follows Tribe (1989) and Bickers (2009) to assert that the collapsing of the legal/ social superposition must be undertaken with the court's acknowledgment of the bilateral influence on the social and legal implications of the court's own role in observing the matter – thus he also applies the Heisenberg Indeterminacy Principle as a heuristic tool.

From this review of literature it is clear that the various ontological elements from the paradigm of quantum mechanics are being successfully deployed as heuristic tools in socio-legal commentary. Moreover, it shows that both the value and methodological rigor of such socio-legal analyses is accepted by the legal academy.

In addition to affirming Tribe's methodology and analytical standpoint the following review of relevant literature further broadens the analytical scope. Reynolds (1991) expressly cites Tribe's methodology in order to apply it to an ontological construct derived from applied mathematics. He applies Chaos Theory as a heuristic tool in socio-legal analysis.[199] Similarly Ruhl (1996) draws from another ontological construct in mathematics, 'Complexity Theory', to frame a socio-legal analysis of the law.[200] At this point in the review of the literature, one necessary question that may be asked: is the sole benefit of the paradigm of quantum mechanics to provide heuristic tools for socio-legal commentary? That is to say, does the literature *only* support quantum mechanical 'theories about law'? The answer to this question appears to be a resounding 'no'.

[199] Reynolds, G. H. (1991), 'Chaos and the Court', 91, *Columbia Law Review*, 110 -117.
[200] Ruhl, J.B. (1996) 'Complexity Theory as a Paradigm for the Dynamical Law-and-Society System: A Wake Up Call for Legal Reductionism and the Modern Administrative State', 45, 5, *Duke Law Review*, 849 – 928.

For example, Lee (2004) explores how the law shapes science theory through an examination of how patents impact on scientific research and invention.[201] This demonstrates that there is a reciprocal interaction between the law and the sciences at the level of socio-legal scholarship. This is the reflective process as espoused by Gibbons (1981). However Lee broadens the base of this concept to posit that rather than a single scientific cause with a single legal effect, there is an ongoing process of feedback between the two discourses. In point of fact there are still more profound implications for the law that become evident from an analysis of the paradigm of quantum mechanics as articulated by Powell and Menendian (2010).[202] They begin their analysis with the observation that ontology and epistemology are central to jurisprudence, and that these two constructs are a distinguishing feature of scientific paradigms. This is consistent with the taxonomy I espoused (Dhall (2010)) in that they assert that legal philosophy is central to legal theory. Powell and Menendian contend that many of the systemically ingrained scientific ontologies and epistemologies in both legal and socio-legal discourse are rooted in the seventeenth and eighteenth century models, i.e. Newtonian mechanics.[203] They contend:

> Widespread and generally unquestioned assumptions regarding causality, objectivity, the nature of the self and knowledge each have deep roots in both the Enlightenment Project and the science and philosophy of that time. Others [Tribe (1989)] have drawn upon the insights of the early twentieth century developments of special relativity and quantum physics, the development of mind science in the last two decades, and the implications of

[201] Lee, P. (2004) 'Patents, Paradigm Shifts, and Progress in Biomedical Sciences', 114, *The Yale Law Journal*, 659 – 695.
[202] Powell, J.A. Menendian, S.M. (2010) 'Remaking Law: Moving Beyond Enlightenment Jurisprudence', 54, *Saint Louis University Law Journal*, 1035 – 1115.
[203] Ibid, 1038.

> systems dynamics and complexity theory. We synthesise these often disparate efforts. Together these insights constitute a sustained paradigm assault on the Enlightenment Project.[204]

Powell and Menendian show that the ontologies and epistemologies of the seventeenth and eighteenth centuries are evident in the fields of constitutional law and in the common law and case law method, and hence expressly affirm Tribe (1989).[205] They assert that the common law:

> ...by reasoning and deriving rules from consensual principles based upon a methodology of analogy and inference, deductive or inductive, is viewed as conforming to scientific dictates. It is understood to be objective, neutral and universalist....Objectivity in legal theory implies the existence of non-controversial, consensus based norms that...can be articulated by neutral observers, be they jurist or theorists.[206]

Thus, following Tribe (1989), Powell and Menendian extend the findings of Martin (1991) into the legal realm.[207] They expose the myth of 'neutrality' in judicial process and reasoning. They observe that the process of following precedent applies an epistemology of discovering legal 'truth' through the study of a series of chronological English common law principles and this implicitly imbues the law with the values held in previous years in the English common law. To illustrate this concept, Powell and Menendian assert that the use of 'Natural law' can provide doctrinal foundation to justify discrimination against homosexuals. This is because such prejudice embodies a Christian ontology in

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[204] Ibid, 1039.
[205] Ibid, 1059.
[206] Ibid.
[207] Martin, E. (1991) 'The Egg and the Sperm: How Science Has Constructed a Romance Based on Stereotypical Male-Female Roles', 16, 3, *Signs*, 485-501 is discussed in chapter 3.5.

respect of determining the ambit of 'normal' sexual preference. They use this example to show clearly the ethno-culturally subjective ontology employed in the application of Natural law. They then posit a potential solution by embracing the ontology of quantum mechanics. They follow Tribe and assert that the quantum mechanical ontology is one in which the court, through the process of deciding a matter, shapes the legal, social and cultural space. Powell and Menendian posit that once one adopts such a perspective then the lack of neutrality in judicial process can be more clearly discerned for the purpose of further study.

Wright (1991) takes this notion further still. He posits that the quantum holist ontology can be a basis for articulating 'absolute equality' in contradistinction to the 'subjective equality' currently encultured. The paper by Wright is also significant as it heralds a more nuanced understanding of quantum mechanics in socio-legal analysis. He explores some possible jurisprudential influences of quantum mechanics, focusing on the nature of Indeterminacy and its ability to soften the hard line drawn when classifying interactions in a legal proceeding. Wright also exposes the myth of legal neutrality. He looks at the ontology of quantum mechanics and applies it to feminist theory, Critical Legal Studies and economics.[208] Wright makes an astute observation when he posits: 'Each of these three movements [e.g. the aforementioned jurisprudential paradigms] is characterised by great internal diversity, just as quantum mechanics is itself subject to a range of conflicting interpretations. Therefore, certain lessons may be valid only if we accept some particular interpretations of quantum mechanics... Quantum theory, however, generally can speak powerfully

[208] Wright, R.G. (1991) 'Should the Law Reflect the World?: Lessons for Legal Theory from Quantum Mechanics', 18, *Florida State University Law Review*, 855 – 881.

to each of these schools of legal thought'.[209] Wright also establishes an appropriate methodology for socio-legal papers, stating that the interpretation of results is of greatest relevance rather than scientifically or mathematically deriving the relevant science.[210] This ensures that legal scholarship is still legal scholarship and is not hijacked by physicists.

Wright engages with the ontology of 'quantum based universal relational holism'.[211] This ontology sees the world as '...more deeply relational and holistic and less a matter of discrete individuals, than most of us had imagined'.[212] This means that:

> Quantum-based holism is not simply a matter of the whole being other than the sum of its parts, or that the states of the parts do not exhaust or specify the state of the whole. Rather, the state of the overall system cannot be reduced to the states of its component parts, because the parts are simply not in definite states in and of themselves. Quantum holism is no less mysterious than any other aspect of quantum theory. Even if we recognise, as we apparently must, that quantum holism applies not merely to microscopic entities such as atoms, but to medium sized objects, such as human beings, our traditional Western version of common sense insists that we can think of individual persons precisely as discrete individuals...Relational holism cannot be narrowly confined. Relational holism is nearly universal, with respect not only to what or whom we are related.[213]

[209] Ibid, 856.
[210] Ibid, 866.
[211] Ibid, 857, 864.
[212] Ibid, 864.
[213] Ibid, 868.

Wright follows physicist d'Espagnat when he observes 'The violation of separability seems to imply that in some sense all objects constitute an indivisible whole...Thus, a universality of relatedness is both inescapable and permanent'.[214] In this exploration of quantum mechanical ontology Wright correctly moves away from catagorising the ontology of general relativity and quantum mechanics as the same, rather he positively articulates the uniqueness of the quantum. This addresses the one concern directed at the methodology applied by Tribe (1989).[215]

Wright's final observation is that the ontology of universal relational holism assists our understanding of universal equality by challenging the male-centric legal standard of 'abstract universality'. He notes that abstract universality is 'exclusionary, or...elevate[s] what is distinctly male into an allegedly neutral, all encompassing norm'.[216] Wright points out that 'abstract universality' has undermined true equality because it has been a '...conceptual instrument of systemic abuse for repressive, inegalitarian ends. He notes, however, that relational holism may allow scholars '...to hold open a redefined, yet recognisable, sense of objective truth'.[217] Wright ends with the assertion '...it is not premature to the process of allowing developments such as universal relational holism to influence legal theory',[218] and notes that 'tracing out the jurisprudential

[214] Ibid, 869.
[215] This particular concern is respect of Tribe (1989) conflating many of the ontological commitments of general relativity with those of quantum mechanics. In so doing, much nuance was lost in order to produce what Tribe catagorised as 'Modern science'. This discussion takes place in chapter 4.1.

[216] Above n 102, 880.
[217] Ibid, 879.
[218] Ibid, 881.

implications or the eventual influence, directly or metaphorically, of universal relational holism is a matter for the long term'.[219]

Powell and Menendian (2010) also embrace the nuance of the ontological structure espoused by quantum mechanics. They excavate the notion that in quantum mechanics the observer is a *part* of the system observed. This is taken to a deeper level of analysis than by Tribe (1989), i.e. they consider a holist ontological structure, in which the notion of individualised human existence is also challenged. They argue that Cartesian duality cannot be presumed to be ontologically and epistemologically absolute. Powell and Menendian pave the way for socio-legal scholars to consider how developments in quantum mechanics now warrant reconsidering some central aspects of the doctrinal core of law, and in so doing, they also broaden the application of Tribe (1989). Powell and Menendian develop their thesis when they note the application of Cartesian duality in the maxim: *actus non facit men sit rea*, which means "an individual cannot be convicted of a criminal offence unless he had a guilty mind."[220] Furthermore, they note that the 'reasonable person test' is a legal fiction; it is a manifestation of the Cartesian ego, a disembodied, reflective self, whose capacity to reason exists *a priori*, unaffected by the particularities of experience. This standard, Powell and Menendian continue, exists in light of recent developments of the mind sciences which challenge the *status quo*.[221] They adopt a thoroughly modern scientific ontology when they note that:

> ...the sense of a unitary perceptual field fosters the illusion of a single unitary self. The perception of a unified consciousness and a 'unified experience' all aid in that illusion, often described as the "reflective self". According to traditional Western views, this self is

[219] Ibid, 869.
[220] Above n 96, 1061.
[221] Ibid, 1074.

> innate, located in space, "authentic" and durable over time. According to Professor Minsky, one of the key fairytales exposed by the mind sciences is the "single self concept".

Powell and Menendian (2010) use this ontological construct to assert one further 'theory about law'.[222] They assert that embracing a quantum mechanical paradigm poses a challenge to the Newtonian notion of linear causation that is applied in legal matters. They argue that the current legal view of causation mandates a clear and quantifiable quantum of causation that must be identified in order to correlate the damage sustained by the plaintiff with the actions of the defendant. In contradistinction they argue that holist ontology, such as that entailed in the 'modern' scientific paradigms espoused by Tribe, views the observer and system observed as comprising a single holist system. They argue that in complex systems, such as human society, outcomes are produced by many contributory factors, some of which could be deemed as analytically insignificant.[223] The example cited in this article was that the societal effect of increasing instances of segregation in a community were not recognised as causally significant when deciding matters of racial discrimination in the late 20th century, and noted that such consideration were expressly dismissed by the judiciary when deciding cases like *Milliken v. Bradley*,[224] and *McCleskey v. Kemp*.[225]

Developing this argument more fully, Marcin (2006) shows that an epistemologically defensible construct of 'justice' is derivable *a priori* from an analysis of quantum mechanical ontology.[226] Such work underscores the far reaching implications of quantum mechanics in legal and socio-legal

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[222] It may be recalled that Gibbons (1981) posited that science can influence law to produce either 'theories of law' or 'theories about law'. This has been discussed in chapter 4.1.
[223] Above n 96, 1087.
[224] *Millikan v Bradley* 418 U.S. 717 (1974).
[225] *McCleskey v. Kemp* 481 U.S. 279 (1987).
[226] Marcin, R.B. (2006) *In Search of Schopenhauer's Cat: Arthur Schopenhauer's Quantum-Mystical Theory of Justice*, CUA Press, Washington D.C.

scholarship, and this includes supplying heuristic tools, and highlighting ontological and epistemological shortcomings systemically evident at many levels of the modern Nation-State.

In conclusion, while Tribe (1989) articulated the heuristic import of quantum mechanics in socio-legal scholarship, the Sokal Hoax caused academic shockwaves that were strongly dissuasive. However, the epistemological discord caused by valid knowledge being ignored in the socio-legal scholarship allowed the building of an unavoidable systemic pressure– valid knowledge had to be considered by socio-legal and legal scholars. As a result, there has been a resurgent albeit cautious exploration of quantum mechanics in socio-scientific literature.

Whilst much of the literature explores the same territory, such as the Heisenberg Indeterminacy Principle, there has been a march toward a more vibrant and fulsome exploration of the socio-legal impacts of quantum mechanics. For example, Powell and Menindian (2010) focussed on exposing some deeper implications in legal and socio-legal analysis born from a more nuanced understanding of quantum theory, namely the systemic enculturation of outmoded scientific ontology and epistemologies in the common law tradition.

Socio-legal scholarship that addresses the nexus of human rights law and quantum mechanics is considerably less abundant. Whilst Marcin (2006) looked at the notion of justice in a global sense, there are two particular papers that warrant special attention. Powell and Menendian (2010) noted the doctrinal impact of the outmoded ontology when incorporated into the paradigm of Natural law, namely the justification of prejudice against homosexuals. The second paper that warrants attention is Wright (1991), which highlighted the need for diligent consideration of quantum mechanics by legal and socio-legal scholars in order to integrate properly the steadily accumulating

new knowledge. Wright also showed that profound insights may be derived for discrete paradigms of jurisprudence from the study of quantum mechanics. The particularly astute aspect of Wright's paper is his singular emphasis on the most sophisticated aspect of the ontological structure in quantum mechanics namely universal holism. Significantly he noted that the legal notion of 'equality' could be reframed in light of quantum holism.

This review of relevant literature has briefly explored the literature that deals with the clear and present epistemological crisis; that lawyers need to adapt to and explore the heuristic and substantive implications of quantum mechanics to the law. One central aspect of limited universal holism is the concept of the 'quantum field'. One important stepping stone in the development of the argument in this thesis are the substantive and heuristic implications of the transition from a particle-based view of physical reality to a view in which fields are dominant. The following section describes the ontological interpretation of QM in Bohm and Hiley (1993). It then describes the reasoning behind the use of the phrase 'limited universal holism'.

4.3: Bohm and Hiley's Undivided Universe

To see a world in a grain of sand

And Heaven in a wild flower,

Hold infinity in the palm of your hand

And eternity in an hour

-William Blake[227]

This thesis uses the interpretation of QM posited by Bohm and Hiley (1993) as the source of its ontology and epistemology.[228] It is worth making one point and raising several corollary issues that arise from it. That is, there are several interpretations of QM jostling for primacy (e.g. the 'Formalism', the Everettian 'Many-Minds' interpretation and the Bohm-Hiley interpretation to name but a few). Each of these interpretations makes different assumptions and describes the universe differently. The effect of having several competing interpretations is significant and has had several ramifications; firstly, there are many encultured ontological and epistemological norms emerging from the 'orthodox' view of QM that are treated as though they are true. The corollary of this is that the ontological and epistemological commitments of the other interpretations are often marginalised. The fact is that the ontological and epistemological commitments of the formalism are no truer than the ontologies and epistemologies posited in the other interpretations, as Bohmian

[227] Blake, W. (1974) "Auguries of Innocence", (ed. A. Kazin) reprinted in *The Portable Blake*, Penguin Books, Middlesex, 150.

[228] Bohm, D., Hiley, B.J. (1993) *The Undivided Universe: an ontological interpretation of quantum theory*, Routledge, New York.

mechanics is viewed as 'empiricially equivalent to orthodox quantum theory'.[229] Secondly, and perhaps contingent on the lack of consensus, is the observation that the scholarly consideration of the competing ontological and epistemological implications for law has been non-existent. The corollary of this dearth of scholarship is that the encultured norms are becoming more deeply embedded, even though they are in no way more correct than ontology and epistemology posited by Bohm and Hiley (1993).

Prior to describing the relationship of microphysical quantum realm to the macroscopic manifest world is it is useful to contextualise what, *prima facie*, appears counter intuitive. Namely, QM points toward to a break of Cartesian duality, yet we perceive that duality.[230] Furthermore, a 'complete contradiction' exists; one between general relativity and QM. GR requires '…strict continuity, strict causality and strict locality' to operate. QM implies the opposite.[231] Bohm and Hiley's (1993) model seeks to articulate a cosmology that coheres the appearance of duality, physical experiments, QM and mathematics and hence offers an ontological interpretation of QM that resolves the paradox.

4.3.1: Epistemology

Bohm and Hiley (1993) use both physics and mathematics together in order to construct their position. Essentially they note that the 20th century witnessed a shift away from physical experiments first being conducted and then mathematics being used to describe and/or explain the results of previously conducted physical experiments. That shift was toward a methodology in which

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[229] Goldstein, Sheldon, "Bohmian Mechanics", *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition), Edward N. Zalta (ed.), URL = http://plato.stanford.edu/archives/spr2013/entries/qm-bohm/ last viewed June 9, 2014.
[230] Above n 2, 351.
[231] Ibid.

mathematical equations and models are seen as 'providing a more detailed and precise way of talking about… physical concepts'.[232] Bohm and Hiley (1993) go on to note that:

> This view has become the common one among most of the modern theoretical physicists who now regard the equations as providing their most immediate contact with nature (the experiments only confirming or refuting the correctness of this contact)…Our approach is not simply to return to the notion that the mathematics merely enables us to talk about the physical concepts more precisely. Rather we feel that these two kinds of concepts represent extremes and that is necessary to be in a process of thinking that moves between these extremes in such a way that they compliment each other.[233]

Bohm and Hiley (1993) further clarify and contextualise their position when they state:

> …our view is that nature is in its total reality is unlimited, not merely quantitatively but also qualitatively in its depth and subtlety of laws and process. Our knowledge at any stage is an abstraction from this total reality and therefore cannot be expected to hold indefinitely when extended into new domains… deeper explanations often imply the limited validity of what was were previously accepted as basic concepts, which later are then recovered as only as approximations or limiting cases.[234]

The effect of the preceding extracts is to neatly articulate the epistemological position of Bohm and Hiley (1993). Specifically they describe their perception (and related cognition) of an infinitely complex natural world using both mathematics and physics as their primary mode of explication.

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[232] Ibid, 320.
[233] Ibid, 320.
[234] Ibid, 321-2.

Appropriately their emphasis on the evolving nature of knowledge picks up on two ideas shared by two authors discussed elsewhere in the thesis. The first is Emily Martin (1991) (which was discussed in chapter 3.4), who argues that objective scientific knowledge is not possible, as it is always necessarily subjective. This is because scientific knowledge is determined both by the mind of the person (or people) creating the narrative and, as indicated above, the temporary nature of the horizons of the domain itself. The second idea expressed above is the recognition that one of the defining attributes by which our society evolves relates to the ongoing movement toward the discovery of new domains. That is to say, as new knowledge is discovered it displaces those ideas and findings that had previously been viewed as valid. This is reflected in Kuhn (1970) in the notion of a 'scientific revolution', as a new (and always better) scientific paradigm replaces the previous paradigm, rendering the old knowledge obsolete[235] The two extracts from Bohm and Hiley (1993) cited above also place this thesis in its proper context. The discussion in this dissertation is not intended to be absolute, rather it is a discussion centred on one of the most resolved, currently accepted ontological theories in the field of quantum mechanics. In time, all the ideas in this thesis will be supplanted by deeper understanding. As such this thesis and the interpretation of QM upon which the discussion rests should be view as part of an ongoing continuum.

Applying the contextualising statement as a heuristic tool, one can see that a legal decision extended into a new domain necessitating that earlier convictions are sometimes overturned is akin to the extension of knowledge in science. For example, the use of DNA evidence to exonerate a person successfully (albeit erroneously) convicted of a crime is one example of old legal knowledge (i.e. the guilt of the accused) not being able to survive extension into a new domain (an increase in the full

[235] Kuhn, T.S. (1996) *The Structure Of Scientific Revolutions* (3rd Ed) University of Chicago Press, Chicago, 12.

body of evidence applicable to a legal matter). To complete the application of Bohm and Hiley's (1993) above mentioned statement to law, one can see the recovery of the previous concept to be used '…only as an approximation'[236] may be apparent when determining which matters warrant further investigations prior to formally pressing charges.

The epistemological position of Bohm and Hiley (1993) is explicitly applied to the development of scientific knowledge in their discussion of the 'appearance/ essence' discourse. This was mentioned in the introduction of this dissertation in the context that it coheres with the process of engaging in the jurisprudential consideration of a legal issue or dispute. As such the 'appearance/ essence dichotomy can be used as a heuristic tool to offer insight into the law. Bohm and Hiley note:

> …as we go around a circular table, we see an ever-changing elliptical shape. But we have learned to regard this changing shape as a mere *appearance*, while the *essence*, i.e. the true being, is considered to be a rigid circular object. This latter is known first and is projected into our immediate experience so that the table even *appear*s to be circular (emphasis original). But further investigation shows that this object is not solid and eventually discloses an atomic structure. The solid object now reverts in our through to the category of an appearance and that the essence is a nucleus surrounded by moving planetary electrons… And later still even these particles were seen to be appearances, while the essence was a set of yet more fundamental particles… But in all of this development in our knowledge, it seems whatever we have thought of matter is turning more and more into empty space with an ever more tenuous structure of moving elements…What has been constant in this overall historical development is a pattern in

[236] Above n 128.

> which at each stage, certain features are regarded as appearance while others are regarded as an essence that which explains the appearance on a qualitatively different basis. But what is taken as essence at any stage, is seen to be appearance of a still more fundamental essence. Ultimately everything plays both the role of appearance and essence. If, as we are suggesting, this pattern never comes to an end, then ultimately all of our thought can be regarded as appearance, not to the senses but to the mind.[237]

Thus Bohm and Hiley (1993) are of the view that '...science is aiming for… appearances to be correct, i.e. that the actions flowing from [the sciences], such as experiments, be coherent with what appearances would imply'.[238] As noted previously, this view provides heuristic insight for the very nature of legal process itself. Judges evaluate evidence in order to try to get to the essence of a dispute, and not simply convict people on the basis of the appearance of guilt. For example, notwithstanding appearances, a person observed leaving a crime scene shortly after the commission of an offence is not necessarily guilty of the commission of that offence. The trial process is run for the express purpose of determining whether the essence of the dispute coheres its appearance. In the same vein, the need for the public perception (i.e. appearance) of the impartiality of legal process led to the oft-quoted aphorism from *R v Sussex Justices, ex parte McCarthy* [1924]:[239] 'Not only must Justice be done; it must also be seen to be done'. One further example of the desirability of aligning appearance and essence in the legal system is evident in the 'plain English drafting movement'. This movement is predicated on the notion that good drafting clearly specifies the rights and obligations created in the document, irrespective of its form (e.g. a piece of legislation or a

[237] Above n 2, 322.
[238] Ibid.
[239] 1 KB 256, [1923] All ER Rep 233.

contract between two parties). This movement is systemically desirable as it enhances rule of law. The Honourable Michael Kirby, former justice of the High Court of Australia, neatly encapsulated the kernel of this movement when he referred to the '..noble objective of making the law speak with a clearer voice' to those bound by it.[240]

The above-mentioned *prima facie* insights demonstrate that there are some clear heuristic insights offered to law from the discussion already undertaken in this section. These points have been included in this section as they fit neatly within the subject matter. Having acknowledged this point, as they speak to value of this area of research, it is timely to engage a description of the ontology espoused by Bohm and Hiley (1993).

4.3.2: Ontology

As described in chapter 3, the formalism in QM creates several problems, such as the wave-particle duality of light and the Schrodinger's Cat thought experiment to name two. These problems are the result of the ontology that underpins the formalism. For example, the wave-particle duality of light is premised on the idea that light behaves as *either* a particle or wave, depending on circumstances. In a similar vein, the explanation for the Heisenberg Indeterminacy Principle is that the measured particle possesses either an indeterminate location or momentum. From this it follows that the formalism endorses an ontology in which nature is 'undecided' on the form of the manifest world.

In contradistinction to this view is the interpretation of QM posited by Bohm and Hiley (1993). Their view is that quanta exist as *both* a particle and wave.

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[240] Kirby, M. (2010) 'Ten Commandments for Plain Language in Law' 33 *Australian Bar Review* 10, 16.

> When we come to the underlying quantum world, we find that it has a radically different nature. To be sure we still assume a particle, which at first sight would appear to be what is also done in classical physics. But now we say that that this particle is profoundly affected by the wave function i.e. through the quantum potential and guidance condition… This implies the possibility of a strong nonlocal connection of distant particles... The forces between particles depend on the wave function of the whole system, so that we have what we may call 'indivisible wholeness'…. There is a kind of objective wholeness, reminiscent of the organic wholeness of a living being in which the very nature of each part depends on the whole. All this behaviour is very different from what can be expected classically.[241]

Thus, according to Bohm and Hiley (1993) nature is always consistent (in that particles have a fixed location), however there is a horizon of understanding that humans are unable to see past. Restated, Bohm and Hiley posit that there is a deeper world (i.e. a structure) that is ever present, but it does not always outwardly manifest to humans. When that structure is manifest (i.e. macroscopic) it is a part of the 'explicate order'. When it does not manifest outwardly (but remains present), it is enfolded into the 'explicate order' and is part of the 'implicate order'. The concepts of implicate and explicate orders are described a little more fully later in this section, however it is raised at this juncture because it provides an overview of their ontology and also indicates the extent to which the Bohm and Hiley model differs from other interpretations of QM.

[241] Above n 2, 177.

Of most significance to this dissertation is that the Bohm and Hiley (1993) model posits a holistic model of physics. This is in contradistinction to the way we ordinarily perceive ourselves in the macroscopic world, i.e. separated from the world and subject to Cartesian duality.[242]

> Our first experience is, of course, of a world that is revealed to us fairly directly by our senses in relation to our outward actions and inward reflections in thought. The immediate experience in this world is that which is described by what is called common sense, but as Bohr has pointed out, this is refined, where necessary, to the more exact description of classical physics. Within the domain of such experience it may be said that this world is *manifest* (emphasis in original)… more generally it can be held in the hand, the eye, and of course, scientific instruments. Its basic characteristic is that it contains relatively stable structures that make holding possible. These structures must not only be relatively stable, but also essentially local.[243]

The basic premise of the holistic model of QM that is posited by Bohm and Hiley (1993) is that the *appearance* of separate entities that interact with one another via Newtonian forces does not entirely reflect the essence of our manifest reality (i.e. the ordinary world which we inhabit). That is to say, quantum holism is the view that it is simply not possible to describe the macroscopic world as a group of separate entities, rather it is the case that the parts are abstractions of the whole. One important corollary of this is that non-locality is seen to be ubiquitous throughout nature at the microscopic level (i.e. when the quantum potential is high). The effect of this view creates a profoundly different view of the universe:

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[242] Ibid, 58.
[243] Ibid, 176.

> The relationship between the parts of the system described [by Bohm and Hiley] implies a new quality of *wholeness* of the entire system going beyond anything that can be specified solely in terms of the actual spatial relationships of all the particles (emphasis in original). This is indeed the feature of the quantum theory, to go beyond mechanism of any kind. For it is the essence of mechanism to say that basic reality consists of the parts of the system which are in preassigned interaction. The concept of the whole, then has only significance, in the sense that it is only a way of looking at certain overall aspects of what is in reality the behaviour of the parts. In [Bohm and Hiley's] interpretation of the quantum theory, we see that the interaction of the parts is determined by something that cannot be described solely in terms of these parts and their preassigned interrelationships. Rather it depends on the many-body wave function (which in the usual interpretation, is said to determine the quantum state of the system.[244]

The effect of the statement above is to uncover an error we make every time we take our Cartesian perception to represent the essential nature of manifest reality. Cartesian duality is only an appearance. The essence of manifest reality includes the underlying wholeness of everything we can perceive. Thus it can be said that notwithstanding the default (Cartesian) nature of perception, it is the perception of separate physical entities that is an abstraction from the whole; not the other way around, as indicated in the extract below.

> …the classical world is explained as part of the overall quantum world [and is] simply assumed. Without such as possibility, we have to assume that somehow the universe is split into qualitatively different distinct parts even though we also tacitly assume that somehow the properties of the classical world are determined in principle from

[244] Ibid, 58.

> quantum laws. To treat the classical level as flowing out of the quantum laws is clearly necessary if we are to consider the universe as single whole. For such a theory requires that the general laws of matter at the classical level shall be implicit in the basic general laws which are actually quantum mechanical. [245]

4.3.3: The Wavefunction

In chapter 3.1.2 the wavefunction was described as it applies to the formalism in QM. The wavefunction also has significance in the Bohm and Hiley (1993) interpretation of QM as well. This type of ontological interpretation of QM is called a 'pilot wave theory'. As noted above, a particle is described both by the manifest particle (with a fixed position) *and* the wavefunction. The description of a particle is completed with the specification of the actual position of the particles. The position of a particle evolves according to the 'guiding condition' or 'guiding equation, which expresses 'velocities of particles in terms of the wavefunction'.[246] The effect of this is that in 'Bohmian mechanics the configuration of a system of particles evolves via a deterministic motion choreographed by the wavefunction'.[247] Another important aspect of the Bohm and Hiley (1993) model is the specific term in the wavefunction called 'quantum potential'. Through this term information about the whole is imparted to the individual particle. It is for this reason that one cannot entirely separate one part of manifest reality from another – the whole is always in the part

[245] Ibid, 342.
[246] Above n 3.
[247] Ibid.

and the part is always in the whole, as '…the implicate order manifests in the activity of a particle through its quantum potential'.[248] Bohm and Hiley (1993) note:

> The many-body wave function [has]… dynamical significance that refers to the whole system …thus playing a key role in the theory. We emphasise that *this is the most fundamentally new aspect* of the quantum theory [emphasis in original]. The above-described feature should, in principle, apply to the entire universe. At first sight this might suggest that we could never disentangle one part of the universe from the rest, so that there would be no way to do science as we know it or even to obtain knowledge by the traditional methods of finding systems that can be regarded as at least approximately isolated from their surroundings. However, it is actually possible to obtain such an approximate separation in spite of the quantum wholeness that [Bohm and Hiley] have described… in the classical limit where quantum potential is negligible, nonlocal interactions will for this reason not be significant. We may say that while the basic law refers inseparably to the whole universe, this law is such as to imply that the universe tends to fall into a large number of relatively independent parts, each of which may, however be constituted of further sub-units that are nonlocally connected. Therefore we can deal with these relatively independent parts in the traditional way as do our experiments.[249]

One important clarification is warranted at this stage. That is, one may wonder why nonlocality is not ordinarily experienced in the manifest world. The answer to this lies in the nature of 'quantum potential'. Bohm and Hiley (1993) state:

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[248] Ibid, 380.
[249] Ibid, 59.

> At first sight one might be concerned as to whether we will be able to understand why nonlocality is not encountered in our common experience of the world. Basically the answer to this question is quite simple. For our ordinary experience, both in the domain of common sense and in that of classical physics, is restricted to situations in which the quantum potential is very small, so that, in this context at least, it does not produce significant EPR correlations... quantum nonlocality is entirely the product of quantum potential.[250]

'Quantum potential' is described by a mathematical statement. The aspects of quantum potential that are germane to this dissertation is that it is high at the quantum level, and reduces as scale increases, until it is negligible at the classical level. It is a mathematical form that allows for some of the key ontological commitments espoused by Bohm and Hiley (1993), such as the notion that a particle is never separate from a new type of quantum field that fundamentally affects it. Another defining aspect of quantum potential is that it is:

> …independent of the strength (i.e. the intensity) of the quantum field but depends only on its *form*. By contrast, classical waves, which act mechanically (i.e. to transfer energy and momentum, for example to push a floating object), always produce effects that are more or less proportional to the strength of the wave. For example one may consider a water wave that causes a cork to bob. The further the cork is from the centre of the wave the less it will bob. But with the quantum field, it is as if the cork could bob with full strength even far from the source of the wave. Such behaviour would seem strange from the point of view of classical physics. Yet it is fairly common at the level of ordinary experience. For example we may consider a ship on automatic pilot being guided by

[250] Ibid, 151.

> radio waves. Here, too the effect of the radio waves is independent of their intensity and depends only on their form. The essential point is that the ship is moving with its own energy, and that the form of the radio waves is taken up to direct the much greater energy of the ship. We may therefore propose that the electron moves under its own energy, and that the form of the quantum wave directs the energy of the electron'. Thus, it may be said that the quantum potential is a form of information potential – it 'feeds' information about the whole into any given particle. In so doing, this may be seen to reflect a measure of proto-consciousness in that particle, as evinced in the double-slit experiement, in which a particle behaves differently (as if it knows) when two slits (rather than one) are open.

Thus, we can be begin to characterise the relationship between the ordinary, manifest level of reality and the microphysical as Bohm and Hiley (1993) note:

> Because of nonlocality, quantum jiggling under quantum interference conditions and other quantum properties…we may say that the quantum world is *subtle* (emphasis in original)…Its root meaning is based on the Latin *subtexlis* which signifies finely woven… we are proposing that it is real and indeed that it constitutes a more basic reality than does the classical 'world'. Indeed as we have shown the classical 'world' comes out of the theory as relatively autonomous. This autonomy arises whenever the quantum potential can be neglected so that the classical world can be treated on its own as if it were independently existent. But according to our interpretation it is actually an

> abstraction from the subtle quantum world which is being taken as the ultimate ground of existence.[251]

The reference above to the notion of that ordinary reality 'comes out' of the quantum realm, and further that the quantum realm is the 'ultimate ground of existence' is to be viewed in the context of the appearance/ essence discussion earlier. Simply stated, the appearance of manifest reality is that wholly described as a collection of separate entities that interact with another via Newtonian forces. The ontological interpretation of QM offered by Bohm and Hiley (1993) paints a different picture of the universe. It posits that a more accurate understanding is that there is a single whole upon which the perception of separateness is based. This whole is more fundamental than the manifest world. That is to say, 'the relative autonomy of the classical level…makes it possible for the total quantum world to manifest and reveal itself with itself in a measurement'.[252] This will be considered in subsequent chapters in the context of some implications this has for law. Prior to embarking upon that discussion, there are several further points of clarification that will be discussed below.

4.3.4: How do we move from quantum wholeness to locality in classical experience?

At this point is salient to clarify what may *prima facie* appear to be a dualist ontology divided between the manifest world and the quantum realm. It should be recalled that as quantum potential decreases, there is an increase in the classicity of behaviour. That is to say '…there is no sharp break between the quantum world and the classical world, but only a continual increase in the 'classicity' of the behaviour, as we approach the domains in which quantum potential becomes less and less

[251] Ibid, 177.
[252] Ibid, 179.

important'.[253] The effect of this is to render impossible the bifurcation of the manifest and quantum realms into a duality. This is best framed in the context that our ordinary perception seems very much grounded in the manifest world of localised particles; and yet a deeper understanding of matter yields the view that it consists of both localised particles *and* the nonlocal wavefunction. A corollary question may be raised as to whether we are responding to the particles in isolation or whether we interact with the wavefunction as well. The answer posited by Bohm and Hiley (1993) is carefully framed. They assert that whilst it appears to be the case that we are able to treat the manifest world as though it appears to be exclusively classical, they offer the view that the quantum and classical worlds cannot be separated into distinct components:

> The world of fields and particles is what conveys information to our senses in a well-defined way…Meaningful communication between people also requires classically describable processes involving a large number of quanta. Thus is not that we are *assuming* that the brain responds only to the states of particles and not to their wave functions. Rather we are simply calling attention to the observed fact that meaningful sense perception and communication has to go through the classical level in which the effects of the wave function can consistently be left out of account…[notwithstanding]…the overall quantum 'world' can manifest itself in the more limited classical sub world…there is not any kind of 'cut' between these two 'worlds'…Rather there is only one overall quantum world which contains an approximately classical 'sub-world' that gradually emerges…Moreover it is significant to note that it is the most characteristic quantum properties such as nonlocality and

[253] Ibid, 343.

> undivided wholeness that bring about the classical world with its locality and separability into distinct components.[254]

Having identified that the ontological structure is not dualistic, the categorisation of the relationship between the manifest and the quantum realms warrants clarification. The process of having the manifest world dissolve into the quantum is referred to Bohm and Hiley (1993) as the 'process of formation and dissolution of wholes (fission/ fusion)'.[255] They state:

> The process of formation and dissolution of the wholes (fission-fusion)… brings about the possibility of an objective ontological wholeness and of a distinction between states of such wholeness and states in which the parts or sub-wholes behave independently. [Bohm and Hiley] understand this through the formation of common pools of information. This information brings about nonlocal interaction, but quantum wholeness implies even more than this. For it arises out of the quantum field which cannot be understood solely in terms of preassigned properties and interactions of the particles alone. Rather the whole is presupposed in the quantum wave function and it is the active information that is in this wave function that forms and dissolves wholes.[256]

The 'fission/ fusion process' is explicated by an analogy posited by Bohm and Hiley (1993) to the functioning of human relationships in society. They posit:

> The most immediate and concrete reality is the collection of individual human beings. In so far as these are related by pools of information, this latter will become manifest in the

[254] Ibid, 178.
[255] Ibid, 95.
[256] Ibid.

> behaviour of human beings. The behaviour of both the individual and the society depend crucially on this information (rather as happens with the particles of physics). The information itself is held at some very subtle level which does not show directly and which has negligible energy compared with that involved in the physical movements of the people. To complete the analogy we might surmise that perhaps the information in the wave function is likewise contained at a more subtle level of negligible energy in a way that has not been shown yet and that we have not thus far been able to study.[257]

Such a description affirms the epistemological position articulated at the start of this chapter; namely that there are clear limits in knowledge possessed by human beings which limit our understanding of quantum realm. This is in contradistinction to the notion that there is an indeterminism that abides at the microphysical level. As such, the position espoused by Bohm and Hiley (1993) is indicative of areas that should be the subject of future research. Having described some of the key ontological commitments of Bohm and Hiley (1993) it is appropriate to turn one's attention to a description of implicate and explicate orders championed by Bohm and Hiley (1993) as these aspects of their ontology lend a refined nuance to the way in which the quantum and manifest realms interact.

4.3.5: The Implicate Order

One of the central loci of commitment in the ontological interpretation espoused by Bohm and Hiley (1993) is the notion of 'implicate order'.[258] This notion is one of the most important concepts because it is this order that informs the development of their discourse. Bohm and Hiley (1993) state

[257] Ibid, 105.
[258] Ibid, 353.

that order can be explicit or tacit.[259] For example, '…the (explicit) order of numbers corresponds to the order of numbers on a line. There are other more abstract types of order, such as order in music and language… [and] yet more subtle is the order of sensations and thought'.[260]

Bohm and Hiley (1993) elucidate the implicate order via analogy. They start with a simple example when they state that enfolding an explicate order into an implicate order occurs when ordinary Cartesian points are perceived through a lens; they note that a '…lens produces an approximate correspondence of points on an object to points on its image'.[261] However, their position is finer-grained and is explained with more precision as they deploy other analogies, such as the functioning of a hologram.

> Each region of a hologram makes possible a whole image of the object. When we put all the regions together, we still obtain an image of the whole object, but one more sharply defined, as well as containing more points of view. The hologram does not look like the whole object at all, but gives rise to an image when suitably illuminated. The hologram seems, on cursory inspection, to have no significant order in it, and yet there must somehow be in it an order that determines the order of points when it is illuminated.[262]

Bohm and Hiley (1993) posit that a hologram has an implicit order. They explicitly uses the phrase 'enfolded' to describe the relationship between the implicate order (i.e. the information encoded on the material upon the holographic data is embedded) and the explicate order (i.e. the object recorded by the hologram). That is to say that Bohm and Hiley (1993) state that the :

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[259] Ibid.
[260] Ibid, 180.
[261] Ibid, 353.
[262] Ibid, 353-4.

> Each part of the hologram contains an enfolded order essentially similar to that of the object and yet obviously different in form…the notion of enfoldment is not merely a metaphor, but that it has be taken fairly literally. To emphasise this point we shall therefore say that the order in the hologram is *implicate* (emphasis in original). The order in the object, as well as the image, will then be unfolded and we shall call it *explicate*.' Bohm and Hiley call the process of order being conveyed from the object to hologram [i.e. during the process of making the hologram] *enfoldment* or *implication*. Conversely, the process in which the order in the hologram becomes manifest to the viewer will be called *unfoldment* or explication.[263]

They argue that enfoldment and unfoldment are commonly encountered in ordinary experience, for example in the wherever one stands in a room, the whole order of the room is enfolded into each small region of space, and this includes the pupil of an eye which may happen to be there. This is unfolded onto the retina and into the brain and nervous system, so as to give conscious awareness [of the appearance of the room].[264] They give an additional example of enfoldment when they posit that '…the order of the entire universe is enfolded into each region and may be picked up by various instruments, such as telescopes'.[265] They further note that the oscillation between the enfoldment and unfoldment of the implicate order is dynamic and ongoing, as Bohm and Hiley assert that the fusion/ fission process is constant. They use the term 'holomovement' to encapsulate that concept and argue that it is one of the fundamental and defining aspects of our universe. This can be seen to echo the notion that there is a 'unity in change' that was articulated by Heraclitus of Ephesus as quoted by Plato in 401d of *Cratylus.* That is to say that the material out of which a thing, such as

[263] Ibid, 354.
[264] Ibid.
[265] Ibid.

river, is comprised does not alone define its existence, rather that there is also an underlying structure governing the organisation of the cosmos.[266]

> Since all matter is now analysed in terms of quantum fields, and since the movement of all these fields are expressed in terms of propagators, it is implied by current physics that the implicate order is universal. These fields, which are being treated as the ground of all existence, have to be understood as being essentially in movement. This is because the field cannot be said to be an entity which would persist (as a particle for example does) in a certain form over a period of time… consider a field variable ψ (x,t) defined at space-time point x, t. This has at most a purely momentary existence and be said to vanish at the very moment at which it would come into being [thus]… we can never have the same field point twice. Nor is there a unique form within which the field that persists [due to the nature of the quantum realm itself]. Therefore all properties that are attributed to the field have to be understood as relationships in its movement. We may suppose that that the universe, which includes the whole of existence, contains not only all the fields that are now known, but also an indefinitely large set of further fields that are unknown and indeed may never be known in their totality. Recalling that the essential qualities of fields exist only in their movement we propose to call this ground the *holomovement*. It follows that ultimately everything in the explicate order of common experience arises from holomovement. Whatever persists with a constant form [i.e. a table, for example] is sustained as the unfoldment of a recurrent and stable pattern which is constantly being renewed by enfoldment [i.e. quantum process] and

[266] Robinson, T (1987) *Heraclitus: Fragments*, Toronto, Ontario, University of Toronto Press, 84.

> dissolved by unfoldment [i.e. perception]. When the renewal ceases the form vanishes.[267]

Bohm and Hiley (1993) then apply holomovement to explain the enfoldment of the quantum realm into the manifest realm and in so doing explain *how* and *wh*y any attempt to formulate the *essence* (as opposed the *appearance*) of the manifest realm must also consider quantum wholeness.

> What then is the relationship between the notion of explicate order and the manifest world? Clearly the manifest world of common sense experience refined where necessary with the aid of concepts and laws of classical physics is basically in an explicate order. However, as we have suggested … this latter order is not always at the manifest level because it is profoundly affected by the active information represented by the quantum potential. This latter operates in subtle way…[and] …is in an implicate order. Therefore …particle movement is not understood fully as self-determined in the explicate order in which it is described. Rather, this explicate order reveals the deeper implicate order underlying its behaviour… [However, the movement of a large object at the manifest level] …becomes manifest only …under conditions in which the quantum potential can be neglected. In this case the movement is not describable in an explicate way, but it can be *approximated* as self-determined in the same explicate order that we used to describe it (emphasis added). Therefore it is essentially independent and can be abstracted as existing on its own. It is therefore capable of being grasped in the hand without fundamental alteration (whereas at the micro-level, the movement of particles is not)… Nevertheless…the implicate order is still revealed in the manifest world in some

[267] Above n 2, 355-357.

> of the more subtle relationships that arise in experiments at a quantum level of accuracy (e.g. interference experiments).[268]

The effect of this extract is to show that the perception (i.e. appearance) that at the manifest level there are many separate objects, is an approximation. The essence of those objects is that they are part of the indivisible whole, connected via the guiding condition. Bohm and Hiley (1993) then state that there is a deeper level, beyond the quantum realm that creates the structure from which both the quantum and manifest realms emerge. They cohere this with 'pre-space'.

> …it is possible, not only for the manifest level of ordinary experience, but also for the quantum level underlying it, to emerge from a still deeper level in which the classical Cartesian notions of form, order and structure have more or less dissolved. Indeed it [is] implicit…that such ideas, underlying our classical notions of space-time and measure, would have to arise as limiting cases of this deeper implicate order. In many ways this suggestion is close to…'pre-space'…[after explaining the mathematics behind their notion of pre-space Bohm and Hiley state]…We could then say the order of space (and ultimately that of time) flowed out of a deeper implicate order of pre-space. Moreover this pre-space would have a structure that was inherently conformable to the laws of the quantum theory. We would thus be free of the present incoherence of trying to force quantum laws into a framework of a Cartesian order that is really only suitable for classical mechanics.[269]

To place their ontology into context Bohm and Hiley (1993) offer the following:

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[268] Ibid, 362.
[269] Ibid, 374.

> …what we can say is "where ever you are" you may represent this as an "ordinary local space" but that there will be a point at which this space "dissolves" into an implicate order. Such a "universe" would not have a definite boundary, but would simply fade into something that does not manifest to us beyond its horizon. Nor would it have a beginning or an end. But rather it would similarly fade in the distant past and in the distant future…to anyone beyond our horizon everything would be as definite (or indefinite) as it is to us. That is to say that there is a kind of relativity of the implicate order.[270]

4.3.6: The Super Implicate Order

Bohm and Hiley (1993) extend their ontology on the basis that it can be applied to quantum field theory. They call this the 'Super Implicate Order'. The super implicate order '…tends to organise the first implicate order into something more particle like than it would in classical physics'.[271]

> Thus far we been considering the implicate order mainly in relation to particle theories, but further interesting insights can be gained by extending the notion of implicate order to quantum field theories. The classical field, which generally obeys a linear equation, has already been understood in terms of the implicate order, e.g. as in the example of the hologram. But when this field is quantised, a further kind of implicate order is introduced. We shall call this the super implicate order. The super implicate order is related to the implicate order as the implicate order, in particle theories, is related to particles.[272]

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[270] Ibod, 377-8.

[271] Ibid, 380.
[272] Ibid, 379.

They go on to note that their ontology is open, on the basis of new knowledge, to extended yet further. Bohm and Hiley (1993) state:

> At this point a little reflection shows that the whole idea of implicate order could be extended in a natural way. For if there are two levels of implicate order, why should there not be more? Thus if we regard the super implicate order as the second level, then we might consider a third level which was related to the second as the second is to the first. That is to say, the third implicate order would organise the second which would thereby become nonlinear. (For example there might be a tendency for whole quantum state to collapse into something more definite.) Evidently we could go on indefinitely to higher levels of implicate order. Since each is related to the one below, as the one below is related to the one still further below… we have an order of implicate orders.[273]

The thrust of these extracts is to leave open the possibility that the horizon of our understanding may be able to be pushed much deeper into the nature of reality as physics and mathematics evolve. Such a sentiment exists in contradistinction to the irreconcilable paradoxes that plague the orthodox view of quantum mechanics. Bohm and Hiley (1993) offer a suggestion about the nature of a third implicate order as one issue is as yet unresolved. This issue is grounded in the limited understanding of consciousness. Specifically, the question of why manifest reality appears separate whilst it is interconnected at its essence remains unanswered.[274] Whilst the next sub-section will describe what Bohm and Hiley (1993) posit on the relationship between the implicate order and consciousness there is one point that should be made. Specifically that the data currently available indicates that

[273] Ibid, 380.
[274] Ibid 381.

the quantum realm affects the manifest level, and not the other way around. They leave open the idea that this may not ultimately be the case:

> Thus far we have considered only a one-way connection of implicate orders in which the higher affects lower but not the other way around. However, we could quite readily extend the idea to allow lower orders to affect higher ones. At present we have very little to guide us as to how to do this…Bohm and Hiley speculate that one example could be in relation to the position towards which the wave function is made to collapse, i.e. '…a two-way relationship between wave function and particle. A similar tendency could be assumed such that all levels of implicate orders would tend to be loosely associated with the levels below. Thus the order of implicate orders would be based on sequences of two-way relationships.[275]

Whilst a detailed discussion of this is beyond the scope of this dissertation, this point has been raised at it demonstrates the type of issues that will need to be addressed as we seek understand the nature of reality. To wit, Bohm and Hiley (1993) give some attention to the interaction of consciousness and the implicate order.

4.3.7: The Implicate Order and Consciousness

As noted several times throughout this chapter one the most interesting aspects of the ontology proposed by Bohm and Hiley (1993) is the fact that we usually perceive the manifest world as a collection of individuated objects notwithstanding ubiquitous entanglement. Bohm and Hiley (1993)

[275] Ibid 380-381.

have given some consideration of this issue. They elegantly restate their ontology and apply it to the notion of consciousness using the specific example of listening to music:

> The essential features of the implicate order are, as we have seen, that the whole universe is in some way enfolded in everything and that each thing is enfolded in the whole. However, under typical conditions of ordinary experience, there is a relative independence of things, so that they may be abstracted as separately existent, outside of each other, and only externally related. However, more fundamentally the enfoldment relationship is active and essential to what each thing is, so that it is internally related to the whole and therefore to everything else. Nevertheless, the explicate order, which is dominates ordinary 'common sense' experience as well as classical physics, appears to stand by itself. But actually this is only an approximation and it cannot be properly understood apart from its ground in the primary reality of the implicate order, i.e. the holomovement. All things found in the explicate order emerge from the holomovement and ultimately fall back into it. They endure only for sometime, and while they last, their existence is sustained in a constant process of unfoldment and re-foldment, which gives rise to their relatively stable and independent forms in the explicate order.
>
> It takes only a little reflection to see that a similar sort of description will apply even more directly and obviously to consciousness, with its constant flow of evanescent thoughts, feelings, desires, urges and impulses. All of these flow into and out of each other and, in a certain sense, enfold each other (as, for example, we may say that one thought is implicit in another, noting that this word literally means enfolded). A very clear illustrative example of this enfoldment can be seen by considering what takes place when one is listening to music. At a given moment, a certain note is being played, but a

> number of the previous notes are still 'reverberating' in consciousness. Close attention will show that it is the simultaneous presence and activity of all these related reverberations that is responsible for the direct and immediately felt 'sense of movement', flow and continuity, as well as for the apprehension of the general meaning of the music. To hear a set of notes so far apart in time that there is no consciousness of such reverberations will destroy altogether the sense of a whole unbroken living movement that gives meaning and force to the what is being heard.[276]

Bohm and Hiley (1993) observe that a similar example is evident when viewing a series of images in quick succession and perceiving them as movement.[277] They go on to note that '[t]he sense of order that in the above experience [listening to a piece of music or watching a movie] is very similar to what is implied in our model of a particle as a sequence of successive incoming and outgoing waves'.[278] For these reasons Bohm and Hiley (1993) suggest '…that our most primary experience of consciousness *is* actually of an implicate order (emphasis in original)'.[279] Consequently, they are able to assert that '…in consciousness, as in quantum theory, the explicate order emerges from the implicate, as a relatively stable and self-determined domain and ultimately flows back into the implicate order'.[280]

The effect Bohm and Hiley (1993) is to posit a coherent, empirically equivalent ontological interpretation of quantum mechanics that addresses many of the unsatisfactory aspects of the orthodox view of quantum mechanics. One of the most satisfactory aspects of their theory is that it

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[276] Ibid, 382.
[277] Ibid, 383.
[278] Ibid, 382.
[279] Ibid, 353.
[280] Ibid, 348.

places humanity a context; at once deeply connected with the entire content of manifest reality whilst aware that it is not nature that is indeterminate; rather it is the horizon of our perception that is limited. Bohm and Hiley (1993) describe a nuanced world that consists of an eternal dance between fission and fusion; a world subject to a discourse in which appearance is supplemented with a deeper essence that reveals itself after a deeper study is undertaken. In turn this essence itself becomes the appearance of a yet more fundamental essence in an infinite recursive dialogue between these two polarities of perception. Bohm and Hiley (1993) note:

> It is interesting in this context to consider again the meaning of the word 'subtle'… this is "rarefied, highly refined, delicate, elusive, indefinable"; its Latin root is *sub-texere*, which means "finely woven". This suggests a metaphor for thought as a series of more and more closely woven nets. Each can 'catch' a certain content of corresponding fineness. The finer nets can only show up the details of form and structure of what is caught in the coarser nets; they can also hold within them content that is implied by the latter. We have thus been led to an extension of the implicate order, in which we have a series of interrelated levels. In these, the subtle- i.e. the more finely woven' levels including thought, feeling, physical reactions – both unfold and enfold those that are less subtle (i.e. 'more coarsely woven'). In this series, the mental side corresponds, of course, to what is more subtle and the physical side to what is less subtle. And each mental side becomes a physical side to what is less subtle. And each mental side in turn becomes a physical side as we move in the direction of greater subtlety…So we are supposing that, like mental processes, physical processes are also capable of extension to indefinitely great levels of subtlety in a series of implicate orders with two-way relationships.

One important aspect of the relationship between the implicate order and consciousness that is yet to be addressed is Bohm and Hiley's (1993) view on the perception of Cartesian duality and the mind-body problem. Prior to encapsulating their view, it salient to be cognisant that *The Undivided Universe* is first and foremost an interpretation of QM. It is not written to engage with the scholarly repartee on the contentious subject of Cartesian duality. Bohm and Hiley (1993) state:

> One may then ask what is the relationship between the physical side and the mental processes? The answer that we propose here is that there are not two processes. Rather it is being suggested that both are essentially the same. This means that that which we experience as mind, in its movement through various levels of subtlety, will, in a natural way ultimately move the body by reaching the level of quantum potential and of the 'dance' of the particles. There is no unbridgeable gap or barrier between any of these levels. Rather, at each stage some kind of information is the bridge. This implies that the quantum potential acting on atomic particles, for example, represents only one stage of the process.
>
> The content of our own consciousness is then some part of this overall process. It is thus implied that in some sense a rudimentary mind-like quality is present even at the level of particle physics, and that as we go to subtler levels, this mind-like quality becomes stronger and more developed. Each kind and level of mind may have relative autonomy and stability. One may then describe the essential mode of relationship of all of these participation, recalling that this word has two basic meanings, "to partake of" and to "partake in".
>
> Through enfoldment, each relatively autonomous level of mind partakes of the whole to one degree or another. Through this it partakes of all of the others in its "gathering" of

> information'. And through the activity of this information, it similarly takes part in the whole and every part. It is in this sort of activity that the content of the more subtle and implicate levels is unfolded (e.g. as the movement of the particle unfolds the meaning of the information that is implicit in the quantum field…[Just] as the perception of hunger is catagorised as thirst, which is then manifest as the body getting up, going to a source of water and drinking it, and then that initial feeling being superseded by one of contentment]. For the human being, all of this implies a thoroughgoing wholeness, in which mental and physical sides participate very closely in each other. Likewise, intellect, emotion, and the whole state of the body are in a similar flux of fundamental participation. Thus there is no real division between mind and matter, psyche and soma.
>
> Extending this view, we see that each human being similarly participates in an inseparable way in society and in the planet as a whole. What may be suggested further is that such participation goes on to a greater collective mind, and perhaps ultimately to some yet more comprehensive mind in principle capable of going indefinitely beyond even the human species as a whole.[281]

4.3.8: Two Important Qualifications and a Caveat or Two

There are two important qualifications that have been made by Bohm and Hiley (1993) in relation to their interpretation of QM. The first is that there remains a vast scale of matter as yet uninvestigated. To wit, Bohm and Hiley (1993) note that the shortest distance measureable in physics is 10^{-16} cm, yet the shortest distances in which it is thought that the current notions of space-time have meaning is 10^{-33} cm. The effect of this is that there is a '…vast range of scale in which an

[281] Ibid, 386.

immense amount of yet undiscovered structure could be contained. Indeed, this range of scale is comparable to that which exists between our own size and that of the elementary particle'.[282]

The second qualification made by Bohm and Hiley is a discrete point that also may flow on from the first point made above. They state '[t]here is no reason to believe that the quantum theory is an ultimate truth. Rather, like other theories, it probably has a limited domain of validity'.[283] The effect of this is that there is a need to remain aware of the developments made in this area of scholarship, as there is still much to explore. This imperative is exacerbated by an observation discussed earlier in this dissertation; namely that a system of laws that reflect the essence of that which they regulate is good for rule of law and hence systemically desirable.

In addition to these qualifications, there are some other concerns that have been raised, but as has been noted by Goldstein (2013), Bohm's work is generally not well understood:

> Bohmian mechanics has never been widely accepted in the mainstream physics community. Since it is not part of the standard physics curriculum, many physicists – probably the majority – are simply unfamiliar with the theory and how it works. Sometimes the theory is rejected without explicit discussion of the reasons for rejection. One also finds objections that are based on simple misunderstandings.[284]

For this reason all the objections that were catalogued in Goldstein (2013) were able to be resolved easily. Thus they are not covered in any significant detail here as they do not relate those aspects of Bohm and Hiley's (1993) model of QM germane to the discussion in this dissertation. Of most

[282] Ibid 38.
[283] Ibid 180.
[284] Above n 3.

interest is the more general objection directed toward so-called 'hidden variable' theories. The basis of this concern is that the orthodox view of QM has indeterminisim at its core. This indeterminism has been accepted and encultured through the view of John von Neumann who claimed that the notion of a '…deterministic completion or reinterpretation of quantum theory was mathematically impossible'.[285] However, Goldstein (2013) observed that 'Bohmian mechanics is a counter example to the claims of von Neumann. In fact, according to John Bell, von Neumann's assumptions…are so unreasonable that "the proof of von Neumann is not merely false but *foolish* (emphasis original)"'.[286]

Bohm and Hiley (1993) also place limits on the extent to which LUH can be applied; they state:

> Although the implicate order is a theory of the whole, it is in no sense a 'theory of everything'. Or to put it differently we do not expect any 'mirror' to provide the complete and perfect reflection of reality as a whole. Every mirror abstracts only some features of the world and reflects them only to a limited degree of accuracy as well as from a limited perspective. We emphasise again that physical theories share this sort of limit as much as other forms of knowledge. For our thoughts are always a limited abstraction from the indefinitely great subtlety of the implicate order as a whole…
>
> …But probably the whole scheme of the implicate order will be found to be limited too, and will eventually have to be contained in some yet more comprehensive idea. More generally, we are not asserting finality for any of the ideas that we propose here. All proposals are points of departure for exploration. Eventually some of them may be

[285] Above n 3.
[286] Ibid quoting Mermin, N.D. (1993) "Hidden Variables and the Two Theorems of John Bell", *Rev Mod Phys.*, 65: 803-815.

> developed so far that we take them as working hypotheses. But in principle we will be ready to modify them or even drop them whenever we find evidence for doing this.

4.3.9: Conclusion.

By this stage it evident that the ontological structure posited by Bohm and Hiley (1993) is epistemology equivalent to the formalism, and posits a paradigm with an ontology and epistemology different from the encultured norms. The progenitor of this ontological construct, David Bohm, describes the basic concept of universal holism in the now classic text, *Wholeness and the Implicate Order*:

> The 'quantum' context thus calls for a new kind of description that does not imply the separability of the 'observed object' and the 'observing instrument'. Instead, the form of the experimental conditions and the meaning of the experimental results have now to be one whole, in which analysis into autonomously existent elements is not relevant.
>
> What is meant here by wholeness could be indicated metaphorically by calling attention to a pattern (e.g. in a carpet). In so far as what is relevant is the pattern, it has no meaning to say that different parts of such a pattern (e.g. various flowers and trees that are to be seen in the carpet) are separate objects in interaction. Similarly, in the quantum context, one can regard terms like 'observed object'; 'observing instrument';...'experimental results', etc., as aspects of a single overall 'pattern' that are in fact abstracted or 'pointed out' by our mode of description. Thus to speak of the interaction of 'observing instrument' and 'observed object' has no meaning.

> A centrally relevant change in the descriptive order required in the quantum theory is thus dropping the notion of analysis of the world into relatively autonomous parts, separately existent but in interaction. Rather the primary emphasis is on undivided wholeness, in which the observing instrument is not separable from what is observed.[287]

This paradigm also resolves many of the unsatisfactory aspects of the orthodox view of QM. The paradigm posited by Bohm and Hiley (1993) is able to provide a radically unique context from which to both critique existing legal norms and also to posit potential legal reform. Any such scholarly work, by virtue of considering the essence of manifest reality, will ensure law remains relevant as it remains in-step with new knowledge. Notwithstanding a myriad of additional reasons, these few reasons alone are sufficient for this area to demand scholarly attention.

Having described Bohm and Hiley's (1993) ontological construct, we can turn our attention to explaining how it fits under the umbrella of LUH..

4.4: Limited Universal Holism

Limited universal holism is the term used throughout this dissertation to describe the notion that there is a deeper level of manifest reality at which locality disappears. As noted in the preceding subsection, this means that ordinary human perception (i.e. appearance) indicating the world consists of the separate entities interacting via Newtonian forces does not fully encapsulate our

[287] Bohm, D. (1980) *Wholeness and the Implicate Order*, Routledge & Kegan Paul, New York, 169.

understanding of manifest reality. It is the case that there is an interpretation that is QM that empirically equivalent to the mainstream orthodox view that creates a different picture of the universe. This interpretation points to a universe in which every particle becomes inseparable from the whole. The implication of this locus of commitment is that we consider what this radically different (and counterintuitive notion) means to us. This thesis asks this question in respect of some legal implications.

Whilst several heuristic insights arising from Bohm and Hiley (1993) have already been mentioned in this thesis, it is necessary to properly contextualise this new ontological structure before engaging with a more detailed discussion. This will be made by looking at each of the three words that make up LUH.

4.4.2: 'LIMITED'

The term 'limited' acts as a crucial contextualisation in this dissertation. It is to recognise that despite the existence of wholeness as the essence of our universe, the appearance is of separate entities via a constant dance between enfoldment and unfoldment. That is to say, the use of 'limited' connotes that as one moves from wholeness at the quantum level into higher-order macroscopic reality (e.g. atomic, molecular and beyond, some of the phenomena that operate at the microphysical level (e.g. ubiquitous entanglement) appear to vanish. As noted previously, Bohm and Hiley have shown that the reason this occurs can be attributed to an increase in the value of the mathematical term 'quantum potential'. Esfeld (2001) uses the term 'chirality' to describe the

process of some properties disappearing as scale changes.[288] One form in which chirality manifests is as the lack of a plane of symmetry in an object as demonstrated by appearance of chirality in chemistry in respect of the existence of asymmetrical molecules. In such molecules, Esfeld observes that there is complete symmetry in the shape of an atom; however, at the molecular level the arrangement of those atoms is asymmetrical.[289] This evidences that whilst asymmetry is a feature at a higher-level (e.g. the molecular level), it is not manifest at the lower level (e.g. at the atomic level). Chirality is the notion that lower-order properties of quantum reality appear to vanish at higher-order levels and higher-order properties appear to vanish at the lower-levels. Thus it may it said that in the simplest sense, chirality is the term used to describe the process by which some properties vanish when moving between the quantum and manifest realms. Bohm and Hiley (1993) emphasise the dynamic interaction between these two realms when they refer to the constant dance between the whole and any localised body being described as a 'holomovement'. It may be recalled that holomovement is responsible for the 'fission/ fusion' of the whole.

Thus, the use of term of the 'limited' is to recognise that whilst the essence of manifest reality is the wholeness described above (and elsewhere in the chapter); there is the appearance of separateness. This separateness, whilst being only an abstraction of the whole, allows for the perception of the myriad of attributes that can be ascribed to any object, such as: species, animate/ inanimate, size, *et cetera.* The significance of this is that law and legal discourse is framed around categorisation (for example, lawful/ unlawful, murder/ manslaughter and the treatment of animate beings versus that

[288] Esfeld, M. (2001) *Holism in Philosophy of Mind and Philosophy of Physics*, Kluwer Academic Publishers, 297-298.
[289] Ibid.

of inanimate beings. It is evident that catagorisation is necessarily contingent on the attributes of the part and necessary for a legal system to function. For this reason the use of the term 'limited' is to recognise that implicate wholeness is an aspect of our manifest reality that has a limited expression in the explicate, or manifest realm. This recognition establishes a crucible for the discussion undertaken in this dissertation.

4.4.2: 'UNIVERSAL'

It was described elsewhere in this chapter how the whole is enfolded into every part of manifest reality via the implicate order. *Prima facie*, this explains the use of the term 'universal'; however, some clarification corollary of this ontological construct is in order. The use of the term 'universal' means that all physical objects which are perceived as separate from us are, in point of fact, inseparable. The separation is an abstraction from the whole. The term 'universal' is a noteworthy inclusion as it is a reminder that Cartesian duality does not fully encapsulate manifest reality. This is because Cartesian duality frames human perception and fuels the perception that the physical universe is filled with discrete objects. On the other hand Bohm and Hiley (1993) show the incompleteness of the view that the universe consists of solid, ball-shaped atoms. They show that we should also include a universal wavefunction in order to better describe physical reality. Thusly an existential paradox emerges.

There are two points that explain this paradox. The first is to note that the tension between ordinary direct perception and the notion of ontological wholeness is part of a broader recognised tension. Guzzetti (2000) observes 'in science, particularly, students' prior ideas (derived from outside experiences or common sense) are often contrary to the scientifically acceptable ideas presented in

the classroom'.[290] Of particular relevance to this discussion is Guzzetti's observation that '[a] plethora of past research demonstrates that students...do not easily give up their prior notions'.[291] Whilst Guzzetti studied the problems of teaching students enrolled in science courses, the principle applies to all people (i.e. including lawyers). Addressing this socio-cultural issue is beyond the scope of the legal research that is subject of this thesis. Nonetheless, it is important to contextualise this tension distinguished in this discussion with the observation that there are many examples of counter-intuitive science. A dedicated Wikipedia page lists several examples of counter intuitive science, including the notion that the Earth is round rather than flat, that water vapour is lighter than air and is reason that clouds float, that under certain circumstances, a warmer body of water will freeze faster than a cooler body and, tellingly, Wikipedia expressly mentions the wave-particle duality of light discovered when conducting the double slit experiment.[292] It is a pragmatic observation that scientific fact and human perception can diverge. Indeed it appears to be a hallmark of increasingly sophisticated scientific knowledge discerned by more subtle experimental observations. It also should be noted that there are some scholarly attempts, such as that made by Domazet (2011), to reconcile the notion that a single quantum system exists simultaneously with the ordinary human perception of manifest reality.[293] However as noted above, resolving the tension between the ordinary human perception of a universe filled with discrete objects and ontological wholeness, is not the focus of this research. This point is made in the context of noting that the

[290] Guzzetti, B. (2000) 'Learning Counter-Intuitive Science Concepts: What have we learned from over a decade of research?', 16, *Reading and Writing Quarterly*, 89 – 98 at 89.
[291] Ibid.
[292] Wikipedia, (2012) 'Counter intuition in Science ', available at <http://en.wikipedia.org/wiki/Counterintuitive#Counterintuition_in_science> last viewed 17 June 2012.
[293] Domazet, M. (2011) 'A Law-Constitutive Explanation of Fundamental Material Objects and "Bodies that Surround Us', 10, 1, *Prolegomena*, 67 -85.

term ‘universal’ connotes that there is an ontological wholeness that challenges the ordinary perception of discrete individuals and objects.

The third term to be addressed in explaining the use of ‘limited universal holism’ is the term ‘holism’.

4.4.3: ‘HOLISM’

The term ‘holism’ is generally correlated with the phrase ‘the whole is greater than the sum of its parts’.[294] However, the term ‘holism’ can be used in two specific contexts when used in a philosophical sense.[295] In the first instance, ‘holism’ can be used as a methodological perspective. In this sense the term refers to the idea that the best way to understand the behaviour of a complex system is to treat it is as a whole rather than to simply reduce the complex system to the study of its constituent elements and their behaviour. As such, methodological holism stands in contrast to methodological reductionism.[296] That being said, there is a paradox that emerges on this point; Bohm and Hiley (1993) frame a relationship between these two seemingly incommensurate polarities when they speak of any part being able to be abstracted from the whole (when quantum potential is low) in order to study the part notwithstanding universal wholeness.

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[294] Healy, R. (2009) ‘Holism and Nonseparability in Physics’, Ed. Zalta E.N., *The Stanford Encyclopaedia of Philosophy*, available at <http://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=physics-holism> last viewed 22 November 2011.

[295] The term ‘holism’ is also used in other disciplines and applications such as anthropology, in business (i.e. holistic branding), in ecology, in *gestalt* theory and economics. See: Ikehara, H.T. (1999) ‘Implications of Gestalt Theory and Practice for the Learning Organisation’, 6, 2, *Learning Organization*, 66-69; Kennet, M. Heinemann, V. (2006) ‘Green Economics: Setting the Scene. Aims, Context and Philosophical Underpinning of the Distinctive New Solutions Offered by Green Economics’, 1, 2, *International Journal of Green Economics*, 68 – 102; Vayda, A.P. (1986) ‘Holism and Individualism in Ecological Anthropology’, 13, 4, *Reviews in Anthropology*, 295 – 313; Schmidt, K. Ludlow, C. (2002) *Inclusive Branding: The Why and How of a Holistic Approach to Brands*, Palgrave Macmillan, New York.

[296] Ibid.

The second use of the term 'holism' describes a metaphysical position. The kernel of metaphysical holism is contained in the statement that 'the nature of the whole is not determined by that of its parts'.[297] In this thesis the notion of 'metaphysical holism' can applied to the universal wavefunction as it is through this aspect of nature that the whole is needed to understand the 'part'. This metaphysical position indicates that a deeper nature of physical reality exists, one that is not fully captured during the ordinary human perception of reality. That is to say, human perception assisted with mathematics and theoretical physics paints a radically different picture of physical reality and this contrasts with that observed with unassisted human perception. The phenomena observed at the deeper level of reality, such as non-locality, entanglement with the rigidly individuated ordinary perception of reality.

Ontological theories that posit metaphysical singularity are all variants of 'monism'. Schaffer (2008) succinctly states that whilst there are many types of monism, they are all similar in that they 'attribute oneness'.[298] This oneness exists simultaneously with reality as ordinarily perceived; LUH can be classified as a form of monism, and indeed Schaffer (2008) observes that an argument for monism can be advanced by way of quantum mechanics.[299] As such, LUH fits into the monist category. It can be seen that holism as a body of thought has been used to integrate the quantum mechanical view of reality with the generally accepted view of the world which is both epistemologically and existentially correct, to a point. Healy (2009) succinctly explains that metaphysical holism has three branches:

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[297] Ibid.
[298] Schaffer, J. (2008) 'Monism', ed: Zalta, E.N., *The Stanford Encyclopaedia of Philosophy*, available at <http://plato.stanford.edu/entries/monism/> last viewed 20 June 2012.
[299] Ibid, 3.2.2.

1. Ontological holism: Some objects are not wholly composed of basic parts.
2. Property holism: Some objects have properties that are not determined by physical properties of their basic parts.
3. Nomological holism: Some objects obey laws that are not determined by fundamental physical laws governing the structure and behaviour of their basic parts.[300]

Quantum mechanics is most often concerned with property and ontological holism, although the ubiquitous holism in Bohm and Hiley (1993) nomological holism. Thus, quantum mechanics makes it apparent that there is a aspect of reality that exists as an essential element ordinary physical reality. Bohm and Hiley (1993) successfully link the micro-physical and macro-physical levels (as previously reviewed), this success is attributable to the use of the term 'limited' in the ontological structure of limited universal holism. It is this aspect of limited universal holism that makes this an acceptable theory. It that spans the divide between the ordinary limits of human perception (e.g. that we are separate and individualised entities moving through a world of discrete objects) but also acknowledges the existence of quantum phenomena. However, it tempers the effect of quantum phenomena by limiting them 'more or less' to the microphysical level of reality.[301] As noted earlier, the issue at hand in this legal thesis is not how the aforementioned model works; rather the discussion is centred on what it means. As such the correlation between LUH and the law must now be drawn. The first step is abstract the notions of equality, universality and inalienability from LUH.

[300] Above n 182.
[301] Above n 140, 300.

4.5 Limited Universal Holism and Equality, Universality and Inalienability

This thesis adopts the view that LUH posits that there is an implicate order enfolded into every part of manifest realm that can be abstracted to 'essential' values. The term 'essential' is chosen because it reflects Bohm and Hiley's notion of 'essence'. The values are equality, inalienability and universality. These values are formulated in the form of a statement: One of the implications of LUH is that it can be used to assert that there is an 'essentially equality' that is universally pervasive and an inalienable aspect of manifest reality.

'Essential equality' is a reference to the notion espoused by Bohm and Hiley (1993) that the individualisation that characterises the manifest realm breaks down and *everything* forms a whole. This wholeness is the essence that defies the nature of our individualised perception; it may be recalled that Bohm and Hiley stated:

> There is a kind of objective wholeness, reminiscent of the organic wholeness of a living being in which the very nature of each part depends on the whole. All this behaviour is very different from what can be expected classically.[302]

This 'objective wholeness' is enfolded into every particle and thought in the universe; it allows the manifestation of the physical reality with which we interact. As noted above, this physical reality is likened to a living being in which every part has an innate equivalence as the nature of each part depends on the whole. Indeed the parts are manifestations of different aspects of the same whole. It may be argued if we apply this analogy to a human being then the notion essential equality is

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[302] Above n 2, 177.

rebuffed – a heart is, *prima facie*, more valuable than a little finger. This is not the case. Such a statement is entirely grounded in its value in the manifest realm and is based on an understanding of its function (i.e. to circulate blood in one's body). If we engage in a thought experiment whereby an alien was to see a human, it is reasonable to think that they would not share that same sense of value, as they would have no understanding of its value to us. Similarly, the finger of a dead person is less useful to the dead person than a finger is to a live person. Likewise, my little finger is worth more to me than someone else's. This thought experiment is designed to highlight the notion that value is subjective and often attributable to a cognitive process, such as our engagement with the utility of the object. The point is that in this example, all these fingers are explicate and the enfolded order is identical in all of them. This enfolded order creates an equivalence that is more fundamental than its value or utility in the manifest world. According to the ontological structure of Bohm and Hiley (1993), since there is no distinction between *quale* and matter, the thoughts that are used to ascertain value are also explicated from that same implicate order. For this reason, this thesis adopts the view that there is an essential equality enfolded into everything in our universe. Accepting essential equality does not necessarily mean that we would say our finger is of the same value to us as the finger on a dead person. Rather the point is that they both contain the same enfolded order, and at a deeper level they cease to be objects at all and are, in point of fact, part of the same whole. It is argued that essential equality is deeply embedded into the entire content of manifest reality. This example has been raised as it identifies one significant aspect of manifest reality. Namely that notwithstanding essential equality there is a hierarchy of value that exists in our minds. It is argued that such perceptions and thoughts are totally based on the 'appearance' of manifest reality. A more nuanced understanding of manifest reality must consider *both* the appearance and essence of the abstracted object in question.

The values of universality and inalienability are somewhat more straightforward to abstract. Universality is a value that is applicable because the entire content of manifest reality; both mind and matter, contain the implicate order. Inalienability is an applicable value because is the essence of manifest reality always contains the same essence, regardless of its properties in the manifest realm. We can now return to the statement that weaves these values together: One of the implications of LUH is that it can be used to assert that there is an 'essentially equality' that is universally pervasive and an inalienable aspect of manifest reality. This statement will be applied in the discussion applying LUH to law later on.

5. SCIENTIFIC FACTS, LEGAL ONTOLOGY AND THE ROLE OF EPISTEMOLOGY IN CREATING ORDER IN THE LEGAL UNIVERSE

As has been noted at several points throughout this thesis, the discipline of law has a particularly strong cultural resistance to external disciplines being woven into its fabric. Three of the primary reasons for this are as follows. Firstly, the 'legalist' history of law (as noted in chapter 1). Secondly, there is the observation that at a systemic level the normative and enforceable dimensions of the law render the consequences of a misstep potentially dire. Thirdly, consistency in law and legal reasoning is an important aspect of both civil and common law traditions, one that affirms the rule of law. Whilst these are important attributes of any legal system, as noted in chapter 1 an epistemic pressure has been steadily building, a pressure that mandates that the law evolves *pari passu* to incorporate knowledge from other disciplines in order to maintain relevance. Such an imperative is best understood through the prism of legal realism. For example, cybercrime is a relatively new area of law that raises a swathe of new challenges requiring regulation and typifies the need for the legal system to evolve, notwithstanding the legalist perspective. This pressure is exacerbated by several observations, for example, globalisation is creating a new world order in which differing legal systems are brought into closer proximity than ever before. Postmodern perspectives have opened the discipline to a variety of analytical perspectives which have themselves shown many areas to be in desperate need of reform. It is at this point that the common law succumbs to a self-made paradox; there is a pressure to become open in order to assimilate the new environmental realities yet remain sufficiently closed in order to operate as intended and maintain the systemic stability for the rule of law. Baxter (2013) observed that prominent structural functionalist, Niklas Luhmann focused extensively on the autopoietic interference that both economics and politics exert on the

legal field.[303] One of the foundational statements made by Luhmann was that '…operative closure is the basis for autonomy or autopoiesis'.[304]

It is with a measure of irony that that one notes the necessity of employing external disciplines to determine when the legal universe, which until relatively recently regarded itself as a wholly autonomous discipline,[305] has to integrate significant findings of these external disciplines. Epistemology is one such external discipline utilised to determine if, when and how 'alien' information from outside the existing legal universe may be integrated into it. It will be shown that *epistemic coherence* and *structural coupling* between the respective disciplines offer two pathways to integrate new knowledge in a manner that will neither needlessly nor carelessly undermine sovereign areas of justifiable autonomy within the legal universe.

5.1: Order in the Legal Universe.

The phrase 'order in the universe' can conjure polar opposite images; on the one hand lies a utopia that consists of peace, law and good governance permeating throughout existence and being applied with consistency and fairness; and on the other hand lies an image somewhat akin to the vision of Senator Palpatine in George Lucus' *Star Wars* saga;[306] some kind of supra jurisdictional

[303] Baxter, H. (2013) 'Niklas Luhmann's Theory of Autopoietic Legal Systems', 9, *The Annual Review of Law and Social Science*, 178-181.
[304] Ibid, 169.
[305] The level of autonomy perceived by the legal discipline occurs not just in respect of non-law disciplines, but inter-jurisdictionally as well. See: Kiefel, J. (2011) 'Comparative analysis in judicial decision-making: the Australian experience', Max Planck Institute, 12 July 2010, published in: 75, 2 (April 2011*), Rabels Zeitschrift für ausländisches und internationales Privatrecht,* 354-370.
[306] Star Wars (2002) *Episode II: Attack of the Clones,* LucasFilms.

federation imposing an Orwellian version of peace upon the meek and the disenfranchised.[307] The differences between the realities espoused in these two interpretations present wildly divergent social realities. The former image implies a universe in which there is internal harmony, and in which citizens willingly submit themselves to the normative social order in a system that embodies the paragon of excellence. The latter image presents only the veneer of order; conflict is rife throughout the universe and a rebellious minority seeks to destabilise the establishment for the greater good, with the promise of a new and more evolved social order. In both these images, despite the aforementioned differences, some elements are common; firstly that there is a disciplinary space that can be conceptualised as a 'legal universe', and secondly that 'order' be framed in some manner that connotes systemic stability. Whilst these images may appear to be entirely removed from the subject matter of this thesis, this is not the case.

When framing the notion of the 'legal universe', it may be recalled from chapter 2, that Banakar and Travers (2005:II) clarify an important issue of terminology. They observe that Bourdieu's notion of the traditional legal discipline constituting a 'field' is compatible with the term 'system' used by Teubner (and also in a combined paper written by Teubner and Paterson[308]). Both view the legal discipline as a 'socially constructed space consisting of set of objective relations'. That is to say that an abstract social space may be demarcated. Thus, for the purposes of this discussion the term 'universe' refers to an identifiable and isolable group or community and as such it becomes apparent

[307] In a time of war enlarged powers are granted to Senator Palpatine, effectively making him an emperor. In a caesarean grab for power, he uses military force to consolidate his rule and refuses to relinquish is position. In so doing Senator Palpatine transitions the federation of societies in the Galactic Republic from a democratic system to an imperial form of government. All opposition to his rule is met with military force. This is the primary story arc that runs through the rest of the *Star Wars* series, as the Rebels seek to restore the galaxy to a democratic system of government.

[308] Paterson, J. and Teubner, G. (2005) 'Changing Maps: Empirical Legal Autopoiesis' (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 215 – 237.

that a legal universe is indeed a definable concept; to wit, Daicoff (1997) has observed that lawyers the world over share a common set of personal attributes.[309] Bourdieu (1987) develops further the notion of legal universe, he argues that lawyers the world over have similarities; particular internal protocols and assumptions, characteristic behaviours and self-sustaining values he terms the 'juridical field'.[310] Probert (1959) notes that lawyers share a particular language,[311] a sentiment echoed by Mertz (2007) who states that the language of law is derived from legal context and that learning that language is the '...key foundation for thinking like a lawyer'.[312] Mertz arrives at this view on the basis that:[313]

> There is a core approach to the world and to human conflict that is perpetuated through ... legal language. This core vision of the world and of human conflict tends to focus on form, authority, and legal-linguistic contexts rather than content, morality and social contexts...This legal worldview and the language that expresses it are imparted in all of the classrooms studied, in a large part through reorienting the way students approach written legal texts. This reorientation relies in important ways on a subtle shift in linguistic ideology... Thus, a key function of law school is actually training to a common language that lawyers use to communicate about the conflicts with which they must deal.

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[309] Daicoff, S. (1997) 'Lawyer, Know Thyself: A Review of Empirical Research on Attorney Attributes Bearing on Professionalism', 46, *The American University Law Review*, 1337 – 1427 at 1390.
[310] Bourdieu, P. (1987,) 'Force of Law', 38, *The Hastings Law Journal*, 805 – 852.
[311] Probert, W. (1959-60) 'Law and Pursuasion: The Language Behaviour of Lawyers' 108, University of Pennsylvania Law Review, 35 -58.
[312] Mertz, E. (2007) The Language of Law School: Learning to "Think Like a Lawyer", Oxford University Press, New York, 3.
[313] Ibid, 4-5.

Notwithstanding that Mertz has identified content, moral and contextual deficiencies in the current status quo within the legal universe; Mertz posits that the legal universe can be framed around yet deeper intellectual processes. She extends the notion of a shared language that unites the transmission of legal education to a notion of a shared epistemology among lawyers and law schools. She posits that the shared legal epistemology urges students to:

> ...pay attention to abstract categories and legal (rather than social) contexts, reflecting a quite particular, culturally driven model of justice...this form is..."legal reasoning". Students learn to select those details and aspects of context deemed salient for the analogies that are used to bridge concrete cases and abstract doctrines.

The scope of Mertz's study is the delivery of legal training in universities for the purpose of obtaining a legal qualification and was not intended to be taken as a fulsome study of the discipline. However in course of undertaking her analysis she exposes the kernel of a systemic issue that is of particular significance to this thesis. Since admission into the legal profession is through an educational gateway, the tone of an individual's legal education sets the context for their professional life.

Mertz notes that 'A standard legal reading conceals the social roots of legal doctrines, avoiding examination of the ways that abstract categories, as they develop, privilege some conflicts and events over others'.[314] The significance of this observation is that Mertz has identified a 'blind spot' in legal reasoning that is systemically encultured throughout the discipline; namely that the delivery of legal training is focussed on the 'what the law is' rather than 'how the law came to be' and 'how

[314] Ibid, 5.

the law needs to evolve'. Carrington (1984) refers to this as 'technocratic' legal education.[315] The corollary of this gap is two-fold; firstly there is a cultural resistance to such types of inquiry on the basis that such areas are of limited value as they fall outside a narrow formulation of 'what the law is'.[316]

The second issue identified by Mertz (2007) consists of the observation that the *modus operandi* in legal education is one analytical step further removed from 'Why the law was articulated in that manner?' That is to say, a fulsome understanding of the law would ask firstly 'What is the law?', secondly and at a deeper level of analysis: 'How did the law come to be such as it is?' and then thirdly and yet more deeply analytical: 'Why is the law such as it is?' Merrtz contends that only the first level of inquiry is consistently being addressed in professional education being delivered by modern law schools. Thus, whilst there is a burgeoning recognition by some parts of the discipline of postmodern, critical and socio-legal perspectives, such perspectives are not being consistently taught and in fact are significantly marginalised at an undergraduate level.

The fixation on only 'abstract legal categories' of salient contextual aspects of a factual matter curtails the examination of broader and deeper contextual aspects; such as those aspects of the matter that could have bearing on the questions of 'How and why is the law as it is?' This also inhibits an analysis or an appreciation of those aspects of a matter that would be salient to any and all other analytical modalities. This in turn creates a number of challenges.

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[315] Carrington. P. D. (1984) 'Law and the River', 34, *The Journal of Legal Education*, 222.

[316] Such a perspective is correlated by Mertz, *inter alia*, with the significant role capitalist epistemology is playing in legal education (e.g. law schools are focussing on delivering a curriculum that is perceived as practical and hence applicable to the business of lawyering and also that it does not overburden students when compared with schools that focus simply on 'what the law is').[316] Whilst fascinating, the exploration of this revelation is beyond the scope of this thesis.

In the first instance, such a position dovetails with the traditional conservative nature of the legalist framing of the legal discipline; namely that lawyers view the law as an 'autonomous discipline', meaning that lawyers traditionally view the law as a self-contained universe that need only look within itself to find all that is required to resolve disputes. This view is endorsed by Vick (2004) who states that 'the disciplinary core [of law] corresponds with a doctrinal approach' to the identity of law and legal thinking.[317] It may be seen that doctrinal and interdisciplinary research inhabit two ends of a spectrum that measures the openness of legal thinking (and legal thinkers) to synthesise ideas, methods, knowledge and precepts being developed outside the boundaries of law particularly when it is viewed as a fully autonomous discipline.

Affirming this notion, Hollander (2007) posits a focussed definition of doctrinal legal research when he states 'Traditional legal scholarship holds that the law is an autonomous discipline, standing alone and separate from other spheres of knowledge'.[318] Such research is also referred to as 'black letter' research and:

> ...aims to understand the law from no more than a thorough examination of a finite and relatively fixed universe of authoritative texts consisting of cases, statutes and other primary sources, the relative importance of which depends on the legal tradition and system within which the legal researcher operates.[319]

[317] Vick, D.W. (2004) 'Interdisciplinarity and the Discipline of Law', 31, 2, *Journal of Law and Society*, 163-193 at 165.
[318] Hollander, D.A. (2007) 'Interdisciplinary Legal Scholarship: What Can We Learn from Princeton's Long Standing Tradition?', 99, 4, *Law Library Journal*, 771 – 792.
[319] Above n 12, 178.

Posner (1987) defines doctrinal legal research as 'a subject properly entrusted to persons trained in law and nothing else',[320] a view he ascribes to the nature of legal professionalism itself – a desire to protect their monopoly over legal practice.[321] Hollander notes that such people hold the view '...that law students (and practitioners) should learn and understand legal principles solely by the close study and analysis of judicial opinions... An important characteristic of this methodology is its almost complete autonomy from other spheres of scholarly knowledge'.[322] Posner (1981) observes that such an approach does not allow for references to the 'theories or methods of social sciences or philosophy' when embarking upon legal scholarship.[323]

The effect of the preceding points is to paint a picture of a legal universe in which the profession has been traditionally oriented toward strict disciplinarity and now creates practitioners who have a shared language and epistemology that is focused on seeking to understand 'what the law is' rather than exploring questions of 'how and why is the law as it is'. The effect of these aspects of the discipline is that a significant measure of intellectual conservatism permeates the common law tradition. This conservatism has two particular consequences of direct relevance to this thesis. Firstly, considering issues of ontology and epistemology are perceived to be of limited or no legal value since they are disciplines that reside in scholarly disciplines outside the law; they reside

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[320] Posner. R.A. (1987) 'The Decline of Law as an Autonomous Discipline 1962-1987', 100, Harvard Law Review, 762.

[321] Such a view of professions became popular in 1970s and 1980s when Johnson (1972) developed the 'resource of power theory'. This theory sees professionalism as a type of occupational control exerting control over '...clients, and over their area of expertise'. The gateway to this exercise of monopolistic power is via the exercise of control over the supply of practicing lawyers. This is achieved through the requirement that legal practitioners must be admitted to the relevant professional bodies (i.e. the Bar Association) in order to practice. See: Johnson, T. (1972) *Professions and Power*, MacMillan, London; Ross, Y.(2005) *Ethics in Law: Lawyers' Responsibility and Accountability in Australia (5th Ed)*, Lexis Nexis Butterworths, Sydney, 57-79.

[322] Above n 13.

[323] Posner, R.A. (1981) 'The Present Situation in Legal Scholarship', 90, *Yale Law Journal*, 1113.

broadly within philosophical inquiry. Secondly, the strict disciplinarity and technocratic focus of law is at odds with scholarship that is widely accepted outside the legal universe. It may be recalled from chapter 1 that Michel Foucault (1970) posited that there is an 'epistemological space specific to a particular period'.[324] Similarly, one the exemplars used in this thesis, Lawrence Tribe (1989) took the view that '…tacit positive rules of discourse cut across and condition different disciplines in any given period'.[325] However, a rigidly disciplinarian view (i.e. legalist) of the law creates an intellectual space in which lawyers could reject the applicability of the perspectives noted above to the legal discipline. Such a position could be argued on a twofold basis: firstly, that Foucault (1970) is itself a piece of work situated within the discipline of philosophy and hence has no applicability to doctrinal legal thinking.

In respect of the issue raised above, notwithstanding the peripheral attention given to postmodern, critical and socio-legal perspectives during undergraduate legal training,[326] the legal discipline has a limited engagement with issues of ontology and epistemology that fall outside the narrow confines of doctrinal research. Mertz views this as a blind spot in legal reasoning.[327] Notwithstanding a limited acknowledgment of deeper issues relating to the context of law, Smith (1999) demonstrates that the substance and practice of law entails considerable ontological and epistemological assumptions that are not strictly rational. He goes so far as to posit that the law is an expression of 'legal faith'.[328] This belief leads lawyers to place their faith in the 'authoritative' and 'objective' nature of the law, and

[324] Foucault, M. (1970) *The Order Of Things: An Archaeology Of Human Sciences*, Pantheon Books, xi
[325] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review,* 2-3.
[326] Such units tend to be available as electives and are not mandatory areas of study.
[327] Above n 5.
[328] Smith, S.D. (1999) 'Believing Like a Lawyer' 40, 5, 5, *Boston College Law Review*, 1041- 1137, at 1112-3.

also in 'canonical texts', such as Constitutions that are interpreted over centuries.[329] The overall effect of such a position is that legal reasoning implicitly adopts a self-perpetuating stance in relation to ontology and epistemology, as all types of legal work reinforces such commitments. These positions are adopted in practice whether or not the profession deems the area as worthy of study. Smith's (1999) view of a 'legal faith' is entirely consonant with Mertz's notion of a specific legal epistemology that is inwardly focussed on 'what the law is'. Both Smith and Mertz demonstrate that the legal universe ignores, as far as possible, other modalities of enquiry that may assist in deepening one's understanding of the reflexive aspects of legal reasoning. It is also significant that one dimension of Smith's notion of 'legal faith' is his observation that *all* faiths carry ontological and epistemological commitments. Further he emphasises the similarity and influence of Christianity with Western legal thought.[330] This point becomes particularly pertinent when viewed in the context of the discussion of human rights in chapter 6.

To return to the two images presented at the beginning of this chapter, the issue is whether the layman's perception of a stable legal profession is based on a legal universe in which there is harmony as all members of that universe willingly submit to the disciplinary core of legal thinking; or whether the legal universe suffers from internal controversy and is rife with conflict and vigorous opposition to the status quo. The answer lies somewhere between these two extremes. The profession has had to adapt and become open to the influence of other disciplines as the notion of the law as an isolated silo has become obsolete. This was exemplified in the prior observation that a rejection of Foucault (1970) would lead to patent absurdity. This observation sits quite apart from

[329] Ibid, 1113.
[330] Ibid, 1123.

the further observation that in adopting such a position the legal discipline would be attempting to argue an irrational, erroneous and hence untenable position. Aside from the examination of the relationship between science and law undertaken in chapters 4, such openness is increasingly necessary as courts decide matters that relate to all aspects of modern life in which science and scientific applications feature ever more prominently. Clearly, this mandates a measure of understanding of disciplines outside law. In the face of pressures such as this, the profession has modified its rigid disciplinarity with a degree of limited openness (in some circles) to interdisciplinarity.

In an effort to transcend the limiting nature of 'legal faith' Smith (1999) notes that many legal scholars '...agree...[on] the need for greater theoretical explicitness in the law...and [also] on the inadequacy of conventional legal reasoning as an autonomous discourse and on the necessity of supplementing or replacing that discourse with something more understandably "rational"'.[331] Such a perspective underlines the pressure to look at rational disciplines to assist in clarifying the epistemological and ontological vagaries facing the law.

Vick (2004) follows Kalman (1996) in advancing the view that interdisciplinarity in legal research creates a 'space of encounter' between law and other disciplines.[332] That is to say that interdisciplinarity is an analytical pathway, subject to the demands of rigour and only when appropriate, for feeding the knowledge from another discipline into legal scholarship. The challenge

[331] Ibid, 1086.
[332] Kalman, L. (1996) *The Strange Career of Legal Liberalism*, Yale University Press, New Haven, 239-240.

this creates is that 'law schools and legal practice move beyond their particular professional cultural understanding'.[333]

As a result, it may be seen that doctrinal and interdisciplinary research inhabit two ends of a spectrum that measures the openness of legal thinking (and legal thinkers) to synthesise ideas, methods, knowledge and precepts that are widely accepted outside the boundaries of law particularly when the law is viewed as a fully autonomous discipline. This relatively recent openness is tempered by the residual inertia within the legal universe toward discipline-wide introversion. This led Mertz to tease out significant content, moral and contextual deficiencies with legal reasoning, as deeper questions of ontology and epistemology remain outside the ambit of doctrinal research. Conversely, the systemic stability engendered in the system of precedent mandates that legal reasoning maintains a significant measure of conservative consistency.

One issue that warrants attention are the fundamental failures that become evident when one engages only with rigid disciplinarity in legal scholarship and a technocratic focus to legal education. One question that follows logically asks how such a position still holds an overarching sway within the discipline. It may be recalled that one of the foundational statements made by Luhmann was that '…operative closure is the basis for autonomy or autopoiesis'.[334] It is at this point that the functionalist view of the legal 'field' posited by Bourdieu (1987) offers valuable insight. He asserts that the power of the law derives from its form – that is to say, that the disciplinary core of the legal discipline is precisely what creates a unique space for law, and furthermore that the 'power of form' is attributable to unique interaction between the discipline of law and language. In order to advance

[333] Above n 12, 165.
[334] Ibid, 169.

this argument Bourdieu posits that the discipline of law mediates its relationship to language through a strain of philosophy known as 'speech act theory'.[335] Green (2009) observes that speech act theory arose from the 'recognition of the importance of speech acts [which] has illuminated the ability of language to do other things than describe [perceived] reality'.[336] As such, speech act theory applies to the legal universe, as there is an intimate relationship between the discipline of law and language. To wit, Bourdieu (1987) posits that the law uses language in a manner by which it:

> ...makes things true simply by saying them. This power is of course the attributes of judges and judicial decisions, among others. The texts of law are thus quintessentially texts which produce their own effects...the special linguistic and social power of law to "to do things with words". Essential to that capacity – to the law's reproduction and continuation, to its legitimation in the eyes of those under its jurisdiction – is... the law's "power of form".[337]

The effect of such a position has been to enculture significant resistance to 'outside' influences as the relationship between law and language (as currently constructed) is central to the continuing ability of the law to function.

Bourdieu (1987) continues in relation to the law's power of form: 'the law's ability to obtain and sustain social consent, is taken (however illogically) as a sign of the law's impartiality and neutrality, hence of the intrinsic correctness of its determinations.'[338] Thus, the issue becomes how to consider

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[335] Above n 2, 809. See also Austin, J (1962) How to Do Things With Words'; Searle J (1969) 'Speech Acts: An Essay in the Philosophy of Language'.
[336] Green, M. (2009) 'Speech Acts', ed: Zalta, E.N., *The Stanford Encyclopaedia of Philosophy*, available at <http://plato.stanford.edu/entries/speech-acts/> last viewed 18 June 2012.
[337] Above n 5, 810.
[338] Ibid.

and integrate knowledge from other disciplines and maintain order in the legal universe when the need for a measure of rigidity must remain an essential aspect of legal reasoning in order for the law to maintain its power and structural integrity. Specifically, in relation to this thesis the issue becomes more focussed and the question becomes: how best to identify and evaluate the existing ontological and epistemological commitments in the law? Furthermore, the question arises: How to posit the legal ramifications of LUH in respect of ontology and epistemology? Whilst conducting an exegetic study of the ontological and epistemological aspects of modern human rights law is undertaken in chapter 6.7, the issue that is dealt with in the following section relates specifically to deploying the ontological structure of LUH in socio-legal scholarship in a manner that promotes order in the legal universe.

5.2: The Role of Ontology and Epistemology in the Common Law

As noted in the preceding section, there remains a significant encultured resistance to the use of non-doctrinal research in the legal universe notwithstanding the rational argument raised for adopting a more open approach. That resistance is so deeply entrenched in the legal discipline that it remains intact even in the face of advocating openness to other disciplines in a manner that ensures continuity of central aspects of legal reasoning. This resistance is systemically endemic, in much the same way that racial and gender prejudice is deeply entrenched in social environments. The reason behind this resistance is neatly encapsulated in Bourdieu's notion that the law has the 'power of form'. There is one obvious epistemological problem that stems from the rote belief that law, once

articulated, is true.[339] Simply stated, legal reasoning is fallible. [340] There is no subsequent test that may be applied by lay people subject to that law to ensure that the legal statement is justified, good, correct or true. Bourdieu labels this notion as 'miscognition', which:

> ...designates induced misunderstanding, [in respect of] the process by which power relations come to be perceived not for what they objectively are, but in a form which renders them legitimate in the eyes of those subject to the power. This induced misunderstanding is obtained not by conspiratorial, but by structural means. It implies the inherent advantage of the holders of power through their capacity to control not only the actions of those they dominate, but also the language through which those subjected comprehend their domination. Such miscognition is structurally necessary for the reproduction of social order, which would become intolerably conflicted without it.[341]

The impact of this passage is to demonstrate that the law, all aspects of it, gain force through the people who are subject to that law simply treating as true whatever the law says. Simply stated, the law is followed not because it is correct or good law, rather it is followed because it comes from a particular source. Whilst there are avenues to avoid some of the troubling aspects that emerge from

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[339] This can be illustrated in notion that racial prejudice could be justified on the basis of entrenched white segregation via the enabling legislation permitting apartheid in South Africa. Indeed beyond justification, failure follow those laws resulted in punishment. The laws themselves reflected the government position that 'white supremacy' warranted segregation on the basis that 'separate development' of the races should be permitted, 'each according to its own genus or inherent characteristics'. See: Landis, E.S. (1961) 'South African Apartheid Legislation: Fundamental Structure', 71, 1, *Yale Law Journal*, 1 -52, 2.

[340] This can be illustrated by highlighting the fact that legal guilt is determined by looking at facts that are deemed to be material to matter and able to be proved in law. This does not necessarily correlate with what actually happened. This can result in decisions made according to legal process being incorrect. In the event of such decisions, legal penalties are imposed as guilt is deemed to be 'proved' or 'not proved', as the particular case warrants: See: Loevinger, L. (1957-1958) 'Facts, Evidence and Legal Proof', 9, 2, *Western Reserve Law Review*, 154 – 175.

[341] Ibid, 813.

miscognition, for example, people are able to appeal a 'bad' judgment and the observation may be proffered that some people wilfully break laws, the point remains that as a normative statement, Bourdieu's concepts do describe the default position in society. The normative value of Boudieu's perspective is revealed when one considers that the notion that law obtains its authority from its source is consonant with legal positivism. Leiter (2009) observes that legal positivism is a popular perspective among many legal philosophers and practitioners,[342] which further bolsters the incisiveness of Bourdieu's perspective.

The effect of Bourdieu's miscognition in the common law country of Australia is that both statutes and judgments are followed irrespective of their objective correctness. This according to Bourdieu, is essential to avoid a systemic breakdown. This is doubly significant to this thesis when one considers one particular clause in the Preamble to the UDHR that states:

> Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,

Applying the principles of miscognition to the meaning contained in the clause above, a dichotomy becomes apparent. On the one hand miscognition allows a populace to treat morally reprehensible laws as valid and good law because of its source. The example given previously was that of the legislation creating apartheid in South Africa.[343] On the other hand, the UDHR unambiguously declares that human rights protections should be woven into the very fabric of a legal system. Thus,

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[342] Leiter, B. (2009) 'Why Legal Positivism?', Paper presented to a panel "Legal Positivism: For and Against?", Annual Meeting of the Association of American Law Schools, New Orleans, January 9, 2010 available at <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1521761> last viewed 18 June 2012.

[343] Above n 33.

it can be seen that miscognition is a pathway that could lead to a state of affairs in which a human rights breach could be deemed to be 'good law' as a function of its source, rather than being good law in itself. Such a process in a nation-state that has ratified the UDHR clearly undermines the democratic principles upon which the UDHR is built. Whilst the preceding example demonstrated the potential for a dichotomous state of affairs to arise, a more recent example is the Australian policy that allowed the federal government to mandatorily detain asylum seekers.[344] In this example, Australia is signatory to the UDHR, yet has enacted a policy that runs contrary to that instrument. Prominent Australian barrister Julian Burnside gave a speech in 2003 which began as follows:

> The universal declaration of human rights is the most widely accepted international convention in human history. Most countries in the world are parties to it. Article 14 of the universal declaration of human rights provides that a person has a right to seek asylum in any territory to which they gain access. Despite that almost universally accepted norm, when a person arrives in Australia and seeks asylum, we lock them up. We lock them up indefinitely and in conditions of the utmost harshness.[345]

This policy has considerable public support;[346] indeed one of the two major Australian political parties used the phrase 'we'll stop the boats' in pre-election rhetoric to garner support in 2010, and

[344] This example is discussed in chapter 6.3.4.

[345] Burnside, J. (2003) 'Australia's treatment of asylum seekers: The view from the outside', Speech delivered at Parliament House, Victoria delivered July 8, 2003. Available at: <http://www.smh.com.au/articles/2003/07/17/1058035124325.html> last viewed 3 October 2012.

[346] Haslam, N. Holland, E. (2012) 'Attitudes Towards Asylum Seekers: The Australian Experience', eds. Bretherton, D. And Balvin, N., *Peace Psychology in Australia*, Springer US, 107 – 120.

still maintained this policy in 2012[347] such that the current conservative government still uses this same mantra. Pedersen, Fozdar and Kenny (2012) show that a number of 'prejudicial' and 'false' beliefs were formed around the asylum seeker issue in Australia, furthermore that the source of the misinformation was to be found in political rhetoric.[348] This example strongly demonstrates the acuity of Bourdieu's 'power of form' as laws are made by governments in order to manifest their policies.

In addition to explaining the dichotomous state of affairs in which the source of law legitimises it through its 'power of form', Bourdieu's miscognition can also explain, and perhaps even justify, the systemic momentum toward rigid disciplinarity, since the law can simply ignore evidence that does not support its position. However, the point remains that were such a position strictly enforced the numerous instances in which the law would be objectively incorrect would create an increasing weight of evidence in favour of a preferable contrary position. Such a cumulative weight of evidence inevitably creates a gravitational pull toward reform. For example, once the accuracy of DNA mapping technology was understood and accepted, an increasing pressure was mounted for the use of DNA evidence to exonerate those already (wrongfully) convicted in an otherwise valid legal proceeding.

One aspect of the close relationship between the disciplinary core of law and language that assists the analysis undertaken in this thesis is that an identification of the epistemological and ontological

[347] Abbot, T. (2010) 'Tony Abbott: My Plan to Stop the Boats', The Sunday Times, 24 July 2010, available at < http://www.perthnow.com.au/news/tony-abbott-my-plan-to-stop-the-boats/story-e6frg12c-1225896488374> last viewed 3 October 2012.

[348] Pederson, A. Fozdar, F. Kenny, M.A. (2012) 'Battling Boatloads of Prejudice: An Interdisciplinary Approach to Activism with Asylum Seekers and Refugees in Australia', eds. Bretherton, D. And Balvin, N., *Peace Psychology in Australia*, Springer US, 121 – 137.

commitments contained in the law can be made from a semantic analysis of the legal documents or doctrines in question. The issue becomes one of assessing and developing criteria of analysis that may then be tested for suitability and for formulating and proposing a defensible alternative when it is suitable and defensible to propose an alternative. This process requires formulating a cognitive framework for evaluating the respective ontological and epistemological commitments and selecting the preferable option against the criterion of analysis.

Such a framework of analysis can be drawn from the field of epistemology itself. Kim (1993) proposes two pathways to assess whether a particular belief is warranted. She notes that '...the truth-value of the content of a given belief depends either on its correspondence with fact, or on its coherence relation with the contents of other beliefs. Either way, the truth of a belief goes beyond introspection of a cognitive subject'.[349] This observation has direct relevance to the present discussion. Firstly, Kim states that establishing the truth-value of a belief goes beyond introspection. Thus one must look at some kind of external evidence. Secondly, Kim proposes that two epistemologically defensible processes may be applied. The first process is to simply see if the belief in question corresponds (or *coheres*) with a known fact. This first test is easy to apply to disputes in the legal universe. For example, one can assess whether a legal finding of fact corresponds with fact as confirmed through scientific study. For example, in the US as at 2012, the use of DNA evidence has exonerated 289 people previously found guilty of committing a number of crimes.[350] The convicted individuals were exonerated because the law recognised the epistemological validity of

[349] Kim, K. (1993) 'Internalism and Externalism in Epistemology', 30, 4, *American Philosophical Quarterly*, 303-316 at 306.

[350] Innocence Project (2012) 'Facts on Post-Conviction DNA Exonerations' available at <http://www.innocenceproject.org/Content/Facts_on_PostConviction_DNA_Exonerations.php#> last viewed 17 May 2012.

DNA evidence notwithstanding the previous findings against them. Thus, the legal belief that the convicted individuals were guilty was not consistent with the DNA evidence available and hence the conviction could be overturned.

Whilst such a comparison is straightforward, the issue becomes more complex when considering legal findings of fact and scientific facts, particularly when one looks at ontological and epistemological beliefs that are tacitly written into the law. To wit, legal coherentism is a valuable analytical position to employ.

5.2.1: Legal Coherentism

It is at this position that Kim's second test is of value. She states that one should look for a '...coherence relation with the contents of other beliefs'.[351] This means that one should consider whether the belief in question is consistent with other beliefs that are held at the same time. Such positions are referred to as 'coherentist'. Prichard (2010) defines coherentism as '...a circular chain of supporting grounds ...[that] ...justify a belief'.[352] Pritchard notes that epistemic coherentism is pragmatic as humans implicitly tend to rely on a web of supporting beliefs.

Whilst Patterson (1996) posits that legal reasoning is internally coherentist,[353] as evinced in the ongoing viability and dependence on the system of precedent, there is a larger contextual issue at play. When legal ontology and epistemology cohere with other disciplines this increases the epistemological standing of legal ontologies and beliefs. The notion of engaging in this type of confirmation is not alien to legal scholarship. Zipursky (1997) coined the phrase 'legal coherence' to

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[351] Above n 43.
[352] Pritchard, D. (2010) *What is This Thing Called Knowledge?*, Routledge, Oxon, 40.
[353] Patterson, D. (1996) *Law and Truth*, Oxford University Press, New York.

connote exactly this perspective in legal thinking. Zipursky suggests that this methodology is desirable and consistent with the legal reasoning when he stated:

> "Legal coherentism"...is compatible with sophisticated positions in epistemology, semantics and metaphysics more generally, and remarkably accommodating to many features of legal practice that other jurisprudential view struggle to accommodate or outright reject... [it] is not about coherence in law.[354]

Amaya (2012) affirms and takes Zipursky's view a step further when she observes that 'coherence [is] built in the course of legal decision making' and occurs when 'faced with a number of interpretative of factual hypothesises, legal decision makers...manipulate the decision elements so as to secure that the preferred alternative is, by the end of process, the most coherent one'.[355]

Whilst the notion of legal coherentism has been articulated by, *inter alia*, Paterson, Zipursky and Amaya, legal coherentism reveals and confirms the simmering methodological paradox within the legal discipline identified in several different contexts in this thesis. On the one hand law must be a closed system in order to preserve its normative function (as Bourdieu argued); to make statements of law to which people adhere by using a consistent form of legal reasoning. On the other hand, legal reasoning must maintain relevance through recognising the validity of other types of analytical inquiry. The key element here is that the law resists distortion that undermines its functioning,

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[354] Zipursky, B. (1996-1997) 'Legal Coherentism: Law, Truth and Interpretation: A Symposium on Dennis Patterson's Law and Truth', 5, *South Western Law Journal*, 1679 – 1721, 1681.
[355] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 9.

whilst being open to the influences that can improve its functioning. Zipursky (1997) clarifies the need for an opening of legal reasoning:

> Non-legal disciplines may be used either critically, or foundationally. Law and economics...could be used to critically examine the content of a legal norm or legal form of an argument, that itself contains concepts that call for economic analysis [such as]...interpreting what constitutes an unreasonable restraint of trade... On the other hand, it could be used as an attractive way of understanding what an entire body of law is really about.... it is one thing to delve into a philosophical analysis of "equality"...it is another to suppose that [US] constitutional law is simply the embodiment of a Lockean or Rawlsian political philosophy.[356]

This tension has also been identified in the socio-legal constructivist analysis of Teubner (1989). He posits that socio-legal constructivism has three methodological theses which were discussed in chapter 2. His position is quoted below:

1. Under a constructivist social epistemology, the reality perceptions of law cannot be matched somehow corresponding to a social "out there". Rather, it is the law as an autonomous epistemic subject that constructs a social reality of its own.

2. It is not human individuals who by their intentional actions that produce law as a cultural artefact. On the contrary, it is law as a communicative process that by its legal operations produces human actors as semantic artefacts.

[356] Above n 48, 1719.

3. Since modern society is characterised on the one side by fragmentation into different *epistemes*, and on the other side by their mutual interference, legal discourse is caught in a trap. The simultaneous dependence on and independence from other social discourses is the reason why modern law is permanently oscillating between positions of cognitive autonomy and heteronomy.[357]

The tension alluded to by Zipursky corresponds with the observations contained in Teubner's points one and three. Teubner allows for the necessarily closed disciplinary core of law by classifying it as one of many 'autonomous epistemic subjects' that exist in the world. However, he goes on to note that there is 'mutual interference' between the many *epistemes* that exist in the world, and thus absolute autonomy becomes an implausible fiction. Thus, Teubner identifies the same tension that was identified by Zipursky. There is a need for the legal discipline to be closed in order for it to function as intended. However, the extent to which the discipline is closed has to be balanced against the need for openness to ensure its relevance and, to a considerable measure and somewhat paradoxically, also to ensure that the law is able to function as intended. The issue remains how to balance these competing tensions.

Teubner's socio-legal method ultimately fails to articulate a concrete epistemic standard for determining the appropriateness of integrating external knowledge into law. However, it may be recalled from the discussion in chapter 2 that a strong relationship exists between socio-legal constructivism and Paterson and Teubner's 'structural functionalism'.[358] It was suggested that if the

[357] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 732.
[358] Paterson, J. and Teubner, G. (2005) 'Changing Maps: Empirical Legal Autopoiesis' (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 215 – 237.

operations within the different fields is 'recursively linking up to other operations in our [legal] field so that in their concatenation they gain the autonomy of an autopoietic system',[359] then the integration would be suitable. In a similar vein, Zipursky suggests the following '...the ultimate criterion for acceptability of a system is its ability to correlate what we already accept within the law; coherence, not correspondence to independently comfortable subject matter...'[360] An obvious reading of this statement is to connote that the viable integration of an external discipline into the existing legal status quo requires that the two systems cohere. However, it is apparent that this too is subject to a fundamental and significant caveat, for it is also reasonable to conclude that openness in the law does not mean simply seeking out any information that affirms the current state of affairs; for example it was previously suggested that economics and econometrics can assist in assessing what, at law, constitutes an unreasonable restraint on trade. In this example one is not simply seeking to use incorrect economic information to affirm the existing regime; rather one is looking for good quality economic analysis to indicate whether some kind of legal reform is necessary. Thus a significant measure of epistemological defensibility is still necessary in respect of the particular information being relied upon. However, determining whether the information within non-law disciplines is reliable falls outside the scope of doctrinal legal research, and thus resolving this tension requires, once again, looking at the discipline of epistemology.

[359] Ibid.
[360] Above n 48.

In order to address this epistemological concern Kvanvig (2011) attaches a caveat to coherentism by stating that there is need to ensure positive epistemic status in addressing the 'regress problem'.[361] He succinctly defines the regress problem as the notion that simply justifying one belief with another belief is not ultimately epistemically satisfying in itself. The justifying belief or beliefs must have adequate epistemic credentials, that is to say, the justifying belief must also itself be reasonably justified. This issue arises not only when some knowledge from an already established discipline is integrated into the law, but also occurs when some new knowledge is developed. These new beliefs must also be compatible with the whole chain of beliefs. Kvanvig (2011) cites Nuerath's boat metaphor to illustrate this concept stating that '...our ship of beliefs is at sea, requiring the ongoing replacement of whatever parts are defective in order to remain seaworthy'.[362]

To deal with both the regress problem and to ensure coherence rather than mere correspondence between disciplines some kind of cognitive structure needs to be used to test the epistemic validity of the belief in question. To wit, Kim (1993) has identified three criteria that should be considered; grounds, adequacy and connection. These are framed as three questions that should be levelled at any particular belief and will determine whether the intended belief is a justified belief and if so, what type of epistemological process is being used. That is to say, if one is looking at deploying a particular piece of information to cohere with an existing legal belief, then the following three questions will assist in determining whether there is coherence between the new non-legal information and the existing legal belief. The value of this to the current discussion is that it provides

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[361] Kvanvig, J. (2011) 'Coherentist Theories of Epistemic Justification', *The Stanford Encyclopedia of Philosophy (Summer 2011 Edition)*, Edward N. Zalta (ed.), available at: <http://plato.stanford.edu/archives/sum2011/entries/justep-coherence/> last viewed 15 July 2011.
[362] Ibid.

a cognitive framework by which to evaluate the merit of ontological and epistemological assumptions written into the law. Further it will also allow a comparison with the ontological and epistemological commitments of limited universal holism.

5.2.2: Kim's Three Questions

Kim's three questions are:[363] Firstly, what sorts of things can be grounds for the justification of beliefs? Secondly, what is the criterion of adequacy that ground has to satisfy in order to yield a particular belief? Thirdly and finally, what is the proper basing relation that must hold between the belief in question and its adequate grounds?

In respect of the first question, what sort of things can be grounds for justifying beliefs – Kim posits in the first instance that any and all suitable grounds used to justify a belief will require a cognitive process of some kind.[364] This notion is then refined further to become one of two types of cognitive processes: either 'ground internalism' or 'ground externalism'. Kim defines ground externalism as the process by which 'something external such as an external fact' is used to justify some beliefs. Conversely, ground internalism covers diverse types of cognitive processes. The term 'internal' is used to indicate that the belief in question is being justified by a process that occurs in the mind– this covers direct experience or a cognitive process in which some piece of evidence is able to justify particular belief.[365] It should be noted that the evidence used to justify the belief in question could itself be another belief.[366]

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[363] Above n 43, 307.
[364] Ibid, 308.
[365] It is a fundamental premise of Kim (1993) to assert that the ordinary epistemological distinction between 'internal' and 'external' is crude. The paper contends that rather simply classifying any given epistemic

In respect of the second question – relating to the adequacy of the grounds used to justify a particular belief, Kim notes that the general information that relates to the first question will not assist in determining whether a *particular* belief is justified for a believer. Thus, the issue becomes one of establishing whether a particular ground is adequate with respect to the justification of the belief in question. Kim asserts that if a belief is justified by a ground that renders the belief likely to be true *in fact*, then such a belief is justified on the basis of 'adequacy externalism'. For example, if DNA evidence places an accused perpetrator's semen inside a rape victim, then the belief that the accused is guilty of rape is justified on the basis of adequacy externalism. On the other hand, if the belief in question is justified by a ground that the believer *thinks* it is true, then such a belief is justified on the basis of 'adequacy internalism'.[367]

The third question to be addressed relates to whether the belief in question is properly based on adequate grounds. One satisfactory connection between the ground and the belief is a *causal relation* between the two. Such a basing relation is classified as 'connection externalism'. Another type of justification mandates that the belief be assessed in light of the adequacy of the grounds (i.e. the epistemic quality of the process or fact relied upon when addressing the second question is defensible and robust), such a ground is classified as 'causal internalism'.

It has become clear that Kim's three questions offer epistemic benefit to the paradigm of socio-legal constructivism. Socio-legal constructivism is a paradigm that allows metaphors and concepts to be

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justification as either internal or external it is better to pose the three questions devised. This is because there is no rigid divide between the two and as such the two types of epistemic justification overlap.

[366] It also is significant to note that Kim sees the distinction between ground internalism and ground externalism as shaky as both processes require some type of internal cognitive process. The distinction is drawn to reflect the current normative discourse in epistemology.

[367] Above n 43, 309.

borrowed from non-legal disciplines and brought into the law for the purpose of analysis and commentary; shedding light onto the dark recesses of the law, revealing assumptions and blind spots that would be invisible when viewed through a strictly intradisciplinary lens save for the borrowing of the metaphors from those non-law disciplines. Legal constructivism transcends the systemic disciplinarity engendered in the common law tradition by showing and accepting the value of the cognitive and analytical process engendered in cognitivism. In order to reach such a standard, Kim's three questions will need to be addressed in relation to whatever aspects of limited universal holism are being purported to cohere with an aspect of the legal discourse.

5.3: Limited Universal Holism and the Law

In order to articulate the avenues by which LUH can impact upon the law, several steps taken in the course of developing this thesis need to be harmonised and brought together in a logical sequence. The first is to look at the points of contact between law and science. The second step is to look at abstracting the ways in which the two disciplines interact in order to frame the influence that is epistemically acceptable, the third step is to critically look at the work of scholars who have applied quantum mechanics to legal and socio-legal scholarship as they have contextualised the way the scientific paradigm of quantum mechanics can influence the law; the fourth step is to identify those aspects of limited universal holism that are consistent with the epistemic imperatives identified as valid in the preceding steps.

Paterson and Teubner articulate the foundation for identifying the point of contact between law and LUH.[368] At the broadest their articulation implicitly acknowledges that the disciplines of law and of theoretical physics are 'autopoietic' in nature, meaning that they are self-reproducing systems of communication.[369] Both law and theoretical physics have their own specific mode of internal communication that separates them from other systems; namely the specialised language of law and science respectively. The space for interaction between the two disciplines emerges wherever that space is actively minimised.[370] Such a space is per minimised when there is coherence between the discourses of the two disciplines. In the context of this discussion, coherence emerges when valid information in the discipline of science is being relied upon to support the conclusion being reached in law.

From Gibbons (1986), the points of contact between science and law may be simply stated: First, there is a level of interaction between science and law in which substantive scientific knowledge is imported into the law and used for legal standards. Gibbons refers to this as 'theories of law'. The second level of interaction between law and science occurs when scientific knowledge produces 'theories about law'. The second type of interaction will be discussed in chapter 5.3.1.

The first type of interaction, 'theories of law' has a strong epistemological bent; for example the amount of alcohol that a person may safely drive with is determined by scientific research and is established by scientific testing. However, from the perspective of law, the intention is to safely regulate the road system. The nominal value of the scientifically determined acceptable blood

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[368] Paterson, J. and Teubner, G. (2005) 'Changing Maps: Empirical Legal Autopoiesis' (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 215 – 237.
[369] Michailakis, D. (1995) 'Law as an Autopoietic System' 38,4, *Acta Sociologicia*, 323 – 337 at 323.
[370] Above n 62, 223.

alcohol concentration (BAC) is not in itself significant as long as the cognitive functioning of the driver in question is sufficient to drive safely. The only caveat is that the process used for assessing a driver's BAC should not conflict with other laws (i.e. by being too intrusive).

In the first instance, LUH can influence the law in a manner consonant with the first type of interaction (i.e. to produce a 'theory of law') when aspects of knowledge from the quantum mechanical paradigm may be used as legal standards.[371] The ontology of LUH points to ontological wholeness enfolded into manifest reality. This is expressly, albeit tentatively, referred to by Wright (1991) when he engages with the ontology of 'quantum based universal relational holism'.[372] Wright (1991) notes that this ontological structure views the world as '...more deeply relational and holistic and less a matter of discrete individuals, than most of us had imagined'.[373] This means that:

> Quantum-based holism is not simply a matter of the whole being other than the sum of its parts, or that the states of the parts do not exhaust or specify the state of the whole. Rather, the state of the overall system cannot be reduced to the states of its

[371] For example, quantum computers are being developed, which in contradistinction to current technology have vastly enhanced computational capabilities. The Australian Minister for Tertiary Education, Skills, Science and Research, Senator Evans stated that a recent Australian advancement in quantum computing '...could result in a transformation similar to the development of transistors for electronic circuitry in 1947'. Once developed, quantum computers are particularly adept at undertaking the type of calculations (factoring integers) around which many current security protocols are based. As such, there will inevitably be heavy regulation of this technology in the future due to the national security implications. See: Australian Government (2012) 'Australian Research Breaks Through Computing Barrier', Media Release, Senator the Honorable Chris Evans, 20 September 2012, available at < http://minister.innovation.gov.au/chrisevans/MediaReleases/Pages/Australianresearchbreaksthroughcomputingbarrier.aspx> last viewed 3 October 2012; Howarth, B. (2012) 'Australian Scientists Make the Leap on Computer Security', July 25, 2012, *The Sydney Morning Herald*, available at < http://www.smh.com.au/it-pro/security-it/australian-scientists-make-the-leap-on-computer-security-20120723-22jag.html> last viewed 3 October 2012.

[372] Wright, R.G. (1991) 'Should the Law Reflect the World?: Lessons for Legal Theory from Quantum Mechanics', 18, *Florida State University Law Review*, 855 – 881., 857, 864.

[373] Ibid, 864.

> component parts, because the parts are simply not in definite states in and of themselves. Quantum holism is no less mysterious than any other aspect of quantum theory. Even if we recognise, as we apparently must, that quantum holism applies not merely to microscopic entities such as atoms, but to medium sized objects, such as human beings, our traditional Western version of common sense insists that we can think of individual persons precisely as discrete individuals...Relational holism cannot be narrowly confined. Relational holism is nearly universal, with respect not only to what or whom we are related. [374]

Wright follows physicist d'Espagnat when he observes 'The violation of separability seems to imply that in some sense all objects constitute an indivisible whole...Thus, a universality of relatedness is both inescapable and permanent'.[375] Wright's final observation is that the ontology of universal relational holism assists our understanding of the notion of universal equality by challenging the male-centric legal standard of 'abstract universality'. He notes that abstract universality is 'exclusionary, or...elevate[s] what is distinctly male into an allegedly neutral, all-encompassing norm'.[376] Wright notes that 'abstract universality' has undermined true equality because it has been a '...conceptual instrument of systemic abuse for repressive, inegalitarian ends. He notes, however, that relational holism may allow scholars '...to hold open a redefined, yet recognisable, sense of objective truth'.[377] Wright ends with the assertion '...it is not premature to the process of allowing developments such as universal relational holism to influence legal theory',[378] and asserts that

[374] Ibid, 868.
[375] Ibid, 869.
[376] Ibid, 880.
[377] Ibid, 879.
[378] Ibid, 881.

'tracing out the jurisprudential implications or the eventual influence, directly or metaphorically, of universal relational holism is a matter for the long term'.[379]

Developing further the issues raised by Wright, chapter 6.8 of this thesis deploys the ontology of LUH in respect of the Preamble to the UDHR, specifically in relation to deploying limited universal holism as monist foundation from which to frame 'essential equality'. Kim (1993) has provided an elegant framework to test for coherence between a belief and the information used to support that belief.[380] Since one premise in this thesis is that certain ontological elements of LUH cohere with particular ontological aspects of modern human rights discernible in the Preamble to the UDHR, the process of applying Kim's cognitive framework will necessitate several steps. Firstly, the ontological beliefs in question must be identified. It was shown above that this could be achieved by engaging in a semantic analysis of the area of law in question. This is undertaken in chapter 6.6 in which a hermeneutic analysis of the Preamble to the UDHR is contrasted with the ontological commitments of limited universal holism identified in chapter 4. The next step required is to demonstrate epistemological coherence between ontological commitments in the specific area of law and the ontology of limited universal holism. This is achieved by analysing the epistemological connection between the loci of commitments between the two ontological structures utilising the cognitive framework created from the questions raised by Kim (1993). Only once these steps have been satisfactorily resolved can one draw a meaningful conclusion in respect of LUH and the ontological and epistemological commitments contained in the UDHR, framed through the lens of epistemological coherentism. A satisfactory resolution using this cognitive framework will support

[379] Ibid, 869.
[380] Above n 43.

the recognition that LUH coheres with form required to be brought into the legal universe. However, as the following section demonstrates, this is not the only way that LUH can influence the law.

5.3.1: Quantum Mechanics and 'Theories about Law'

As discussed in chapters 4.1 and 5.2, the second type of interaction between science and law occurs when ontological aspects of a scientific paradigm are reflected in legal scholarship. This second type of interaction occurs either when ontological aspects of a scientific paradigm are applied as heuristic tools of analysis or when legal institutions are created and they mirror the ontological structure of the scientific paradigm in question.[381] Gibbons calls this a 'theory about law'. Tribe (1989) falls into this category, in which all three scientific paradigms were employed; the Newtonian, general relativity and quantum mechanical paradigms. An example of this is Tribe's observation that the US Constitution, with its checks and balances is Newtonian in structure.

As previously mentioned, Kuhn (1976) noted that scientific paradigms carry specific 'loci of commitment'. These loci of commitment are isolable elements that have been abstracted from global paradigms. He observed that moving from one paradigm to another entails the observer making a *gestalt switch*. When applied to the quantum mechanical paradigm and the ontological structure of limited universal holism, the phrase 'isolable elements abstracted from...' refers to the key elements of the formalism in QM identified in chapter 3A. They were wave-particle duality of light and matter; indeterminism and the Heisenberg Indeterminacy Principle; superposition; nonlocality and entanglement and the measurement problem.

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[381] Tribe (1989) is analysed in chapter 4.2.

5.3.2: Tribe's Error

As already discussed in chapter 4.2, some of the ontological features of the orthodox view of the formalism have been deployed in socio-legal scholarship with varying degrees of success. The limited success enjoyed by the scholarship in question is often a product of limited engagement with, or understanding of the relevant science. The essence of these challenges is the nature of quantum mechanics, specifically that many of the loci of commitment are counter intuitive. It may be recalled that Guzzetti (2000) observed 'in science, particularly, students' prior ideas (derived from outside experiences or common sense) are often contrary to the scientifically acceptable ideas presented in the classroom',[382] and furthermore that 'A plethora of past research demonstrates that students...do not easily give up their prior notions'.[383] Whilst Guzzetti's research studied the problems faced when teaching students enrolled in science courses, the principle of cognitive inflexibility applies to all people, including socio-legal scholars.

By way of specific example, Tribe (1989) analysed the landmark US case of *Brown v Board of Education.*[384] In this analysis he employed the Heisenberg Indeterminacy Principle as a heuristic tool. Unfortunately this application was flawed because this heuristic tool relied upon an over simplified interpretation of this locus of commitment. His assertion was that, according to the Heisenberg Indeterminacy Principle, the process of observation affected the system observed (i.e. affecting position and momentum in quantum world via measurement is a heuristic tool that describes how legal adjudication affects the 'position and momentum' of the society in which the

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[382] Guzzetti, B. (2000) 'Learning Counter-Intuitive Science Concepts: What have we learned from over a decade of research?', 16, *Reading and Writing Quarterly*, 89 – 98 at 89.
[383] Ibid.
[384] *Brown v Board of Educ.*, 347 U.S. 483 (1954).

observation occurs). This heuristic position, adopted by socio-legal scholars (such as Tribe (1989)[385]), is overly simplistic. Tribe states:

> To see how the Heisenberg Uncertainty Principle works, imagine first a really big hypothetical "particle" – say a basketball....in our *viewing* the ball, in the sense of measuring its position, necessarily changes where it is.
>
> The problem is that, for the ball to be visible, at least a little light must shine on it, and reflect off it...when the light particles bounce off the ball they move it a little ...That is precisely the situation at the subatomic level, the province of quantum theory.[386]

Even if one ignores the findings in other interpretation of QM, there are still problems. From this description, Tribe's position is that in order to see something, such as a photon, another photon must be reflected off it. This ontological structure creates the image of two ball-like photons bouncing off each other; one photon bounces down the barrel of a microscope to be seen by the scientist whilst the other photon is disturbed in original trajectory for that collision. Unfortunately this conjures the model of a universe ultimately consisting solely of ball-like atoms that are themselves made of solid nuclei (consisting of protons and neutrons) with ball-like electrons orbiting around the nucleus, like a planet (the nucleus) with moons orbiting around it (the electrons). This view is fundamentally and significantly incomplete. It may be recalled that Al-Khalili notes 'Physicists today rightly complain that Bohr's model of the atom is still taught to schoolchildren. This is not what atoms look like.'[387] It should be recalled from chapter 3 that the term of art used by

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[385] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38, 18.
[386] Ibid, 109.
[387] Above n 3, 47.

proponents of orthodox interpretation of the formalism to describe the position of a packet of quanta is a mathematical quantity called the 'wavefunction'.[388] In the formalism the wavefunction provides the probability of a quantum entity being in a particular location at a given time.[389] For example, the probability of an electron still being close to the point of release in a short time is high. As time passes, the probability of the electron being in other spaces increases and the likelihood of it being close to the original point of release decreases. Thus, unlike the localised position of a classical particle described by Tribe (1989), the wavefunction is spread out over space. This is called a 'position wavefunction'. The smearing of location is responsible for the term 'wave' in 'wavefunction'. The paradigmatic (and ontological) significance of conceiving matter as wavefunction rather than a ball-like particle cannot be overstated, as a wavefunction is fundamentally a different entity when contrasted with a ball-like particle.

Proponents of the orthodox view of the formalism adopt the view that when a particle is not being tracked the wavefunction is the only justifiable description of the quanta in question.[390] Thus, proponents of the orthodox view assert that quanta have their influence spread out over space until measurement or observation. It is at this point that the wavefunction is said to 'collapse' and we observe a classical ball-like particle localised in space. Thus, whilst the notion of observation affecting a system is correct, the specific conceptualisation of quanta adopted by those socio-legal scholars shows a somewhat confounded understanding of the quantum realm. A better description of the measurement problem (using the orthodox interpretation of the formalism) is that it is an

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[388] Ibid, 64.
[389] The Schrodinger equation does not itself provide the probability; the wavefunction assigns two numbers to each point of space and the probability is calculated by summing the square of those numbers.
[390] Above n 3, 67.

aspect of the nature of wavefunctions themselves that describe the electron's possible location and state of momentum prior to observation. Applying this view, the particles themselves are not necessarily in any particular location and state of momentum. According to the orthodox view applied by Tribe, it is impossible to determine if quanta even possesses definite location and momentum at any fixed point in time prior to observation (e.g. prior to the collapse of the wavefunction it is unknown whether particles even have a fixed position and state of momentum). Al-Khalili encapsulate the orthodox view of the formalism when he states: 'The truth of the matter is that the uncertainty relation is a consequence of the relation between the two types of wavefunctions, and since the wavefunctions tell us all we can know about [quanta] we simply cannot say more about it. The uncertainty principle gives us a limit on what we can predict about a quantum state, and hence what we can know about it when we do look'.[391] Whilst the descriptions of the ontological attributes of the formalism may have appeared somewhat technical for a law thesis, it is only through a more fulsome description that one is able to evaluate whether or not a particular heuristic application of QM in socio-legal scholarship is epistemically defensible. Whilst Tribe (1989) deploys the Heisenberg Indeterminacy Principle well, his description of it is fundamentally incorrect. This begs the question as to whether in the long run this misinterpretation increases misunderstanding of the already complex and challenging realm of quanta in socio-legal scholarship.

5.3.3: The Heuristic Lessons of Limited Universal Holism for Legal Philosophy

The question arises as to what type of heuristic analysis may be epistemologically warranted when considering an ontological aspect of quantum mechanics. One novel way of conceptualising the interaction between science and law has become evident in this thesis, namely that the socio-legal

[391] Ibid, 69.

coupling between science and law can be described as an entangled state. To examine this interaction we will need to utilise the concept of entanglement. Bub (2010) defines quantum entanglement as the notion that non-classical correlations are possible between separated quantum systems.[392] This means that when two packets of quanta interact, their properties become entangled. When a property of one of the packets of quanta is measured then it known that the other is instantaneously endowed with the identical property. This has also been referred to as 'coherence'. The use of the phrase of 'non classical' connotes that the particles are not physically connected, in the sense we would ordinarily perceive.

To that end, it may be recalled that Paterson and Teubner propose that the autopoietic process in an interdisciplinary socio-legal context consists of '...a multitude of autonomous but interfering fields of action in each of which, in an *acausal and simultaneous manner*, recursive processes of transformation take place [emphasis added]'.[393] Each of these of these fields constructs information internally; thus each of the fields is self-organising. For the purpose of this analogy, each disciplinary field heuristically correlates with a particle in two-particle quantum system, and it will be shown that each aspect of Paterson and Teubner's description of socio-legal autpoiesis employs a locus of commitment from quantum mechanics.

In the first instance, Paterson and Teubner note that the traditional linear sense of causal influence needs to be reconceived as '...simultaneous events of structural coupling',[394] when disciplines interact. The notion of 'simultaneous structural coupling' is consistent with the notion of

[392] Bub, J. (2010) 'Quantum Entanglement and Information' The Stanford Encyclopaedia of Philosophy, (Winter 2010 Edition), Edward N. Zalta (ed), available at <http://plato.stanford.edu/archives/win2010/entries/qt-entangle/> last viewed Wednesday, March 28, 2012.
[393] Above n 52, 221.
[394] Ibid, 222.

entanglement. It should be recalled that different types of quanta are able to become entangled into a single system through interaction, and once they have become entangled the outcomes of measurement between the various systems is correlated. Esfeld states:

> ...the states of the two systems in the Bell experiment are entangled because these systems have interacted in the past. Whenever two systems interact and their interaction dies down, their states remain entangled after the interaction according to quantum [mechanics]. Interaction gives rise to entanglement.[395]

The notion of interaction leading to entanglement has been advocated by many notable scientists, such as Schrodinger (1935),[396] Teller (1986),[397] Howard (1989)[398] and Lockwood (1989)[399] and (1996).[400] Paterson and Teubner's concept of an 'acausal and simultaneous ...transformation' also describe in sociological terms the type of behaviour manifest in coherent quantum systems. It should be recalled that Esfeld (2001) describes entanglement in remarkably similar terms:

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[395] Ibid, 243 – 244.
[396] Schrodinger, E. (1935), 'Die gegenwartige Situation in der Quantenmeckanik' 23, *Naturwissenschaften*, 811-812, 827, 848-849.
[397] Teller (1986), 'Relational Holism and Quantum Mechanics', 37, 1, *British Journal for the Philosophy of Science*, 71-81.
[398] Howard, D. (1989), 'Holism, Separability, and the Metaphysical Implications of the Experiments', eds: Cushing, J.T. and McMullin, E. *Philosophical Consequences of Quantum Theory: Reflections on Bell's Theorem*, University of Notre Dame Press, Notre Dame, 248.
[399] Lockwood, M. (1989), *Mind, Brain and the Quantum: The Compound 'I'*, Blackwell, Oxford, 213-214, 228-229.
[400] Lockwood, M. (1996), "'Many Minds' Interpretations of Quantum Mechanics", 47, *British Journal for the Philosophy of Science*, 159-188 at 163.

> Entanglement is not a relation of causal dependence. The two systems... are removed... in such a way that that there is no longer any considerable interaction between them. Nonetheless, their...states are entangled.[401]

Paterson and Teubner's notion of 'autonomous but interfering fields' can be used to describe with precision the interaction of quanta. The correlation between the ontological commitments of the socio-legal field conceived by Paterson and Teubner and QM can be deepened. This can be achieved by considering the question: 'How can we identify the different types of mutual recontextualisation that are responsible for the meeting of these closed discourses?'[402] The answer to this question is determined, according to them, by analysing whether the operations within the different fields are 'recursively linking up to other operations in our field so that in their concatenation they gain the autonomy of an autopoietic system'.[403] This can be seen to correlate with the notion of quantum coherence as conceived in the orthodox view of the formalism; two separate wavefunctions creating a third wavefunction. This third wavefunction correlates with the notion of the newly formed autonomous autopoietic space. This is a reasonable assertion. It may be recalled that in such circumstances, the creation of a new wavefunction from two separate wavefunctions creates an autonomous entity, which is the third wavefunction.

This analogy withstands further scrutiny as one can also apply it to the quantum concept of 'wavefunction collapse'. In this analogy articulating a particular point of contact between science and law corresponds with measurement or observation. This perspective can be taken because the internal discourse within these two autonomous discourses continues recursively Thus the

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[401] Esfeld, M. (2001) *Holism in Philosophy of Mind and Philosophy of Physics*, Kluwer Academic Publishers, 244.
[402] Ibid, 223.
[403] Ibid.

knowledge base within the respective discourses will continue to evolve after the articulation of a point of contact; i.e. through research both scientific and legal knowledge will continue to develop, yet, unless expressly considered, the old information will remain within the bounds of accepted interdisciplinary research. The two disciplines can be said to have collapsed until the next 'simultaneous event of structural coupling' occurs.

It is apparent that there is a strong correlation between the ontological commitments in Paterson and Teubner's structural functionalist conception of law and the orthodox interpretation of QM; however the issue of the specific connection between law and LUH remains to be defined more fully. As it happens, this connection provides a salient point on which to conclude this chapter. Simply stated, LUH provides an ontological heuristic that allows the legal discipline to understand its own nature with greater clarity. It has been shown throughout this thesis that the legal discipline is caught between counterpoised forces; it is forced to be both open and closed to other disciplines. It is contended that the connection of law to external disciplines is better described through the ontological commitments of limited universal holism. It may be recalled that Teubner (1989) observed:

> ...legal discourse is caught in a trap. The simultaneous dependence on and independence from other social discourses is the reason why modern law is permanently oscillating between positions of cognitive autonomy and heteronomy.[404]

The use of the term 'trap' implies that some kind of pitfall has ensnared the legal discipline. Adopting the ontological structure of LUH shows that this is not the case, rather the nature of

[404] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 732.

connection between the legal discipline and other disciplines is misconceived. This misconception arises from attempting to liberate the law from the human cognitive agent. Whilst such a standpoint is analytically potent, it introduces some erroneous perceptions. Both Douzinas and Paterson and Teubner correctly observe that the law is created by humans, but then note humans must be created by law – Douzinas' empirical person. This can incorrectly be interpreted to imply that the law has an identity outside and independent of the human mind. One can reveal the erroneous nature of this view by considering a thought experiment in which every human being were to be killed in some calamity. At that point, the law would cease to describe any aspect of the world.

A more correct perception would realise that the law exists as an independent entity only because it exists in the communal human mind (i.e. is made explicate in the human mind). The effect of this is to recognise that the cognitive processes mandated when utilising legal method are inexorably dependant on human cognitive processes (i.e. it cannot be entirely abstracted from the whole). It should be remembered that both Douzinas and Paterson and Teubner recognise that the law is a form of 'social discourse'. As such the notion of law existing in the communal mind is acknowledged, however the conception of the law as a truly autonomous field downplays the centrality of this aspect of the identity of the law.

The ontological construct of LUH can act as a metaphor to describe the identity of the legal discipline and its relationship with other fields. Firstly, just as the universal wavefunction means that an object cannot ever be fully separated from the whole, so it is that the law is not able to be entirely isolated from the broader world. That being said, when quantum potential is negligible, it is possible to treat objects as abstracted individuals from the whole such that they may be studied. In this analogy quantum potential may be correlated with the use of the symbols used for autopoietic

communication within the legal universe to create a 'common pool of information'. That is to say; instances of high levels of autopoietic discourse within the legal universe can be used to circumscribe a disciplinary space that can be treated as though it were a separate disciplinary (i.e. an autonomous and abstracted) space. Conversely, as the use of the symbols of autopoietic communication decrease then the edges of that space begin to dissolve. Increasingly the legal universe becomes unified with the whole. As is the case with LUH, there is no sharp and distinct divide between two realities. It may be recalled that Bohm and Hiley (1993) state:

> …the overall quantum 'world' can manifest itself in the more limited classical sub world…there is not any kind of 'cut' between these two 'worlds'…Rather there is only one overall quantum world which contains an approximately classical 'sub-world' that gradually emerges…Moreover it is significant to note that it is the most characteristic quantum properties such as nonlocality and undivided wholeness that bring about the classical world with its locality and separability into distinct components.[405]

It is important to note that in this extract the characteristics of the part are brought about from the wholeness. Whilst beyond the scope of this dissertation, this perspective could provide a space for further investigation in the future; namely that holism is responsible for the characteristics of legal universe. If this is taken as an ontological fact, then the insights generated could be of interest to explicating the relationship between law and society and thus offer some insight into developing the notion of rule of law further. That being said, it is sufficient at this stage to note that the ontological structure being espoused is not dualistic. The categorisation of the relationship between the manifest and the quantum realms warrants revision in order to complete the application of LUH to

[405] Bohm, D. (1980) *Wholeness and the Implicate Order*, Routledge, London, 178.

the legal universe described in this thesis. The process of having the manifest world dissolve into the quantum is referred to by Bohm and Hiley (1993) as the 'process of formation and dissolution of wholes (fission/ fusion)'.[406] They state:

> The process of formation and dissolution of the wholes (fission-fusion)… brings about the possibility of an objective ontological wholeness and of a distinction between states of such wholeness and states in which the parts or sub-wholes behave independently. [Bohm and Hiley] understand this through the formation of common pools of information. This information brings about nonlocal interaction, but quantum wholeness implies even more than this. For it arises out of the quantum field which cannot be understood solely in terms of preassigned properties and interactions of the particles alone. Rather the whole is presupposed in the quantum wave function and it is the active information that is in this wave function that forms and dissolves wholes.[407]

The 'fission/ fusion process' is explicated by an analogy posited by Bohm and Hiley (1993) to the functioning of human relationships in society. They posit:

> The most immediate and concrete reality is the collection of individual human beings. In so far as these are related by pools of information, this latter will become manifest in the behaviour of human beings. The behaviour of both the individual and the society depend crucially on this information (rather as happens with the particles of physics). The information itself is held at some very subtle level which does not show directly and which has negligible energy compared with that involved in the physical movements of the people. To complete the analogy we might surmise that perhaps the information in

[406] Ibid, 95.
[407] Ibid.

> the wave function is likewise contained at a more subtle level of negligible energy in a way.

This can be used to better understand the essence of the legal universe. The extracts above indicate that we must consider *both* its ability to be treated as though abstracted from the world and also recognise that at a deeper level its existence is contingent on, and fundamentally influenced by the whole. Developing this analogy further, Bohm and Hiley's (1993) concept of 'holomovement' is also applicable as a heuristic tool. It may be recalled that Bohm and Hiley (1993) apply holomovement to explain the enfoldment of the quantum realm into the manifest realm and in so doing explain *how* and *wh*y any attempt to formulate the *essence* (as opposed the *appearance*) of the manifest realm must also consider quantum wholeness. In this application of LUH to law, it explains why we should consider law as part of the wider world in order to understand the essence of the legal universe. That is to say, the following extract explains why the legalist conception of the legal field cannot be taken to encapsulate the essence of the legal system:

> What then is the relationship between the notion of explicate order and the manifest world…? Clearly the manifest world of common sense experience refined where necessary with the aid of concepts and laws of classical physics is basically in an explicate order. However, as we have suggested…,this latter order is not always at the manifest level because it is profoundly affected by the active information represented by the quantum potential. This latter operates in subtle way…[and] …is in an implicate order. Therefore …particle movement is not understood fully as self-determined in the explicate order in which it is described. Rather, this explicate order reveals the deeper implicate order underlying its behaviour… [However, the movement of a large object at the manifest level] …becomes manifest only …under conditions in which the quantum

> potential can be neglected. In this case the movement is not describable in an explicate way, but it can be *approximated* as self-determined in the same explicate order that we used to describe it (emphasis added). Therefore it is essentially independent and can be abstracted as existing on its own. It is therefore capable of being grasped in the hand without fundamental alteration (whereas at the micro-level, the movement of particles is not)… Nevertheless…the implicate order is still revealed in the manifest world in some of the more subtle relationships that arise in experiments at a quantum level of accuracy (e.g. interference experiments).[408]

The notion of holomovement can also be applied at a second level; specifically in the way the law can exist as both a collective enterprise (i.e. a disciplinary space shared by many people) and also as an individualised practice in the mind of an individual lawyer. This relationship can be understood as the autopoietic symbols of communication that must be articulated by an individual lawyer at some point. That individual is not free to produce an artefact of autopoietic communication in an entirely self-determined way; in order to produce a valid communication they are bound by the 'active information' present in those artefacts. As such, the holomovement can also be used to describe the relationship between the individual legal practitioner and the legal field taken as a whole.

The application of LUH to conceptualisation of law can be deepened. Each term in the phrase 'limited universal holism' is of value in the following analysis. Firstly, the observation that the ontological structure of LUH can be applied in what may be seen as an entirely unrelated field is a manifestation of its universality. Secondly, the ontology of LUH posits that that there is whole is enfolded into the part. In this discussion it is argued that that despite the notion that law may be

[408] Ibid, 362.

conceived as an autonomous discipline, and often functions as such, this is not a full description of the legal discipline. It is consistent with a realist understanding of the legal universe; i.e. to accept that it is affected by other disciplines. In the second instance, and more confronting to lawyers, is the notion that legal decision makers themselves engage in the rational process of coherentism, as indicated by Amaya (2012). She distinguishes between 'factual' coherence and 'normative' coherence in legal decision making; 'factual' coherence refers to 'coherence built in the course of legal decision making' and occurs when 'faced with a number of interpretative factual hypothesises, legal decision makers...manipulate the decision elements so as to secure that the preferred alternative is, by the end of process, the most coherent one. Or they may ignore or underplay the relevance of disturbing evidence in order to preserve the coherence of their favoured hypotheses'.[409] Normative coherence is 'relevant to the justification of normative conclusions in law'.[410] Amaya posits that these two types of coherence can be fused into a single theory of coherence in law.[411] This is consonant with Balkin (1993) who also notes that these two types of coherence are, in a practical sense indissolubly linked. He posits:

> ...we bring our own judgments about what is right and good and how one should balance competing purposes, policies and principles. Because our judgments about these matters may differ, so may our conclusions about the point of particular legal doctrines....Moreover, what is most significant about our disagreement is the implicit terms of agreement through which it occurs. When we disagree about the proper application of a legal norm, we do not disagree about whether the legal norm is

[409] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 9.
[410] Ibid, 3.
[411] Ibid, 4.

> coherent; rather, we disagree about the point of a legal norm whose coherence we accept for the purposes of our argument. We attack our opponent's theory about the point of the norm because it makes the norm less coherent from our perspective – because it misdescribes the purposes, policies, and principles underlying the doctrine, or balances them in an unconvincing or arbitrary way.[412]

This position shows that the 'why' and the 'how' of law are inseparably linked as legal coherentism is at play all the time. This position applies equally to those cognitive and interpretive processes that lie at the disciplinary heart of legal method and explain why, *inter alia*, judges do not all always decide cases in exactly the same way and reach identical conclusions. The logical corollary of this construction of legal decision-making is that even the disciplinary heart of legal method is entangled with other cognitive processes and concepts. It is contended that this does not mean that, as described by Teubner, the law is ensnared in a 'trap', rather it speaks to the deepest level of our nature: that the cognitive and communicative process of legal method cannot be entirely abstracted from the single coherent web from which the perception of an individualised discipline emerges when viewed from a teleological perspective.

Rather than claim that the disciplinary nature of law is illusory, it is important to state at this juncture that the term 'limited' in limited universal holism offers clarity. LUH acknowledges that as one moves to higher-order macroscopic reality (e.g. atomic and molecular levels), some of the phenomena that operate at the microphysical level (e.g. entanglement) appear to vanish, and the part may be treated as though it is abstracted from the whole. It may be recalled from chapter 4.4.2

[412] Balkin, J.M. (1993) 'Understanding the Legal Understanding: The Legal Subject and Problem of Legal Coherence', 103, 105, *The Yale Journal of Law*, 106- 176.

that Esfeld uses the term 'chirality' describe the phenomena described above, namely that which some properties (such as symmetry) vanish when moving between different levels of reality. In respect of the current discussion this means that within some levels of analysis the law can be conceived of a being a discrete discipline. This, according to both Bourdieu and Luhmann is necessary in order for the law to function as intended, as a stable rule of law is predicated on legal certainty and the internal consistency of legal method.[413] Indeed if the notion of a legal discipline were illusory then studying the discipline would be impossible. The shift between the two perspectives occurs in much the same way that quanta often behave as ball-like particles, yet consist of a particle *and* the wavefunction. The significance comes from recognising that just as the particle nature of matter is not ultimately complete; at the deepest level of physical reality the ball-like particle is part of the whole. So too at the deepest analytical levels of abstraction and cognitive analysis, the discipline of law and the cognitive process of legal method dissolve into the coherent web of concepts and understanding that constitutes an individual's mind. This position is endorsed by legal coherentism.

The analysis shows one implication of LUH is that it can assist the legal discipline to reframe its own identity, and in so doing allow a more nuanced understanding of the law. This perspective hastens the process of introducing the legal discipline to both the orthodox view of the formalism and LUH. Such a process that appeals to openness to valid new findings will ensure that the legal discipline remains in step with some highly significant developments in the knowledge base that occur outside the confines of traditionally defined doctrinal legal research. It also paves the way for the discipline to reframe the lines of demarcation that have divided the profession based on what are now

[413] As demonstrated through the ongoing operation of the doctrine of precedent.

outmoded ontologies and epistemologies. This new perspective supplements the traditional points of view, and in so doing prepare the legal discipline to continue to evolve in step with the numerous discourses that coexist side-by-side with the law.

The preceding analysis present examples of the observations made by both Michel Foucault (1970) when he posited that there is an 'epistemological space specific to a particular period'.[414] This notion has been affirmed by Lawrence Tribe (1989), when he stated that '…tacit positive rules of discourse cut across and condition different disciplines in any given period'.[415] Particularly pertinent to this research is Tribe's observation that the ontological and epistemological loci of commitment in scientific paradigms, often tacitly, influence the social sciences. This observation correlates with the abstract thinking of socio-legal structural functionalism and the conceptually challenging disciplinary space of theoretical physics. The discussion in this section has looked at the paradigmatic and disciplinary interaction of law and both LUH and the orthodox view of the formalism, and in so doing affirmed the validity of the first premise examined in this thesis, that the ontological structure of LUH has significant legal philosophical and socio-legal implications. Having affirmed the validity of the first premise, it is timely to consider the validity of the second premise utilising the specific example of modern human rights.

[414] Foucault, M. (1970) *The Order Of Things: An Archaeology Of Human Sciences*, Pantheon Books, xi
[415] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review,* 2-3.

6. HUMAN RIGHTS

This chapter has two foci: first, to show that the ontological commitments tacitly written into the Preamble of the Universal Declaration of Human Rights 1948[1] (the Preamble) cohere with the ontological commitments of LUH. In order to realise this objective, the ontological commitments of the Preamble must be identified and contrasted with those of limited universal holism. The first point of focus mandates engaging in a dual-levelled analysis, firstly with an analysis of the historical origins of modern human rights in chapter 6.2 and secondly by performing an exegetic analysis of the Preamble itself in chapter 6.7. The second point of focus is to use the modern human rights project to draw out the types of interference that affect the ability to move fundamental values from theory to practice.

Throughout this chapter the phrase 'modern human rights' is used often. Whilst human rights principles can be identified in various cultural and legal systems throughout human history, the principles are not in themselves the primary focus of this study. This thesis analyses the Preamble because the UDHR is one of the foundational instruments that declared and legitimised human rights in the modern world. Furthermore, the UDHR is highly significant as it is the first human rights instrument that has significant global consensus. Eide (1998) noted that the UDHR was proclaimed by the United Nations General Assembly '...in hindsight to be ... the most important resolution ever adopted by the United Nations'.[2] He observed that the significance of the UDHR rests on 'at least'

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[1] United Nations General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, A/RES/217A(III), available at < http://www.unhcr.org/refworld/docid/3ae6b3712c.html> last viewed 20 June 2012.

[2] Eide, A. (1998) 'The Historical Significance of the Universal Declaration', 50, 158, *International Journal of Social Science*, 475-497 at 475.

these five bases: (i) that the UDHR consolidated a process of normative development; (ii) it broadened and gave substance to the twin concepts of freedom and equality and their interrelationship; (iii) it overcame some the criticisms directed at 'natural' and 'civil' rights; (iv) it declared that human rights were universal; and (v) it made compliance with human rights a legitimate concern of international law and relations.[3]

Some of the consequences that may result from epistemological coherence between the ontological commitments written into the Preamble and the loci of commitment that emerge from LUH will be discussed in chapter 6.9. The possible consequences for discussion will be identified through analysing two particular areas in chapter 6.5, international dualism and dialectical ethno-cultural relativism. In this chapter modern human rights will be analysed using a methodological process that is framed through the paradigm of structural functionalism (itself discussed in chapter 2). In order to engage with the analytical paradigm of structural functionalism, it will be necessary to establish modern human rights is an autonomous legal field with its own specific mode of internal communication distinct from other social discourses. This is undertaken in chapter 6.1. The focus of the analysis is to identify the unique linguistic features used in modern human rights law that allow it to be classified as an autonomous legal field. The analytical perspective of socio-legal structural functionalism has been chosen because of its powerful ability to show the consequences of various disciplinary fields interfering with one another. Validating this method of analysis, it may be recalled

[3] Ibid, 476.

from chapter 2.1.2 that Freeman (2011) described human rights as '...an interdisciplinary concept, *par excellence*'.[4]

There are many autopoietic fields that impact upon modern human rights that are beyond the scope of this this thesis, such as economics, politics,[5] utilitarian empiricism to name but a few. Each of these fields constructs information internally and utilise unique semantic artefacts that in turn allow each of these fields to be self-organising. However, the focus will be on the specific *epistemes* of the international law norms of legal dualism and the dialectical ethno-cultural relativism. Thus, the special purpose of the analysis in this chapter is fourfold; firstly to identify the autopoietic nature and core ethos of modern human right as revealed in the Preamble; secondly to show how the two particular interfering fields selected for analysis affect the practical manifestation of that ethos, thirdly to show epistemological coherence between the core ethos of modern human rights (as written into the Preamble) and LUH, and finally to act as a case study that shows the practical obstacles that face moving a clear statement of core values from theory to practice.

Once the epistemological connection between the ethos of modern human rights and the Preamble is established using the cognitive framework created from the questions raised by Kim (1993) (discussed in chapter 5.2.2), the level of epistemological coherence between the ontological commitments of LUH and the Preamble will be contextualised through the lens of the newly emerging field of legal coherence.[6] This methodological approach is conducive to an integration of

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[4] Freeman, M. (2011) *Human Rights: An Interdisciplinary Approach*, Polity, Cambridge, 13.
[5] Economics and politics have been recognized as autopoietic fields by Luhmann: Baxter, H. (2013) 'Niklas Luhmann's Theory of Autopoietic Legal Systems', 9, *The Annual Review of Law and Social Science*, 167-184.

[6] Legal coherence is discussed in chapter 5.2.1.

LUH into the legal system being consistent with order in the legal universe and is the driving force behind attempting to apply that high epistemological standard.

6.1: Modern Human Rights as an Autopoietic Space

As noted, the first step in this analysis is to establish that modern human rights is itself an autopoietic legal space in order to legitimise the utilisation of a functionalist perspective. This has already been recognised in scholarship by Verschraegen (2002),[7] Madsen (2011)[8] and Hilpold (2011).[9] The placement of this thesis is unique and is described below. For example, Verschraegen (2002) observes that the subject matter being explored in this thesis; namely a gap in one aspect of the existing literature which classifies modern human rights as autopoietic:

> Luhmann in his theory makes no attempt to take up the old philosophical question of how to legitimize and ground human rights. Rather he focuses on the societal structure in which human rights are embedded and on the possibilities of sociological description implied herein.[10]

The unique positioning of this thesis is further clarified as it adopts a posture more legalistic than sociological in the following analysis. Madsen (2011) identifies one of the issues that is being examined in this thesis; the difference between the theory and practise of modern human rights when he states:

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[7] Verschraegen, G. (2002) Human Rights and Modern Society: A Sociological Analysis from the Perspective of Systems Theory', 29, 2, Journal of Law and Society, 258-281.
[8] Madsen, M.R. (2011) 'Reflexivity and the Construction of the International Object: The Case of Human Rights, 5, 3, International Political Sociology, 259-275.
[9] Hilpold, P. (2011) 'WTO and Human Rights: Bringing Together Two Autopoietic Orders', 10, *Chinese Journal of International Law*, 1.
[10] Above n 6, 260.

> The question of human rights is hardly a settled one…In fact, distinguishing the prescriptions and idealism of human rights from its actual empirical properties in terms of an object of study remains a real challenge in the social sciences.[11]

Thus we can proceed with the knowledge that whilst the notion of catagorising modern human rights as an autopoietic system is not novel in itself, there are particular points at which there is novel engagement with the autopoietic nature of modern human rights law.

The first use of the term 'human rights' in the context of the modern human rights project has been attributed to President Roosevelt in a speech to the US Congress on January 6, 1941.[12] Since that time the modern human rights meme has been gaining momentum. Whilst there have been many expressions of justice in many cultures throughout history; as Eide (1998) notes:

> The developments leading to the first codification of rights can be traced back to the 17th and 18th century. It is often stated that notions about the dignity of the human being are much older and reflected in the great religions.[13]

This chapter looks only at the statements of modern human rights made after President Roosevelt used the term 'human rights' in the US congress in 1941. The effect of adopting this stance is to limit the relevance of discussing Natural law and hence maintain a sharp focus in the course of analysis. The foundational document for modern human rights used in this investigation is the 1948 *Universal Declaration of Human Rights* (UDHR), specifically the Preamble. There are six main instruments and a host of regional treaties that elaborate upon the core rights contained in the UDHR. Thus, the

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[11] Above n 7, 261.
[12] O'Neill, N. Rice, S. Douglas, R. (2004) *Retreat From Injustice: Human Rights in Australia (2nd ed.)*, The Federation Press, Sydney, 13.
[13] Above n2, 478.

UDHR is declaratory and the subsequent instruments seek merely to give effect to the declared rights in the UDHR. This reinforces the importance of looking at the UDHR, as it is the wellspring from which all subsequent human rights instruments have been drawn.

The six main treaties that cover enforcement are the 1976 *International Covenant of Civil and Political Rights* (ICCPR)[14] and also in 1976, the *International Covenant of Economic, Social and Cultural Rights* (ICESCR),[15] the 1965 *International Convention on the Elimination of All Forms of Racial Discrimination* (ICERD),[16] the 1979 *Convention on the Elimination of All Forms of Discrimination against Women* (CEDAW),[17] 1984 *Convention Against Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment* (CAT)[18] and the *Convention on the Rights of the Child*[19] ratified in 1989. In spite of the proliferation of human rights based treaties ratified by nation-states in the United Nations (UN), human rights abuses continue to occur in many countries in modern times.

The simplest way to determine whether modern human rights is an autopoietic field is to perform a heuristic analysis of the language used in the primary instruments (the UDHR, ICCPR and ICESCR).

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[14] United Nations Treaty Collection, *International Covenant on Civil and Political Rights*, available at <http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-4&chapter=4&lang=en> last viewed 9 June, 2011.

[15] United Nations Treaty Collection, *International Covenant on Economic, Social and Cultural Rights*, available at <http://treaties.un.org/Pages/ViewDetails.aspx?src=TREATY&mtdsg_no=IV-3&chapter=4&lang=en> last viewed 9 June, 2011.

[16] United Nations: Office of the United Nations High Commissioner for Human Rights, *International Convention on the Elimination of All Forms of Racial Discrimination*, available at <http://www2.ohchr.org/english/law/cerd.htm> last viewed 4 October 2012.

[17] United Nations: Division for the Advancement of Women, *Convention of the Elimination of All Forms of Discrimination against Women*, available at < http://www.un.org/womenwatch/daw/cedaw/> last viewed 4 October 2012.

[18] United Nations: Office of the United Nations High Commissioner for Human Rights, *Convention Against Torture and Other Cruel, Inhumane or Degrading Treatment or Punishment*, available at <http://www2.ohchr.org/english/law/cat.htm> last viewed 4 October 2012.

[19] United Nations: Office of the United Nations High Commissioner for Human Rights, *Convention on the Rights of the Child*, available at <http://www2.ohchr.org/english/law/crc.htm> last viewed 4 October 2012.

The utilisation of that specific terminology in a space of interaction will indicate an autopoietic disciplinary field defined by the shared use of that specific technical language. Significantly, since the UDHR was the first internationally recognised and ratified human rights instrument, the Preamble orients both the provisions that follow and modern human rights in general. As was noted above, the aforementioned instruments subsequent to the UDHR all seek to enforce the rights declared in the UDHR. For this reason, it is the focus of the current analysis.

From an analysis of the Preamble, it is apparent that three central ideals underpin human rights; equality, universality and inalienability. Whilst a fourth, 'dignity' may also be discerned, it is not the focus of this analysis for it both lacks the finitude of the first three ideals identified, and (in the context of modern human rights and the quantum holism espoused in this thesis), is supervenient to equality: a system of human rights based upon LUH that lacks equality cannot possibly protect dignity.

Equality is evident in the first statement made in the Preamble, which reads, 'Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world'. Equality is expressly articulated in Articles 1 and 2 of the UDHR. Further implicit reference to equality is made in all other Articles of the UDHR with the inclusion of the phrase 'every one' when establishing the scope of those provisions. Similarly, the preambles to both the ICCPR and the ICESCR make explicit references that emphasise that modern human rights consist of inalienable rights that are universally applicable and that enshrine an equality of all people. The lists of substantive rights that follow seek to realise these fundamental objectives with a set of codified principles ratified by many countries. As at 8 June 2008, 160 countries had ratified the ICESCR; 167 countries had ratified the ICCPR. The UDHR is a

declaration that was ratified by proclamation on 10 December 1948 with 48 votes in favour, none against and eight abstentions.

Notwithstanding the comments given above, identifying an autopoietic space by simply identifying a space of common language through a semantic and hermeneutic analysis of the key instruments does not circumscribe the field. A further step is necessary, because a more critical and in-depth analysis reveals that there is an emergent need to define the term 'human rights' precisely. This need arises out of the observation that term 'human rights' is used in a number of different contexts within the instruments themselves, and consequently has different meanings attached to it. Thus, *because* of the wording and structure of the ratified instruments themselves there is a profound need to define the term 'human rights' in a fulsome manner. This need is exacerbated by two salient observations. At the institutional level, treaties ratified by member states do not constitute enforceable legal standards for the signatory nation-states. This results in a pastiche of rights being adopted by those same member states. Aside from fundamentally undermining Article 5 of the 1993 *Vienna Declaration and Programme of Action* which states: 'All human rights are universal, interdependent and interrelated',[20] the practice also means that nation-states formulate their own definition of human rights and the scope of protection afforded under any local legislation.

It is a truism that a definition of 'human rights' emerges from a semantic and hermeneutic analysis of UN instruments, but finding a fully resolved and a fixed definition of human rights in practice has proved to be difficult. Nickel (1987) performs a hermeneutic analysis of the various preambles to the principal human rights treaties and defines human rights as basic moral guarantees that people in all

[20] United Nations General Assembly (1993) *Vienna Declaration and Programme of Action*, available at <http://www.unhchr.ch/huridocda/huridoca.nsf/(symbol)/a.conf.157.23.en> last viewed 4 October 2012..

countries and cultures have simply because they are people.[21] However, Donnelly (2003) flags a problem with Nickel's (1987) definition as he notes that the abstraction of 'human' into a 'human subject' for the purpose of interpreting the precise scope of protection provided under human rights instruments is vague and ill defined. Indeed this is germane to one limb of the second premise being examined; specifically that LUH can be applied in a wider context than the modern human rights project, as is discussed in chapter 6.9.1.

Donnelly (2003) observes that Nickel's (1987) definition is simplistic as it indicates the intent but not the reality of the operation of human rights in practise. Donnelly notes that if only human beings can have human rights, then any entity that is not human cannot hold human rights. As a result, Donnelly posits that any form of collective right (e.g. Article 27 ICCPR: Minority Culture),[22] must be something else and asserts that '...it does not logically follow that society or any other social group has *human* rights'. [23] This tension exists even though many rights can only be exercised or enforced through collective action. Donnelly's observations have not highlighted any fatal flaws in either individual or collective human rights as human rights remain topical in legal, socio-legal and political discourse. However his observations demonstrate that coming to a fully resolved understanding of the human subject and precisely circumscribing the scope of protections afforded by modern human rights instruments is a conceptual void. Perhaps a measure of reticence to engage in process of formally defining the human subject is attributable to the cultural milieu from which modern human rights emerged. Thomas (1991) observed that the Nazi definition of 'humanity' was formulated in

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[21] Nickel, J. (1987) *Making Sense of Human Rights: Philosophical Reflections on the Declaration of Human Rights*, University of California Press, Berkley, 561.
[22] Article 27 ICCPR.
[23] Donnelly, J. (2003) 'The Universal Declaration Model', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 25.

such manner as to exclude those of Jewish faith.[24] He posited that there are only two possible constructions; either the human subject has a universalist meaning or it does not. If it is universalist, then the definition is all encompassing and there is way to exclude anyone. On the other hand he notes that the rejection of the universalist notion of a 'human' has been argued '...because [it was] in truth quite oppressive, since [it] primarily stood for the white male European tradition'.[25] The morbid irony identified by Thomas (1991) and the tragic consequences that resulted from the subjective definition that the Nazis attached to their notion of humanity seems to pervert the very idea of rejecting the universalist definition. The key point to be abstracted from this discussion is that to avoid the potential of remaking mistakes of the past, the definition of the human subject needs to be universalist and hence formulated inclusively. Whilst there is good reason to contextualise the reticence to define the human subject, the point remains that at the present time there is a lack of precision in the language utilised in human rights instruments. This has been identified by some scholars seeking to advance the development of a culture that supports human rights.

The second term in the phrase 'human rights' is 'rights'. Whilst defining 'rights' in themselves is not too difficult a task, ascertaining a precise formulation of the term 'rights' as it pertains to 'human rights' has also proved difficult. Modern formulations of 'rights' bifurcate the discussion into atomic and molecular levels.[26] This means that basic elements are combined to create complex rights. At the atomic level, the seminal work of Hohfeld (1919) articulated 'Hohfeldian Incidents'

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[24] Thomas, L. (1991) 'Characterizing and Responding to Nazi Genocide: A Review Essay', 3, *Modern Judaism*, 371- 379, 376.
[25] Ibid.

[26] For example Wenar (2005) and (2010).

deconstructed legal rights into four categories; Privileges (or liberties); Claims; Powers and Immunities.[27] Lazarev (2005) succinctly encapsulated Hohfeldian Incidents.[28] A *liberty* is an absence of a duty to abstain from the action. A *claim*-right is to say that X is legally protected from interference by Y, or X is protected against Y's withholding of assistance with respect to X's project. A *power* is one's ability to alter legal or moral relations, such as privity to contract. Finally, the notion of *immunity*; if X has an immunity against Y, it means that Y has no power to change X's legal or moral position. For example, if a state has no power to place X under a duty to wear a hat outdoors, then X has an immunity in that respect and the state has a correlative disability. It is significant that Hohfeld's atomic rights are always correlative, that is to say that rights and duties are mutually entailed.

The term 'molecular rights' refers to a combination of atomic elements into synthetic rights-based claims. Wenar (2005) looks at the nature of rights, both at atomic and molecular level in a modern context,[29] and shows that such an analytical framework is suited to understanding contemporary rights based issues. It is apparent that any claim that invokes modern human rights consists of molecular rights claim in so far as every provision drafted in the international human rights instruments has been focussed on articulating a specific aspect of a specific protection, and not drafted to ensure that the content of the right in question has a particular atomic legal form. As a result many modern claims need careful consideration to ascertain the precise nature and scope of

[27] Hohfeld, W. (1919), *Fundamental Legal Conceptions as Applied in Judicial Reasoning*, Yale University Press, New Haven.
[28] Lazarev, N. (2005), 'Hohfeld's Analysis of Rights: An Essential Approach to a Conceptual and Practical Understanding on the Nature of Rights', 12, *Murdoch University Electronic Law Journal*, 1.
[29] Wenar, L. (2005) 'The Nature of Rights', 33, 3, *Philosophy and Public Affairs*, 223-253.

the protection invoked in the light of the observation that atomic rights exist only with correlative duties.

Many modern rights based claims are often framed in terms of 'positive' and 'negative' rights; furthermore the rights themselves may exist in tension. The positive use of the term 'right' refers to an enforceable claim or entitlement that the right-holder may enforce against another party. For example, the right to welfare recognised in some jurisdictions can be a claim a citizen makes against her government to be supplied with assistance of some kind. The negative use of the term 'right' refers to a freedom e.g. it is a right not to be interfered with.[30] The right to personal security is a negative right in that it is a right not to be physically or mentally injured. Furthermore, one person's right may conflict with another person's freedom, for example the right to physical integrity. Wenar (2005) shows that one's right over one's body is a molecular right consisting of all four Hohfeldian incidents.[31] In the first instance, one has a *privilege* to either move one's body or not to move one's body. One also has a *claim* in the form of a negative right not to be touched by others. One holds a *power* that allows the *claim* to be waived, e.g. to allow someone to touch another person. Finally, there is an *immunity* that stops others from *waiving* one's *claim*. Thus, all four Hohfeld incidents are evident in the legal relationship that people have to their body. As noted above, the effect of this reductive analysis of human rights claims is that careful consideration needs to given to determine the scope and nature of any human rights based claim. Girwirth (1984) advocates that the modern

[30] It is important to note that a negative right can still give rise to an enforceable claim. For example, the right not to be interfered with is normally conceived as a negative right, however during a mêlée, the government may need to have Police actively intervene to quell the disruption, and indeed may be held to have breached their duty by not intervening. Thus, it is conceivable that a negative right can generate a positive claim.

[31] Above n 23, 234.

human rights are best described as claim rights.[32] Having recognised this, it is logical to move away from the notion of 'rights' as abstract constructs and look toward the literature that discusses 'rights' in respect of human rights.

One key limb of modern human rights is the third provision of the Preamble. This provision recognises that human rights must be enshrined in the rule of law and protect individuals from the arbitrary exercise of power by a government or regime. The effect of this provision is to establish the scope of international human rights. Douzinas (2000) picks up on this notion when he states that the political corollary of human rights is 'the claim that political power must be subject to reason and law, [and] have now become the staple ideology of most regimes and their partiality has been transcended'.[33] Accordingly, human rights must be discussed in the sphere of public law. Acknowledging the notion that modern human rights can be conceptualised as a distinct and autonomous space that can be used to appropriately constrain political power affirms the autopoietic nature of modern human rights law. One can see that a specific language is applicable within that demarcated disciplinary space. However, in order to define modern human rights pragmatically it is also essential to consider other autonomous, interfering fields.

Dworkin (1977) explored possible meanings of the term 'rights' in the context of defining individual rights vis-a-vis the rights and responsibilities of both a government as an institution and the people that are governed by that government.[34] Dworkin showed, *inter alia*, that rights in practice are not absolute. He did this by adopting a position in which a citizen's duty to follow the law of the land

[32] Gewirth, A. (1984) 'The Epistemology of Human Rights' 1, 2, *Social Philosophy and Policy*, 1 – 24.
[33] Douzinas, C. (2000) *The End of Human Rights*, Hart Publishing, Oxford, 1.
[34] Dworkin, R. (1977) *Taking Rights Seriously*, Harvard University Press, Massachusetts, 186- 205.

corresponds with governmental duty to respect individual's rights. This is a position that is Hohfeldian in the sense that it speaks of correlative rights and duties. Dworkin conducted a thought experiment in which a citizen follows his or her conscience and breaks a law. In receiving a punishment from the courts for that breach, Dworkin asserted that the individual's freedom of conscience is subjugated to the need for the government to ensure that people adhere to the law. Dworkin noted that these two obligations; namely the individual's right to freedom of conscience and the duty to obey the law are intrinsically paradoxical.[35] Having established that no right can be absolute, the issue Dworkin argued is the need for a rights respecting government to have powerful reasons to justifiably curtail a right. Dworkin ultimately adopted the view that rights are the '...majority's promise to the minority that their dignity and equality will be respected'.[36] The language that Dworkin employed in his research moved into a resonant harmony with the language employed in the various human rights instruments ratified by many nation-states with seats in the United Nations.

Donnelly (2003) followed the method adopted at the start of this section when he noted that for the purposes of international action human rights are defined as '...whatever is in the Universal Declaration of Human Rights'.[37] This legal positivist definition *prima facie* neatly sidesteps all philosophical and ideological debate. By linking the definition of the human rights contained in the UDHR to the operation of UN it accurately places human rights into the realm of the relationship between nation-states and humans and consolidates the perspective followed thus far. The ultimate rationale behind this interpretative methodology arises from the fact that UDHR is a proclamation

[35] Ibid, 186-9.
[36] Ibid, 205.
[37] Above 17, 22.

made by nation-states that unambiguously posits what rights human beings are entitled to. Quite apart from the content of the modern human rights instruments themselves, the forum in which the instruments have been ratified imputes agency on the part of the institutions making those representations. Woven into this observation is also the recognition of the limitations inherent in the protections afforded by the UDHR. The UN is a consent-based political organisation, and as such neither the UDHR as a proclamation, nor any subsequently ratified treaty creates an enforceable legal standard. Donnelly adopted this definition because of the central role the UDHR has played in shaping the modern human rights culture.

Douzinas (2000) adopted a similar approach but yields a different result when defining 'Human Rights'. He noted that 'human rights' is a combined term, one that refers to:

> ...the human, to humanity or human nature and is indissolubly linked with the movement of humanism and its legal form. But the reference to "rights" indicates their implication with the discipline of law, with its archaic traditions and quaint procedures.[38]

Douzinas underscored the relationship between humans and the law in the observation that people must be brought in front of the law to acquire rights, duties, powers and competencies. Douzinas called the legal definition of a person the 'empirical person'.[39] In so doing, Douzinas applied the analytical lens of Teubner's (1986) legal constructivist process. In this application of that process, Douzinas identified the circularity of the process of creating an empirical person; first, humans

[38] Above n 27, 18.
[39] Ibid, 19.

create law but then they must be defined in that law. Thus, Douzinas follows Derrida (1989)[40] in positing that humans exist both before and after the law and hence human rights are '...both the creations and creators of modernity, the greatest political and legal invention of modern political philosophy and jurisprudence'.[41] Douzinas made this assertion because he posited that human rights mark a profound turn in political thought when legally framing human agency; from duty to right. Secondly, Douzinas argued that modern human rights reversed the priority between the individual and society. Thirdly, he posited that moving from classical natural law to modern human rights heralded an analytical shift with the justification for rights moving from nature to history and then to the concepts of 'humanity' and 'civilisation'.[42] Douzinas noted the same tension or paradox observed by both Hohfeld (1919) and Dworkin (1977), namely that human rights are internally fissured: they are used in defence of the individual against state power, but are built in the image of an individual with absolute rights. There cannot be any absolute rights if those rights must be balanced with another person's nor if they must be subjugated to allow an institution to govern, thus the wording utilised in the drafting of all human rights instruments is flawed from the outset.

A conceptual consonance is apparent in the definitions posited by Donnelly (2003) and Douzinas (2000). Essentially they both assert that the empirical definition of a human is contained in the UDHR (and subsequent human rights instruments) in so far as specifying the relationship between the nation-state and the human. The issue of establishing the ultimate scope of this definition is unresolved. This can be illustrated by exploring two issues, one of which is best posed as a question.

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[40] Derrida, J. (1989) "Devant la Loi" in A.Edoff (ed), *Kafka and the Contemporary Critical Performance: Centenary Readings*, Indiana University Press, Bloomington.
[41] Above n17, 19.
[42] Ibid, 20.

Firstly, to whom should a nation-state apply the definition of the empirical person? This is not expressly addressed in the definition. Secondly, establishing the ultimate scope of protection afforded by modern human rights instruments is a grey area. That said, the Rome Statue for the International Criminal Court articulates the nation-state's broader duty to 'humanity'. However that is not a part of the human rights framework in the ordinary sense,[43] as the duty owed by a nation-state to non-citizens is not absolute. At this stage, it is significant only to note the practical limitations of the empirical person when defined by modern human rights instruments.

Kennedy (2004) takes a different tack in defining human rights.[44] Rather than define human rights, he talks of the 'human rights vocabulary' in the context of international humanitarian law. Whilst the phrase 'human rights vocabulary' is ambiguous to the point of being abstruse, it does afford a unique analytical perspective. The reference to 'a specific human rights vocabulary' bears more than a passing resemblance to one of the key aspects needed to identify an autopoietic space, as has been noted previously. Kennedy adopts a purposive definition of human rights by linking human rights with the international humanitarian movement at large and in so doing adopts a pragmatic, consequentialist stance. Such a definition of human rights is not satisfactory in a strictly doctrinal sense as it does little to create absolute legal certainty. Kennedy's position shows that law is not a separate entity that exists in an isolated bubble. Kennedy made a powerful argument that the theory and the practice of human rights are not only inextricably entwined, but rather that they form a seamless whole.

[43] Rome Statue for the International Criminal Court, UN Doc. A/CONF. 183/9 (17 July 1998).
[44] Kennedy, D. (2004) *The Dark Side of Virtue*, Princeton University Press, Princeton.

Notwithstanding the many modern human rights instruments, Mutua (2010) evaluated the manifestation of human rights in East Africa through the existence and functioning of human rights Non Government Organisations (NGO's). Mutua adopted a similar methodological stance as Kennedy (2004) and employed a purposive definition of human rights.[45] He justified this analytical point of view because there is a dearth of locally driven human rights reform due to the status quo of the NGOs in East Africa. Mutua (2010) asserted that evaluating the consequences of those institutions provided a stable platform from which to calculate the level to which human rights objectives are being realised. Those objectives can be discerned from an analysis of modern human rights instruments and how they operate locally. By adopting the purposive definition of human rights, Mutua was able to argue that human rights are the essential precursors to a vibrant civil society. He adopted a similar frame of analysis to Harbeson (1996) when he emphatically opined that civil society [and by extension human rights] are an essential dimension in reforming state power and creating:

> ...sustained political reform, legitimate states and governments, improved governance, viable state-society and state-economy relationships and prevention of the kind of political decay that undermined new African governments a generation ago.[46]

[45] Mutua, M. (2009), 'Introduction', ed. Mutua, M. '*Human Rights NGO's in East Africa: Political and Normative Tensions*', University of Pennsylvania Press, Philadelphia, 5.
[46] Harbeson, J.W. (1996), 'Civil Society and Political Renaissance in Africa', in Harbeson et al (eds), *Civil Society and the State in Africa*, Lynne Rienner Publishers, Boulder Colorado, 1-2.

Dembour and Kelly (2007) adopt yet another approach in defining human rights.[47] They regard modern human rights as part of a dynamic continuum; a process that seeks to provide the individual with justice in the sphere of international law. As such, they do not provide a specific definition of human rights; rather they focus on the institutions and processes that adjudicate disputes between the individual and the nation-state. Clarke (2007) showed that rather than marginalise the role of defining human rights, the real locus of commitment in this perspective addresses how best to treat the victims of human rights abuses as social/ political beings.[48] Dembour and Kelly adopted the same view as the other authors, namely that human rights regulate the relationship between the nation-state and the individual. A significant focal point of Dembour and Kelly is that they frame the international jurisdiction as being '...given shape and meaning' in specific local (or domestic) contexts.[49] This sentiment indicates that if widespread protection is to become a feature of modern life, then there is a need to ensure consistency between local and international notions of human rights.

From the foregoing analysis, two observations have become patently obvious, firstly that modern human rights are indeed an autopoietic legal field. This observation provides the methodological substratum for the subsequent analysis. Secondly, a purposive definition of modern human rights can be clearly identified as the thread that runs consistently through the various definitions of modern human rights. In the simplest terms, modern human rights are a set of rules that gain force

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[47] Kelly, T. Dembour, M.B. (2007), 'Introduction: The Social Lives of International Justice', eds Dembour, M.B. and Kelly, T, *Paths to International Justice: Social and Legal Perspectives*, Cambridge University Press, Cambridge, 1-25.

[48] Clarke, K.M. (2007), 'Global Justice, Local Controversies: The International Criminal Court and the Sovereignty of Victims', eds Dembour, M.B. and Kelly, T, *Paths to International Justice: Social and Legal Perspectives*, Cambridge University Press, Cambridge, 158.

[49] Ibid, 6.

only through consensus at the international level. They are a set of protections intended to regulate the relationship between the nation-state and human beings, although the forum of ratification is essentially that of nation-states. The protection is intended through the creation of an 'empirical person'; this empirical person is essentially a codified set of rights that defines the human in respect of the state. Any given claim for human rights is complex in nature and may be broken down into more fundamental types of legal rights. This serves to demonstrate the need for careful analysis when evaluating such claims. Such analysis must also include consideration of the inherent paradox entrenched in human rights law. The notion of the fully autonomous human being at the heart of human rights protections is a fiction. Human beings have correlative duties to respect the rights of others and also must allow a nation-state to govern. Thus, the institution that provides the rights must curtail absolute liberty amongst the population in order to govern. The issue then becomes a calculus of scope. This calculus must consider and balance the conflict of interest that manifests and the conditions under which individual human rights become limited. One unchanging constant is that international human rights are given meaning through the local jurisdictional context. Some modern scholars strongly advocate a purposive definition of human rights, one that looks at the consequences of the actions of the relevant human rights actors in question. They argue that only then can one truly evaluate whether human rights have been respected or whether they have been unjustifiably curtailed.

6.2: What are the Aspirations of Modern Human Rights?

The next two issues for consideration are identification of the aspirations of modern human rights law, and an examination of the level of success enjoyed by the modern rights regime. An appropriate place to start is the genesis and development of modern human rights. Modern human rights

emerged from concerns over the conduct of the Axis powers in the Second World War. The establishment of the Nuremburg Trials is widely considered a significant step in the journey toward drafting of the UDHR. Morrison (1995) asserts that this is because:

> Nuremburg is the visible symbol of the transition from a Westphalian system of state sovereignty to an international system that took place in the middle of this century. In a sense, it represents the foundation of modern thinking about international law, with an emphasis on the maintenance of peace and the responsibility of the state and its officers to international standards.[50]

Morrison (1995) goes on to highlight the significance of Nuremburg, notwithstanding the:

> ...tons of paper and gallons of ink... can be [used to] measure… the changes in international norms and expectations that quickly followed its decisions...the adoption of ...the Universal Declaration of Human Rights and its related Covenants and Conventions'.[51]

He further notes that a '...search of library catalogues revealed only four books published in the half century preceding Nuremburg devoted to the issues of international human rights.[52] This leads Morrison to the conclusion that 'The world after Nuremburg was very different to the world before. The decisions of 1945-46 erased any lingering doubts about the illegality of aggressive war. The decisions of the immediate post-war world created an international law of human rights'.[53]

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[50] Morrison, F.L. (1995) 'The Significance of Nuremburg for Modern International Law', 149, 4, *Military Law Review*, 207-,207.
[51] Ibid, 208.
[52] Ibid, 211.
[53] Ibid, 213.

Morrison then refers to Art 1, 2 and Chapter VII of the United Nations Charter that led to the formation of the UN,[54] and in turn to the drafting committee charged with drafting the document that ultimately became the UDHR. The aspirations of modern human rights can be discerned from a brief analysis of the literature relating to these significant events in the history of modern human rights.

6.2.1: The Nuremburg Trials

Steiner *et al* (2008) state that the aims of the UDHR in broadest terms were to build upon the precedents referred to in the Nuremburg Judgment and to continue the manifestation of the UN's basic purpose; the building and maintenance of peace.[55] O'Neill *et al* (2004) offer a similar perspective and follow Starke (1978)[56] in positing:

> ...the catalyst for the internationalisation of human rights was the atrocities committed in Nazi Germany during the Second World War, and it was the political conviction of the Allies that, if the war was due to the conduct of totalitarian states who had denied their citizens human rights, "one important safeguard against the outbreak of war and the preservation of peace was the protection of human rights".[57]

These authors cited link the intended aspirations of modern human rights with the Nuremburg Judgments. The term 'Nuremburg Judgments' refers to the trials of various war criminals, predominantly Nazi party leaders and military officials. These trials were organised and conducted

[54] Ibid.
[55] Steiner, H. Alston, P. Goodman, R. (2008) *International Human Rights In Context: Law, Politics and Morals*, Oxford University Press, New York, 134.
[56] Starke, J.G. (1978) 'Human Rights and International Law' eds. Kamenka, E. and Tay, A. *Human Rights*, Edward Arnold, Melbourne, 113, 118, 132-133.
[57] Above n 6, 13.

by the Allied powers. The trials themselves were known as the 'Nuremburg trials'. Steiner (2008) and Glendon (2001) argue that the most significant aspect of the Nuremburg Judgments was that they applied international law doctrines and concepts to impose criminal punishments on individuals for the commission of acts undertaken under three new heads: Crimes Against Peace, War Crimes and Crimes Against Humanity. These new heads of prosecution were drafted in the London Agreement, which was designed to constitute 'an International Military Tribunal for the Trial of War Criminals'.[58] At the core of the London Agreement was the expanded notion of individual responsibility for international crimes. Prior to the London Agreement, international (or universal) humanitarian crimes were limited to piracy, slave trading and genocide and crimes committed in the conduct of war, '*jus in bello*'. Whilst the Charter (Article 6) annexed to the London Agreement *prima facie* marked the start of a deeper recognition of humanitarian concerns in the vernacular of international law, the response to the Nuremburg Judgments was lukewarm at the time, and it has cooled further with time due to corollary legal concerns. These concerns continue to plague human rights in recent times as they undermine the integrity of the notion of individuals having *locus standi* in the sphere of international law.

Firstly, the defence argued a principle well established in international and the domestic law of two of four signatory nations to the London Agreement i.e. the United States and the UK. Namely, the defence of '*Nullum crimen sine lege, nulla poena sine lege*' – that there can be no punishment of crime without a pre-existing law. It should be noted that the grounds for this defence lay in the fact that the London Agreement was created after the acts being prosecuted had already been committed. It was also argued that an agreement between the parties to the London Agreement

[58] London Agreement of 8 August, 1949, 50 Stat. 1544 EAS No 472.

should not bind non-signatories, in this case Germany. Despite these doctrinal shortcomings, Kelsen (1947) supported the trial process. He adopted the view that the end justified the means; that is to say, the acts being prosecuted were so morally objectionable that the retrospective law applied to them '...can hardly be considered incompatible with justice'.[59] Steiner (2008) notes that ultimately the defence against *ex post facto* laws was overcome on the basis that a nation-state that attacking a neighbouring nation-state knows that they have done wrong. Therefore, according to Steiner, any criticisms levelled at the absence of formal laws could be overcome.[60] Further, it was argued that the Axis countries were signatory to *The General Treaty for the Renunciation of War* of 27 August 1928,[61] which condemned unconditionally recourse to war as an instrument of national policy.

Biddle (1947) noted that the legal notion of 'crimes against humanity' was designed to reach into a sovereign nation and create a liability for internal actions. He further noted that the Nuremburg Judgments conflated 'war crimes' and 'crimes against humanity', a reading which he regarded as desirable.[62] Welcher (1947) argued that having a trial process of some kind was preferable to treating the defeated parties 'out of hand'. Ultimately, Welcher argued, the tribunal should be seen as a 'political' rather than a 'legal' program.[63] Alpheus Thomas Mason was a prominent scholar who was able to directly quote Chief Justice of the US Supreme Court, Harlan Stone, in his critically acclaimed biography, *Harlan Fiske Stone: Pillar of the Law.* It is clear that Stone categorically held the view that the Nuremburg trial was little more than *vae victis* – woe to the vanquished. Mason (1957)

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[59] Kelsen, H. (1947) 'Will the Judgment in the Nuremburg Trial Constitute a Precedent in International Law' 1 *International Law Quarterly*, 153 at 164.
[60] Above n 40, 119.
[61] This treaty is more generally known as the *Pact of Paris* or the *Kellogg-Briand Pact*, signed by 63 countries including Germany, Italy and Japan.
[62] Biddle, F. (1947) 'The Nuremburg Trial', 33, *Virginia Law Review,* 679 at 694.
[63] Welcher, H. (1947) 'The Issue of the Nuremburg Trial,' 62, *Political Science Quarterly*, 11 at 23.

quotes Stone thus: '...the Nuremburg trial is an attempt to justify the application of the might of the victor to the vanquished...I dislike extremely to see it dressed up with a false facade of legality'.[64] In more recent times Osiel (1997) viewed the Nuremburg trials as one side of multi-sided dispute and noted that the trials ignored that other parties (e.g. the Allies) had also committed similarly unlawful acts on a large scale. Toulouse (2006) states:

> ...was Hiroshima (i.e. launching of nuclear bombs[65] over Japanese cities in August 1945) a crime against humanity?...The post war trials (Nuremburg, Tokyo) pronounced sentences against the losers only: the winners had safely granted total impunity status to themselves... it appears then, at this stage, that only way to save the Hiroshima bombing from retrospective condemnation is to grant permanent everlasting impunity status to the USA, under a principle that might makes right.[66]

Osiel asserts powerfully 'This unsavoury feature of the Nuremburg Judgments has undermined its authority in the minds of many, weakening its normative weight'.[67] Rosenbaum (2006) notes that jurisdictional concerns, retroactive punishments, standard causation arguments and freedom of association principles were subjugated to a moral process, rather than a legal one.[68]

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[64] Mason, A.T. (1956) *Harlan Fiske Stone: The Pillar of the Law*, Viking Press, New York at 715.
[65] The bombs dropped on Japan by the US were fission-type atomic bombs. On 6 August 1945, a uranium gun-type fission bomb code-named 'Little Boy' was detonated over Hiroshima. On 9 August 1945 a plutonium implosion-type fission bomb code-named 'Fat Man' was detonated over Nagasaki. These two bombings resulted in the death of over 220,000 people. See: Rhodes, R. (1995) *Dark Sun: The Making of the Hydrogen Bombs*, Simon & Schuster, New York.
[66] Toulouse, G. (2006) 'Scientific Revolutions and Moral Revaluations' in *Science and Society: New Ethical Interactions*, Fondazione Carlo Erba, Milan.
[67] Osiel, M. (1997) *Mass Atrocity, Collective Memory, and the Law*, Transaction Publishers, New Jersey at 122.
[68] Rosenbaum, T. (2006) 'The Romance of Nuremburg and the Tease of Moral Justice', 27 *Cardozo Law Review* 1731 at 1736.

Glendon (2001) and Steiner (2008) argue that despite a contentious trial process, the most significant aspect of the Nuremburg trials is their effect on humanitarian law in which both a nation-state and individuals were held externally responsible for internal actions.[69] This principle of international humanitarian law is apparent today. Rancilio (2001) posits that a second important legal principle established in this trial was to limit the use of the 'superior orders defence',[70] which allowed government officials to plead that they were following orders and therefore should not be held accountable for their actions.[71] This is also a principle that survives today in international humanitarian law. As noted, the reliance of the Nuremburg Judgments on the London Agreement to create individual responsibility for international humanitarian crimes has been the subject of considerable controversy and legal debate.[72] Whilst the actions of the trial have been be justified, the weak legal (and dubious moral) foundations undermine one of the central elements essential for a binding human rights regime by having the appearance of *vae victis* – might makes right. However, it will be shown in chapter 6.2.2 that modern human rights are not only built upon the precedents referred to in the Nuremburg Judgments and a manifestation of *vae vicitis*, but also that they are an ongoing manifestation of the UN's basic purpose; the building and maintenance of peace.[73]

[69] Glendon, M. (2001) *A World Made New: EleanorRoosevelt and the Universal Declaration of Human Rights, Random House*, New York at xviii.
[70] Rancilio, P. (2001) 'From Nuremburg to Rome: Establishing an International Court and the Need for US Participation', 78, *University of Detroit Mercy Law Review*, 299 at 304.
[71] Ibid.
[72] Specifically those valid defences raised by the counsel acting for the accused in the Nuremburg trials and the reliance on those such as Kelsen who believed that the end justified the means. Above n 53.
[73] Above n 40.

6.2.2: A Hermeneutic Consideration of the Universal Declaration of Human Rights

Crystallising a substantive set of principles that codified the lofty ideals of the UN into a single document that would become the UDHR was not a simple task in the shadow of World War 2 and the Nuremburg Trials. Glendon (2001) posits that the modern human rights movement was instigated as a concession to small countries and in response to the demands of numerous religious and humanitarian groups that the Allies make good their wartime rhetoric.[74] Modern human rights were to act as an assurance that the community of nations would never again countenance such grave violations of human dignity. The newly formed UN established a smaller 'Nuclear Committee' within the Commission on Human Rights in 1946. The Nuclear Committee consisted of nine members and was chaired by Eleanor Roosevelt. The Nuclear Committee was charged with making recommendations about the structure and functions of the Commission on Human Rights envisioned in the Charter that established the United Nations as a body. It is significant that the United Nations Charter itself made a few references to human rights, but did not specify what those rights should be.

The terms of reference for a permanent Commission on Human Rights (the Commission) were accepted in mid 1946, and the Commission met for the first time in January 1947. A Drafting Committee was established with the mandate to produce a list of human rights to present to the United Nations Economic and Social Council. The process of codifying human rights into the UDHR was an international effort involving scholars, philosophers and politicians from many different cultures and ethnicities. Several important principles that acted as a precursor to the development

[74] Above n 63, xv.

and drafting the UDHR were discussed in that group. There was considerable tension between members of the Drafting Committee when they were deciding on the supreme unit for human rights; the individual or the group/ community. This tension manifested in the debate over the terms attached to the empirical person. Lebanese philosopher Charles Malik was instrumental in drafting the UDHR and he used the term 'human person', whilst the chairperson of the drafting committee, Eleanor Roosevelt, preferred the term 'individual'.[75]

Malik's reliance on the primacy of the term 'human person' was to emphasise the social dimension of personhood and to avoid connotations of radical autonomy and self-sufficiency.[76] In the discussion within the Nuclear Committee Malik's 'human person' was the precursor to the UDHR.[77] One of most pertinent observations during the pre-drafting discussions were made by the Australian delegate, Colonel William Roy Hodgson and the Indian delegate Mrs. Mehta. The observation was that human rights instruments without institutional protection would be hollow; they proposed an International Court of Human Rights. Their view has proved to be prophetic as the enforcement of human right is still a live issue in international humanitarian law. As Glendon (2004) notes that '...long lists of rights are empty words in the absence of a legal and political order in which they can be realised'.[78]

After Rene Cassin finished the second draft, the UDHR assumed a structure similar to its current form. The Cassin draft consisted of: a Preamble; six introductory articles; thirty-six substantive

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[75] Ibid 42.
[76] Ibid.
[77] Malik, H. (ed.) (2000) *The Challenge of Human Rights: Charles Malik and Universal Declaration*, Charles Malik Foundation, Oxford, 29.
[78] Glendon, M. (2004) The Rule of Law and the International Declaration of Human Rights, 2, 5, *Northwestern University Journal of International Human Rights Law*, 1.

articles analytically grouped under eight headings; and two concluding provisions on implementation. Cassin drew heavily from the French notion of human rights and stated:

> ...the Declaration should base universal rights on the great fundamental principle of the unity of mankind, a principle that has been shamefully violated in the recent war.[79]

On June 16 1947 the Drafting Committee added a formal statement of equality into the draft UDHR. Even though a third draft of the UDHR was prepared and many small changes were made after the Cassin draft, the ethos of the document was largely similar to the form of the UDHR ratified by the UN General Assembly. The Preamble to the UDHR as ratified in 1948 is as follows:

> Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,
>
> Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,
>
> Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,
>
> Whereas it is essential to promote the development of friendly relations between nations,

[79] Above n 63, 67.

> Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,
>
> Whereas Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,
>
> Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge.

Hermeneutic consideration of the Preamble to the UDHR yields the following kernels; there is an intention to create a 'universal' body of rights, as evinced in the phrase 'all members of human family'. Similarly there is an express reference to '...the promotion of universal respect for and observance of human rights'. There is a sense that the rights themselves are intended to be 'inalienable'. This can be discerned from the express reference to 'the... inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world'. Similarly, the reference to the negative position; specifically that '...disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind' and finally that 'Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms' endorses the view that human rights are intended to be inalienable. A third and final kernel that can be discerned is the centrality of 'equality' in the Preamble to the UDHR. The term 'equality' refers to the recognition that people of all races and creeds and people of any gender and

sexual preference are considered equal. This heuristic analysis need only be based on a basic legal semantic understanding, as the language used in the Preamble is unambiguous.

To reiterate, the three terms; universality, inalienability and equality are widely adopted as encapsulating the essence of modern human rights. Donnelly (2003) adopts an identical, albeit purposive point of view. [80] As such, these three terms capture the essence and aspirations of modern human rights. Consequently, the three terms provide a suitable basis from which to evaluate the success of modern human rights law. The three principles can be restated into a single sentence: the aspiration of modern human rights is to create an inalienable set of rights that are universally applicable to all humans and that those rights are predicated on equality.

In addition to these three ideals encapsulating the essence of modern human rights, one of the most significant implications of the Nuremburg Trials must also be considered, namely that both nation-states and individuals could be held externally accountable for human rights violations against citizens and non-citizens of that nation-state alike. This can be simply paraphrased as 'accountability' or 'enforceability' and is the logical corollary of 'inalienability'. The scope of enforceability for any given human right ultimately determines the measure of its inalienability. This imperative can also be read into the UDHR in the last paragraph of the Preamble, which states that a common understanding of the intended meaning is of the 'greatest importance' in realising the aspirations of modern human rights.

[80] Donnelly, J. 'Equal Concern and Respect', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 51.

All modern human rights instruments seek to codify and protect these ideals articulated through a suite of interlocking rights. Testing modern human rights against the core notions of universality, equality and inalienability/ accountability allows a platform for a concrete evaluation to determine the success or failure of modern human rights and also to distinguish them from the aspirations written into the instruments that articulate them. These observations inform the next issue, namely instances in which modern human rights fail to deliver the intended or aspired level of protection. These problems can be identified at two distinct levels; problems with the theory or problems with the practical manifestation of human rights. However, before this analysis is undertaken, there is one significant preliminary epistemic question that warrants proper consideration. Since the language of the Preamble is unambiguous and the treaty itself has been ratified by nation-states, the question arises: 'Through what systemic practice can any nation-state depart from the clear intention articulated in the UDHR?' In order to answer this question, we will turn again to the structural functionalist paradigm of Paterson and Teubner.

Defining modern human rights using only the documents that articulate those rights is of limited value, as they need to be considered in their proper context. This context necessitates practically defining modern human rights instruments against the backdrop of the UDHR and UN. As will become apparent, much of the scholarship in this area has become mired in post-modern constructivist thinking. It is clear that in a manner akin to the interaction between law and science, there are many autonomous fields interfering with the manifestation of the core ethos of modern human rights law. This methodological perspective is implicitly embodied in Merry's (2007) paper in which she offers a pragmatic, if ultimately nebulous definition of modern human rights instruments. She posits that human rights instruments are:

> ...quasi-law, ...The creator of new international cultural categories rather than as a set of rules that are enforced. Influence rather than coercion is the prevailing mode of enforcement. Success means disseminating new standards and intervening in the negotiations that take place within national delegations. This negotiation is influenced to varying degrees by nations' desires to appear 'civilised' before the international community, defined as compliance with human rights treaties.[81]

This definition does not separate the essence of human rights from the *modus operandi* of the international political environment in which modern human rights reside, thus demonstrating that the field of modern human rights is autopoietically entangled with political imperatives. Conflating the theory of human rights with the norms of international law, obfuscates a nuanced study of modern human rights. However, this perspective exemplifies the notion that modern human rights law is itself an autonomous autopoietic legal category, and as such is able to provide a realist's view of modern human rights. This perspective affords a position from which some important observations can be made to assist the determination of how the ontological commitments written into the Preamble of the UDHR are practically manifest in the world.

There are two salient points that relate to the UDHR in its ratified form. These are discernible from the definition of modern human rights instruments posited above by Merry (2007).[82] Firstly, the ultimate potency of the UDHR is undermined from the outset as the language of the Preamble to the UDHR refers only to 'the actions of the member states' and neatly avoids the language of obligation.

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[81] Merry, S.E. (2007) 'Human Rights as a Path to International Justice: The Case of the Women's Convention', eds Dembour, M.B. and Kelly, T, *Paths to International Justice: Social and Legal Perspectives*, Cambridge University Press, Cambridge, 162.

[82] Ibid.

Secondly, the legal status of a declaration in international law is non-binding and hence persuasive only. This should be contrasted with Article 5 of the 1993 Vienna Declaration, which unambiguously states: 'All human rights are universal, interdependent and interrelated'.[83] Notwithstanding the notion of inalienable rights and the Vienna Convention, the two issues discussed above seriously undermine the ability of modern human rights to deliver the aspired level of protection in a practical sense. This sentiment is particularly prophetic in light of the observations already made, namely that at the time the UDHR was drafted it was observed that human rights without fulsome institutional protection were 'hollow'. It should be apparent from the preceding discussion that despite the noble intention written into the UDHR, the institutional and jurisdictional attributes of the interfering fields that are entangled with modern human rights undermine the clarity of concept transference from theory to practice. Thus rather than clarify the aspirations of modern human rights, realist perspectives highlight one reason why those aspirations cannot be met.

Even though Donnelly (2003) repeatedly stated that the essence and purpose of modern human rights is to protect 'human dignity', a more usable statement was identified when human rights were defined in the previous section. Namely, the core ethos and aspirations of the modern human rights project is to create a suite of interlocking rights that enshrine and protect humans and that these are built upon the notions of inalienability, universality and equality. These terms present themselves from an analysis of the preambles and Articles of the UDHR, ICCPR and ICESCR. Glendon (2001) and

[83] Vienna Declaration 1993 Article 5.

Hunt (2007) also adopt such a perspective when they affirm that the ethos of human rights can be encapsulated into the same three terms; universality, inalienability and equality.[84]

6.3: When do Modern Human Rights Fail to Deliver the Aspired Levels of Protection?

It has already been shown how and why a realist assessment of modern human rights law utilising a structural functionalist methodology yields the view that there are many autonomous fields that interfere with a strict legalist reading of the Preamble to the UDHR. That said, the aspirations of modern HR were clearly articulated after hermeneutic consideration of the relevant text. The Nuremburg Judgments showed, *inter alia*, significant global consensus in rejecting state endorsed barbarism and inhumanity. However, instances of state endorsed inhumanity are both wide ranging and commonly in evidence in the post World War 2 period. One need only read any newspaper or listen to any news bulletin to find instances of contemporary human rights abuses perpetrated by many nation-states, even those that are signatory to the UDHR. This thesis will analyse six contemporary examples of human rights lapses that in the following discussion. The first five examples are practical problems and the sixth is a doctrinal shortcoming that becomes evident from a deeper analysis of the five practical problems. All the examples given are relevant to the current analysis as they demonstrate that interfering fields continue to autopoietically redefine modern human rights. The examples selected highlight the chasm between the ontological commitments of the Preamble to the UDHR and the conduct of nation-states. The origin of this dissonance between the aspirations and practice of modern human rights will be addressed in some detail in chapters 6.5 and 6.6.

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[84] Above n 63, 66; Hunt, L. (2007) *Inventing Human Rights*, Norton Publishing, New York, 20.

6.3.1: The 'War on Terror': Guantanamo Bay and the Executive Order of 13 November 2001

The recent US led 'War on Terror' has breathed fresh life into the human rights debate, as there is clear and compelling evidence of grave human rights violations being perpetrated both to and by the United States. The first practical problem relating to human rights is a specific action undertaken by the President of the United States. Article 7(b) of the Presidential Military Order (the Order) delivered by George W. Bush on the 13 November 2001 relates to the detention of non-citizens of the US and states that:

> (b) With respect to any individual subject to this order:
>
> > (1) military tribunals shall have exclusive jurisdiction with respect to offences by the individual; and
> >
> > (2) the individual shall not be privileged to seek any remedy or maintain any proceeding, directly or indirectly, or to have any such remedy or proceeding sought on the individual's behalf; in (i) any court of the United States, or any state thereof, (ii) any court of any foreign nation, or (iii) any international tribunal.[85]

[85] Executive Orders, 'Military Order of 13 November, 2001' Federal Register: 16 November, 2001, (Volume 66, Number 22), Presidential Documents. Page 57831 – 57836.

Evans (2002) notes that both the order itself and the circumstances surrounding the issuance of the order raise several significant and contentious legal issues.[86] The first is the US declaration of war on a non-state actor, in this case Al-Qaeda. This in itself constitutes a significant change to the laws of war, as this had never occurred previously. The second issue is the retrospective declaration of war, that is to say that s1(a) of the Order stated that the acts of September 11 were so severe that they rose to the level of 'hostile acts' under the law of war and thus gave rise to an armed conflict.[87] Thirdly, the exclusion of Congress from the process of setting up military commissions is also viewed as contentious by some. For example, Fisher (2001) and Seelye (2001) criticised the Order as an unconstitutional expansion of executive authority with potential for abuse.[88] On the other hand, Glabberson (2001) asserted that the Order was a valid exercise of the President's Commander-in-Chief Power.[89] Henkin (1996) notes that there is no provision in the US Constitution that allows the normal processes of government to be enlarged in time of crisis.[90]However Evans (2002) notes that the US precedent of *Quirin*[91] served as a valid precedent for the Bush administration to issue the Order.[92] Evans also observed that the Military Commissions that were set up to try the suspects differed procedurally from the ordinary court-martial process. For example, under the Uniform Code of Military Justice court-martials are ordinarily appealable on all questions of fact and adhere to the

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[86] Evans, C.M. (2002) 'Terrorism of Trial: The President's Constitutional Authority to Order the Prosecution of Suspected Terrorists by Military Commission', 51, 6, *Duke Law Review*, 1831-1856.
[87] Ibid, 1846.
[88] Fisher, L. (2001) 'Bush Can't Rely on FDR Precedent', *LA Times*, December 2; Seele, K.Q. (2001) [Letter], '300 Law Professors Oppose Tribunals Plan', *New York Times*, December 8, 2001.
[89] Glabberson, W. (2001) 'Support for Bush's Antiterror Plan', *New York Times*, December 5.
[90] Henkin, L. (1996) *Foreign Affairs and the US Constitution* (2nd Ed), Oxford University Press, New York.
[91] *Ex Parte Quirin*, 317 U.S. 1 (1942). The US Supreme Court upheld the jurisdiction of a US military tribunal to try several German saboteurs. This case also cited as precedent for the trials of Guantanamo inmates in the War on Terror.
[92] Above n 88, 1846.

rules of evidence, but he Military Commissions only followed evidentiary guidelines established by the Secretary of Defence.[93]

Whilst the departure from the ordinary court-martial process may be justified on the grounds of the exigencies of war, it is clear that the military tribunals undermine the right to a fair trial as they changed some of the most fundamental procedural rules that guide the operation of a civilian trial. Aside from fundamentally undermining the human rights principles the US was also instrumental in bringing to world attention, there are other human rights concerns that plague the US. At present there is no International Court of Human Rights, such as that suggested by Col. Hodgson during the drafting of UDHR. Cognisant of this void, the next most appropriate jurisdiction to prosecute human rights violations at the international level is the International Criminal Court (ICC). However, the US has signed but not ratified the Rome Statute of the International Criminal Court (the Rome Statute). As a result the US does not submit to the jurisdiction of the ICC, and in fact takes this a step further. Cowdery (2003) observes that the US has used economic and political pressure to enter into Article 98 Agreements with numerous nations-states and posits that these agreements fundamentally undermine the Rule of Law.[94]

6.3.2: Article 98 Treaties

'Article 98 Treaties' is a term that refers to a particular class of international agreement that the US established with other nation-states in order to avoid the jurisdiction of the International Criminal

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[93] Ibid, 1832.

[94] Cowdery, N. (2003) *Terrorism and the Rule of Law*, Address at the International Association of Prosecutors 8th Annual Conference, Washington DC, 10-14 August, 2003 available at <http://www.odpp.nsw.gov.au/speeches/IAP%202003%20-%20Terrorism%20and%20the%20Rule%20of%20Law.htm> last view 30 May 2011.

Court (ICC). The reach of these agreements includes US nationals and her allies. Article 98 treaties are also called 'bilateral non-surrender agreements'. Benzing (2004) observes that the US government has been 'overtly negative, or even hostile...on the issue of the ICC'.[95] Benzing continues with the observation that '...beyond the impression that merely not joining the Court would insufficiently protect its national interests, the United States has embarked upon a campaign to actively ensure that the Court will not exercise its jurisdiction over its nationals'.[96] This position has been adopted by the US despite it '...playing an active role in the preparatory work leading up to the adoption of the ICC statute'.[97]

Article 98(2) of the Rome Statute of the International Criminal Court prohibits the ICC from requesting a member state to assist the court by handing over a person or evidence if that action would force that state to act in a manner which is inconsistent with their obligations in international law as cited below:

> 2. The Court may not proceed with a request for surrender which would require the requested State to act inconsistently with its obligations under international agreements pursuant to which the consent of a sending State is required to surrender a person of that State to the Court, unless the Court can first obtain the cooperation of the sending State for the giving of consent for the surrender.[98]

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[95] Benzing, M. (2004) 'U.S. Bilateral Non-Surrender Agreements and Article 98 of the Statute of the International Criminal Court: An Exercise in the Law of Treaties', 8, Max Planck Yearbook of United Nations Law, 181-235.
[96] Ibid, 183.
[97] Ibid, 182.
[98] Rome Statute of the International Criminal Court, Article 98(2) at 54 available at <http://untreaty.un.org/cod/icc/statute/english/rome_statute(e).pdf> last viewed 31 May 2011.

The interpretation of this provision preferred by the US has legitimised the creation of bi-lateral agreements to stop states from surrendering US nationals to the ICC. Negotiations between the US and other nation-states to implement Article 98 treaties began in 2002, with the execution of the first agreement between the US and Romania.[99] These treaties have different forms to cover the status of the nation-states, e.g. unilateral or bilateral immunity for persons, and they also cover signatory and non-signatory nation-states.[100] The US reading of Article 98(2) allows these states to stop the surrender of a US national to the ICC where an Article 98 treaty is in place. This is made possible by the existence of that treaty rendering the surrender contrary to the nation-states international obligations under that treaty. Cowdery (2003) wryly observed the hypocrisy of the US in pressuring Croatia to enter into an Article 98 treaty whilst simultaneously pressuring the Croatian government to surrender some of its own nationals to the International Criminal Tribunal for the Former Yugoslavia (ICTY), being run by the ICC.[101] Benzing notes that there is no scholarly consensus on resolving the conflicts between treaties. However he concludes that these agreements are not consistent with article 98 of the Rome Statue.[102] As a result he believes that the ICC could reasonably disregard those agreements, whilst conceding at the same time that it is 'highly unlikely' that the ICC would request the surrender of US national.[103]

[99] Above n 89, 190.
[100] Eubany, C. (2003-2004) 'Justice for Some: US Efforts Under Article 98 to Escape the Jurisdiction of the International Criminal Court', 27, *Hastings International and Comparative Law Review*, 103 at 119 -122.
[101] Above n 88.
[102] Above n 79, 235.
[103] Ibid.

6.3.3: The Hague Invasion Act

Under the Bush presidency the US enacted the *American Service Members' Protection Act* (ASMP) in 2002. This legislation allows *inter alia* the following: funding to the UN to be withheld if the purpose of those funds is to assist the ICC;[104] the US supplies peace keeping forces only after a non-surrender agreement is in place;[105] the US can withhold military assistance (including funding) from any nation that is signatory to the Rome Statute;[106] there is even a legislative provision that allows the president to 'use all means necessary and appropriate to bring about the release of US nationals'. Guzzini (2002) notes that scholars have dubbed the ASMP as 'The Hague Invasion Act', as this act pre-empts the use of military force to liberate US personnel (and their allies) held in custody by the ICC in The Hague.[107] The US may undertake three actions, which when taken together allow her to sidestep the jurisdiction of the ICC and hence avoid international liability for individuals who have committed human rights violations. Firstly, the US effectively 'unsigned' the ICC treaty on 6 May 2002. Secondly, the US insists on Article 98 treaties being in place in many circumstances. Thirdly, the US has enacted the ASMP. These actions should be considered in light of the contrary treatment of non-US citizens under the provision of Presidential Military Order of 13 November 2001. This saw people, such as Australian David Hicks, subjected to the practice of 'extraordinary rendition' and torture in the US

[104] Above n 94, 123.
[105] Ibid.
[106] Ibid.
[107] Guzzini, S. (2002) 'Foreign Policy Without Diplomacy: The Bush Administration at the Crossroads', 16, 2, *International Relations*, 291 at 295.

base Camp X-Ray, located at Guantanamo Bay, whilst others were subjected to torture at other locations around the world, including in the infamous Abu Ghraib prison in Iraq.[108]

6.3.4: Extraordinary Rendition

In other writing I have concurred with the definition of extraordinary rendition given by Weissbrodt and Bergquist (2006). This definition categorises it as a hybrid human rights violation,[109] because it combines elements of arbitrary arrest, enforced disappearance, forcible transfer, torture, denial of access to consular officials, and denial of impartial tribunals.[110] It involves the state-sponsored abduction of a person in one country, with or without the cooperation of the government of that country, and the subsequent transfer of that person to another country for detention and interrogation. Weissbrodt and Bergquist (2006) have tested the practice of extraordinary rendition against international human rights instruments and found that the practice breaches numerous conventions in the UDHR, ICCPR, ICESCR, both the *Convention* and *Protocol Relating to the Status of Refugees 1967*, the *Convention Against Torture* (1984), the *Vienna Convention on Consular Relations 1963* and the *Geneva Conventions 1949*. The practice of extraordinary rendition has been legally justified on the basis of policy intentions articulated in both the *US Executive Order of 13 November 2001* and the ASMP legislation in the US. Mayer (2005) is of the view that additional justification had been argued on the basis that the US has created a new category of person in international law, one

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[108] Hicks, D. (2010) *Guantanamo: My Journey*, Random House, Sydney, 177-418; Hersh, S.M. (2004) 'Annals of National Security: Torture at Abu Ghraib', *The New Yorker*, available at <http://teachers.colonelby.com/krichardson/Grade%2012/Carleton%20-%20Int%20Law%20Course/Week%2011/TortureAtAbuGhraib.pdf> last viewed 20 June 2012.

[109] Dhall, A. (2010) 'Neo-Naturalism: A Fresh Paradigm in International Law', 65, 5, *World Futures: The Journal of General Evolution*, 363 -380 at 367.

[110] Weissbrodt, D., Bergquist, A. (2006) 'Extraordinary rendition: A Human Rights Analysis.', *Harvard Human Rights Journal,* 19.

to whom the Geneva Conventions does not apply, namely 'illegal enemy combatants'.[111] Mayer gained public attention by labelling the process of extraordinary rendition as 'outsourcing torture'.[112]

The explicit statements of policy of the US have allowed the practice of extraordinary rendition to be put into operation even though the human rights treaties ratified by the United States ostensibly created rights and liabilities. Clearly the policy of extraordinary rendition and the other problems highlighted in chapter 6.3 demonstrate the lack of ultimate recognition of human rights and how deft legal manoeuvring has been used to circumvent the modern human right regime.

6.3.5: The Mandatory Detention of Asylum Seekers by Australia

I have noted in other writing that whilst the Australian government dispensed with the policy of mandatory detention of asylum seekers in July 2008, this issue is an example of the subordination of ratified international human rights agreements to domestic political considerations.[113] It is notable that the change in policy was the result of a change in government at a national election, and was one of the major platforms canvassed during the election. The direction of policy reform is toward an increasingly liberal adoption of human rights; however, the legal mechanisms in place allow for a reversal of policy if it is deemed politically expedient. As such, this contentious legal issue demonstrates how easily a policy of mandatory detention can be reinstated and how fickle human rights protection can be. The relevant legislation is Section 176 of the Australian *Migration Act 1958* (Cth):

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[111] Mayer, J. (2005) 'Outsourcing Torture: The Secret History of America's "Extraordinary Rendition" Program', *New Yorker: Annals of Justice*, available at <http://www.newyorker.com/archive/2005/02/14/050214fa_fact6?currentPage=1> last viewed 9 June 2011, 7.

[112] Ibid.

[113] Above n 103, 368. See also the discussion chapter 5.2, nn 39 – 42.

> This Division is enacted because the Parliament considers that it is in the national interest that each non-citizen who is a designated person should be kept in immigration detention until he or she:
>
> (a) leaves Australia; or
>
> (b) is given a visa.

I have noted in other writing that the question of establishing who is caught by this provision boils down to the interpretation of two key phrases: 'national interest' and 'designated person'.[114] There are some protections seemingly enshrined into Australian law, such as those judicially recognised in *Kioa v West*.[115] This case brought part of the common law doctrine of natural justice into Australian law. Mason J stated:

> It is a fundamental rule of the common law doctrine of natural justice expressed in traditional terms that, generally speaking, when an order is to be made which will deprive a person of some right of interest or the legitimate expectation of a benefit, he is entitled to know the case made against him and to be given an opportunity of replying to it... The reference to 'right or interest' in this formulation is must be understood as relating to personal liberty, status, preservation of livelihood and reputation, as well as to propriety rights and interests.
>
> The reference to 'legitimate expectation' makes it clear that the doctrine applies in circumstances where the order will not result in the deprivation of a legal right or

[114] Above n 103.
[115] *Kioa v West* (1985) 159 CLR 550.

> interest. Take, for example, an application for the renewal of licence where the applicant, though he has no legal right or interest, may nevertheless have a legitimate expectation which will attract the rules of natural justice.[116]

The effect of *Kioa* is that it indicates that asylum seekers coming into Australia would have the ability to present a case in relation to their mandatory detention, as there appears to be judicially recognised protections brought into Australian law. However protections such as those recognised in *Kioa* can be overridden in certain circumstances, such as in the face of an express governmental intention to do so. In this instance the broad definition attached to 'designated person' during the policy of mandatory detention for asylum seekers could not be challenged by the ambit of judicial discretion afforded under the concept of 'legitimate expectation' as the policy itself was explicitly articulated. This policy of mandatory detention prompted three UN treaty bodies to publish observations on Australia's obligations toward asylum seekers. All three noted incongruity between ratified obligations and domestic legislation. The Committee on the Elimination of Racial Discrimination (CERD) recommended the 'faithful' implementation of international refugee law. The Human Rights Commission (HRC) recommended policy changes on mandatory detention under the *Migration Act*. The Committee against Torture found 'an apparent lack of appropriate review mechanisms for ministerial decisions' on people who may face torture if deported (Amnesty International Australia, 2001).[117] The findings of those bodies did not change the government's policy orientation. The latitude afforded when acting in the 'national interest' does not preclude any future express change in policy regarding the definition of 'designated person' having an even wider

[116] Ibid, [582] – [583] per Mason, J.

[117] Amnesty International Australia (2001) *Annual report, Australia 2001*. Available at: <http://web.amnesty.org/web/ar2001.nsf/bed8009ca83e16c780256a4f00344f2f/da8606216e55bd518025a48004ab72f/$FILE/australia.pdf > last accessed June 9, 2011.

reach than during the policy of detaining asylum seekers (as long as the changes are within the scope of the enabling act, in this instance, the *Migration Act 1958* (Cth)). The type of treatment received by asylum seekers seeking refuge in Australia should be contrasted with the scope of rights declared in the UDHR. One obvious conflict between the rights declared in the UDHR and the Australian position was identified in chapter 5.2.

Whilst the policy relating to the detention of asylum seekers has not been changed back to one requiring mandatory detention, on 7 May 2011 the Australian government announced that a Memorandum of Understanding (MOU) had been signed with Malaysia to address the issue of asylum seekers. The essence of this bilateral agreement is to transfer 800 people who were seeking asylum in Australia into Malaysia, and for Australia to resettle 4,000 refugees currently residing in Malaysia.[118] The Australian government is fully funding this agreement.[119] The central areas of concern relate to the fact that Malaysia has neither ratified the UN Refugee Convention nor the Protocol, nor is Malaysia a signatory to CAT. Further, Malaysia has a poor record in relation to the treatment of asylum seekers; having passed a law in 2002 that allows caning for immigration violations.[120] This state of affairs has attracted criticism from many sources including the Australian Law Council,[121] Amnesty International[122] and the UN Commissioner for Human Rights.[123]

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[118] Amnesty International Australia (2011) *Brief: Australia's Refugee Deal with Malaysia*, available at <http://www.asrc.org.au/media/documents/amnesty-brief-malaysia-swap.pdf> last viewed 9 June 2011.
[119] Ibid.
[120] Ibid, 2.
[121] Australian Law Council (2011) Media Release 1122: *Law Council Voices Concern over Australian Malaysia Asylum Seeker Agreement*, available at: <http://www.vicbar.com.au/getfile.ashx?file=HomePageBoxMiddleFiles/1122%20Law%20Council%20voices%20concern%20over%20Australia%20Malaysian%20asylum%20seeker%20agreement.pdf> last viewed 9 June 2001.
[122] Above n 112.

6.4: The Shaky Foundations of Modern Human Rights Law

The Presidential Decree, Article 98 treaties, extraordinary rendition and other examples given in chapter 6.3 are instances of severe human rights abuses that continue to occur. They are *prima facie* incompatible with the language of the Preamble. Determining how these practices occur requires an analysis of several aspects of the language and of the history of the UDHR and the environment in which it operates.

Kennedy (2004) identified some foundational problems with modern human rights. He focussed on the 'outcomes' or the 'consequences' in the course of his analysis. Kennedy (2004) implicitly identified a profound deficiency in modern human rights law; namely the jurisprudential justification for modern rights is ultimately a conceptual void. This conceptual void appears to be incompatible with the clear ontological commitments articulated in the UDHR. However, he showed that regardless of doctrinal clarity, the commitments are obfuscated during the process of interacting with the myriad of interests and disciplines that make up the many spheres of human activity with which modern human rights must interact (e.g. economics and politics are key autopoietic fields that interact with law as identified by Luhmann).[124] This 'conceptual void' has two limbs. The first is that since modern human rights law has become an autonomous autopoietic space and cultivated its own vocabulary, the vocabulary used in that system has itself become an obstacle. It is no longer transferable back into the disciplines that interfere with modern human rights; i.e. the language of

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[123] Australian Broadcasting Commission, *Asia Pacific Focus*, Interview Ms. Navi Pillay, Presenter Jim Middleton, aired 30 May, 2011. Transcript and interview available at <http://www.radioaustralianews.net.au/stories/201105/3230416.htm> interview, last viewed 9 June 2011.

[124] Baxter, H. (2013) 'Niklas Luhmann's Theory of Autopoietic Legal Systems', 9, *The Annual Review of Law and Social Science*, 167-184.

modern human rights law is not generally compatible with, *inter alia*, the language of international obligation. The second limb identified by Kennedy is that the epistemological merit of the ontological commitments articulated in the Preamble is insufficient to create an autonomous and enforceable human rights regime in the context of the autopoietic environment in which it operates at a practical level.

Whilst Kennedy's analysis shows that there are many positive and desirable outcomes in humanitarian law (and some 'dark sides'), the absence of a strong doctrinal foundation opens up a Pandora's box of corollary issues that require attention directed toward the disciplines that interact with modern human rights law. As an international human rights lawyer, Kennedy was troubled with what appeared to be an arbitrary and/ or a doctrinal justification for intervening in the internal affairs of a nation-state.[125] He observed that there was a tendency for theoretical and methodological debates to overlook human suffering, even though that suffering is the prime motivation behind humanitarian law and the assessment of outcomes.[126] Furthermore, Kennedy noted that the corollary of the robust methodological debates is that humanitarian concerns are displaced by 'default policy positions'; positions that would otherwise be rendered untenable by a strong doctrinal foundation for modern human rights law.[127]

Another significant problem that emerges from the conceptual vacuum caused by the lack of a robust epistemological foundation for modern human rights is the changing vocabulary used by the various actors in humanitarian law. As identified above, and by Paterson and Teubner, this is a

[125] Above n 38, 41.
[126] Ibid, 56.
[127] Ibid, 119.

defining attribute of autonomous autopoietic spaces. The consequences of this have been lamented by human rights scholars. They found, *inter alia*, that the ethos of modern human rights has become 'lost in translation'. The reason for this is that the unique language of modern human rights enables blind spots and biases to become encultured, as vocabulary is itself normative in nature.[128] Donnelly notes that such problems 'capture' humanitarian law and frustrate its ultimate effectiveness.

It is clear that a deeper analysis is required to work toward resolving the issues caused by the shaky foundations of modern human rights law. The paradigm of structural functionalism provides a position from which to assert not only that the foundations for modern human rights are shaky; but also that the nature of modern rights is creating a crisis of both identity and vocabulary. It may be noted that the central characteristic of autopoietic fields is that they recursively redefine themselves. The autopoietic interference between fields is a double-edged sword. Whilst it can guide the evolution of an autopoietic field toward greater efficiency and relevance, it can also systematically undermine the core principles. This clarifies the scope of the challenge conducting a structural functionalist analysis. Firstly the interfering fields must be identified, and secondly, the specific type of interference needs to be specified.

Before turning to an exegetic epistemological analysis of the Preamble to the UDHR, the two disciplines scheduled for analysis that autopoietically interfere with modern human rights will be explored.

[128] Ibid, 113.

6.5: Why do these Problems Exist?

As noted above, the problems highlighted in section 6.2 share a common attribute. In spite of a recognised and ratified international human rights standard, significant human rights violations still continue to occur. This manifests as a *prima facie* bifurcation between the mandates of ratified human rights treaties and the conduct of the governments of the US, Australia and other countries. Such divergence between international treaties and the conduct of nation-states is symptomatic of, *inter alia*, legal dualism. The international law practice of legal dualism is an important *episteme* that interferes with the autopoietic autonomy of modern human rights and as such warrants express consideration. Legal dualism is indicative of two simultaneous and separately operating jurisdictions; the international and the domestic. The legal notion of 'sovereignty' lies at the heart of legal dualism. Sovereignty, as currently understood, has allowed the US to act contrary to ratified human rights instruments, to implement Article 98 Treaties, to reject the ICC's jurisdiction entirely, and to condone the practice of extraordinary rendition.

It is also appropriate to examine Australia's refugee policy. Whilst it may appear that inclusion of the example of Australia's refugee policy is capricious, this is not the case. This Australian policy position exposes several important challenges relevant to the operation of human rights. Firstly it shows that the scope of protection afforded under human rights instruments is of a fickle nature. Secondly, careful wording of the relevant legislation allows the interpretation to be determined by policy positions that are themselves ephemeral. Thirdly, this Australian example shows the concerns levelled against the US are applicable to other modern, liberal democracies. Fourthly, this example is itself a live and current social discourse; one in which the fields of human rights law, and the legal

notion of sovereignty both impact upon one another, as will be discussed below. This is a good example of how modern human rights and legal dualism autopoietically interfere with one another.

Adopting a similar instance, Malaysia also has not ratified some significant human rights instruments. This demonstrates an ethno-cultural rejection of 'universal' human rights despite the provision in the Preamble that expressly states: 'Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge'. Dialectical ethno-cultural relativism is a second *episteme* that interferes with the autopoietic autonomy of modern human rights and this too warrants express consideration.

Both legal dualism and the ambit of legitimate socio-cultural expression in international human rights law are significant issues that stymie the emergence of a modern human rights regime and limit its capacity to deliver the aspired levels of protection. Put simply, both these issues can be reduced to the tension between normativism and relativism. In the first instance, this tension is expressed in the systemic legal inconsistencies between the aspirations of a universally (e.g. internationally) normative binding human rights regime and the legal concept of sovereignty that enshrines autonomy for nation-states. In the second instance there is tension between human rights as normative ethical and cultural statements and the stance of some nation-states, Malaysia being one such state, holding that human rights are unsuitable for integration into the local legal schemata. However, it is apparent that the existence of the problems highlighted in chapter 6.3 are in sharp contradistinction to the very essence of modern human rights; namely that human rights espouse equality, are inalienable, have universal applicability and can be used to hold individuals and nation-states accountable for human rights violations.

6.5.1: Legal Dualism and the Rise of the Nation-State

Legal dualism refers to the simultaneously coexisting albeit separate international and domestic jurisdictions. It is a logical extension of a globalised world in which the primary actors are interconnected nation-states on the one hand, but defined by their separate and distinct autonomy (i.e. sovereignty) on the other. The concept of sovereignty can be traced back to the origins of international law. In other writing I have adopted a position similar to Beaulac (2003)[129] and posited that Bodis in *Six Livres de la Republique* of 1576 laid the foundations of modern international law.[130] It is acknowledged that Grotius is regarded as the "father" of international law and is widely believed to have championed the secularisation of natural law in the modern age via his assertion that it would subsist even if God did not exist, "*etiamsi daremus non esse Deum*." The thrust of early jurisprudence in international law centred on protecting the sovereignty of nations, and not on protecting the rights of individuals. As a result, in seeking to understand legal dualism a brief exposition on the rise of the 'nation-state' as a legal entity is an essential element.

The rise of the modern nation-state is widely viewed as commencing with the execution of the *Treaty of Westphalia* of 1648 (the Treaty). [131] The '*Treaty of Westphalia'* is a collective name that refers to two particular treaties; the *Peace of Munster* and the *Treaty of Osanbruck* signed in 1648, on May 15 and 24 October respectively. These two treaties are also referred to as the *Peace of Westphalia*. These instruments ended the Thirty-Year War by placing the states of Western Europe on an equal footing and affirming their mutual autonomy. Taylor (1994) succinctly encapsulates the

[129] Beaulac, S. (2003) 'The Social Power of Bodin's "Sovereignty" and International Law' 4, *Melbourne Journal of International Law,* 4.
[130] Above n 103, 366.
[131] Contra: Osiander, A. (2001) 'Sovereinty, International Relations and the Westphalian Myth', 55, 2, *International Organization*, 251 – 287.

birth and rise of the nation-state and the process that led to ratification of the Treaty. He observed '...medieval European politics was not territorial in nature. Within feudalism, personal loyalties formed a social hierarchy of political relations with no recourse to sovereignties'.[132]

According to Taylor, the two dominant political powers in Europe prior to the 12th century were the Roman Empire and the papacy. The 'effective defeat of the empire by the papacy left a vacuum in which two forms of territoriality developed';[133] a 'city-states' approach developed in Italy, which Taylor posits, was a system that '...evolved through a competitive territorial politics which gradually reduced the number of players through elimination by war.'[134]

Strayer (1970) called the second system a 'law-states' system,[135] which developed a unit at a scale between city-state and empire. Taylor noted that there were 'medium-sized polities [which] constructed centralised administrations based upon law courts and exchequer. But such internal functions were not completed by external organs of state since there was yet no interstate in place. This began to change in the...16th century'.[136] The term 'interstate' refers to a state in the intermediate position between city-state and empire.

The most significant parallel development in Europe was the outbreak of the 30-Year War. This conflict was complex with a large number of participants, each with its own distinct goals. However

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[132] Taylor, P.J. (1994) 'The State as Container: Territoriality in the Modern World-System', 18, 151, *Progress in Human Geography*, 151-162. Although the case England was that all feudal tenures were held by the Crown, conflating property and sovereignty. See: McLean, J. (1999) *Property and the Constitution*, Hart Publishing, Oregon, 2

[133] Ibid, 154.

[134] Ibid.

[135] Strayer, J.R. (1970) *On the Medieval Origins of the Modern State*, Princeton University Press, Princeton, New Jersey.

[136] Above n 125, 154.

Gross (1948) noted that '…the Thirty Years War had its origin, at any rate partially, in a religious conflict, or as one might say, in religious intolerance'.[137] The consequences of this war were catastrophic. Kamen (1968) observes that '...the material devastation caused...was enormous... over the German lands as a whole, the urban centres lost one third of their population and the rural areas lost forty percent'.[138] With such devastation, it is little wonder that the Thirty Years War created an urgent need for reform. Taylor states that the ratification of the Treaty recognised:

> ...an interstate system...which confirmed the success of medium sized states by eliminating rival foci of power both above and below. Basically state-centralisation was accepted through the principle of non-interference in each other's internal affairs, thus formally eliminating all rival centres in territories. At the same time the last vestiges of papal and empire political supremacy were removed. The end result was the modern sovereign state as power container, formally all-powerful within its territory.[139]

Moving into the modern age, one can plainly see that the United Nations is an organisation built around the recognition of the unit of governance that is the nation-state. A lauded conservative scholar Scrutton (2003) observes:

> The United Nations, as it name implies, is founded on the assumption that the world divides nations, that political decisions are made by and on behalf of

[137] Gross, L. (1948) 'The Peace of Westphalia', 42, 22, *The American Journal of International Law*, 20 – 42.
[138] Kamen, H. (1968) 'The Economic and Social Consequences of the Thirty Years' War, 39, *Past and Present*, 44-61, 48.
[139] Above n 125, 153.

> those nations, and that it is possible to bring the nations of the world together in a common forum in order to settle their disputes by negotiations.[140]

It has become clear that the initial state-centric direction of international law has evolved into the doctrine of sovereignty, which is at the base of the doctrine of non-intervention in the domestic affairs of nation-states. Triggs (2006) affirms this position as she regards the early foundations of international law as providing a rampart against the international protection of both human rights and the environment.[141] In other writing (Dhall 2010) I have referred to this as a tension between the state-centricity of international law and the human-centricity of human rights law. This tension exists notwithstanding the observation of the Eide (1998) that:

> By adopting the Universal Declaration, the member states of the United Nations in 1948 appeared to make a break from traditional *Realpolitik*, which had been the more normal stuff of inter-governmental relations since the treaty of Westphalia of 1648.[142]

The German phrase '*Realpolitik*' is used to describe a pragmatic approach (as opposed to an idealistic approach) in politics. The importance of the tension between state-centricity and human-centricity is emphasised by Donnelly (2003). Indeed every scholar cited in this chapter has, to a varying degree, observed the importance of the nation-state in the construction, substance and

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[140] Scruton, R. (2003) Russel Kirk Memorial Lecture Series: 'The United States, the United Nations, and the Future of the Nation-State, The Heritage Foundation, available at http://www.heritage.org/research/lecture/the-united-states-the-united-nations-and-the-future-of-the-nation-state last viewed 22 June 2012.

[141] Triggs, G. (2006) *International Law: Contemporary Principles and Practices*, LexisNexis Butterworths, Sydney.

[142] Eide, A. (1998) 'The Historical Significance of the Universal Declaration', 50, 158, *International Journal of Social Science*, 475-497 at 475.

enforcement of human rights.[143] Donnelly notes that the state occupies the paradoxical role of 'principle violator' and 'essential protector' of human rights, and affirms the notion that modern human rights must emphasise the control of state-power.[144] The examples in chapter 6.3 show that this paradox extends beyond the relationship between a nation-state and its citizens, but also apply in a broader international context.

Shen (2004) enumerated seven attributes in order to define 'sovereignty' purposively, as follows:[145]

> (1) Sovereign equality; (2) political independence; (3) territorial integrity; (4) exclusive jurisdiction over a territory and the permanent population therein; (5) freedom from external intervention and corresponding duty of non-intervention in areas of domestic jurisdiction of other States; (6) freedom to choose political, economic, social and cultural systems; and, (7) dependence of obligations arising from international law and treaties on the consent of States.

It is clear that Shen's items (5) and (6) are at the heart of the tension between sovereignty and the demands of accountability that modern human rights must impose if they are to extend meaningful protection to the individual *vis-a-vis* the nation-state. These counterpoised forces create a tension between the State-centricism of international law and human-centricism of human rights law.[146] Henkin (1995-1996) sidesteps this tension by positing that modern human rights law has changed the face of international law by eroding the notion of absolute, impermeable sovereignty.[147] Henkin

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[143] Above n 17, 34-35.
[144] Ibid, 35-36.
[145] Shen, J. (2002) 'National Sovereignty and Human Rights in a Positive Law Context', 26, *Brooklyn Journal of International Law*, 417, at 419-424.
[146] Above n 138, 368-369.
[147] Ibid.

argues that the driver for this change is the movement of modern human rights out of the sphere of convention-based law into the realm of *ius cogens*.[148] *Ius cogens*, literally meaning 'strong law', is defined in Article 53 the *Vienna Convention on the Laws of Treaties1969* (the Vienna Convention) to mean:

> ...a peremptory norm of general international law is a norm accepted and recognised by the international community of States as a whole as a norm from which no derogation is permitted and which can be modified only by a subsequent norm of general international law having the same character. [149]

Concerning Henkin's (1994) argument, Anton *et al* (2005) articulate a *prima facie* observation with a strong cautionary flavour about the law of *ius cogens*.[150] Whilst acknowledging that law can move from treaty-based legitimacy into *ius cogen*s, Anton *et al* (2005) assert that the process by which a principle of law becomes *ius cogens* (i.e. a norm) is not defined and is 'vague'.[151] Triggs (2006) notes that even if a human rights violation warrants an intervention on the basis of derogation to the principle of *ius cogens*, the Doctrine of the Non-Intervention of States must still be balanced.[152] Thus, Shen's (2004)'s points (5) and (6) noted above still need to be actively considered and are not fully displaced even if one accepts Henkin's assertion that human rights should be taken to be a form of *ius cogens*.[153] Quite apart from these doctrinal arguments, a simple logical observation may be

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[148] Henkin, L. (1995-1996) 'Human Rights and State "Sovereignty"', 25, *Georgia Journal of International and Comparative Law*, 31 at 38.
[149] 1155 UNTS 331.
[150] Anton, D. Matthew, P. Morgan, W. (2005) *International Law: Cases and Materials*, Oxford University Press, Melbourne.
[151] Ibid, 233.
[152] Above n 134.
[153] Above n 146.

made: if human rights law is indeed *ius cogens*, then how can we account for the five examples of current failures of modern human rights shown in section 6.3? Furthermore, how can there be neither remedy nor restitution for the aggrieved? It is apparent that the argument posited by Henkin (1994) is ultimately fanciful.

Clarke (2007) adopts a more pragmatic standpoint when she sees a softening of the rigid application of classical sovereignty toward a more fluid notion of the nation-state. She posits that modern forms of human rights abuses can '...no longer be understood as operating through single forms of sovereign power that reflect one path or hegemonic notion of justice within the state alone'.[154] She observes that both sovereignty and the definition of justice have moved from the purview of the state to the realm of individuals and institutions. These networks and institutions form 'transnational human rights networks'.[155] These networks reflect the emergence of new actors into the landscape of modern human rights enforcement, such as Non-Governmental Organisations (NGO's), victims, the nation-state and supra national agencies for enforcement such as the ICC. These observations not only highlight the importance of the nation-state in human rights law, but also raise a question. Given the centrality of the nation-state and its wide-ranging autonomy, what role can supra-national human rights enforcement reasonably occupy? This question frames the conflict between the notions of nation-states as wholly autonomous and impermeable entities and the need to hold nation-states accountable for human rights violations. Thus, the issue becomes one of scope; because rather than holding a rigid sense of sovereignty, a nation-state must become sensitive to the jurisdictional demands of modern human rights law.

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[154] Above n 42, 154.
[155] Ibid, 136.

Clarke (2007) offers the view that modern human rights law produces 'hybrid articulations of justice'. Thus she sees the tension of the State-centricity in sovereignty and human-centricity in human rights law mandating that nation-states make real the notion of universal norms '...through the language of jurisdiction and membership'.[156] Clarke ultimately suggests that this new form of sovereignty nation-states should take is one in which they submit to the power of international enforcement agencies. Clarke's exposition of the relationship between modern human rights law and sovereignty seems to underline the importance for calls for an International Human Rights Court made initially during the drafting process of the UDHR[157] and it serves only to highlight the dire need for such an institution.

Clarke's framing of 'sovereignty' shows the autopoietic nature of legal dualism itself and highlights the increasingly obvious challenge confronting the administration of modern human rights. Clearly one area adding complexity and creating difficulty afflicting the emergence of an enforceable modern human rights regime is the autopoietic nature of the series of *epistemes* that interfere and interact with the modern human rights. That is to make the observation that they are themselves autopoietic. This creates an environment that is almost infinitely recursive. This field has become mired in a morass of post modernism with an inability to cut through the *status quo*.

From the literature, it is apparent that an incompatibility exists between sovereignty as currently conceived and the legal environment mandated by an enforceable human rights regime. Cali (2007) teases out some issues from her nuanced study of the intersection between modern human rights

[156] Ibid, 154.
[157] See chapter 6.2.2.

law and sovereignty.[158] Cali studies a case in the European Court of Human Rights (ECtHR). The ECtHR is the adjudicator of human rights disputes in Europe and is a supra-national institution. As such, the ECtHR deals directly with the division of authority for human rights matters between the nation-states and is an agent for delivering justice at an international level. Its example could pave the way for the establishment of other supra-national institutions in the international jurisdiction. It is interesting to note from her study of the ECtHR adopts the view that normative/ relativist debate transcends the legal and she merges it with socio-cultural discourse. This perspective results in an incisive analysis that challenges the notion that modern human rights law and ethno-cultural identity are separable in international law.

Instead of making her analytical framework a simple exploration of the normative/ relativistic debate in human rights, Cali (2007) looks at the notions of 'legal cosmopolitanism' versus a 'society of states' in framing the relationship between the spheres of national and supra-national human rights dispute management.[159] She focuses on the 'Doctrine of Margin of Appreciation' (the Doctrine) to illustrate her point. Ultimately Cali's study shows that the Doctrine undermines the notion of impartial review and accountability for human rights violations in a supra-national human rights body.

Hutchinson (1999) notes that the genesis of the Doctrine was the 1960 ECtHR case of *Lawless v Ireland*. That case was not framed in a manner that allowed the ECtHR to decide the matter *de novo*, rather it was structured to examine domestic decisions and ensure that they were consistent with

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[158] Cali, B. (2007) 'The Limits of International Justice at the European Court of Human Rights: Between Legal Cosmopolitanism and "A Society of States"', eds Dembour, M.B. and Kelly, T, *Paths to International Justice: Social and Legal Perspectives*, Cambridge University Press, Cambridge, 111.
[159] Ibid.

convention obligations.[160] The Doctrine emerged to ensure a balance in the relationship between a sovereign state party and supervising organs of the Human Rights conventions in Europe.[161] Benvenisti (1998) defines the Doctrine as a 'principled recognition of moral relativism', and states that it is based on the notion 'that each society is entitled to certain latitude in resolving the inherent conflicts between individual rights and national interests or among different moral convictions'.[162] Benvenisti notes that the original intention of the Doctrine was to stop the threats to national security posed by a wide ranging jurisdiction invested in a supra-national body, to become a justification for decisions of a non-security related nature.[163] Benvenisti argues that the Doctrine should only be used when the ECtHR is considering matters that apply to the whole population of a nation-state, e.g. free speech. But he notes that it may become a tool of oppression if it is being used to justify laws limiting the rights of minorities.[164] In her analysis of the case of *Sahin v Turkey*[165], Cali showed that the ECtHR used the Doctrine to avoid deciding a matter relating to the regulation of religious symbols at an educational institution. Sahin was an Islamic university student who was prohibited from wearing her headscarf at the university she attended. The ECtHR upheld the decision in Turkey, namely that Sahin could not wear her headscarf at university. The reason given by the ECtHR was that this matter fell under the legitimate discretion afforded under the Doctrine. Rather than follow Benvenisti (1998), although such an argument could reasonably be made, Cali

[160] Hutchinson, M. (1999) 'The Margin of Appreciation Doctrine in European Court of Human Rights', 48, 3, *The International and Comparative Law Quarterly*, 638 at 640.
[161] Ibid, 647.
[162] Benvenisti, E. (1998) 'Margin of Appreciation, Consensus and Universal Standards', 31*, International Law and Politics*, 843 at 844.
[163] Ibid, 846.
[164] Ibid, 847.
[165] *Leyla Sahin v Turkey* (Application No. 44774/ 98) 29 June 2004.

viewed this decision of ECtHR as showing the obfuscated jurisdictional scope of international human rights courts.

Cali (2007) follows Hutchinson (1999) in adopting the view that the Doctrine has become an announcement of deference, and is not itself a coherent jurisprudential principle.[166] She offers insight into why this is the case noting that the ECtHR is caught between two counterpoised forces; the *political* sphere in which the primacy of sovereignty is emphasised by nation-states and the contrary perspective in which the realisation of the *functional* mandate that ECtHR delivers international justice.[167] Cali notes there are two primary paradigms for organising the relationship between the international courts and nation-states; 'legal cosmopolitanism' and as a 'society of states'.[168] The approach mandated by a 'society of states' perspective is consistent with the *political* force highlighted in the dichotomy above and a 'legal cosmopolitanist' perspective is consistent with the *functional* force highlighted in the dichotomy above.

'Legal cosmopolitanism' puts a greater emphasis on the task of the courts, namely the adjudication of human rights, and advocates that domestic laws are subordinate to the international legal order. It does not solve the problem of how the units of the individual, groups, or nation-states relate together. But, it does envisage a general framework of functional competency within a hierarchical order.[169] The 'society of states' approach draws heavily on the statist conception of the international legal community and sees the courts as having a limited and primarily consensual role. It points to the primacy of sovereign authority on matters of law and order, the subsidiary nature of

[166] Above n 151, 112.
[167] Ibid, 130.
[168] Ibid, 116.
[169] Ibid.

international institutions in relation to states and the central role states play for the well-being and security of their individual members.[170] Cali observes that the society of states is the hegemonic norm in the sphere of international law today and notes that the ECtHR lacks the legal and moral right to make substantive intervention in the decision making process of a nation-state.

It is important to distinguish the manifestations of *vae victis,*[171] from a 'society of states' approach, as there is a *prima facie* similarity in that they are both predicated on the existence of the nation-state as the unit of governance. The society of states approach rests its moral defence of sovereignty on the notion that the nation-state is a fundamental organising unit. *Vae victis*, on the other hand, has the outright dismissal of human rights obligations as its hallmarks. *Vae victis* is contingent on the capacity of a nation-state to act independently as a powerful agent in international relations, irrespective of the consequences. In addition to the Nuremburg Trials (identified in chapter 6.2.1), one specific instance of *vae victis* is the observation made by Cowdery (2003) in relation to US – Croatia relations. He identified that the US pressured Croatia to hand over people to the ICC whilst simultaneously exerting pressuring for an Article 98 Treaty to be signed.[172] Cali's lack of formal acknowledgement of such a significant attitude towards supra-national institutions, such as the US ambivalence to the ICC, must be considered when applying her finding outside the European jurisdictional microcosm.

Cali ultimately does not view international courts like the ICC and ECtHR as failing to live up to their ideals, rather she posits that they are trapped between the competing conceptions of the courts as

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[170] Ibid, 116-117.
[171] See chapter 6.2.1.
[172] Above n 88.

either political or functional bodies. This is itself an outcome of the two competing models of international community that consist of either a 'society of states' or 'legal cosmopolitanism'. She notes that the Doctrine of the Margin of Appreciation is a direct and unsatisfactory manifestation of those tensions. A pragmatic evaluation of international human rights courts powerfully demonstrates that they are hybrid bodies that blur legal and socio-legal identity. She also demonstrates that the mere *existence* of human rights institutions is not a panacea that guarantees ultimate human rights protection. Indeed the rules by which those institutions operate must enable the court to manifest a clear mandate. Importantly, Cali follows Philpott (1999) and notes that the purpose of human rights law is to constrain the authority of states based on universal principles that should define the role human rights courts occupy.[173] This purposive view of human rights points toward legal cosmopolitanism as ultimately desirable and as instrumental in developing a set of binding and enforceable human rights protections.

Continuing in the vein of Cali's hybrid legal and socio-cultural analysis of the ECtHR, Mutua (2010) and Kennedy (2004)[174] raise concerns directly on the nexus of legal and socio-cultural dimensions of modern human rights law. However, Kennedy uses the term 'humanitarian law', rather than 'human rights law'. This distinction of terminology underlines the need for a fulsome study of human rights to cover more than the formal treaties that expressly refer to the term 'human rights'. Any successful study must take into account relevant sociological, political, economic and even military concerns and institutions. As a consequence Kennedy (2004) emphasises pragmatism in humanitarian law. This, Kennedy argues, is achieved by focussing on the outcomes of humanitarian

[173] Philpott, D. (1999) 'Westphalia, Authority and International Society', 47, *Political Studies*, 566, at 570.
[174] Ibid.

initiatives rather than on related structures or intentions.[175] Consequently, Kennedy (2004) addresses the failure of international courts to deliver upon their ideals in a different manner to Cali. Kennedy separates the institutions and structures of human rights from the human rights themselves,[176] and emphasises the need to evaluate the outcomes of their work. In so doing Kennedy identifies a further reason why modern human rights fail to deliver the aspired levels of protection. Kennedy traces this failure to the ideological issues contained in the realist/idealist dichotomy that underpins the debate in human rights law. This aspect of Kennedy's analysis is congruent with Cali's (2007) exploration of 'legal cosmopolitanism' versus the 'society of states' approach.[177] According to Kennedy, 'realists' adopt the (Hobbesian) view that states struggle against one another to secure their national interests in wealth and territory.[178] For this reason, the sovereignty of nation-states is paramount. This is congruent with the 'society of states' position articulated by Cali (2007).[179] The 'idealist' view espoused by Kennedy favours multilateral over unilateral action and regards economic growth as a vehicle of freedom for the global population rather than as an extension of national interest.[180] This view coheres with Cali's 'legal cosmopolitanism' on many significant points.[181] Kennedy sees that the rigid distinction between idealism and realism is softening as pragmatism in humanitarianism steadily gains traction. He argues that the two views converge into a hybrid perspective. One may venture that such a perspective be termed 'neo-realist', although Kennedy does not use that term himself. The neo-

[175] Ibid, xx-xxvi, 116-117, 125, 270, 328, 350.
[176] Above n 38, 116.
[177] Above n 151.
[178] Above n 38, 333.
[179] Above n 151.
[180] Above n 38, 333-334.
[181] Above n 151.

realist perspective is an ongoing dialectical exploration of the two extreme ends of argument to produce realistic goals and empower institutions to realise those goals.

Kennedy adopts a similar view to Cali (2007) in noting that the classical notion of sovereignty needs to be reformulated. To that end, Kennedy posits that the modern law of force needs to allow: '...a set of external rules embodied in a sacred text', rather than in a 'professional vocabulary for argument'.[182] Thus Kennedy concurs with the other scholars explored in this chapter in noting the need for some kind of binding or enforceable supra-national jurisdiction to deliver the levels of protection that modern human rights aspire to deliver. Kennedy posited an 'exchange theory' type of modification to the *status quo* to create a more permeable notion of sovereignty. Under this theory when nation-states breach human rights they lose the right to oppose jurisdictional interference.[183] The observation that even a dyed-in-the-wool pragmatist cannot escape is that an analysis of humanitarian law from the preceding theoretical and practical perspectives highlights the need for both practical and doctrinal reform to remedy the failings of modern human rights.

Kennedy's (2004) analysis dissects out numerous pragmatic failings of modern human rights, with a focus on the 'dark sides' of humanitarian law. Kennedy defines these dark sides as '...costs, unacknowledged risks, [and] unanticipated losers'.[184] The dark sides include, *inter alia*, socio-cultural issues such as human rights themselves acting as hegemonic distortions of culture, vocabulary, resource allocation that is too narrow in its purview.[185] Kennedy affirms the views of other scholars cited in this chapter when he notes the profound emphasis of 'Western' values in modern human

[182] Above n 38, 267.
[183] Ibid, 71.
[184] Above, n 38, xix.
[185] Ibid, 8-35.

rights and that this promotes a culture of the 'modern West and the rest'.[186] This view is also espoused by other scholars. Mutua (2010) observes that human rights NGOs in East Africa are largely funded by Western donors who are able to (and do) dictate moral, political, ideological preferences leading to alienation and disconnection between the local population and the instruments charged with nurturing a local culture of human rights.[187] Kennedy also notes that the prevalence of proselytising religious background institutions in international humanitarian law (e.g. NGOs) is creating a Christian hegemony in the third world, and this implicitly undermines the right to freedom of religion.[188] Equally profoundly, Mutua asserts that this modern dynamic eviscerates the fundamental right to self-determination that '...is at the heart of the entire human rights corpus'.[189]

Several observations can be made from this autopoietic analytical perspective. The first is that sovereignty has become a double-edged sword in the field of modern human rights law, as the nation-state is both the best protector and greatest violator of human rights in the modern age. Secondly, the classical view of sovereign nation-states as autonomous and wholly enclosed juridical entities that operate in the sphere of international law is becoming more and more outmoded and irreconcilable with the demands of a functional modern human rights regime. Thirdly, socio-legal realist scholars have established that international law is not wholly contained within the continuum between a 'society of states' and 'legal cosmopolitanism', and furthermore that the future development of international law must also recognise the occurrence of *vae victis* in the foreign

[186] Ibid, 20, 132.
[187] Mutua, M. (2010) 'Human Rights NGO's in East Africa: Defining the Challenges', ed. Mutua, M. '*Human Rights NGO's in East Africa: Political and Normative Tensions*', University of Pennsylvania Press, Philadelphia, 29-30.
[188] Above n 38.
[189] Above n 39, 30.

policy orientation of powerful nation-states.[190] Fourthly, it is now apparent that even in instances where supra-national institutions exist specifically charged with protecting human rights, there are jurisprudential tools such as the Doctrine of Margin of Appreciation, which undermine and diminish the jurisdiction of those institutions. Such practices subordinate modern human rights to the view that nation-states are defined according to the classical view of sovereignty. Mutua and Kennedy have shown that the organs of modern humanitarian law ultimately undermine the ethno-cultural autonomy of nation-states, which in turn is contrary to the mandates of modern human rights law protecting freedom of religion. Mutua has advanced the powerful observation based on a realist study of human rights to show that there is an encultured Western hegemony throughout modern human rights in practice. Finally, there is now a discrete body of literature that acknowledges several perceived illegitimate cultural dimensions of modern human rights law obfuscated by the traditional formulation of the law of sovereignty. Thus, notwithstanding the clarity and unambiguous phrasing of the UDHR (and the other related instruments), one of the interring fields has been identified and discussed. Exactly how LUH can affect the *status quo* is considered later (in 6.8 and 6.9), however the second autopoietic field that interferes with modern human rights must now be identified and discussed.

6.5.2: Dialectical Cultural Dualism: International Normativism v Legitimate Cultural Relativism: The Asian Values Debate

The other *episteme* identified for analysis as a function of its autopoietic interference with modern human rights law is dialectical cultural dualism. Tilley (2000) provides a simple definition of cultural

[190] No suggestion was offered as to what form future reform should take.

relativism when he states that its essence is expressed in the maxim: 'morality is relative to culture'.[191] Thus, cultural and moral relativism, by its very nature, creates an epistemic tension with the unambiguous claims to universality written into the Preamble:

> Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge.

Indeed it may recalled from chapter 6.1, that an expression of cultural relativism allowed sufficient latitude for the Nazi regime to create an exclusive definition of humanity; had there been a universally accepted definition of 'human', then it would be impossible for anyone to endorse the moral justification of the Third Reich. However, Triggs (2006) notes that perceptions of cultural relativism in human rights are an important issue. Modern human rights have had a heavy reliance on Western notions of justice ever since they were first given form in the UDHR,[192] they are perceived as unsuited for universal enforcement in a world of cultural plurality.[193] For example, Article one of the UDHR is the same as the first article in the *French Declaration of Human and Civic Rights of 26 August 1789*.[194] Engle (1999-2000) observes that debates about the meaning and importance of 'culture' subsumed the human rights discourse in the 1990s.[195] Donnelly (2007)

[191] Tilley, J. (2000) 'Cultural Relativism' 22, 1, *Human Rights Quarterly*, 501.
[192] See chapter 6.2.2 which deals with the French influence exerted by Rene Cassin when drafting the UDHR.
[193] Above n 88, 881 – 990.
[194] *French Declaration of Human and Civic Rights of 26 August 1789,* available at < http://www.conseil-constitutionnel.fr/conseil-constitutionnel/root/bank_mm/anglais/cst2.pdf> last viewed at 5 October 2012.
[195] Engle, K. (1999-2000) 'Culture and Human Rights: The Asian Values Debate in Context', 32, *New York University Journal of International Law and Politics*, 291.

argues that this issue remains current when he asserts that cultural relativism has been and remains '...the most discussed issue in modern human rights'.[196]

The origin of cultural relativism in the modern human rights discourse can be traced back to the *Bangkok Declaration of March 1993*.[197] This Declaration was the product of a meeting of Asian-Pacific nation-states in preparation for the World Conference on Human Rights held the same year in Vienna. The content of that Declaration voiced concerns over a perceived Western bias in the development and implementation of modern human rights. A Singaporean government official, Kausikan (1993) posited the 'myth of the universality' and provided a concise exposition on the substance of the debate:[198]

> The diversity of cultural traditions, political structures, and levels of development will make it difficult, if not impossible, to define a single distinctive and coherent human rights regime that can encompass the vast region from Japan to Burma, with its Confucianist, Buddhist, Islamic and Hindu traditions. Nonetheless, the movement toward such a goal is likely to continue. What is clear is that there is a general discontent with the purely Western interpretation on human rights.

Essentially Kausikan argued that in a world of cultural plurality the tension between traditional value systems and human rights doctrines is irreconcilable. Whilst the universal nature of human rights

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[196] Donnelly, J. (2007) 'The Relative Universality of Human Rights', 29, 2, *Human Rights Quarterly*, 281-301 at 282.
[197] The Bangkok Declaration, March 29 – April 3 1993, available at: <http://law.hku.hk/lawgovtsociety/Bangkok%20Declaration.htm> last viewed 17 June, 2011.
[198] Kausikan, B. (1993) 'Asia's Different Standard', 92, *Foreign Policy*, 24-42.

was recognised in the Bangkok Declaration in paragraphs [1] and [10], there is a clear reference to concerns over cultural relativism as paragraph [8] reads:[199]

> 8. Recognize that while human rights are universal in nature, they must be considered in the context of a dynamic and evolving process of international norm-setting, bearing in mind the significance of national and regional particularities and various historical, cultural and religious backgrounds;

This section should be read in conjunction with paragraph 5, which states:[200]

> 5. Emphasize the principles of respect for national sovereignty and territorial integrity as well as non-interference in the internal affairs of States, and the non-use of human rights as an instrument of political pressure;

These two paragraphs demonstrate that the there was a measure of concern expressed by Asian nation-states that modern human rights could potentially be used to infringe their legitimate autonomy. Similarly, paragraphs [3] and [7] recognise the Asian concern that Western nation-states use the legal concept of sovereignty as an argument to protect their autonomy in order to cloak their own human rights abuses, whilst imposing a different standard on other nation-states whenever they deem it expedient. This concern should be considered in light of the discussion of *vae victus* in 6.5.1, and the examples of human rights abuses discussed in 6.3. Davidson (2001) notes that 'Asian Values' critiques of human rights include the view that the '...West has used its view of

[199] Above n 190, [8].
[200] Ibid.

individualistic human rights as an instrument of neo-imperialism'.[201] Paragraph [7] of the Bangkok Declaration reads that the Asian parties to that document:[202]

> 7. Stress the universality, objectivity and non-selectivity of all human rights and the need to avoid the application of double standards in the implementation of human rights and its politicization, and that no violation of human rights can be justified;

In other writing I have expressed the perceived hypocrisy by the 'champions' of modern human rights, the US, erodes their normative weight.[203] Jackson (2006) observes that the 'torture scandal' that came to public awareness when photographs of prisoner mistreatment and torture in Abu Ghraib prison in 2004 were publically released challenged deeply held beliefs about '...the American civil identity, the military and the nature of American polity'.[204] Feldman (2006) points out that the Bush administration had internal documents debating the practices used in Guantanamo Bay to extract information from detainees going back to 2001.[205] This situation reflects the type of 'double standards' referred to in paragraph [7] above. Such practices powerfully demonstrate that instead of modern human rights being used to shield human dignity, they have also been used as a sword in international diplomacy, as illustrated by the US criticism of human rights practices in many countries, such as China notwithstanding the human rights abuses perpetrated by the US itself. Situations, such as those outlined above, provide clear evidence that other fields interfere with

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[201] Davidson, J.S. (2001) 'East versus West: Human Rights and Cultural Differences', 8, *Canterbury Law Review*, 37.
[202] Ibid.
[203] Above n 103, 371.
[204] Jackson, R. 'Political Language, Policy Formulation and the Practice of Torture in the War on Terrorism: Implications for Human Rights' delivered at the *2006 Annual Meeting of American Political Science Association*, August 30-September 6.
[205] Feldman, N. (2006) 'Ugly Americans' in "*The Torture Debate in America"* (ed. Greenburg, K.) Cambridge University Press.

modern human rights; those fields materially influence the scope and form of protection afforded by modern human rights.

Noting the assertion by Xie and Nui (1994) that 'sovereignty is the foundation and basic guarantee of human rights';[206] Donnelly (2003) goes on to observe that the official Chinese position echoes the sentiment written into paragraphs 5 and 8 of the *Bangkok Declaration*. This was expressed in the statement made by the Chinese government (China (1993)) which reads 'The rights of each country to formulate its own policies on human rights protection in light of its own conditions should... be respected and guaranteed'.[207] Furthermore, Cooper (1994) quotes the Chinese position at the Second World Conference on Human Rights held in Vienna during 1993 was that 'individuals must put the state's rights before their own'.[208] The Chinese position that each country has to formulate the meaning and scope of human rights protection in the domestic jurisdiction has evolved from the relationship between the individual and the state from the Confucian Code of Ethics espoused in ancient China. The concept of *'li'* has been translated varyingly as 'proper conduct',[209] 'harmony' or 'propriety'.[210] Donnelly (2003) argues that *'li'* is a complex concept without simple translation into English; it consists of a complex set of '...interlocking, hierarchical, social roles centred on filial

[206] Xie B., Nui, L. (1994) Review and Comments on the Issue of Human Rights, paper presented at JUST International Conference, "*Rethinking Human Rights*" at Kuala Lumpur, *supra* Donnelly (2003) at 108.
[207] China (1993) Statement by H.E. Mr. Lui Hiaqui, Paper read at the Second World Conference on Human Rights at Vienna, supra Donnelly (2003) at 108.
[208] Cooper, J.F. (1994) 'Peking's Post-Tiananmen Foreign Policy: The Human Rights Factor', 30, *Issues and Studies*, 69.
[209] Chun, S. (2009) 'On Chinese Cosmopolitanism (*Tian Xia*)', 8, 2, *Culture Mandala: The Bulletin for East-West Cultural Studies*, 20 at 23.
[210] Fenton, J.Y. *et al*, (1983) *Religions of Asia*, St. Martin's Press, New York, 14-16; Kent, A. (1993) *Between Freedom and Subsistence: China and Human Rights*, Oxford University Press, Hong Kong, 31-40.

piety'.[211] Donnelly (2003) distinguishes this from the notion of an individual bearing inalienable rights *vis a vis* the government, emphasising Chinese claims that *'li'* is not a form of culturally relativist synthesis that is compatible with a human rights based state-citizen relationship. The manifestation of '*li*' in governance engenders a form of limited government, whilst modern human rights set an absolute limit of governmental power.[212] Whilst Donnelly's asserts that the ordinary formulation of *'li'* is irreconcilable with an individual bearing absolute human rights in the sphere of public law; one should remember the classical Hohfeldian formulation of rights highlighted earlier, namely that rights and duties are fundamentally and intrinsically correlated. This is an unexplored area worthy of consideration[213] in order to promote a deeper integration of modern human rights into Chinese law and culture.

It is apparent that modern human rights are not the normative standards they were hoped to be. The views discussed above have allowed cultural relativism to be used as a lever by which certain nation-states have rejected human rights altogether, or used it as a reason to elevate their autonomy above the mandates of modern human rights utilising the vehicle of legal sovereignty. This has had the effect of diminishing the scope of protection afforded by domestically enacted human rights regimes. Preis (1996) asserts that cultural relativism results in 'fallacious reductionism'[214] whilst Donnelly (2003) notes that 'culture' is used in human rights literature in ways

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[211] Donnelly (2003) 'Human Rights and "Asian Values"', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 116.

[212] Ibid.

[213] Whilst the notions discussed have been considered in respect of European scholarship, as the idea itself is an Enlightenment idea and received widespread consideration in continental philosophy, the statement above suggests that an express study of '*li*' and correlative rights and duties should be undertaken.

[214] Preis, A.B. (1996) 'Human Rights as Cultural Practice: An Anthropological Perspective', 18, *Human Rights Quarterly*, 296.

that lead to '...spurious explanation based on false essentialism and excessive aggregation'.[215] Ghai (1994) cautions against simple and total acceptance of the arguments for Asian values in the modern human rights discourse, as he believes a measure of circumspection is warranted:[216]

> Perceptions of human rights are reflective of social and class positions in society. What conveys as a picture of a uniform Asian perspective on human rights is the perspective of a particular group, that of the ruling elites, which gets international attention. What unites these elites is their notion of governance and the expediency of their rule. For the most part the political systems they represent are not open or democratic, and their publicly expressed views on human rights are an emanation of these systems, of the need to justify authoritarianism and occasional repression.

Taking an entirely different tack, Donnelly (2003) and (2007) asserts that modern human rights are a discrete entity in every culture and hence the very substance of the Asian values debate is moot.[217] The foundation of his argument is that modern human rights are built on the 'overlapping consensus' between all signatory states of the UDHR and that no culture he has come across has disagreed with more than three particular rights.[218] This can be discerned through a structural functionalist analysis. Essentially, Donnelly posits that modern human rights is an autonomous discourse and the 'overlapping consensus' is a space of interaction between nation-states; each of which is an epistemic subject engaging in its own autonomous recursive human rights discourse.

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[215] Donnelly, J. (2003) 'Non-Western Conceptions of Human Rights', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 86.
[216] Ghai, Y. (1994) 'Human Rights and Governance: The Asia Debate', 15, 1, *Australian Yearbook of International Law*, 5.
[217] Above n 144 and n 189.
[218] Donnelly, J. (2003) 'Human Rights and Cultural Relativism', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 89 at 94.

Reframing Donnelly's perspective through the lens of structural functionalism shows his views on this point are a little simplistic. The space of 'overlaping consensus' is itself an autopoietic space that has its own recursive autopoietic discourse. Thus, even though there is an ostensible consensus, the evolution of that autopoietic space, as noted previously is mired in postmodern subjectivity, as was noted previously. This, *inter alia*, paralyses the emergence of a normative modern human rights regime.

That said, the recursive discourse does facilitate the identification of deeply ingrained challenges that would otherwise escape detection. To that end, Donnelly's assertion that the ancient Western cultures and traditions are as alienated from the mandates of modern human rights as any other culture is relevant to the Asian Values debate.[219] He is able to make this point by undertaking a structural rather than cultural analysis.[220] Firstly, he posits that the notion of common good in the West arose from Divine commandment rather than from a society consisting of rights-bearing individuals.[221] Secondly, Donnelly notes that political theory of Aquinas employs the terms '*ius'* and *'lex'* ('right' and 'law' respectively) in the context of morality, not in the context of an 'entitlement', as mandated in modern human rights law. Donnelly also discerns that the Classical Natural law authority for Aquinas' notion of 'right' is vested in the Divine and not something that people were thought to possess naturally.[222] Thirdly, Donnelly argues that modern markets and states provide the real impetus for developing human rights. Donnelly concludes this argument with the statement:

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[219] *Contra* Douzinas (2000), above n13.
[220] Above n 211, 76.
[221] Ibid.
[222] Ibid, 77.

> Social structure, not "culture" does the explanatory work. When the West was filled with 'traditional societies', it had social and political ideas and practices strikingly close to those of traditional Asia, Africa and the Near East... The historical connection of human rights with the West is more accident or effect than cause. Westerners had no cultural proclivity that led them to human rights.[223]

It is apparent that numerous profound and complex tensions emanate from the interaction of modern human rights and the other autonomous discourses that cause autopoietic interference. Those specifically analysed were legal dualism *vis a vis* sovereignty and dialectal cultural relativism. The interference between these particular autonomous discourses creates a capacity to either reject human rights outright, read down human rights from terms that have been ratified, or to limit their effect in domestic law based upon cultural and legal concerns. Such human rights abuses ought to be considered in the realist context in which they operate. For example, it is difficult to entirely dismiss the arguments of cultural relativism advanced in the Asian values debate when there are repeated and fundamental human rights abuses perpetrated by the Western nation-states that themselves make the most vociferous attacks on the validity of the Asian values debate. There are clearly systemic legal 'loopholes' at a fundamental level that allow such a state of affairs to manifest.

The rejection of modern human rights by non-Western nation-states (such as Malaysia and Saudi Arabia) can be traced to, *inter alia*, a practical manifestation of a theoretical failing with modern human rights. This statement can also be applied to the problems of double standards practiced by the US. Donnelly (2003) observes that modern human rights are '...only loosely based on abstract

[223] Ibid, 78.

philosophical reasoning and *a priori* moral principles'.[224] The lack of an epistemologically robust foundation for human rights exacerbates the latitude in which arguments of, *inter alia*, cultural relativity may be sustained. Famous positivist, Jeremy Bentham assaulted the epistemological foundation of Natural rights that informed modern human rights instruments when he stated that Natural rights were 'bawling on stilts'.[225] Notwithstanding the teleological assertion made by Donnelly (2003); specifically that modern human rights '...emerge instead from the concrete experiences, especially the sufferings, of real human beings and their political struggles to defend or realise their dignity', [226] the failure to provide a persuasive methodological justification for human rights has opened the door to a swathe of dualist criticisms levelled at modern human rights. The criticisms that undermine modern human rights are based upon the identification of issues which have their origins in the legal and culturally dualist environment . In the following section the literature addressing the justifications for modern human rights is reviewed to illuminate further weaknesses in modern human rights law.

6.6: Modern Human Rights Law and the Autopoietic Interference of International Law and Dialectical Cultural Relativism

The structural functionalist analysis undertaken has shown that modern human rights are themselves an autonomous epistemic subject with its own recursive dialogue with a unique language. As such it constitutes an autopoietic system; however this system has other recursive autopoietic systems interfering with it. The two fields identified in this analysis are (firstly) legal

[224] Donnelly, J. (2003) 'Markets, States and the West', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 58.
[225] Bedau, H. (2000) 'Anarchical Fallacies: Bentham's Attack on Human Rights', 22, 1, *Human Rights Quarterly*, 261-280.
[226] Above n 211.

dualism whose recursive discourse is currently embodied in the friction between the 'society of states' and 'legal cosmopolitanism' approaches in international law. The second recursive autopoietic discipline identified is dialectical ethno-cultural relativism. This autonomous field is internally fissured, grappling with the counterpoised imperatives on the one hand of creating universal legal standards with common meaning that can then become normative standards that will legitimately constrain governmental power, and on the other hand of maintaining cultural diversity. Two arguments are commonly advocated to reject the notion of a normative human rights regime on the basis of preserving cultural diversity. Firstly, that no fair cross-culturally normative meaning is possible and secondly, that in practice normative standards are used hypocritically as tools of political manoeuvring or even ignored entirely, even when ratified.

The two *epistemes* of legal dualism and dialectical ethno-cultural normativism interfere with the modern human rights *episteme*. This autopoietic interference manifests as some functional limitations of the currently accepted consent based model of modern human rights. It is *prima facie* apparent that a consent based approach to international governance is inconsistent with a normative system of human rights protections as it embeds a systemic inconsistency that favours the state. One can highlight this inconsistency with an example. At the level of the state/ citizen relationship, citizens do not get to consent to which laws are to be followed and which can be ignored; yet a penalty is imposed when a citizen infringes any given law. Nonetheless, nation-states consent to provide the scope of human rights protection to the citizen at the international level, but the scope of protection is limited if an individual attempts to obtain relief or restitution when their fundamental rights are violated by a nation-state.

The systemic inconsistency is explicated by the consensual nature of international law practices and the normative intention of modern human rights law. To wit, Douzinas (2000) posits that that the foundations of modern human rights began with the Nuremburg and Tokyo Trials, the Charter of the UDHR and the subsequent launching of '...a long campaign of standard setting'.[227] Such a view identifies three features. First, the modern human rights movement was given birth within the practical sphere of international law. Some of the issues raised by this have already been raised and will be further examined. The second observation relates to Douzinas's reference to the significance of the Nuremburg Trials. As already been shown in chapter 6.2.1, there is a broad consensus that rather than embody a real international rule of law, the *ad hoc* tribunals set up in the wake of World War Two were an example of *'vae victis'* – might makes right. Thus, legitimacy of those tribunals was not embedded in an inherently just process that made a rational appeal to jurists on the basis of compliance with the rule of law. Indeed, the practical examples provided in chapter 6.3 powerfully demonstrate that *vae victis* is still part of the landscape of international law. The third observation is Douzinas' assertion that the foundation for modern human rights began, *inter alia*, with the UDHR and this begs the question of what foundational elements were woven into the UDHR itself.

The last two of these three observations must be viewed in the context of the first observation: the operation of international law. Notwithstanding the consensual relations that inhabit the international law realm, Koskenniemi (1990) observes that the entire thrust of international law has been to move slowly away from politics towards the rule of law,[228] a vision affirmed by the United Nations General Assembly Resolution 44/23 [15 November 1989] declaring the decade 1990-1999 as

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[227] Above n 13, at 115.
[228] Koskenniemi, M. (1990) 'The Politics of International Law', 4, The European Journal of International Law, 1-29 at 6.

the 'United Nations Decade of International Law'. However, the tension identified earlier still remains; there are paradoxical priorities requiring that international law be both consensual and normative. Unsurprisingly, this tension afflicts modern human rights instruments. Koskenniemi argues that the requirement of normativity mandates that the law should apply to all legal subjects, even against a nation-state which opposes its application to itself.[229] However, such normativism is fundamentally at odds with the consent-based system in international law. The reliance on consent ultimately has created a system that is infinitely flexible to the point of being unable '...to be taken seriously in the construction of international order'.[230] A solution now seems possible only if states articulate what they 'really' will, or what the content of normative justice 'really' is.[231] That is to say, human rights instruments should specify pragmatic legal standards of protection and be written in unambiguous language. This problem applies to modern human rights instruments. Douzinas (2000) notes that the consensual aspect of modern human rights is utopian in nature and this conflicts with their normative aspirations that are reflected in his statement, 'human rights are the necessary and impossible claim of law to justice'.[232] It may be contended that this has been encultured through the ultimate incompatibility between the positive law framework of modern law and the natural law content of modern human rights. Addressing this very concern, Raff (2003) observed '...reaction to the extremes of the Nazi regime and the legal positivism era stimulated a revision of the interpretative method of the German courts, inspiring a renaissance of Natural Law thinking'.[233] Raff

[229] Ibid, 8.
[230] Ibid, 17.
[231] Ibid, 21.
[232] Above n 27, 380.
[233] Raff, M. (2003) 'German Law Today: Property Concepts in Public Law' in *Private Property and Environmental Responsibility: A Comparative Study of German Real Property Law*, Kluwer Law International, The Hague, 169

advances the *Socialist Imperialist Party Dissolution Case*[234] of 1952 as an example of this jurisprudential movement, with the observation that 'the influence of Natural Law was clear when the court observed that identifiable fundamental values lie at the heart of the free and democratic [German] constitutional order...'[235] The implication of this statement is that the fundamental values remained valid and could be the basis of post-war prosecution of the Nazis, notwithstanding that the Nazis had implemented a positivist legal order that made their actions legal.

Returning to the international jurisdiction, Cali (2007) notes that the ECtHR can apply the doctrine of Margin of Appreciation.[236] However Koskennemi is of the view that 'sovereignty' is not an absolute defence that allows nation-states to act unilaterally and unchecked in other areas of international law. He contends that issues such as cross border pollution demonstrate that sovereignty can be pierced in conditions other than in the face of the direst human rights violations. Koskennemi states:

> ...transboundary pollution shows the juxtaposition of the freedoms of the source-state and target state; ...the former's freedom to pursue economically beneficial use of its territory contrasted with the latter's liberty to enjoy a pure environment. The conflict is insoluble by simply preferring "liberty", or some right inscribed in the notion of sovereignty. Balancing seems inevitable to reach a decision.[237]

Thus, Koskennemi shows that finding the correct balance in matters that limit the scope of sovereign power is within the purview of international law. This then segues to the third observation made by Douzinas in relation to the foundations of modern human rights law specifically that the foundation

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[234] *Socialist Imperialist Party Dissolution Case* (1952) 2BVerfGE.
[235] Above n 226.
[236] Above n 151.
[237] Ibid, 19.

for modern human rights began, *inter alia*, with the UDHR. This begs the question of 'What foundational elements were woven into the UDHR itself?' The ontological commitments of universality, equality and inalienability have already been identified in the preceding discussion. However, one further issue remains to be explored – 'What is the epistemological footing upon which those ontological commitments stand?' This question is significant both methodologically and practically. At the methodological level the nature of autopoietic interference between fields is contingent on the epistemological processes that support any disciplinary point of contact. To illustrate this point, if flawed science supports claims that alcohol at a particular blood concentration affects hand-eye coordination and one's reflexes in a manner that makes driving dangerous, then the law would be unlikely to give much weight to that standard. On the other hand, if epistemologically robust data backs up the claim that alcohol and driving do not mix together well then many jurisdictions will impose those particular standards on the level of alcohol that a driver can safely have in his or her blood stream to drive safely.

Thus, if the epistemological process that links an assertion and the material used to justify that assertion is robust, then the law can give greater weight to the assertion. When applied to autopoiesis, the nature and extent of interference between autopoietically-linked discourses is dependent upon the epistemological strength of the points between the constituent disciplines.

6.7: An Epistemological Exegesis of the Preamble to the UDHR

The following hermeneutic analysis of the Preamble shows that what has been regarded as epistemologically robust, is in point of fact, significantly flawed. Donnelly (2003) has observed that

the epistemological foundation of modern human rights consists of 'foundational appeals'.[238] Hunt (2007) notes that foundational appeals make a 'claim of self-evidence' and expressly states that the UDHR relies upon such statements.[239] Foundational appeals, according to Donnelly (2003), are those that have no answer to the question of "Why?" To illustrate this Donnelly cites the reference in the UDHR to the 'inherent dignity... of all members of the human family', and notes that such statements are susceptible to ontological and external critique.[240] It was shown earlier that modern human rights are reducible to ontological conditions stating that inalienable rights are universally applicable to all human beings and that those rights are predicated on equality. These are not self-evident *a posterior*, rather the UDHR posits the relevant ontology via series of a foundational claims, liberally employing the term 'whereas' which literally means 'it being the fact that' (Hunt 2007). The only universally acceptable manner to alleviate this shortcoming is to have an *external* or *empirical* foundation to justify human rights, as this can offer an evidence-based imperative for acceptance (Sosa 2006).[241] :

> Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,
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> Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

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[238] Donnelly, J. (2003) 'The Concept of Human Rights', *Universal Human Rights: In Theory and Practice 2nd Ed*, Cornell University Press, London, 18-19.
[239] Hunt, L. (2007) *Inventing Human Rights*, Norton Publishing, New York.
[240] Ibid, 18.
[241] Sosa, E. (2006) 'Skepticism and the Internal/ External Divide' eds. Greco, J. And Sosa, E. *The Blackwell Guide to Epistemology*, Blackwell Publishing, Oxford.

> Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,
>
> Whereas it is essential to promote the development of friendly relations between nations,
>
> Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,
>
> Whereas Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,
>
> Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge.

According to Hunt (2007) the foundational claims made in the UDHR suffer the 'paradox of self-evidence'. Whilst 'foundationalism' is one theory of knowledge historically accepted as legitimate, the foundational claims relied on by the UDHR do not match the criteria for genuine foundationalist statements, as can be demonstrated from an analysis of Pritchard (2010).[242] A successful foundationalist claim must be logically self-evident, such as the statement made by Descartes, *cogito ergo sum* (I think, therefore I am). Descartes' statement is self-evident because to doubt the statement, one must be alive in order to engage in the cognitive process of doubt. This makes the

[242] Pritchard, D. (2010) *What is This Thing Called Knowledge?*, Routledge, Oxon, 36-39.

truth of the claim immune to skepticism. In contrast, the type of foundational claim made in the UDHR merely masquerades as epistemically sound foundationalism. Unlike Descartes' *cogito*, the assertion that humans have 'inherent' dignity is *not* logically self-justifying. This epistemological failure is called the 'paradox of self-evidence'. Koskennemi makes an apt observation regarding the paradox of self-evidence in noting that self-evident principles '…do not exist in the manner previously thought'.[243] Hunt (2007) succinctly encapsulates this notion as it applies to modern human rights stating:[244]

> …if equality of rights is so self-evident, then why did this assertion have to be made and why was it only made in specific times and places? How can human rights be universal if they are not universally recognized? Shall we rest content with the explanation given by the 1948 framers [of the UDHR] that "we agree about the rights but on the condition no one asks us why"? Can they be self-evident when scholars have argued for more than two hundred years [?]… An assertion that requires an argument is not self-evident.

Whilst modern human rights are based on an improper version of foundationalism, it is clear that a robust foundationalist basis to modern human rights would be extremely difficult to articulate. Highlighting this logical problem, Pritchard notes that there are very few statements that are epistemically and logically self-justifying in this way.[245] Thus it appears impossible to find any foundationalist claims in support of the epistemically sound belief that human rights are based on the ideals of universality, inalienability and equality.

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[243] Above n 221.
[244] Above n 232, 19-20.
[245] Pritchard, D. (2010) *What is This Thing Called Knowledge?*, Routledge, Oxon, 40.

In addition to the paradox of self-evidence in respect of codified human rights instruments, there are two additional problems with this use of foundational statements to justify modern human rights. Firstly, I have noted in other writing that '…all foundational arguments are subjective and operate within a culture-specific purview. Accordingly, the content of foundational statements is determined by the dominant beliefs in that society at the time such statements are posited'.[246] This should be considered in light of dialectical ethno-cultural relativism.

The second problem is that notwithstanding the social consensus that may be present when they are articulated, in all foundational claims the justification is primarily *internal* in an epistemological sense. Audi (2006) observes that an internal epistemological process can be employed to articulate a multiplicity of differing perspectives.[247] Thus the epistemic substratum underpinning the normative value of the Preamble is further eroded.

It is apparent that at an institutional and doctrinal level there are conceptual problems that stymie the development of a normative universal modern human rights culture. At the institutional level, modern human rights inhabit a world in which international law is built around the notion of sovereign states. In practice it appears that sovereignty is impermeable unless grave human rights violations occur in nation-states. In such cases intervention is motivated by the national interest of another powerful and influential nation-state. *Vae victis* is still the dominant paradigm in international law despite claims to the contrary. The ambit of discretion afforded to nation-states in a consent-based human rights environment undermines their normative aspirations. Further to

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[246] Dhall, A. (2010) 'On the Philosophy and Legal Theory of Human Rights in Light of Quantum Holism' 66, *WorldFutures*, 1-25 at 5.

[247] Audi, R. (2006) 'Moral Knowledge' eds. Greco, J. and Sosa, E. *The Blackwell Guide to Epistemology*, Blackwell Publishing, Oxford.

these institutional concerns, there are significant doctrinal concerns with modern human rights; namely the apparent epistemological problem with the drafting of the Preamble. Such significant reliance on foundationalism is both misguided and fundamentally flawed. It is misguided in the sense that the espoused foundationalism fails to lead to the conclusion that human rights are an inalienable set of protections that are universally applicable to all people and are predicated upon equality. Rather, such ontological conditions are posited *de novo*. The foundationalism relied upon is susceptible to the paradox of self-evidence. These epistemological failures allow a pragmatist to find logical flaws with the doctrinal foundation of human rights, no matter how desirable or virtuous human rights are.

6.8: Limited Universal Holism and One Ontological Insight for Modern Human Rights

The following discussion is an examination of the way the ontological structure of LUH may be able to resolve the problems highlighted throughout this chapter. In order to engage with that examination a number of steps must be taken. Firstly, it was shown that the elements that constitute the ethos of human rights are a set of interlocking protections that amount to an **inalienable** set of rights that are **universally** applicable and are predicated upon **equality**. In addition to these three ideals as the essence of modern human rights, one aspect of Nuremburg Trials was flagged as fundamentally relevant, namely that both nation-states and individuals could be held externally accountable for human rights violations against citizens and non-citizens of that nation-state alike. This can be simply paraphrased as 'accountability' or '**enforceability**'. All modern human rights instruments seek to codify and protect these ideals through a suite of interlocking rights.

It has also been shown that the epistemological footing of modern human rights is shaky; the vocabulary in the instruments that declare and attempt to implement modern human rights consists

of poorly formulated foundational claims. Furthermore, a pragmatic examination of the environment in which those instruments operate, (e.g. international law) reveals an autopoietic space that is internally fissured as a consequence of the many interfering discourses clamouring for influence. The present situation is one in which there is an unresolved tension between the consent-based human rights regime on the one hand and unambiguous claims made by modern human rights on the other. This tension can also be framed in terms of the chasm between theory and practice.. As the situation currently stands there is little compulsion for nation-states to treat human rights as normative standards, particularly if national interest is deemed to lie elsewhere. The modern examples discussed in chapter 6.3 demonstrate that there is no such thing as equal and inalienable human rights protections that are universally applicable.

It is with a view to strengthening the scope of protection afforded by modern human rights that the second premise of this thesis was framed, namely that the ontological commitments of LUH epistemically cohere with the core notions that underpin the Preamble of the UDHR, specifically the notions of equality, universality and inalienability. It may be recalled that in chapter 4.5 a statement of values abstracted from LUH was posited, i.e. one of the implications of LUH is that it can be used to assert an 'essentially equality' that is universally pervasive and an inalienable aspect of manifest reality.

As was discussed in chapter 5.3, when taken to their logical ends, the legal principles that underpin human rights dissolve into the coherent web of concepts and understandings that is any (and every) individual's cognitive map. This thesis contends that epistemological coherence between LUH and modern human rights strengthens the epistemic and conceptual grounding that modern human rights currently enjoy. This coherence affirms the ethos of modern human rights. This bolstered

conceptual substratum can act as a rational and compelling argument to work toward reforms that could ensure enforceability of human rights norms. The nature of epistemological support in favour of modern human rights is explored below in two parts. The first part is a semantic examination of the congruity between the ontological commitments of both the Preamble to the UDHR and LUH. The second part is an application of Kim's questions (discussed in chapter 5.2.2) dealing with the relationship between a specific belief and the particular fact it is used to justify.

As a preliminary to engaging in specific discussion below, it is important to consider an important insight that Bohm and Hiley's (1993) ontological interpretation offers in relation to the tension exposed in the discussion on dialectical cultural dualism in chapter 6.5.2. The essence of that discussion was the two incommensurate perspectives: that human rights are individual concepts and that in some cultures that the interests of the collective are ascendant as typified by the notion of *li*. One of the implications emerging from LUH is that the individual can only be treated as abstraction from the whole. In chapter 4 the concept of holomovement was used to describe the continuous oscillation between the whole and the individual and in chapter 5.3 this was applied to describe an individual lawyer and the legal field. It is posited that holomovement can also describe the relationship between an individual and their collective culture. That is to say that the culture is enfolded into the individual. Further, that individual is never able to be truly isolated from that culture; they can be treated as an individual that is abstracted from that culture. Thus, via holomovment we can move toward a paradigm in which we conceive of human beings in terms of individuals abstracted from a whole. It should be noted that this is in addition to the fact that people from all cultures are made of atoms and as equally subject to the implicate order as everyone and

everything else. This is an area that warrants future research, but it is outside the scope of this dissertation to analyse this in any depth.

6.8.1: Semantic Correlation between the Ontological Commitments of the Preamble to the UDHR and Limited Universal Holism

Limited universal holism is an ontological construct describing the relationship between the microphysical and manifest aspects of our reality. It may be recalled that quantum mechanics has rendered obsolete the view that the universe is made of tiny discrete, ball-like particles. Bohm and Hiley (1993) refine this notion when they show that in addition to particles, a universal wavefunction is also needed in order to complete the description of matter. Further, it is via this wavefunction that the whole in enfolded into the part and consequently, the part cannot ever be viewed as entirely separate from that whole. The result of this is view is that in order to consider the nature of the part (i.e. every corporeal and non-corporal part of manifest reality), we cannot exclude the whole. This consideration is in addition to the attributes that we directly perceive (i.e. the appearance) that we are one element in an interconnected biosphere. At this juncture it is important to recall that Bohm and Hiley (1993) observed that the ordinary realm is dependent upon the quantum; whilst it was also noted in chapter 4 that while the possibility of two-way influence remained open, such a position could not be determined definitively at the present time. Coupled to this observation, it was noted in chapter 1 (and at several other points) that good law is law that which integrates the 'essence' of that which it seeks to regulate. That is to say, a good judgement engages with the essence of the dispute and similarly, a good piece of legislation engages with the essence of that which it seeks to regulate. It was asserted that such law affirms the rule of law. It is for this reason that this thesis proposes that modern human rights law would be bolstered with a deeper consideration of the 'essence' of human beings. In this instance, this essence means that we should

consider the enfolded whole in the individual as well as the individual. This will be explained further shortly. However, it is important at this juncture to reiterate the observation made in 6.8, that the attributes of the implicate order cohere with the ontological commitments upon which modern human rights are grounded. This coherence is especially significant because the coherence emerges from the most advanced natural science relating to the nature of physical reality and thus, the coherence is at a very deep level.

As stated in chapter 4.3, an individual contains the enfolded whole is the best description of 'what is'. A universal wavefunction entails equal value (i.e. equality) to everything within its boundaries, because the individual is inseparable from the whole. It may be recalled that this was discussed in chapter 4.5 using the example of a little finger. Consequently, the notion of equality is an essential property of physical reality as by definition, absolute individuation is precluded by the nature of the essence of matter. Accordingly, human beings are not described completely at all levels of reality by the ordinary Cartesian perception of separateness. They are better described as equivalent (i.e. equal) localised nodes of subjective awareness abstracted from a singular entangled quantum reality that is enfolded into them. This notion has been the subject of comment by Wright (1991) and was noted in chapter 4.2. It may be recalled that he asserted that holism assists our understanding of the notion of universal equality by challenging the male-centric legal standard of 'abstract universality'. He noted that abstract universality is 'exclusionary, or...elevate[s] what is distinctly male into an allegedly neutral, all encompassing norm'.[248] Wright notes that 'abstract universality' has undermined true equality because it has been a '...conceptual instrument of systemic abuse for repressive, inegalitarian ends. This ought to be considered in the context of the Asian values debate

[248] Ibid, 880.

discussed at 6.5.2. Wright notes, however, that relational holism may allow scholars '...to hold open a redefined, yet recognisable, sense of objective truth'.[249] Wright's assertion relies upon the notion that **equality** is an implicate property enfolded into physical reality. It is worth restating the values abstracted from LUH as they form the basis for the epistemic coherence with the core ethos that underpins the Preamble to the UDHR: One of the implications of LUH is that it can be used to assert that there an 'essential equality' that is universally pervasive and an inalienable aspect of manifest reality.

An important corollary question emerges from the coherence between the ontological commitments derived from the discipline of science (specifically LUH) and the Preamble i.e. how does this newly bolstered, coherent foundation interact with the autopoietic fields with modern human rights? This is an important issue because it is acknowledged that a foundation for human rights bolstered with ontological coherence does change the environments with which modern human rights interacts; for example, the world will still be culturally pluralistic and economic rationalism will still be a significant consideration when nation-states make decisions. This issue is given some consideration in chapter 6.9.

In summary, the ontological commitments of modern human rights are that all human beings are entitled to be treated with **equality**, that the protections should be **inalienable** and that those protections are **universally** applicable to all people. The ontological structure of LUH also indicates that there is an ontological '**essential equality'** that is an **inalienable** aspect of physical reality and is **universally** pervasive. The loci of commitment of these two ontologies cohere quite strongly. An

[249] Ibid, 879.

application of the three questions (discussed in chapter 5.2.2) articulated by Kim (1993) that deal with the cognitive validity and adequacy of the facts used to justify a particular belief is considered below. The coherence of the ontological construct of LUH and the ontological commitments of modern human rights is examined in this light.[250]

6.8.2: The Ontological Commitments of the Preamble to the UDHR and Kim's Three Questions

Epistemic coherence means that the proposed belief is supported by the fact or facts advanced in support of that belief. In this thesis the belief in question is the second premise, namely that LUH coheres with the core notions that underpin the Preamble, specifically the notions of equality, universality and inalienability. The fact advanced is the ontological structure of LUH. The three questions advanced by Kim (1993)[251] to be addressed are: Firstly, what sorts of things can be grounds for the justification of beliefs? Secondly, what is the criterion of adequacy that the grounds have to satisfy in order to yield a particular belief? Thirdly and finally, what is the proper basing relation that must hold between the belief in question and its adequate grounds?

Kim's Question One

In respect of the first question: what sorts of things can be grounds for justifying beliefs? Kim posits that in the first instance any and all suitable grounds used to justify a belief will require a cognitive process of some kind.[252] This notion is then refined further to one of two types of cognitive

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[250] Kim, K. (1993) 'Internalism and Externalism in Epistemology', 30, 4, *American Philosophical Quarterly*, 303-316, 307.
[251] As noted above, these are discussed in chapter 5.2.2.
[252] Ibid, 308.

processes: either 'ground internalism' or 'ground externalism'. Kim defines ground externalism as the capacity to use 'something external such as an external fact' to justify some beliefs. Conversely, 'ground internalism' covers more diverse cognitive processes. The use of the term 'internal' is used to indicate that a process that occurs in the mind justifies the belief in question. This covers processes such as direct experience or a cognitive process in which some piece of evidence is able to justify a particular belief.[253] It should be noted that the evidence used to justify the belief in question could itself be another valid belief.[254]

In this instance the justification for the belief consists of the notion that the structure of physical reality is such that a deep and transcendent equality exists, and the supporting fact is that quantum mechanics affirms this equality as a fundamental physical property of every particle in the universe via the wavefunction. Thus, in this instance the beliefs are being supported with the knowledge derived from the scientific paradigm of quantum mechanics, specifically theoretical mathematics and physics. Such a position for the justifying belief is 'ground externalism'. Kim (1993) notes:

> Ground externalism does not assert that only the external can be grounds of justification of beliefs. It grants that grounds for inferential beliefs, i.e., beliefs justified by other beliefs, can be something internal. However, ground externalism is distinguished from ground internalism in that it allows that, for some beliefs, their

[253] It is a fundamental premise of Kim (1993) to assert that the ordinary epistemological distinction between 'internal' and 'external' is crude. The paper contends that rather simply classifying any given epistemic justification as either internal or external it is better to pose the three questions devised. This is because there is no rigid divide between the two and as such the two types of epistemic justification overlap.

[254] It also is significant to note that Kim sees the distinction between ground internalism and ground externalism as shaky as both processes require some type of internal cognitive process. The distinction is drawn to reflect the current normative discourse in epistemology.

> justifying grounds can be something external such as an external fact [e.g. the ontology of limited universal holism].[255]

The critical element to this type of ground externalism is both the quality of the fact in question and relationship of that fact to the belief justified. As mentioned previously, the fact deployed in favour of modern human rights is that the physical reality can be described through the ontological structure of LUH. That ontological structure has loci of commitment that are hermeneutically consonant with the ontological commitments of modern human rights as tacitly stated in the Preamble which is itself the declaration upon which modern human rights is based.

Kim's Question Two

The second locus of analysis identified by Kim (1993) asks: "What is the criterion of adequacy that the ground has to satisfy in order to yield a particular belief?" Kim notes that general information relating to the first question will not assist in determining whether a *particular* belief is justified. Thus, the issue becomes one of establishing whether a particular ground adequately justifies the belief in question. Kim asserts that if a belief is justified by a ground that renders the belief likely to be true *in fact*, then such a belief is justified on the basis of 'adequacy externalism'. For example, if there is DNA evidence that places an accused perpetrator's semen inside a rape victim, then the belief that the accused is guilty of rape is justified on the basis of adequacy externalism. On the other hand, if the belief in question is justified by a ground the believer *thinks* is true, then such a belief is justified on the basis of 'adequacy internalism'[256].

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[255] Above n 242, 308.
[256] Ibid, 309.

In this thesis, the relationship of the fact (i.e. LUH as posited using theoretical physics and mathematics) to the belief that the structure endorses the ontological commitments of modern human rights is a type of adequacy externalism; equality is a fact discernible from an ontology derived within the scientific paradigm of quantum mechanics.

Kim's Question Three

The third and final question to which an answer is sought is: "What is the proper basing relation that must hold between the belief in question and its adequate grounds?" This question asks whether the belief in question is properly based on adequate grounds. One satisfactory connection between the ground and the belief is a *causal relation* between the two. Such a basing relation is classified as 'connection externalism'. Another type of justification mandates that the belief be assessed in light of the adequacy of the grounds (i.e. the epistemic quality of the process or fact relied upon when addressing the second question is defensible and robust). Such a ground is classified as 'causal internalism'.

In this thesis LUH is examined and is found to cohere with the ontological commitments of modern human rights employing causal internalism. This is the case because there is a hermeneutic consonance between the ontology of the two. This analysis demonstrates that the ontological commitments of limited universal holism and the Preamble do in fact cohere.

Satisfactory answers to the three questions fulfil the necessary requirements to affirm the secondary premise of this thesis; namely that limited universal holism can act as an ontological affirmation of the core notions that underpin the Preamble, specifically the notions of equality, universality and inalienability. However, there are still some issues that must be addressed; firstly, the question may

be asked 'So what?'. Restated, this question asks what is the significance of the epistemological coherence between LUH and the Preamble to the UDHR? Secondly it may be said that the carefully worded second premise of this thesis avoids an epistemic issue: the ontological notions of inalienability, equality and universality have been applied to human beings; whereas LUH speaks of those ontological attributes attaching to the entire content of physical reality, equally to both animate and inanimate objects. These two legitimate questions need full exploration.

6.9: So What?

Epistemological coherence between the loci of commitment in LUH and the Preamble inevitably leads to a pragmatic question: 'So what?' The answer to this question appears *prima facie* paradoxical. An ontological structure that coheres with the ontological commitments in the Preamble acts as a lever for an argument that a stricter legalist reading of the UDHR is appropriate when deciding matters pertaining to human rights. The apparent paradox is that this notion is arrived at from an interdisciplinary legal analysis which has applied the socio-legal methodological paradigm of structural functionalism which itself viewed as a polar opposite to legalism. Thus, it appears to be paradoxical that an interdisciplinary socio-legal analysis affirms a legalist approach and actually endorses the methodological *status quo*. Pragmatists have already recognised that the law requires cognitive closure in order to function. Thus while it is not a paradox *per se*, it emphasises that the impact of interfering fields must be diminished in order to produce a practical manifestation of the UDHR closer to its wording. The law may be conceived, as some socio-legal scholars assert, to be caught between autonomy and heteronomy as the law is a social communicative process. The need to consider knowledge derived in other disciplines is relevant to law because any discipline solely focussed inwardly ignores valid new knowledge being constantly developed in other

disciplines, and runs the risk of problems and outmoded points of view becoming embedded deeply within it.[257] In fact, when applied to the law, knowledge from other disciplines is often able to improve the relevance, efficiency and epistemic coherence of law with the many environments with which the discipline interacts.[258] At this juncture it is appropriate to shed some light onto this discussion by applying LUH as a metaphor, as was undertaken in chapter 5.3.3. In applying that metaphor one could describe the relationship of human rights law to other disciplines as a field that can be treated as abstracted from the whole (i.e. those other disciplines) when the artefacts of autopoietic communication are highly discipline centric (i.e. when quantum potential is high). In modern human rights we can see that this is not the case (in a legalist sense) because there are numerous fields outside of law that have adopted those artefacts of communication. To continue the analogy to LUH, this has the effect of decreasing the value of 'quantum potential'; as a result, disciplinary boundaries become blurred and a clearly defined autopoietic space becomes harder to identify. This has the effect of rendering a legalist reading of the UDHR as unrealistic. As was noted in chapter 5.3.3, this is occurring at both systemic and individual levels. Thus we can conclude that at the systemic level, the semantic artefacts of communication in the autopoietic field of modern human rights are occurring in a hybrid disciplinary space; consequently those artefacts cannot be interpreted as though they originate in a purely legal disciplinary space.

We can now apply LUH as a metaphor for a second time in a manner akin to way it was applied in chapter 5.3. When so applied to the current discussion, the field of modern human rights dissolves into the singular field that is the web of concepts and understanding that constitutes an individual's

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[257] Nissani, M. (1997) 'Ten Cheers for Interdisciplinary Research', 34, 2, *The Social Science Journal*, 201 – 216, 207.
[258] Ibid, 201.

cognitive *Grundnorm*.[259] This dovetails with views of Balkin (1993), who posits that coherence in any cultural system, of which jurisprudence is one, is about creating 'shared frameworks of understanding' between people.[260] This could be achieved, in this instance through LUH cohering with and being used in the hermeneutic process that a legal thinker uses in order to interpret and apply the UDHR when constructing Douzounis's 'empirical person'. There are two limbs to this point. The first limb is that the loci of commitment with LUH cohere with a wide range of seemingly divergent positions – as LUH is a monist ontology, it coheres with all monist ontologies. The effect of this coherence is to enhance the process of creating shared frameworks of understanding. This in turn enhances the rule of law, as the greater the number of cohering beliefs, the greater the epistemic stability of the entire cognitive web. This is discussed in chapter 9.

The second limb is that the interpretation the UDHR should be undertaken with an awareness of coherence between LUH and core notions underpinning modern human rights. It will be shown how being cognisant of a holistic ontology would influence the cognitive process by which human rights provisions are interpreted. This would widen the scope of protection afforded under given provision in a manner akin to the way that jurists and scholars with a preference for Natural law often view the scope of protection that should be afforded under any given provision as wider than those who prefer a positivist legal paradigm. While it is acknowledged that the preceding point is a

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[259] '*Grundnorm*' in this instance is used in the English rather than German sense. That is to say that the coherent web of concepts which comprises a individual's mind (according to both legal coherentism and epistemological coherentism which are both discussed in chapter 5.2.1. It is with a measure of irony that it is noted that Austrian jurist and philosopher of law posited that the legal system is an interlinked set of norms that are themselves underpinned by a '*Grundnorm*'. Thus, one could apply the Kelsonian notion of a Grundnorm and the sentence would still convey its intended meaning. See: Cotterrell, R. (2003) *The Politics of Jurisprudence: A Critical Introduction to Legal Philosophy 2nd ed* , LexisNexis Butterworths, London, 105.

[260] Balkin, J.M. (1993) 'Understanding the Legal Understanding: The Legal Subject and Problem of Legal Coherence', 103, 105, *The Yale Journal of Law*, 106- 176, 108.

generalisation, the point remains that the process of interpreting (i.e. generating meaning) legal sources cannot be divorced from the individual's cognitive framework (including all prejudices and biases). This is arguably the perspective upon which both feminist and critical legal paradigms have been constructed.

It should be recalled that Teubner (1986) noted '...it is the law as a communicative process that that by its legal operations produces human actors as semantic artefacts', to wit, modern human rights is an avenue to that end. The value of human rights has been articulated in both positive and negative terms in the Preamble to the UDHR, via the assertions:

> Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice and peace in the world,
>
> Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people.

The point that warrants emphasis is that the epistemic foundations of the claims themselves are afflicted by the paradox of self-evidence as foundationalism is misapplied. Whilst the claims made within the Preamble may be true when correlated with specific facts (e.g. they may cohere strongly), that, however, is a moot point. The application of foundationalism in the Preamble of the UDHR is itself flawed, and this was discussed in chapter 6.7. This undermines the notion that modern human rights norms, as defined in the Preamble to the UDHR, could ever be defensible legal standards in themselves. One process that may alleviate this problem is to engage with legal coherence. Balkin

(1993) notes that 'legal norms...must begin with the presumption that they make sense – that they represent an intelligible and defensible scheme of regulation... an assumption of coherence becomes necessary as a test of our understanding...legal norms make no sense to us, if they make distinctions that seem incoherent or arbitrary'.[261] He further notes 'If we do not assume that the legal norms we are trying to understand are coherent, we will have no way of determining whether our conclusions are due to the failure of our own understanding'.[262] This view becomes most pertinent when one considers the interfering autopoietic fields of dialectical ethno-cultural relativism and legal dualism found widely in existing global legal discourse. The weak foundational claims for modern human rights grant them an epistemic status that is easily displaced by the imperatives of these other fields. The effect of this displacement is that the UDHR cannot be coherent with the legal field in a manner that statutory sources of law are able to create legally enforceable standards determined by applying the ordinary canons of legal interpretation. This issue is evinced in the modern practical examples of state-sanctioned human rights violations given in chapter 6.3.

Given the unambiguous level of protection[263] of modern human rights if one deploys the canons of a strict legalist hermeneutic framework to interpret both the declaratory statements made in the Preamble and also in the subsequent instruments intended to give effect to the UDHR, the question arises: how is the practical or realistic level of protection afforded under that instrument anything but an ambiguous standard? Whilst the notion of legal dualism was discussed in chapter 6.5.1, there

[261] Ibid, 151-152.
[262] Ibid.
[263] The wording used in modern human rights instruments is not tempered with form of restraint written in framing the scope of the duty owed the world's people by signatory nation-states.

is another issue worthy of comment that relates to the process by which lawyers interpret the law. The mechanics of this lies in the observation that the process of determining the practical meaning of that (or any other) document (legal or otherwise) is achieved through the 'traditional conception of the hermeneutic circle'.[264] Gadamer (1975) argues that when we revise our understanding of what the parts of a text mean by considering their relation to the whole of our belief set, then we also revise our conception of the meaning of the whole by considering its parts.[265] Applied to modern human rights this means that the entire autopoietic field which defines the realist meaning of human rights consists of a number of recursive autopoietic fields; but not any one of the contributing fields can displace the interference of the other fields. The doctrinal core of law is simply one such field. Thus modern human rights have themselves become a hybrid disciplinary space.

When deciding a matter in dispute a lawyer interpreting either the Preamble or the instruments intended to give effect to modern human rights will need to take into account some new variables. Firstly, the supra-national jurisdiction of the UDHR is tenuously connected with domestic laws given the widespread practice of international dualism. Secondly, the language of the Preamble to the UDHR is unusually explicit and unwavering. If a strict legal hermeneutic interpretive method is applied to the text itself, the UDHR becomes a highly prescriptive set of rules, and as such, the extent to which the UDHR was intended to be contextualised to particular disputes is unclear and unresolved. This distinction is drawn because it shows that a measure of epistemological coherentism was intentionally drafted into the UDHR in the by way of the overt attempt for the

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[264] Ibid.

[265] Gadamer, G.G (1975) Truth and Method (translated Barden G. and Cumming, J.), 291. This is consistent with position adopted in legal coherentism as discussed in chapter 5.2.1.

UDHR to appeal to all the member states of the UN. To wit, the discussion in chapter 5.2.1 should be revisited; Amaya (2012) distinguishes between 'factual' coherence and 'normative' coherence; 'factual' coherence refers to 'coherence built in the course of legal decision making' and occurs when 'faced with a number of interpretative of factual hypothesises, legal decision makers...manipulate the decision elements so as to secure that the preferred alternative is, by the end of process, the most coherent one. Or they may ignore or underplay the relevance of disturbing evidence in order to preserve the coherence of their favoured hypotheses'.[266] Normative coherence is 'relevant to the justification of normative conclusions in law'.[267] Amaya posits that these two types of coherence can be fused into a single theory of coherence in law.[268] It may be recalled that Balkin (1993) asserted that these two types of coherence are, in a practical sense indissolubly linked, when he posited:

> ...we bring our own judgments about what is right and good and how one should balance competing purposes, policies and principles. Because our judgments about these matters may differ, so may our conclusions about the point of particular legal doctrines....Moreover, what is most significant about our disagreement is the implicit terms of agreement through which it occurs. When we disagree about the proper application of a legal norm, we do not disagree about whether the legal norm is coherent; rather, we disagree about the point of a legal norm whose coherence we accept for the purposes of our argument. We attack our opponent's theory about the point of the norm because it makes the norm less coherent from our perspective –

[266] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 9.
[267] Ibid, 3.
[268] Ibid, 4.

> because it misdescribes the purposes, policies, and principles underlying the doctrine, or balances them in an unconvincing or arbitrary way.

This position shows that the 'why' and the 'how' of law are inseparably linked as legal coherentism is at play all the time. This position applies equally to those cognitive and interpretive processes that lie at the disciplinary heart of legal method and explain why, *inter alia*, all judges do not all decide cases in exactly the same way and reach identical conclusions. This is also applicable to the discussion in this thesis on modern human rights. It follows from the previous point that the epistemological criticisms that may be levelled at the Preamble ***must*** have an effect on the way modern human rights are interpreted and applied. This is because the epistemological criticisms undermine the very claims that assert the value of modern human rights.

It is for that reason that whilst the two types of legal coherentism can be linked, there are some particularly pertinent observations that may be made. The focus of the coherentist argument advanced in this thesis is to explain the law, and hence render it intelligible in accordance with the line of reasoning advanced by Wendel (2011).[269] He asserts that explanation for a law is different to a justification for it. However he also notes that in practice the two do blend together 'in interesting ways', which he labels as 'covert normativity'. [270] Thus, he notes that 'the question for modern legal scholars is what they regard the relationship to be, between substantive claims about what the law is, or what it is for, and the methodological theses about how one justifies a legal explanation'.[271]

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[269] Wendel, B.W. (2011) 'Explanation in Legal Scholarship', 96, 4, *Cornell Law Review*, 101-138.
[270] Ibid, 105.
[271] Ibid, 125.

Thus it is clear that epistemological coherence is of significant value to the modern human rights discourse. It is now possible to consider one practical reform that may be undertaken in response to the epistemological coherence identified in the preceding discussion. In the first instance, inserting a clause into the UDHR that recognises the epistemological shortcomings of existing regime and the ontological coherence with the quantum mechanical view of the world would constitute a landmark step forward. The specific form of such a clause is an area that warrants further consideration in a discrete research piece in light of how precisely formulated UN instruments must be and the complexity of obtaining agreement across all member nation-states as it was shown in chapter 6.2.2. A reform such as this would be a double edged sword; at the systemic level it does not change anything, it is simply an addendum to a system that allows state-sanctioned human rights abuses on a regular basis and is still subject to *vae victis*.

On the other hand the proposed reform would introduce a new autopoietic field to support the ideological substratum of modern human rights, and introduce that autopoietic field to the world at large.[272] It would focus on the epistemic implications of ontological holism espoused by quantum mechanics. If recognised, the ultimate impact of a quantum mechanical ontology that coheres with the ethos of human rights points toward the way the UDHR would change for that coherence. One impact that can be clearly foreseen is that the coherence will assist modern human rights in finding a 'reflective equilibrium', one in which the human rights norms are considered from the bottom up to arrive at sets of human rights principles inferred from state-of-the-art scientific theories. Such a

[272] It was noted in chapter 4.4.3 that 'holism' is an ontology that has gained traction in many diverse disciplines; philosophy of mind, organisational behaviour, *gestalt* theory, economics, anthropology and business. The coherence with limited universal holism (as epistemologically justified through an application of Kim's questions) will apply to equally to each of these disciplines.

regime for modern human rights would herald a move toward greater epistemic clarity in the way the UDHR is understood and interpreted. To that end this thesis heralds the opening move in an epistemic chess match that takes a realist position in legal autopoietic discourse in modern human rights when rationalised from the ontological perspective of quantum holism. It is also salient to note that the UN will not last forever as it is a political entity born from agreements between nation-states, and as such, those treaties and agreements will be supplanted. At this juncture it is significant to note that paradigmatic reform (in the Kuhnian sense) results from the need to find solutions to problems that are irreconcilable within the existing paradigm. The effect of introducing LUH into the field legal philosophy will certainly highlight problems within the existing (and outmoded) ways of constructing legal subjects and hasten the move toward paradigmatic reform.

One further point needs to be made in light of Balkin's observation that a lack of epistemic coherence is the most troubling feature in the context of laws we believe to be unjust. This is because we are asked to understand the purposes of the law in order to interpret it, and as such, different values will underpin different conclusions about the appropriate balance struck by a particular regulation. In the case of modern human rights the converse appears true. Because the notion of human rights is perceived by many to be just, the lack of coherence caused by a poor epistemic substratum is not deemed problematic. Donnelly (2003) adopts just such an incorrect position, in that he asserts that the overlapping consensus apparent in the wide spread ratification of the UDHR and other modern human rights instruments negates the effect of the epistemic gap. It is also possible to conclude that Donnelly's position is erroneous because it is based on the view that 'consensus' is as epistemologically satisfactory as 'coherence'; this is not the case. In order to reconstruct (e.g. interpret) the law rationally, the point remains that one must also understand the

'truth' inscribed in the law, as noted by Balkin.[273] It is on this point that the epistemological coherence of LUH and the Preamble is of value and also distinguishes itself from the epistemic value from Donnelly's 'consensus'-based argument. One epistemologically valid avenue for perceiving truth is via the process of coherentism. Deploying the ontology of limited universal holism to cohere with the ontological commitments of the Preamble to the UDHR is consonant with the submission made by F.S.C. Northrop with which he ended his submission to the United Nations prior to the adoption of the UDHR, Northrop (1947) stated:

> An adequate bill of rights, therefore must possess…The guarantee of the freedom for, and the establishment of the scientific and philosophical inquiry into the basic premises of human and social ideologies necessary to provide the means for transcending and resolving the ideological conflicts of the contemporary world. The minimum foundation for a bill of rights is a political philosophy which is both a philosophy of all the world's cultures and a philosophy of science.[274]

It is clear that the ultimate legal and cultural impact of a systemic recognition of the epistemological coherence between LUH and law will only be understood after further research. However an article or treaty ratified by the United Nation that recognises the consonance between the ontological commitments of modern human rights and LUH will be a significant step toward the creation of an enforceable human rights regime. This is not as radical a suggestion as it may appear at first glance. Quantum physicist Henry Stapp presented an invited contribution to a symposium sponsored by the

[273] Above n 252, 158
[274] Northrop, F.S.C. (1947) 'Towards a Bill of Rights for the United Nations: A Symposium prepared and edited by UNESCO', *Human Rights: Comments and Interpretations*, Allan Wingate, New York.

United Nations Educational, Scientific and Cultural Organisation (UNESCO) titled *Science and Culture: A Common Path for the Future* as far back as September 1995. He stated:

> Classical mechanics is based upon a mechanical picture of nature that is fundamentally incorrect. It has been replaced by a radically different theory: quantum mechanics. This change entails an enormous shift in our basic conception of nature, one that can profoundly alter the self-image of man himself... Quantum mechanics may provide the foundation for a moral order better suited to our times, [by endorsing] a self-image that endows human life with meaning, responsibility, and a deeper linkage to nature as a whole...This arises from...the deep-level connectedness of spatially separated physical entities...It is as if the entire universe is, in some sense a single organism whose parts are in instantaneous communication... Quantum theory indicates that we are all, far more intricately than appearances indicate... facets of one universal process. Thus according to the quantum conception of nature, the notion that any one of us is separate and distinct from the rest of us is an illusion based on misleading appearances. Recognition of this deep unity of nature makes rational the belief that to act against another is to act against oneself.[275]

Formal recognition of the correlation between the ontological commitments of LUH and the Preamble of the UDHR would not be a panacea that remedies all human rights grievances and systemic shortcomings. It is reiterated that such recognition cannot displace the fields that autopoietically interfere with modern human rights. Rather ratification of an article or treaty

[275] Stapp, H. (1995) 'Values and the Quantum Conception of Man' invited contribution to the UNESCO sponsored symposium: *Science and Culture: A Common Path for the Future*, Tokyo, September 10-15 available at < http://www.au.af.mil/au/awc/awcgate/lbl/quantum_concept_man.pdf> last viewed 26 June 2012, 1, 9, 10.

recognising this coherence offers two advantages. Firstly, it is a reform that works within the *status quo*, and does not necessitate any significant reform as a precursor to ratification, other than education. Secondly, such an article or treaty would deepen the understanding of the question: 'Why have human rights?' Legal coherentism indicates that this would, in turn, assist deciding human rights matters. This assistance comes from the fact that 'why' a law exists is intrinsically linked with 'how' legal matters are decided. As such, a stronger argument for 'why' would bolster the place of human rights in modern society.

A treaty or an article that recognises the coherence between the ontological commitments of the Preamble to the UDHR and limited universal holism would also act as a beacon to all; human rights can have a sound ontological foundation. Such a foundation would certainly alter the dynamic of discussion in respect of establishing a normative human rights culture and the viability of a forum for resolving human rights disputes and grievances.

6.9.1: Equality Only for Humans or Essential Equality? Wild Law and LUH.

The diligent inquirer may have noted that there is one significant issue that needs to be acknowledged. This may be discerned from the extract from Stapp (1995) above. It was noted in chapter 4.5 that the ontological structure of LUH applies to *every particle (and thought) in the universe*. Thus far in this thesis LUH is being used to cohere with the view that all human beings are equal as is posited in the Preamble to the UDHR. In the first instance this is not problematic as at no point is it claimed that equality between people is all that is being asserted. It was noted in chapter 4.5 that both the essence and appearance of objects in manifest reality must be considered. Human beings are a discernible group in manifest reality and are, in many ways, the dominant species on Earth. However, one question remains unanswered: what are the possible implications of essential

equality if we extend the notion beyond our species? This will be considered in the following discussion.

The first step is to review briefly the structure espoused. The ontological construct adopted by Bohm and Hiley posits that every part of manifest reality has the whole enfolded into it. The structure this creates is referred to as the implicate order. The grossest manifestation is classical reality; the level of ordinary interactions that human beings perceive in daily life. At this level the scientific paradigms of Newtonian mechanics and general reality describe how different objects interact with one another. At the molecular and atomic levels and beyond (i.e. as quantum potential increases) the paradigm of quantum mechanics holds sway as the accuracy and applicability of the other scientific paradigms breaks down. One significant shift of ontological commitment is the collapse of individualisation at the quantum level and the observation that a universal wavefunction describes physical reality at the microphysical scale. The effect of this is that the entire content of the classical reality is described by the universal wavefunction and the unaided, individualised perception of human being is penultimate rather than the ultimate reality.

In addition to the observation that human beings are made up of atoms and molecules and hence are a part of the universal wavefunction, there are additional aspects of the human ontology that warrant consideration. Human beings also have, *inter alia*, behavioural, genetic, cellular and biochemical processes that can be used to define or classify them; indeed the entire thrust of the structural functionalist approach to law is the position that human beings cannot be defined in a legal vacuum. Rather human beings are defined through and by their relationships to interfering fields. In this sense, the term 'field' can be interpreted broadly to include abstract meme-fields and

physical objects.[276] This opens the field up considerably and clearly underlines the great difficulty of coming to a full and complete definition of the 'human being' as evinced in post-humanist scholarship. To completely encapsulate all facets of human beings within a legal definition is becoming ever more fraught with complex difficulties as this would include all of the above as well as: gender, citizenship, marital status, voting status, property ownership and debtor obligations among other things. With specific reference to human rights, Douzinas (2000) notes that 'human rights' is a combined term, one that refers to:

> ...the human, to humanity or human nature and is indissolubly linked with the movement of humanism and its legal form. But the reference to "rights" indicates their implication with the discipline of law, with its archaic traditions and quaint procedures.[277]

Douzinas underscores the relationship between humans and the law with the observation that people must be brought in front of the law to acquire rights, duties, powers and competencies. Douzinas calls the legal definition of a person the 'empirical person'.[278] He identifies the circularity of the process of creating an empirical person; first, humans create law but then they must be defined in that law. Thus, Douzinas applies the socio-legal constructivist methodology of Paterson and Teubner (2005) in his definition of a human.

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[276] Indeed the entire disciplines of posthumanism, cultural posthumanism and transhumanism all liberate the definition of a human being from the notion that we are only comprised of only that with which humans were born. See: Bostrom, N. (2005) 'A History of Transhumanist Thought', 14, 1, *Journal of Evolution and Technology*, 1 – 25; Miah, A. (2007) 'Posthumanism: A Critical History', in Gordijn, B. And Chadwick R. (eds), *Medical Enhancements & Postumanity*, Routledge, New York.

[277] Above n 14, 18.

[278] Ibid, 19.

However, as mentioned above, and discussed in chapter 6.1, the process of defining 'human' is difficult, however it is from considering this difficulty that the primary issue for discussion is framed. Namely that LUH applies to every atom in the universe, not just human beings. However, as will be shown, whilst pertinent this concern is ultimately irrelevant to the examination of the two premises in this thesis. The issue raised by essential equality as an attribute of inseparability at quantum level (and the enfolded whole) being recognised as an essential aspect of physical reality is that it calls into question the notion of potentially attempting to assert absolute equality for the entire content of classical reality. Instead, it is argued that such a notion is recognition of the essence described by Bohm and Hiley (1993) and would enhance rule of law. Indeed recognition of essential equality lies at the heart of the paradigm of Earth Jurisprudence (also referred to as Wild Law), as Cashford (2011) observes:

> In an interdependent world, where every mode of being depends on every other mode of being, then every mode of being has rights derived from the universe which brought them into being and made them who they are. In this sense, every mode of being is equal: "The well-being of each member of the Earth community is dependent on the well-being of the Earth itself".[279]

[279] Cashford, J. (2011) 'Dedication to Thomas Berry' in Burdon, P. (ed) *Exploring Wild Law: The Philosophy of Earth Jurisprudence*, Wakefield Press, Kent Town, 9.

Berry (2006) has articulated '10-Principles of Jurisprudence' to resolve any tension arising caused by the legal recognition of essential equality and balancing it with the 'appearance' of manifest reality.[280] Point six in this list is relevant to the current discussion:

> 6. All rights are role specific or species specific, and limited. Rivers have river rights. Birds have bird rights. Insects have insect rights. Humans have human rights. The difference is qualitative, not quantitative. The rights of an insect would be of no value to a tree or a fish.[281]

This point has the effect of recognising that essential equality does not equate to a rigid equality of treatment, as this would ignore the role that 'appearance' should play in formulating a legal response to LUH. Thus, the issue is resolved simply by creating appropriate legal categories. Whilst this seems straight forward, the point remains that defining 'human' for the purpose of discussing 'human rights' has not been the focus of much express scholarly thought; perhaps because it appears to be an obvious answer (i.e. one human being is born to another human being). At this juncture it is pertinent to recall the discussion in chapter 6.1. That discussion identified the abstruse definition of the term 'human' currently used in modern human rights law and the catastrophic genocide that resulted from the Nazis using an exclusive rather than inclusive definition of 'human' during the Third Reich. It will come as no surprise that the lack of a universally accepted definition of 'human' still creates injustice in a practical (albeit less appalling) sense. For example, if human rights attach to 'humans', does a heavily intellectually handicapped person have a lesser right to an identical level of education as an able minded person because they do not have the same intellectual

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[280] Berry, T. (2006) *Evening Thoughts: Reflecting on the Earth as Sacred Community*, ed. Tucker, M.E., Sierra Club Books, San Francisco, 149-150.
[281] Ibid.

capacity? Similarly, if one accepts that human rights only operate between the state and the citizen, the question becomes whether stateless citizens are less 'human' because they have no government from which to claim any 'human rights'?

These questions are of particular significance when contrasted with the ethos of human rights – that there ought to be a suite of inalienable rights predicated on equality and universally applicable to all human beings. This dissonance leads in essence to the question: where and how does one draw a line that demarcates someone 'human' enough to make a claim for their human rights to be respected versus someone not human enough to be classified as 'human' for the purpose of having equality of protection under human rights? This same issue was posed in respect of the possibility that LUH could be used to argue that human rights should apply to objects as well as people. Of course this becomes a pragmatic and unavoidable issue; resources will always be finite and there will always be those for whom equality of protection will not be possible because this would involve an excessive consumption of resources and also may have adverse effects on other human's claims. To revisit the analogy above, it may not be possible for an intellectually handicapped person to be educated to a tertiary level either because the cost would be too great or the person's disability may render such an achievement beyond possibility. Thus the issue become one of calculus; should human rights in practice work toward creating formal equality, ensure equality of opportunity or an equality to fulfil one's potential. It is at this point that one can look to Berry's (2006) point nine:

> 9. ...No living being nourishes itself. Each component of the Earth community is immediately or immediately dependent on every other member of the community for the nourishment and assistance it needs for its own survival. This mutual nourishment,

> which includes the predator-prey relationship, is integral with the role that each component of the Earth has with the comprehensive community of existence.[282]

Whilst this point refers to the consideration of interspecies competition, it can also be applied to intraspecies competition. Just as there is an interspecies predator-prey relationship so also not every inhabitant of a particular component of the Earth's web of life (or 'legal category' when framed in the paradigm in Earth Jurisprudence) has identical capability (taken yet further, it is noted that there are cannibalistic practices in some species, for example the Australian Redback spider[283]. As such a measure of inequality is a necessary characteristic of a properly functioning universe. However, each inhabitant of any given category does have equivalent legal value, thus the scope of the protection offered by human rights to a particular individual will vary, as long as it is in keeping with the intent of the specific right in question. As such the reference in Berry's point nine to 'mutual nourishment' is an apt phrase to describe a position of orientation. Human rights cannot place an intellectually handicapped person in a position of being healthy in mind. Rather, when evaluating the scope of his or her right to education a calculus will have to be made, one that balances finite resources, the capability of the person in question, the intent of the right to education and seek to ensure a measure of nourishment for the person in question. This will be determined by the norms and resources held within the society in question.

In terms of human rights and LUH, what Berry's imperative suggests is this: in fulfilling the ontological commitment to value each member of the universal community equally, we must strive to fulfil such equal rights context-specifically. That is, the rights of sharks include the right to eat prey

[282] Ibid.
[283] Forster LM (1992) 'The Stereotyped Behaviour of Sexual Cannibalism in Latrodectus-Hasselti Thorell (Aranea, Theridiidae), the Australian Redback Spider', 40, 1, *Australian Journal of Zoology*, 1-11.

necessary for their survival, and the rights of sharks prey to live do not usurp the shark's right to eat them. However, this line of argument does not mean that in the context of human rights, political 'sharks' (to continue the metaphor) have the right to exterminate all prey capriciously – that is, Hitler was not granted the right to eugenically exterminate all handicapped persons simply because he was at the top of the political food chain, so to speak. Context-specific application of such principles does not mean arbitrary or capricious application. We could employ, for example, Singer's (1972) notion of 'marginal utility' to demonstrate where our natural obligations lie. This idea suggests that we ought to provide practical expression to the rights of all until the point of 'marginal utility ' is reached. This is the point at which by doing more, as much suffering would be caused to other members of the community as would be relieved by the actions.[284] In nature, a shark will not eat beyond its fill that is necessary for survival. So, by way of a practical human rights example, the right to education for a physically handicapped person in Australia might mandate that the government provide handicap-friendly ramps at public libraries to promote educational access, because the cost of doing this is not so onerous as to cause an economic inability to feed the general population, for instance. In a very poor third-world country, if the cost of implementing handicap-access ramps were to be so onerous as to prevent large swathes of the population from being able to eat, the expression of honouring the equal right of persons to education would not necessarily mandate provision of such ramps. Of course, if the economic climate of the third-world country in question improved, then such provisions for handicapped persons might also emerge.

[284] Singer, P. (1972) 'Famine, Affluence and Morality', 1, 3, *Philosophy and Public Affairs*, 229 -243.

In the same vein but a distinct point, Douzinas notes the similar tension or paradox observed by both Hohfeld (1919) and Dworkin (1977), namely that human rights are internally fissured: they are used for the defence of an individual against state power articulated in the image of an individual with absolute rights if one looks at the wording of the various human rights instruments. However, there cannot be any absolute rights if those rights must be balanced with another person's nor if they must be subjugated to allow an institution to govern.

From the discussion above an even more relevant question emerges: What, if anything, does an epistemological coherence between the ethos of human rights and LUH mean aside from the impact on legal decision making that can be discerned through an application of legal coherentism? It is clear from the preceding discussion that we still need to arrive at a legal definition of the term 'human' for the purpose of engineering human rights. This issue itself deserves to be the subject of focussed further research but addressing the issue in more detail is beyond the scope of this thesis. However a few relevant but general points will be raised in this analysis. Since LUH points to enfolded metaphysical equality at one end of physical reality and ordinary unaided human perception points to a Cartesian ontology, a bridge needs to be built between these two extremes of perception. It appears, however that ordinary human perception is multi-layered: from a base level of the unified quantum potential and then, as quantum potential begins to decrease, on to the level of atoms and molecules; molecules interacting with each other to create cells at the cellular level, organs and a mind boggling range of chemicals, then through bio-chemical and bio-electrical processes to generate feelings, thoughts, behaviour and ultimately the perception of a single human person divided from the rest of the physical reality. Along this (admittedly massively simplified) path

an epiphenomenon called a 'human being' emerges.[285] Where on this path this occurs is not immediately clear, however there will be a point at which a discernible 'human' appears. This notion of something legally defined as a 'human being' becoming recognised at a particular point in the levels of process that occurs between quantum singularity and the classical level of physical reality is explained by gradual decrease in quantum potential (itself discussed in chapter 4) and this is also consistent with formation of legal categories espoused in Berry's Principles of Earth Jurisprudence.[286]

Since quantum mechanics, by virtue of positing a universal wholeness, indicates that there is no fundamental object called a 'human being', then there is a need to utilise legal constructivism to articulate a definition of 'human'. In respect of using constructivism and building a definition of the empirical person from a quantum mechanical foundation, Kronman (1985) states that lawyers should be:

> ...confident in our power to discover the norms that ought to govern us through abstract philosophical reflection untainted by experience or historical fact, and equally confident in our ability to implement whatever norms we choose through the systematic and self-conscious reconstruction of existing institutions from the ground up. [287]

As such there is a need to reconsider the definition of 'human' acknowledging that the 'ground' in the extract above is LUH, and also there is need to reconsider the suitability of the existing

[285] It is worth noting that in this simplified list human consciousness is conspicuous in its absence. This is important area of human endeavour that has a great deal to tell us about who and what it is to be 'human'. See: Chalmers, D. (2003) 'Consciousness and its Place in Nature' eds: Stitch, S.P. and Warfield, T.A. *Philosophy of Mind*, Blackwells, Oxford, 102-142; Tuszynski, J. (ed) (2006) *The Emerging Physics of Consciousness*, Springer, Heidelberg.

[286] Above n 272.

[287] Kronman, (1985) 'Alexander Bickel's Philosophy of Prudence', 94, 1, *Yale Law Journal*, 1567 at 1571.

institutions to integrate new norms. If the current institutions are deemed to be unable to integrate these new norms, then we should consider restructuring them. This comment should be considered in light of the discussion in chapter 6.5.1 regarding legal dualism and the rise of the nation-state.

To be both viable and pragmatic the definition of the empirical person needs to integrate into the functional reality of the world at the level of ordinary human perception; a world of limited resources and systemic inequality. Such a definition dovetails with the synthesis of the definitions of 'human' as described by Donnelly (2003) and Douzinas (2000) and discussed in chapter 6.1. They posit that the empirical definition of a human is contained in the UDHR (and subsequent human rights instruments) for the purpose of specifying the relationship between the nation-state and the human. This positivistic definition of the empirical person leaves several issues unresolved. Firstly, the question to whom a nation-state should apply the definition of the empirical person is not expressly addressed in the definition. Secondly, there is no assistance in establishing the ultimate scope of protection afforded by modern human rights instruments to marginal cases, such as the hypothetical intellectually handicapped person referred to in this discussion. Such lapses weaken the status of the instruments that frame modern human rights as they become self-limiting statements of aspiration rather than formulating a binding and enforceable standard of behaviour in respect of the human being and the organs of governance. That said, the *Rome Statute for the International Criminal Court* articulates the nation-state's broader duty towards 'humanity'. However that is not a part of the human rights framework in the ordinary sense,[288] as the duty owed by a nation-state to non-citizens is not absolute and as noted throughout this thesis, ratification of treaties is not a binding commitment by nation-states toward individuals. This thesis shows that the relationship

[288] Rome Statue for the International Criminal Court, UN Doc. A/CONF. 183/9 (17 July 1998).

between human beings and the legal fiction that is the nation-state needs more deliberate consideration.

To revisit the issue that started the present discussion: Why does a LUH based human rights regime apply to humans and not to everything given that there is enfolded essential equality? The answer is simple: whilst at the deepest level of physical reality there is only wholeness, the manifest world is a complex interconnected biosphere with many discrete roles and species, each deserving of recognition and protection that is both specific and appropriate. In respect of the corollary issue in relation to intraspecies equality: in the first instance a measure of inequality is an unavoidable and is in fact desirable as it reflects the natural order of life. The most important principle is that there is an *equality of value* enjoyed by every member of the biosphere.

An additional consideration further tempering modern human rights is the recognition that modern human rights law is not an isolated disciplinary field. It is an autopoietic space with a multitude of interfering discourses; two of which have been identified in this thesis; international dualism and dialectical cultural relativism. It is also quite clear that at the ordinary level of physical reality there is the perception of an individualised existence in which there is wide variation of human beings. That in turn mandates a variation in the application of human rights. A definition of 'human' in respect of 'human rights' needs to be formulated, one that recognises that human beings are localised nodes of subjective awareness emerging out of universal wavefunction. This new understanding of the 'human' needs to be integrated into modern human rights. Adopting the notion of species-specific protections, these rights should be framed as rights for *Homo sapiens*. Once this has been undertaken, determining the scope of protection afforded by human rights needs to take into account material environmental factors ranging from the current *status quo* (as in chapter 6)

through to the finite nature of all physical resources and the reconsideration of legitimate cultural relativism using a 'ground up' approach. Significantly, there is an absence of such a definition in the current human rights system. Whilst there are instances in which a functional definition is presumed, those definitions, as currently framed, are reactively made and leave many people ostensibly 'not human enough' to warrant protection of human rights.

The real strength of LUH is that it provides (for the time being) a foundation, a basement level from which to engage in the complex process of building legally empirical definitions for all things. Even if we create a definition for human beings that accords with our ordinary perception but takes into account LUH; the question remains, 'what does the ontological fact of LUH between man and nature mean for the way we conceive of and regulate our relationship with nature?' As noted in 6.8.3, this issue has already been identified and presented at a UNESCO-sponsored symposium by the eminent physicist, Dr. Henry Stapp.[289]

It may be recalled that Stapp (1995) stated that the manner in which quantum mechanics is altering our perception of the self-image of human kind is 'providing the foundation of a moral order better suited to our times, a self-image that endows human life with meaning, responsibility and a deeper linkage to nature as a whole'.[290] Bohm and Hiley (1993) posit:

> The notion of a separate organism is clearly an abstraction, as is also its boundary. Underlying all this is unbroken wholeness even though our civilisation has developed in such a way emphasise the separation into parts…

[289] Above n 267.
[290] Ibid.

…What we have done here is open up the possibility of an overall approach that encompasses all aspects of objective nature and of our subjective experience (e.g. as an observer and a thinker). To develop such an approach, we first note that not only inanimate nature, but also living nature, is to be understood in terms of the implicate order. Consider a tree, for example, which grows from a seed. Actually the seed makes a negligible contribution to the material substance of the plant and to the energy needed to make it grow. The substance comes from the air, water and soil, while energy comes from the sun. In the absence of the seed, all of these move in an implicate order of relatively low subtlety (based, for example, on the order of the constituent particles). This brings about the constant re-creation of inanimate matter in various forms [via the action of quantum processes]. However, through the information contained in the DNA molecule, the overall process is subtly altered so that it produces a living tree instead. All the streams of matter and energy, which had hitherto developed in an organised way, now begin to bring substance and energy to the plant, which grows and eventually decays to fall back into inanimate matter.

At no stage is there a break in this process. For example one would not wish to say that an 'inanimate' molecule of carbon dioxide enters the tree and becomes 'alive', or that the oxygen molecule suddenly 'dies' when it leaves the tree. Rather life is eternally enfolded into matter and is more deeply in the underlying ground of a generalised holomovement as is mind and consciousness. Under suitable conditions, all of these unfold and evolve to become manifest in ever more refined states of organisation…

…As we have seen throughout this book [*The Undivided Universe*], however, quantum physics interpreted ontologically and extended in a natural way makes possible a reflection of even the subtle mental processes of the observer. Thus, through the mirror the observer

> sees 'himself' both physically and mentally in the larger setting of the universe as a whole. There is no need, therefore, to regard the observer as basically separate from what he sees, nor to reduce him to an epiphenomenon and approximation valid for only certain limited purposes. More broadly one could say the through the human being, the universe is making a mirror to observe itself. Or vice versa the universe could be regarded as continuous with the body of the human being. After all, this latter, like the plant, gets all its substance and energy from the universe and eventually falls back into it. Evidently the human being could not exist without this context (which has very misleadingly been called an environment).[291]

Limited universal holism should be further explored in order to work toward deepening our understanding of this epistemically valid ontological construct, which in turn will influence the autopoietic and hermeneutic processes undertaken in the legal field. More research is required to understand how the legal field will be ultimately influenced. However, it is a fundamental aspect of this thesis to acknowledge that human rights, both doctrinally and practically, operate in a multi-faceted environment, one in which politics, economics, national interest, international law and myriad of other influences affect their implementation. This thesis has focused on how epistemological coherence between LUH and Preamble to the UDHR may change the dynamic of discussion. Accepting the ontology of LUH as described in this thesis is the first step in an ongoing process of sustainable integration. Just as further research is required in the disciplines that assert the ontology of holism, so too is a considerable amount of research required to clarify the path to be followed in the continuing re-evaluation and evolution of our social institutions. It is clear, however, that by virtue of challenging the currently accepted norms of ontology, there will be a

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[291] Bohm, D. and Hiley B.J. (1993) *The Undivided Universe*, Routledge, New York, 388-9.

substantial revision to the social sciences, as ontology often implicitly underpins their content. Rather than confuse the state of affairs, such issues show us a way of reframing areas that have become legal calluses; areas of law hardened to real and fundamental reform because they have been built upon a flawed ontological foundation, one that is incomplete as it does not take into account fundamental physics and its impact on the nature of that which the law seeks to regulate. Stapp (1995) notes:

> Quantum mechanics was originally a theory about atoms and their constituents: it was about our observations on systems composed of electrons, photons and nuclei. However, these are the same elements from which most materials are made, including the tissues and other components of our brains and bodies. Consequently, quantum mechanics is not merely a theory about the detailed behaviour of atoms.[292]

It is apparent that legal philosophers need to actively consider the implications and practical manifestations of a reality that exists as a whole enfolded into individuals who should be treated as a part abstracted from that whole.

[292] Ibid, 2.

7. SUMMARY

This thesis has investigated the validity of two premises. The first premise states that the ontological structure of limited universal holism describes physical reality in a manner that has significant legal philosophical and socio-legal implications. The second premise states that the ontological loci of commitment from limited universal holism epistemologically coheres with the core ontological notions that underpin the Preamble of the Universal Declaration of Human Rights of 1948 (UDHR),[1] specifically the notions of equality, universality and inalienability.

7.1: The Rise of Interdisciplinarity in the Legal Field and Structural Functionalism

Several preliminary issues needed to be resolved in order to examine the two premises. In the first instance, a fundamental disciplinary question was raised relating to the discipline of law: is it even systemically permissible that an ontological structure derived from a scientific paradigm may be validly utilised to cohere the loci of commitment in a legal document, such as the Preamble to the UDHR (the Preamble)? Evidence was adduced to show that paradigms of natural science inevitably affect the social sciences as argued by Thomas Kuhn in *The Structure of Scientific Revolutions*.[2] As such the answer to this question appears to be strongly in the affirmative. However, such a position

[1] United Nations General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, A/RES/217A(III), available at < http://www.unhcr.org/refworld/docid/3ae6b3712c.html> last viewed 20 June2012.
[2] Kuhn, T.S. (1976), *The Structure of Scientific Revolutions,* 3rd Edition, The University of Chicago Press, Chicago.

makes a significant assumption. Namely, that law is a social science. The notion that the law can be classified as a social science has been rejected by the legal discipline until relatively recently.

Whilst the common law tradition extends back over hundreds of years, within the legal tradition there was an explicit rejection within the legal discipline for classifying the law as a social science in the 1930s. The preferred term of art was to classify law as a 'technology'.[3] This was argued on the basis that law has a disciplinary core that is unique and autonomous and deals with 'narrow treatises addressing traditional legal subjects'.[4]

The 1930s heralded the point at which the tide of opinion began to turn, and there was a 'realist revolution'.[5] The term 'realism' was intended to connote that the newly emerging perspective was pragmatic. It mandated looking at the law in terms of how it functioned and as such, sought to unify law with the other social sciences. This significantly opened the law up to other disciplines.[6] Interdisciplinarianism in law began to gain momentum in the1960s. The use of the term 'revolution' implies there was some kind of *gestalt switch* caused by a paradigmatic coup in which the newly devised 'realist' legal thinkers usurped the power of the 'traditionalist' legal thinkers. However this overstates and oversimplifies the case. Rather than opening a sharp cleavage plane becoming between two polar views, the law became an autopoietic field (although this itself was recognised only in the 1980s) – a field in which either of the two could be called upon for their analytical perspectives, depending on circumstances. Indeed often some hybridised position was adopted in

[3] Cairns, H. (1935) 'Law as a Social Science', 2, 4, *Philosophy of Science*, 484-498, 487.
[4] Ibid, 437.
[5] Priest, G.L. (1983) 'Social Science Theory and Legal Education: The School as University', 33, *Journal of Legal Education*, 437-441, 437.
[6] Engle, E. (2008) 'The Fake Revolution: Understanding Legal Realism', 47, *Washburn Law Journal*, 653-674, 461.

order to produce the richest analytical perspectives. The birth of the realist perspective in legal scholarship created an epistemic space for analyses (such as this thesis) within the broad conceptual territory of the legal discipline. This change also heralded the creation of socio-legal method.

The specific branch of socio-legal method that has been deployed in this thesis is 'structural functionalism' about which Banakar and Travers (2005:II) made the following observation:

> Within structural functionalism, the constitutive elements of a system are never considered in isolation from each other or from the *totality* of the system, which in turn is regarded as more than the sum of its constitutive parts...[structural functionalism sheds]... light on the normative features of social life by examining the relationship between micro-elements of social systems such as norms, roles, human agency, practices or communicative action and their macro manifestations such as social institutions, structures, systems of fields... Legal forms of behaviour or organisation are, thus, explained as the "result of the structure of the relationships existing in the larger society and the legal system itself".[7]

This description highlights some of the key attributes that connect this episteme to scholarly evolution of the realist perspectives of the 1930s. The methodological perspective of structural functionalism has been deployed twice in this thesis. Firstly, it has been utilised to explore the nature of interaction between the field of science and the field of law, and then a second time to undertake an analysis of modern human rights in chapter 6, specifically in relation to the interactions

[7] Banakar, R. and Travers, M. (2005) 'Structural Approaches', (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 196.

between the ontological commitments revealed by a legalist interpretation of the Preamble, and the autonomous fields of ethno-cultural dualism and international law norms.

In the first application of structural functionalism (i.e. in relation to the interaction between science and law) it became clear that these are two fiercely autonomous disciplines that are inevitably coming into more and more intimate contact. Whilst the birth of realism allowed for perspectives from outside law to be used in legal scholarship in so far as the law became classified as a social science, it is a significantly bigger question to resolve whether the interaction between these two particular disciplines is tenable. The possibility that their disciplinary cores may simply be incompatible as they adopt fundamentally different ontological and epistemological stances must be considered.

Forward thinking American jurist, Oliver Wendel Holmes,[8] asserted in 1895 that the law, lawyers and legal scholarship needed to look to science for valuable inputs. He stated: 'An ideal system of law should draw its postulates and its legislative justification from science'.[9] This was a radical notion at the time, as this assertion predates the 'realist notion' by several decades. Furthermore, the phenomena of the 'realist revolution' should be contextualised against the observation that the legal discipline maintained a borderline xenophobic attitude to interdisciplinarianism until well into the 1970s. The tensions between the realist and traditionalist positions eventually became evident in the so-called 'realist revolution',

[8] Discussed in chapter 4.1.

[9] Holmes, O.W. Learning and Science, speech delivered at a dinner of the Harvard Law School Association, June 25, 1895, in Loevinger, L. (1963) 'Jurimetrics: The Methodology of Legal Inquiry', 22, 3, *Law and Contemporary Problems*, 5-45 at 6.

The traditionalist position has been neatly encapsulated by Vick (2004) who notes that 'the disciplinary core [of law] corresponds with a doctrinal approach' to the identity of law and legal thinking.[10] Hollander (2007) affirms this position when he states 'Traditional legal scholarship holds that the law is an autonomous discipline, standing alone and separate from other spheres of knowledge.[11] Such research is also referred to as 'black letter' research and:

> ...aims to understand the law from no more than a thorough examination of a finite and relatively fixed universe of authoritative texts consisting of cases, statutes and other primary sources, the relative importance of which depends on the legal tradition and system within which the legal researcher operates. [12]

Posner (1987) defines doctrinal legal research as 'a subject properly entrusted to persons trained in law and nothing else',[13] a view Posner ascribes to the nature of legal professionalism itself – a desire to protect their monopoly on law practise. Doctrinal legal analysis is most commonly associated with Christopher C. Langdell, dean of Harvard law school in the last quarter of the twentieth century. As a result such research is categorised as belonging to the 'Langdellian school'. It is apparent that for those who adopt a Langdellian view of legal scholarship the very notion of looking for valid information located outside the purview of the legal profession in order to feed into legal reasoning is heresy. Hollander notes that such people hold the view '...that law students (and practitioners) should learn and understand legal principles solely by the close study and analysis of judicial

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[10] Vick, D.W. (2004) 'Interdisciplinarity and the Discipline of Law', 31, 2, *Journal of Law and Society*, 163-193 at 165.
[11] Hollander, D.A. (2007) 'Interdisciplinary Legal Scholarship: What Can We Learn from Princeton's Long Standing Tradition?', 99, 4, *Law Library Journal*, 771 – 792.
[12] Above n 9, 178.
[13] Posner. R.A. (1987) 'The Decline of Law as an Autonomous Discipline 1962-1987', 100, *Harvard Law Review*, 762. Discussed in chapter 5.1.

opinions... An important characteristic of this methodology is its almost complete autonomy from other spheres of scholarly knowledge'.[14]

In contrast to the traditionalist, the realist position is captured in the quote by Oliver Wendell Holmes that was cited above. It refers to the epistemic reality that any discipline with a solely inward looking focus ignores valid knowledge being developed in other disciplines. In so doing it deeply embeds outmoded points of view within the discipline, including gaps and problems.[15] Often the knowledge ignored is able to improve the relevance, efficiency and epistemological coherence of law with the many environments that the discipline interacts with.[16] It is a salient observation that interdisciplinary scholarship is complimentary to the disciplinary core of law. Holmes' quote refers specifically to the need for law to draw 'its postulates and its legislative justification from science'.[17] A fulsome analysis undertaken by Gibbons (1993) considered the interaction between science and law and *vice versa* is reviewed in this thesis. His conclusions about the interaction between the ways in which science influences law may be simply synthesised into two broad categories. The first category is 'theories about law' and the second, 'theories of law'.

Gibbons posited that 'theories about law' are the result of a systematic application of social scientific research techniques to the law and cites 'jurimetrics' as an example; Lawrence Tribe's application of heuristic tools derived from scientific paradigms in legal scholarship is another example of this. 'Theories about law' is abstrusely defined by Gibbons. He noted that it occurs when natural or social

[14] Above n 10.
[15] Nissani, M. (1997) 'Ten Cheers for Interdisciplinary Research', 34, 2, *The Social Science Journal*, 201 – 216, 207.
[16] Ibid, 201.
[17] Holmes, O.W. Learning and Science, speech delivered at a dinner of the Harvard Law School Association, June 25, 1895, in Loevinger, L. (1963) 'Jurimetrics: The Methodology of Legal Inquiry', 22, 3, *Law and Contemporary Problems*, 5-45 at 6.

science have theories of law based upon them, such as Hayek (1978), who applied an evolutionary model to law, or Posner (1978) who engaged in an economic analysis of law.[18]

Gibbons' category of 'theories of law' is a level of interaction between science and law in which substantive scientific knowledge is imported into the law and utilised as a legal standard. This has a strong epistemological bent; for example the amount of alcohol with which a person may safely drive is determined by scientific research and is established by scientific testing. However, from the perspective of law, the intention is to safely regulate the road system safely. What the scientifically determined acceptable blood alcohol level (BAC) actually is, is not in itself significant as long as the cognitive functioning of the driver to drive safely is unimpaired.

The preceding discussion is undertaken to show that the discipline of law has evolved to acknowledge the impact of the discipline of science on law; and furthermore to acknowledge that such interaction promotes the epistemic stability of law by allowing the law to cohere with other aspects of the environment which the legal system inhabits.

7.2: Premise One

With respect to the first premise of this thesis; i.e. that the ontological structure of limited universal holism describes physical reality in a manner that has significant legal philosophical and socio-legal implications for the legal universe, both the implications for a 'theory of law' and a 'theory about law' were explored.

[18] Hayek, F.A. (1978) 'Law, Legislation and Liberty', University of Chicago Press; Posner, (1979), *Economic Analysis of Law*, 2nd Ed, Little Brown and Co, New York.

Limited universal holism is an ontological structure derived from the scientific paradigm of quantum mechanics. It constructs a picture of the fundamental nature of the universe radically different from that described by Newtonian mechanics and General Relativity. Such radical differences present significant cognitive hurdles that must be overcome. In order to engage with limited universal holism and to understand its ontological implications one must first have an understanding of the key ontological commitments of the quantum mechanical paradigm. Many deeply encultured beliefs held about the nature of the world that we experience ordinarily through gross perception just do not hold true at the microphysical level of reality. This creates an intellectual challenge when engaging with limited universal holism as suddenly fundamental aspects of reality that we are familiar with and take for granted cease to hold sway.

For example, the ontological structure of limited universal holism challenges the unaided perception that Cartesian duality encapsulates human existence. However, this is not the only conceptual leap required to engage with the quantum mechanical picture of the cosmos. There is an additional locus of commitment in the paradigm of quantum mechanics; namely that matter is not ultimately 'solid'. The erroneous view that matter is ultimately solid may well be attributed to the incorrect cosmological picture presented to secondary students the world over.. Specifically, atoms are not the "solid balls" they are purported to be; rather they are better described as fields. Al-Khalili notes 'Physicists today rightly complain that Bohr's model of the atom is still taught to school children. This is not what atoms look like.'[19]

[19] Al-Khalili, J. (2003) *Quantum*, Weidenfield and Nicolson, London , 47.

This is a highly significant point because to consider any legal philosophical and socio-legal implications of limited universal holism one must first engage with the cosmological view of quantum mechanics in general. Only then will limited universal holism make sense and have a context relevant to legal philosophy and socio-legal scholarship. In chapter 3 are described the primary loci of commitment in the paradigm of quantum mechanics; the wave-particle duality of light as explicated by the double-slit experiment, indeterminacy and the Heisenberg Indeterminacy Principle, superposition, non-locality, entanglement, and decoherence.

An engagement with those loci of commitment will show, *inter alia*, the attributes described by quantum mechanics are consistent across all interpretations of that scientific paradigm. Further, those loci are themselves, as described by Tribe (1989) the 'metaphors' of physics that may be 'borrowed' for the purpose of 'explor[ing] the heuristic ramifications for the law',[20] i.e. to create Gibbons 'theories about law'. Indeed, Lawrence Tribe is an exemplar used in this thesis. His paper in the Harvard Law Review, *The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics*, was the first article to deploy all three scientific paradigms in a piece of socio-legal scholarship.

It was shown in chapter 5.3.1 that as groundbreaking as Tribe (1989) was, his reasoning was afflicted by a significant methodological flaw in respect of the ontological understanding of quantum mechanics. Tribe (1989) succumbed to one of the fundamental and incorrect assumptions about physical reality; namely that atoms are the "solid balls". In so doing he ignored the more correct

[20] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38*,* 2.

ontological position that atoms are in fact better described as fields. Tribe (1989) applied the erroneous traditional atomistic world view when engaging in his heuristic analysis of quantum mechanics.

In respect of examining the first premise, that the ontological structure of limited universal holism describes physical reality in a manner that has significant legal philosophical and socio-legal implications; two novel 'theories about law' derived from loci of commitment within quantum mechanics were proffered in this thesis. Firstly it was posited in chapter 5.3.2 that the interaction between science and law can be heuristically described as an 'entangled state'. Bub (2010) defines quantum entanglement as non-classical correlations between separated quantum systems.[21] This means that when two packets of quanta interact, their properties become entangled. It is known that once entangled, measuring a property of one of the packets of quanta instantaneously endows the other packet of quanta with the identical property.[22] The phrase 'non classical' connotes that the particles are not physically connected, in the ordinary sense. This type of non-physical connection has also been referred to as 'coherence'.

To that end, it was posited that such a coherent connection between disciplines is entirely consistent with Paterson and Teubner's socio-legal discussion of structural coupling between disciplines. It may be recalled that Paterson and Teubner proposed that the autopoietic process in an interdisciplinary socio-legal context consists of '...a multitude of autonomous but interfering fields of action in each of which, in an acausal and simultaneous manner, recursive processes of transformation take

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[21] Bub, J. (2010) 'Quantum Entanglement and Information' The Stanford Encyclopaedia of Philosophy, (Winter 2010 Edition), Edward N. Zalta (ed), available at <http://plato.stanford.edu/archives/win2010/entries/qt-entangle/> last viewed Wednesday, March 28, 2012.

[22] See chapter 3.1.4 for the full discussion.

place'.[23] Each of these of fields constructs information internally; thus each of the fields is self-organising. For the purpose of this heuristic analogy, each disciplinary field correlates with the wavefunction of a single particle. When disciplines interact, Paterson and Teubner note that the traditional linear sense of causal influence needs to be reconceived as '...simultaneous events of structural coupling'.[24]

The concept of 'autonomous but interfering fields' and 'simultaneous structural coupling' and an 'acausal and simultaneous ...transformation' describe in sociological terms the type of behaviour manifest in coherent quantum systems when two or more particles become entangled. Indeed, this heuristic analogy may be extended when one considers Paterson and Teubner question. They ask 'How can we identify the different types of mutual recontextualisation that are responsible for the meeting of these closed discourses?'[25] The answer to this question is determined, according to them, by analysing whether the operations within the different fields are 'recursively linking up to other operations in our field so that in their concatenation they gain the autonomy of an autopoietic system'.[26] This can be seen to correlate with the notion that individual packets of quanta, once entangled, become a discrete quantum system; the two separate wavefunctions create a third wavefunction. This analogy withstands further scrutiny as one can also apply the quantum concept of 'decoherence'.

Unification through entanglement occurs when two quanta interact with each other and will endure any amount of separation in space, and will end with the collapse of the wavefunction. One may

[23] Paterson, J. and Teubner, G. (2005) 'Changing Maps: Empirical Legal Autopoiesis' (eds. Banakar, R. and Travers, M.) in *Theory and Method in Socio-Legal Research*, Hart Publishing, Oxford, 215 – 237, 221.
[24] Ibid, 222.
[25] Ibid, 223.
[26] Ibid.

recall from chapter 3A that the act of observation and/ or measurement collapses the wavefunction. The term 'decoherence' is used to describe quanta losing their nonlocal connection with one another through the collapse of the wavefunction. In this analogy, articulating a particular point of contact between science and law corresponds with measurement or observation. This perspective can be taken because the internal discourse within these two autonomous discourses continues recursively, thus the knowledge base within the respective discourses will continue to evolve after the articulation of a point of contact; i.e. scientific and legal knowledge, through research, will continue to develop, yet, unless expressly considered, the old information remains within the bounds of accepted interdisciplinary research. The two disciplines have decohered until the next 'simultaneous event of structural coupling' occurs.

A second novel 'theory about law' derived from a locus of commitment within quantum mechanics was proffered in chapter 5.3.2 of this thesis. Specifically, that limited universal holism provides an ontological heuristic that allows the legal discipline to understand its own nature with greater clarity and will reconceptualise an aspect of the law that is currently framed in a clumsy manner. Socio-legal scholars currently conceptualise the relationship between law and other disciplines such that:

> ...legal discourse is caught in a trap. The simultaneous dependence on and independence from other social discourses is the reason why modern law is permanently oscillating between positions of cognitive autonomy and heteronomy.[27]

It was posited that the use of the term 'trap' implies that some kind of pitfall has ensnared the legal discipline. Adopting and applying the ontological structure of limited universal holism as a heuristic

[27] Teubner, G. (1989) 'How the Law Thinks: Toward a Constructivist Epistemology', 23, 5, *Law and Society Review*, 727-758 at 732. Discussed in chapter 5.3.3.

tool shows that this is not the case. Rather the nature of connection between the legal discipline and other disciplines is misconceived. Each term in the phrase 'limited universal holism' was shown to be of value in that analysis. Firstly, the observation that the ontological structure of limited universal holism is applicable in this circumstance was taken as a singular manifestation of its universality. Secondly, the ontology of limited universal holism posits that that there is single coherent state that simultaneously coexists with the classical level in which individuation is ordinarily perceived. It was shown that despite the notion that law may be conceived as an autonomous discipline, and often functions as such; this is neither the best nor the fullest description of the legal discipline. In the first instance, it was shown that the law is affected by other disciplines. In the second instance, and more confronting to lawyers, is the notion that legal decision makers themselves engage in the rational process of coherentism, as indicated by Amaya (2012).[28] This is consonant with Balkin's (1993) observation (discussed in chapter 5.3.3) that legal method can be described as a process that itself employs epistemological coherence. He stated:

> ...we bring our own judgments about what is right and good and how one should balance competing purposes, policies and principles. Because our judgments about these matters may differ, so may our conclusions about the point of particular legal doctrines....Moreover, what is most significant about our disagreement is the implicit terms of agreement through which it occurs. When we disagree about the proper application of a legal norm, we do not disagree about whether the legal norm is coherent; rather, we disagree about the point of a legal norm whose coherence we accept for the purposes of our argument. We attack our opponent's theory about the

[28] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 9.

> point of the norm because it makes the norm less coherent from our perspective – because it misdescribes the purposes, policies, and principles underlying the doctrine, or balances them in an unconvincing or arbitrary way.[29]

Balkin showed that the 'why' and the 'how' of law are inseparably linked as legal coherentism is at play all the time. This position applies equally to those cognitive and interpretive processes that lie at the disciplinary heart of legal method and explain why, *inter alia*, judges do not all decide cases in exactly the same way and reach identical conclusions. The logical corollary of this construction of legal decision-making is that even the disciplinary heart of legal method is entangled with other cognitive processes and concepts. It is contended that this does not mean that, as described by Teubner, the law is ensnared in a 'trap', rather it was posited in this thesis that this dual nature of the legal discipline, to be open and simultaneously closed, speaks to the deepest level of our nature; that the cognitive and communicative processes of legal method are reducible to a single coherent web from which the perception of an individualised discipline emerges when viewed from a teleological perspective.

Rather than indicate that the disciplinary nature of law is illusory, it is at this juncture that the term 'limited' in limited universal holism offers clarity. The very term 'limited' (in limited universal holism) acknowledges that as one moves from a lower microphysical reality to higher-order macroscopic reality (e.g. atomic and molecular levels), some of the phenomena that operate at the microphysical level (e.g. entanglement and superposition) appear to vanish. Esfeld uses the term 'chirality' to span

[29] Balkin, J.M. (1993) 'Understanding the Legal Understanding: The Legal Subject and Problem of Legal Coherence', 103, 105, *The Yale Journal of Law*, 106- 176.

the divide between the two levels of reality that exist simultaneously.[30] In respect of the current discussion this means that from some analytical perspectives the disciplinary field can be seen as interdigitated with other fields, whilst from analytical perspectives the law can be conceived of a being a completely discrete discipline.

The shift between describing law on the one hand as a field that relies upon cognitive coherence and on the other hand as a rigidly enclosed disciplinary space was shown to occur in much the same way that quanta often behave as individualised ball-like particles. The significance of this analogy is that it mirrors the quantum mechanical view of matter at one level of reality. Just as the particle nature of matter is not ultimately accurate and at the deepest level of physical reality the ball-like particle becomes a part of the singular quantum field, so too, at the deepest analytical levels of abstraction and analysis, the discipline of law and the cognitive process of legal method dissolve into the coherent web of concepts and understanding that constitute an individual's mind.

These two novel examples confirm the validity the first premise examined in this thesis, namely that the ontological structure of limited universal holism structures physical reality in a manner that has significant legal philosophical and socio-legal implications. This paved a pathway to examine the validity of the premise that limited universal holism epistemologically coheres with the core ontological notions that underpin the Preamble,[31] specifically the notions of equality, universality and inalienability.

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[30] This is discussed in chapter 4.2.2.

[31] United Nations General Assembly, *Universal Declaration of Human Rights*, 10 December 1948, A/RES/217A(III), available at < http://www.unhcr.org/refworld/docid/3ae6b3712c.html> last viewed 20 June 2012.

7.3: Limited Universal Holism

In order to undertake an examination of the validity of the second premise in this thesis, several steps needed to be followed. As a preliminary matter, the ontological attributes of limited universal holism needed to be clearly described. It was shown in 4.3 and 4.4 that limited universal holism posits that physical reality consists of an ordinary or classical level and a quantum field, both coexisting simultaneously. The ordinary (or classical) level contains the objects and interactions with which we are ordinarily familiar. However underneath this level of reality coexists with a universal quantum wavefunction which describes the motion of every particle in the universe. The ontological construct of limited universal holism used in this thesis was articulated by an exemplars, Bohm and Hiley.

Of most significance to this dissertation is the holistic model of physics posited by Bohm and Hiley (1993). This model offers a view that is in contradistinction to the way we ordinarily perceive ourselves in the macroscopic world, i.e. separated from the world and subject to Cartesian duality.[32] The basic premise of their holistic model of QM is that the *appearance* of separate entities that interact with one another via Newtonian forces does not entirely reflect the essence of our manifest reality (i.e. the ordinary world which we inhabit). That is to say, quantum holism is the view that it is simply not possible to describe the macroscopic world as a group of separate entities, rather it is the case that the parts are abstractions of the whole. One important corollary of this is that non-locality is seen to be ubiquitous throughout nature at the microscopic level (i.e. when the quantum potential is high). It is necessary to properly contextualise this new ontological structure before engaging with

[32] Ibid, 58.

a more detailed discussion. This will be made by looking at each of the three words that make up LUH.

The term 'limited' acts as a crucial contextualisation in this dissertation. It is to recognise that despite the existence of wholeness as the essence of our universe, the appearance is of separate entities via a constant dance between enfoldment and unfoldment. That is to say, the use of 'limited' connotes that as one moves from wholeness at the quantum level into higher-order macroscopic reality (e.g. atomic, molecular and beyond, some of the phenomena that operate at the microphysical level (e.g. ubiquitous entanglement) appear to vanish. As noted in 4.3, Bohm and Hiley have shown that the reason this occurs can be attributed to an increase in the value of the mathematical term 'quantum potential'. Esfeld (2001) uses the term 'chirality' to describe the process of some properties disappearing as scale changes.[33] Bohm and Hiley (1993) emphasise the dynamic interaction between the Classical and quantum realms when they refer to the constant dance between the whole and any localised body being described as a 'holomovement'. It may be recalled that holomovement is responsible for the 'fission/ fusion' of the whole.

Thus, the use of term of the 'limited' is to recognise that whilst the essence of manifest reality is the wholeness; there is the appearance of separateness. This separateness, whilst being only an abstraction of the whole, allows for the perception of the myriad of attributes that can be ascribed to any object, such as: species, animate/ inanimate, size, *et cetera.* The significance of this is that law and legal discourse is framed around categorisation (for example, lawful/ unlawful, murder/ manslaughter and the treatment of animate beings versus that of inanimate beings. It is evident that

[33] Esfeld, M. (2001) *Holism in Philosophy of Mind and Philosophy of Physics*, Kluwer Academic Publishers, 297-298.

catagorisation is necessarily contingent on the attributes of the part and necessary for a legal system to function. For this reason the use of the term 'limited' is to recognise that implicate wholeness is an aspect of our manifest reality that has a limited expression in the explicate, or manifest realm. This recognition establishes a crucible for the discussion undertaken in this dissertation.

Turning to the phrase 'universal'. It was described in 4.3 how the whole is enfolded into every part of manifest reality via the implicate order. *Prima facie*, this explains the use of the term 'universal'; however, some clarification corollary of this ontological construct is in order. The use of the term 'universal' means that all physical objects which are perceived as separate from us are, in point of fact, inseparable. The separation is an abstraction from the whole. The term 'universal' is a reminder that Cartesian duality does not fully encapsulate manifest reality. This is because Cartesian duality frames human perception and fuels the perception that the physical universe is filled with discrete objects. On the other hand Bohm and Hiley (1993) show the incompleteness of the view that the universe consists of solid, ball-shaped atoms. They show that we should also include a universal wavefunction in order to better describe physical reality. Thusly an existential paradox emerges from the divergence between ordinary perception and ontology. However, it is a pragmatic observation that scientific fact and human perception often diverge. Indeed it appears to be a hallmark of increasingly sophisticated scientific knowledge discerned by more subtle experimental observations. However resolving the tension between the ordinary human perception of a universe filled with discrete objects and ontological wholeness, is not the focus of this research. This point is made in the context of noting that the term 'universal' connotes that there is an ontological wholeness that challenges the ordinary perception of discrete individuals and objects.

The third term to be addressed in explaining the use of 'limited universal holism' is the term 'holism'. The term 'holism' is generally correlated with the phrase 'the whole is greater than the sum of its parts'.[34] However, the term 'holism' can be used in two specific contexts when used in a philosophical sense.[35] In the first instance, 'holism' can be used as a methodological perspective. In this sense the term refers to the idea that the best way to understand the behaviour of a complex system is to treat it is as a whole rather than to simply reduce the complex system to the study of its constituent elements and their behaviour. As such, methodological holism stands in contrast to methodological reductionism.[36] That being said, there is a paradox that emerges on this point; Bohm and Hiley (1993) frame a relationship between these two seemingly incommensurate polarities when they speak of any part being able to be abstracted from the whole (when quantum potential is low) in order to study the part notwithstanding universal wholeness.

The second use of the term 'holism' describes a metaphysical position. The kernel of metaphysical holism is contained in the statement that 'the nature of the whole is not determined by that of its parts'.[37] In this thesis the notion of 'metaphysical holism' can applied to the universal wavefunction as it is through this aspect of nature that the whole is needed to understand the 'part'. This

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[34] Healy, R. (2009) 'Holism and Nonseparability in Physics', Ed. Zalta E.N., *The Stanford Encyclopaedia of Philosophy*, available at <http://plato.stanford.edu/cgi-bin/encyclopedia/archinfo.cgi?entry=physics-holism> last viewed 22 November 2011.

[35] The term 'holism' is also used in other disciplines and applications such as anthropology, in business (i.e. holistic branding), in ecology, in *gestalt* theory and economics. See: Ikehara, H.T. (1999) 'Implications of Gestalt Theory and Practice for the Learning Organisation', 6, 2, *Learning Organization*, 66-69; Kennet, M. Heinemann, V. (2006) 'Green Economics: Setting the Scene. Aims, Context and Philosophical Underpinning of the Distinctive New Solutions Offered by Green Economics', 1, 2, *International Journal of Green Economics*, 68 – 102; Vayda, A.P. (1986) 'Holism and Individualism in Ecological Anthropology', 13, 4, *Reviews in Anthropology*, 295 – 313; Schmidt, K. Ludlow, C. (2002) *Inclusive Branding: The Why and How of a Holistic Approach to Brands*, Palgrave Macmillan, New York.

[36] Ibid.

[37] Ibid.

metaphysical position indicates that a deeper nature of physical reality exists, one that is not fully captured during the ordinary human perception of reality. The phenomena observed at the deeper level of reality, such as non-locality, entanglement with the rigidly individuated ordinary perception of reality. Healy (2009) succinctly explains that metaphysical holism has three branches:

1. Ontological holism: Some objects are not wholly composed of basic parts.
2. Property holism: Some objects have properties that are not determined by physical properties of their basic parts.
3. Nomological holism: Some objects obey laws that are not determined by fundamental physical laws governing the structure and behaviour of their basic parts.[38]

Quantum mechanics is most often concerned with property and ontological holism, although the ubiquitous holism in Bohm and Hiley (1993) nomological holism. Thus, quantum mechanics makes it apparent that there is an aspect of reality that exists as an essential element ordinary physical reality. Bohm and Hiley (1993) successfully link the micro-physical and macro-physical levels and previously reviewed, this success is attributable to the use of the term 'limited' in the ontological structure of limited universal holism. It is this aspect of limited universal holism that makes this an acceptable theory. It that spans the divide between the ordinary limits of human perception (e.g. that we are separate and individualised entities moving through a world of discrete objects) but also acknowledges the existence of quantum phenomena. However, it tempers the effect of quantum

[38] Above n 182.

phenomena by limiting them 'more or less' to the microphysical level of reality.[39] We may now turn our attention to the examination of the second premise.

7.4: Premise Two

Examination of the coherence between the ontological commitments of both limited universal holism and the Preamble of the UDHR has been achieved by engaging in a multi-levelled analysis of the Preamble. The first level consisted of undertaking a heuristic textual analysis to dissect out the ontological commitments written into the Preamble. They were revealed to be encapsulated in three terms or principles; equality, universality and inalienability. The three principles can be restated in a single sentence; the aspiration of modern human rights is to create an inalienable set of rights that are universally applicable to all humans and that those rights are predicated on equality. Such an understanding of the central ethos of modern human rights is shared by many notable scholars in the field of human rights scholarship such as Jack Donnelly and Mary Glendon.

Prior to examining the second layer of analysis highlighted above, it was observed that despite clear and unambiguous wording in both the Preamble and the substantive provision in the UDHR, human rights abuses are frequently perpetrated by the very nation-states that have both championed and ratified modern human rights treaties. This was shown to occur because modern human rights law itself may be classified as an autopoietic field; one that has a multitude of interfering fields including utilitarian empiricism, economics, politics, Rawlsian and Lockean theories, to name but a few. This thesis explored two particular interfering fields, dialectical ethno-cultural dualism and international law norms. This analysis deployed (for the second time), the *episteme* of structural functionalism, to

[39] Above n 140, 300.

ascertain the nature, scope and extent of interference with the practical manifestation of the otherwise clearly worded ethos of modern human rights.

It was the noted that the autopoietic interference between disciplines is a function of the epistemic status of the various interfering elements. The level of analysis consisted of epistemological exegetic analysis of the Preamble to the UDHR to ascertain the epistemological status of ontological commitments it contains.

This analysis revealed that the ontological commitments in the Preamble rely upon flawed epistemological foundationalism. A successful foundationalist claim must be logically self-evident, such as the statement made by Descartes, *cogito ergo sum* (I think, therefore I am). Descartes' statement is self-evident because to doubt the statement, one must be cognitively alive to doubt it, thus logically making the truth of the claim immune to skepticism. In contrast, the type of foundational claim made in the UDHR merely masquerades as epistemically-sound foundationalism, as unlike Descartes' *cogito*, the assertion that humans have innate dignity is *not* logically self-justifying. Essentially the issue is that the ontological claims relied upon are not self-evident *a posterior*, rather the ontological commitments in the UDHR rely upon flawed foundational claims. It employs the term 'whereas' liberally, which literally means 'it being the fact that' (Hunt 2007). This epistemological failure has been called the 'paradox of self evidence'.[40] The assertion made by Koskennemi that self-evident principles '…do not exist in the manner previously thought' is a

[40] Ibid.

reference to the paradox of self-evidence.[41] Hunt (2007) succinctly encapsulates this notion as it applies to modern human rights stating:

> …if equality of rights is so self-evident, then why did this assertion have to be made and why was it only made in specific times and places? How can human rights be universal if they are not universally recognized? Shall we rest content with the explanation given by the 1948 framers [of the UDHR] that "we agree about the rights but on the condition no one asks us why"? Can they be self evident when scholars have argued for more than two hundred years [?]… An assertion that requires an argument is not self-evident.[42]

Whilst modern human rights are based on an improper version of foundationalism, it is clear that even a genuine version of foundationalism could not provide a viable alternative foundation for human rights. As Pritchard notes, the problem is that there are very few statements which are epistemically and logically self-justifying in this way,[43] and as such it is almost impossible to find foundationalist claims that support the belief that human rights should be based on ideals of universality and equality.

In addition to the paradox of self-evidence in respect of codified human rights instruments, there are two additional problems with this use of foundational statements to justify modern human rights. Firstly, Dhall (2010) notes that '…all foundational arguments are subjective and operate within a culture-specific purview. Accordingly, the content of foundational statements is determined by the

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[41] Above n 181.
[42] Above n 183, 19-20.
[43] Pritchard, D. (2010) *What is This Thing Called Knowledge?*, Routledge, Oxon, 40.

dominant beliefs in that society at the time such statements are posited'.[44] This should be considered in light of dialectical ethno-cultural relativism.

The second problem is that in all foundational claims the justification is primarily *internal* in an epistemological sense, notwithstanding the social consensus that may be present when they are articulated. This is highlighted by Audi (2006) when he notes that internal epistemological process can be employed to articulate a multiplicity of differing perspectives.[45] Thus the epistemological rigor underpinning the normative value of the Preamble is further eroded.

It is at this juncture that the secondary premise of this thesis becomes pertinent. It was shown earlier that the core ethos of the Preamble to UDHR (and modern human rights in general) were the notions of equality, universality and inalienability. Thus the examination of the second premise necessitated comparing and contrasting these principles with the ontological commitments of the limited universal holism. It was shown in chapter 6.9 that this coherence occurs at two levels.

In respect of the first level, it should be recalled that limited universal holism is an ontological construct at the microphysical level of reality. It should also be recalled that quantum mechanics has rendered the view that the universe is made up of tiny ball-like particles now obsolete. The accepted point of view is that fields ultimately describe 'what is'. Further, limited universal holism contends that the fields of individual quanta are now better thought of as a single field. There are two steps to this; firstly, once quanta interact they become entangled, secondly, it is accepted by many physicists that all quantum systems have interacted at some point in the history of the universe. The effect of

[44] Dhall, A. (2010) 'On the Philosophy and Legal Theory of Human Rights in Light of Quantum Holism' 66, *WorldFutures*, 1-25 at 5.
[45] Audi, R. (2006) 'Moral Knowledge' eds. Greco, J. and Sosa, E. *The Blackwell Guide to Epistemology*, Blackwell Publishing, Oxford.

this is to posit that the basement level of physical reality consists of a singular field. This is the best descriptor of 'what is'. The attributes of that singular field cohere with the notions of equality, inalienability and universality. This coherence makes itself apparent from a consideration of the attributes of that singular field.

A field has intrinsically the attribute of equality as individuation precludes the notion of a field. This was picked up in Wright (1991); who asserted that holism assists our understanding of the notion of universal equality by challenging the male-centric legal standard of 'abstract universality'. He notes that abstract universality is 'exclusionary, or...elevate[s] what is distinctly male into an allegedly neutral, all encompassing norm'.[46] Wright notes that 'abstract universality' has undermined true equality because it has become a '...conceptual instrument of systemic abuse for repressive, inegalitarian ends. He notes, however, that relational holism may allow scholars '...to hold open a redefined, yet recognisable, sense of objective truth'.[47] Wright's assertion relies on the notion that if ultimately deconstructed, **equality** is a fundamental property of physical reality. This position coheres with the argument of Esfeld, that ubiquitous entanglement is a fundamental property of physical reality.

It was noted above that many physicists accept the notion that all quanta have interacted at some point in the history of the cosmos. Further, it was noted that once entangled, the connection remains. After a quantum system decoheres, the issue is not that the connection ceases to be; rather it is that observation or measurement collapses the wavefunction for the duration of measurement or observation. Thus, it is epistemologically tenable to assert that since every particle

[46] Ibid, 880.
[47] Ibid, 879.

is reducible to a quantum system, and further that all quantum systems have interacted then a singular quantum system does indeed exist at basement level of reality. Thus, the equality that subsists at that the quantum level is **universally** applicable to every aspect of physical reality as every atom is ultimately reducible to this state. It is an **inalienable** aspect of physical reality as previously mentioned, as every particle is reducible to a quantum system, and those quantum systems form a singular field. This is simply the picture of the cosmos and physical reality that cutting edge science constructs for humanity.

This description of the ontological construct derived from the discipline of science raises the question of how it interacts with modern human rights. In the first instance, it is a salient point to note that there is a *prima facie* consonance between the ontological structure of limited universal holism and human rights. It may be recalled that the ontological commitments of modern human rights are that all human beings are entitled to be treated with **equality**, that the protections should be **inalienable** and that those protections are **universally** applicable to all people. The ontological structure of limited universal holism posits that **equality** is an **inalienable** aspect of physical reality that is **universally** pervasive.

The question then becomes: what are the consequences of that epistemological coherence? This leads to the second instance of coherence evinced in the analysis of the second premise. This second instance of coherence follows the work of Balkin (1993) and notes that coherence in any cultural system, of which jurisprudence is one, is about creating 'shared frameworks of understanding'.[48]

[48] Balkin, J.M. (1993) 'Understanding the Legal Understanding: The Legal Subject and Problem of Legal Coherence', 103, 105, *The Yale Journal of Law*, 106- 176, 108.

Such a framework of understanding is being advanced in this instance through limited universal holism cohering with and being able to be utilised in the autopoietic process of interpreting the ontological and epistemological commitments in the UDHR. Such interpretative coherence is significant because, as Balkin (1993) notes 'legal norms...must begin with the presumption that they make sense – that they represent an intelligible and defensible scheme of regulation... an assumption of coherence becomes necessary as a test of our understanding...legal norms make no sense to us, if they make distinctions that seem incoherent or arbitrary'.[49] He further notes 'If we do not assume that the legal norms we are trying to understand are coherent, we will have no way of determining whether our conclusions are due to the failure of our own understanding'.[50] This becomes most pertinent when one considers the interfering autopoietic fields of dialectical ethno-cultural dualism and existing international law norms; the weak foundational claims for modern human rights grant them an epistemic status that has been easily displaced by the imperatives of these other fields. The effect of this displacement is evinced in the modern practical examples of state-sanctioned human rights violations given in chapter 6.3.

Deploying a deepening sense of epistemological coherence is crucially important as Amaya (2012) shows that the 'why' and the 'how' of law are inseparably linked as legal coherentism is at play all the time. It was shown that Amaya (2012) distinguishes between 'factual' coherence and 'normative' coherence; 'factual' coherence refers to 'coherence built in the course of legal decision making' and occurs when 'faced with a number of interpretative of factual hypothesises, legal decision makers...manipulate the decision elements so as to secure that the preferred alternative is, by the

[49] Ibid, 151-152.
[50] Ibid.

end of process, the most coherent one. Or they may ignore or underplay the relevance of disturbing evidence in order to preserve the coherence of their favoured hypotheses'.[51] Normative coherence is 'relevant to the justification of normative conclusions in law'.[52] Amaya posits that these two types of coherence can be fused into a single theory of coherence in law.[53] This is consonant with Balkin (1993) who also notes that these two types of coherence are, in a practical sense indissolubly linked, when he posits:

> ...we bring our own judgments about what is right and good and how one should balance competing purposes, policies and principles. Because our judgments about these matters may differ, so may our conclusions about the point of particular legal doctrines....Moreover, what is most significant about our disagreement is the implicit terms of agreement through which it occurs. When we disagree about the proper application of a legal norm, we do not disagree about whether the legal norm is coherent; rather, we disagree about the point of a legal norm whose coherence we accept for the purposes of our argument. We attack our opponent's theory about the point of the norm because it makes the norm less coherent from our perspective – because it misdescribes the purposes, policies, and principles underlying the doctrine, or balances them in an unconvincing or arbitrary way.

This position applies equally to all cognitive and interpretive processes that lie at the disciplinary heart of legal method and explains why, *inter alia*, judges do not all decide cases in exactly the same way and reach identical conclusions. This is also applicable to the discussion in this thesis on modern

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[51] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 9.
[52] Ibid, 3.
[53] Ibid, 4.

human rights. It follows from the previous point that the epistemological criticisms that may be levelled at the Preamble to the UDHR ***must*** have an effect on the way modern human rights are interpreted and applied as they epistemically isolate the very claims which assert their value. For example, one dimension that is *prima facie* apparent is that framing human rights in the context of a quantum mechanical ontology challenges positions that assert that human rights are based on Christian ontology. This is an area worthy of specific consideration.

Thus, it is naive to believe that epistemological coherence is of no value to the modern human rights discourse. The practical reform posited in response to the epistemological coherence identified in the preceding discussion is to propose that a new clause or article is drafted. This clause or article could be inserted into the UDHR. Its purpose is to recognise the epistemological shortcomings of existing human rights regime and to expressly articulate ontological coherence with the quantum mechanical view of the world. Such a clause would constitute a landmark step forward. If such a reform were deemed too radical, then an instrument drafted under the auspices of UNESCO is also a viable alternative. UNESCO has already recognised and invited contributions that examine the moral implications of theories that espouse a singular quantum field.[54] The advantage of this type of reform is that UNESCO employs highly educated scientists, and as such, those people would have the least difficulty in understanding the loci of commitment in the quantum mechanical paradigm. The type of reform proposed in this thesis would be a double edged sword; at the systemic level it

[54] Stapp, H. (1995) 'Values and the Quantum Conception of Man' invited contribution to the UNESCO sponsored symposium: *Science and Culture: A Common Path for the Future*, Tokyo, September 10-15 available at < http://www.au.af.mil/au/awc/awcgate/lbl/quantum_concept_man.pdf> last viewed 26 June 2012.

would not change anything, it is simply an addendum to a system that allows state-sanctioned human rights abuses on a regular basis and is still subject to *vae victis*.

On the other hand the proposed reform, if recognised, would introduce a new autopoietic field to support modern human rights, and indeed introduce that autopoietic field to the world at large. It would focus on the epistemic implications of ontological holism espoused by quantum mechanics. The ultimate impact of a quantum mechanical ontology that coheres with the ethos of human rights points toward the way the UDHR would change for the coherence. One impact that can be foreseen is that the coherence will assist modern human rights in finding a 'reflective equilibrium', one in which the human rights norms are being considered from the bottom up in order to arrive at sets of human rights principles inferred from state-of-the-art scientific theories. Such a regime for modern human rights would herald a move toward greater epistemic clarity in the way the UDHR is understood and interpreted. To that end this thesis heralds the opening move in an epistemic chess match that takes a realist position in legal autopoietic discourse in modern human rights rationalised from the ontological perspective of quantum singularity.

One should now return to the two premises of this thesis to contextualise the above suggestions. The first premise of this thesis is that the ontological structure of limited universal holism describes physical reality in a manner that may have significant legal philosophical and socio-legal implications for the legal universe. The second premise required an examination the validity of limited universal holism epistemologically cohering with the core ontological notions that underpin the Preamble of the UDHR, specifically the notions of equality, universality and inalienability. From the analysis offered and discussion undertaken, it appears that both premises are affirmed. Furthermore, there

are some significant wider legal philosophical and socio-legal implications that emanate from the ontological structure of limited universal holism.

8. CONCLUSIONS

As noted in chapter 2.4, the final element in the structural form of a PhD thesis as identified by Phillips and Pugh (2005) is to articulate the 'contribution' made by the research described in the thesis and analysed with a focus on an 'evaluation of the importance of [the] thesis to the development of the discipline'.[1] This evaluation of the PhD form also should 'underline the significance of [the] analysis, point out limitations...[and] suggest what new work is appropriate'.[2] Phillips and Pugh note that 'In practical terms, this component of the thesis is usually the last chapter or so...'[3] These considerations frame the two premises that this thesis has examined. The first premise of this thesis is that the ontological structure of limited universal holism has significant legal philosophical and socio-legal implications. The second premise examined in this thesis is that the loci of commitment within the ontology of limited universal holism epistemologically coheres with the core ontological notions that underpin the Preamble of the *Universal Declaration of Human Rights of 1948*, specifically the notions of equality, universality and inalienability.

8.1: Importance

At a disciplinary level the importance of this thesis is that it engages in a systematic description of quantum mechanics and teases out some of the key loci of commitment in a piece of socio-legal scholarship. This contextualises the relevance of the work of Thomas Kuhn, particularly *The Structure of Scientific Revolutions* in respect of the legal discipline in the modern age. He showed that

[1] Phillips, E.M. and Pugh, D.S. (2005) *How to get a PhD: A handbook for students and their supervisors* (4th ed), Open University Press, Berkshire, 59.
[2] Ibid.
[3] Ibid.

paradigms of natural science inevitably affect the social sciences.[4] Kuhn's notion of natural science affecting the social sciences manifests in this thesis as coherence between the ontological structure evident in the socio-legal paradigm of structural functionalism and the fields espoused by limited universal holism. This has been discussed in chapter 5.3.2. The argument used in this thesis employed an analytical perspective that acknowledges that there are many fields of autopoietic interference that interact with the generally perceived disciplinary core of legal thinking. This perspective develops further some of the findings of Tribe (1989), who showed that 'the metaphors and intuitions that guide physicists can enrich our comprehension of social and legal issues'.[5] He posited that 'heuristic ramifications' are relevant to the purpose of exploring 'concepts we might draw from physics [that] promote illuminating questions and directions'.[6] This is demonstrated in this thesis with the novel application of quantum coherence as a heuristic tool to clarify the type of interdisciplinary coupling described by socio-legal scholars, Teubner and Paterson.

An important corollary point consolidated in this thesis is the perspective that the law can be legitimately classified as a social science. Whilst the view that law is a social science appears well accepted in the present day, the developmental pathway followed by the law shows a somewhat different picture. Generally, the law is viewed as having a rigidly autonomous disciplinary core. The recently articulated concept of legal coherentism demonstrates and underlines the cognitive impossibility of rigid autonomy. Legal coherentism, which draws from cognitive psychology, shows

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[4] Kuhn, T.S. (1976), *The Structure of Scientific Revolutions,* 3rd ed, The University of Chicago Press, Chicago.
[5] Tribe, L. (1989) 'The Curvature of Constitutional Space: What Lawyers can learn from Modern Physics', 103, 1, *Harvard Law Review*, 1-38*,* 2.
[6] Ibid.

that complex legal decisions are broken down into smaller decisions.[7] Those smaller decisions in turn draw from a 'coherentist architecture of mental representations, which can be likened to an intricate electrical network'.[8] As a result, the image of law that has been advanced in this thesis is that of a field; its disciplinary core emerges from the cognitive field that resides within individuals' minds.

The importance of identifying certain aspects of the legal system (such as that identified above), is that they facilitate more nuanced and accurate studies of law. These provide pathways toward identification and of deepening one's understanding of the processes that underpin the law. Such pathways enable reforms to be devised that take into account a realistic perception of the law. Clearly this enhances the rule of law.

Deepening our understanding of the points of contact between quantum mechanics and law is simply continuing a limb of legal research with a long pedigree namely that legal research looks at the law in context. As such, notwithstanding the strong tendency toward disciplinarity in legal scholarship, a consideration of the relevance of quantum mechanics in this legal thesis acts as a strongly contextualising and grounding point of analysis. In considering the very building blocks of physical reality, quantum mechanics describes the ultimate nature of the entities that the law seeks to regulate. However, there is a final point about the importance of this research that is somewhat confronting. Quantum mechanics points toward a radically different understanding of the universe, one in which the currently accepted ontological norms in law are challenged as they no longer match

[7] Simon, D., (2004) 'A Third View of the Black Box: Cognitive Coherence in Legal Decision Making', 71, 2, *The University of Chicago Law Review*, 511-586 at 520.
[8] Ibid.

the nature of the cosmos described by science. This will require reframing our understanding of the world through which we, as lawyers, move. This in turn mandates that legal scholars cultivate literacy in multiple disciplines for only with an interdisciplinary lens can the law be contextualised properly. In this thesis the disciplines touched upon were philosophy of law, law, socio-legal methodologies, quantum mechanics, philosophy of science, human rights, international law and epistemology. With such diverse areas considered, and the fields of interference between them so great, it is apparent that this thesis has looked only at one very small slice of a very large pie. Further research is needed into the several intersecting areas considered in this thesis as the global community continues to foster a continuingly deepening engagement with both holism and quantum mechanics. This is evinced in the multi-jurisdictional research effort that is being directed to the Large Hardron Collider located on the French-Swiss border. The increasing body of knowledge in the scientific paradigm of quantum mechanics is exerting an epistemological pressure on law. The pressure is clearly mounting that law continues to evolve by adapting to, and integrating new, relevant knowledge into its fabric. Such a position ensures coherence between the law and many fields which both affect and are affected by law.

Epistemological coherence between the law and other fields is highly desirable systemically; Amaya (2012) notes that coherence between law and other fields promotes the effectiveness of law and '...is indispensible to successfully advance law's project of regulating and transforming social life'.[9] Whilst the preceding statement applies as much to legal coherence in general as it does to the specific deployment of coherence in this thesis, the following observation applies more narrowly to

[9] Amaya, A. (2012) 'Ten Theses on Coherence and Law' available at SSRN, <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2064295> last viewed 2 June 2012, 21.

the discussion undertaken in this thesis. Having Douzinas' notion of the 'empirical person' defined in law through a set of ontological commitments that cohere with the loci of commitment in the ontology of limited universal holism will improve legal certainty. This is because '...a coherent body of norms is more easily remembered and understood',[10] and also that a coherent web constituted by valid knowledge is more stable. Furthermore, the coherence manifested in this thesis paves the way for reconsidering particular aspects of the modern human rights discourse that have become mired. Articulating coherence between the ontological commitments of quantum mechanics and modern human rights will inevitably affect the autopoietic fields with which human rights interact. This thesis identified two particular autopoietic fields with which modern human rights interact. In relation to the autopoietic of field of dialectical enthno-cultural dualism asserting that modern human rights are 'Western' and Christian in their ontological commitments, can now be challenged. This is because limited universal holism resides with in the disciplinary boundaries of science and the philosophy of science and is beyond other ideological and doctrinal concerns. In respect of the second autopoietic field identified, legal dualism and the nation-state, a reductive analysis can challenge the notion that the interests of the nation-state can simply override human rights concerns. The emergence of the human being occurs at more fundamental level (i.e. closer to the level of quantum mechanical singularity) than does the existence of the nation-state. Such an observation warrants express research examining the *status quo*. In any event, limited universal holism gives a fundamental level to work from when constructing legal categories, such as those proposed in Berry's (2006) 10-Principles of Jurisprudence.[11] The importance of this should not be

[10] Ibid, 24.
[11] Berry, T. (2006) *Evening Thoughts: Reflecting on the Earth as Sacred Community*, ed. Tucker, M.E., Sierra Club Books, San Francisco, 149-150.

underestimated. For the first time in human history legal constructivists have a robust foundation from which to build a system of law that has its epistemological justification in the discipline of science. Thus, this thesis is important because in addition to the substantive contributions made in chapters 5.3, 6.8, 6.9, 8 and 9, it deepens the epistemological coherence between the discipline of law and science.

8.2: Significance

When considering the *modus operandi* in modern human rights, it is clear that priority is given to the sovereignty of nation-state over human rights interests. One avenue of understanding this state of affairs is articulated by Simon (2004), who showed that legal decision-making is an inherently coherentist cognitive process.[12] As noted elsewhere in thesis, this means that decision makers evaluate and balance a number of competing considerations. Amaya (2012) showed that coherentist cognitivism in legal decision making results in the justification for any law affecting its interpretation and application. As a result, the epistemic foundation for human rights can only be bolstered with an ontological foundation that coheres with limited universal holism. Nonetheless, these two preceding points are subject to a significant caveat: it is clear that the broader societal understanding of the ontological commitments of the paradigm of quantum mechanics needs to be improved as it is rife with misunderstanding and misinformation.

This thesis confronts the paradigmatic issues head on; it has provided a description of the quantum mechanical paradigm and its ontological commitments for the purpose of considering some legal philosophical and socio-legal implications. Whilst the Langdellian-view of the law has been shown to

[12] Simon, D., (2004) 'A Third View of the Black Box: Cognitive Coherence in Legal Decision Making', 71, 2, *The University of Chicago Law Review*, 511-586.

be insufficient and indeed unrealistic, the point remains that interdisciplinary work raises valid concerns. In teasing out these implications it has become clear that there are significant methodological and cultural hurdles to be overcome; the disciplinary focus of law being one of the most noteworthy.

Australia's Chief Scientist, Gabriele Bammer notes that 'The Australian Council of Learned Academies recognises that there are considerable benefits of interdisciplinary research',[13] however she recognises that there is urgent need to reform and to strengthen support for such research. Bammer notes that '...this support needs to come from government, industry, philanthropists and research organisations'.[14] This is doubly significant in legal scholarship as there is a tendency (which has been noted throughout this thesis) toward narrow disciplinarity.

The second observation is that the demonstrated coherence between the ontological commitments of the Preamble to the UDHR and limited universal holism enhances the epistemic stability of modern human rights. This takes the form of influencing how legal disputes are resolved; as well as acting as a lever to advocate in favour of a global culture that protects human rights norms. This will be briefly discussed in chapter 9.

The special significance of this interdisciplinary thesis is that it consolidates the (limited) socio-legal research on quantum mechanics and exposes a significant measure of inaccuracy in the minds of those who author such works, as discussed in chapter 4.2. This inaccuracy relates to the perceived validity of the heuristic insights drawn from quantum mechanics. It is clear that deep engagement

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[13] Bammer, G. (2012) *Strengthening Interdisciplinary Research: What is it, what it does, how it does it and how is it supported*, Australian Council of Learned Acadamies.
[14] Ibid, 5.

with the ontological aspects of quantum mechanics is conceptually demanding. This serves to highlight some of the limitations of this research piece.

8.3: Limitations

Several complex fields of study are deployed in this thesis; fields that have themselves yielded thousands if not hundreds of thousands of doctoral theses over the years. One methodological limitation of dealing with complex fields of study is that each field is only able to receive limited attention and must be heavily synthesised. Despite meticulous care in preventing errors, heavy synthesis creates the scope for conceptual distortion and as such this should be acknowledged.

Another limitation of this thesis is that in providing a description of quantum mechanics it has been difficult to convey the extent to which traditional and encultured perceptions of the physical reality have been shattered by modern science. An enquiry into the nature of physical reality, such as that exhibited in the search to understand the quantum level of physical reality, is existential in nature and the implications for all *epistemes* are vast. This thesis deals only with one very narrow intersection between quantum mechanics and law.

One additional limitation of this work is that it ends with no definitive statement of exactly how the epistemological coherence between limited universal holism and modern human right law will manifest in relation to the current *status quo* in modern human rights law. There are two reasons for this. Firstly, this is been due to the number and complexity of considerations present, each of which requires a deeper excavation. This would mandate a sizable research effort by many researchers, each specialist in the various disciplines analysed in this thesis. The second reason is that the pragmatic analysis of the areas of law studied shows numerous fields that are autopoietically

entangled with the field of modern human rights while this thesis has considered only two. For a definitive conclusion to be reached every entangled autopoietic field needs to be expressly considered. As such, this thesis just touches the surface of a vast new and exciting area. That said, the elegance of such research would be demonstrated in its ability to balance the interests of the many intersecting fields, and then to spearhead practical reforms that reflect that fine balance. The process of applying and integrating those practical reforms into the status quo would also require a great deal of work.

8.4: Suggestions for Further Research

This thesis shows that there is a need in legal research for deepening the understanding of and engagement with quantum mechanics, as it has been shown that the ontological structure of quantum mechanics is fundamentally different from the normative view that currently holds sway. Pragmatic research is required to consider how it should be integrated with law. As such, deepening an understanding of how law and quantum mechanics could interact indicates pathways for future research.

One project for future research is to consider remedying the limitations listed in chapter 8.3. To wit, the impact that some of the many other autopoietic fields that interfere with autopoietic process of modern human rights should be the subject of express consideration. Such an analysis could take into account one suggestion made in this thesis; specifically to investigate the possibility that the UN ratify an instrument or article that expressly articulates coherence between quantum field theory and the ontological commitments of limited universal holism. Another potential topic for future research is to engage in specific study of ontological and epistemological commitments across various cultural groups for the purpose of contrasting the loci of commitment identified in this

thesis. Such research would begin to refine the sphere of influence that quantum mechanics will have on law in different cultures, in addition to moving forwards toward the emergence of a perennial ontological structure for the purpose of deepening the global human rights culture.

One of the most exciting areas for future research is an examination of coherence between Earth Jurisprudence and limited universal holism. Greene (2011) observes that the progenitor of Earth Jurisprudence, Father Thomas Berry (1914-2009), '... was not interested in a philosophical understanding of the universe, he was interested in an *experienced* cosmology (emphasis in original).'[15] Such a work can be related to the subject matter in this thesis as the Bolivian Alliance for the Peoples of Our America issued a statement that has been ratified by nine countries supporting the call for the adoption of a *Universal Declaration of Mother Earth Rights* states:

> In the 21st century it is impossible to achieve full human rights protection if at the same time we do not recognise and defend the rights of the planet Earth and nature. Only by guaranteeing the rights of Mother Earth can we guarantee the protection of human rights. The planet Earth can exist without human life, but humans cannot exist without the planet Earth.[16]

The final area for future research is the potential to deepen the epistemic status of human rights by investigating the possibility of extending epistemological coherence of limited universal holism to include other ethno-cultural traditions. This area is given brief consideration in chapter 9. It is however clear that given the entrenchment of the existing paradigms and institutions and the

[15] Greene, H.F. (2011) 'Cosmology and Earth Jurisprudence' in Burdon, P. (ed) *Exploring Wild Law: The Philosophy of Earth Jurisprudence*, Wakefield Press, Kent Town, 130.

[16] VII ALBA-TCP Summit: Special Declaration for a Universal Declaration of Mother Earth Rights, (2009) available at < http://motherearthrights.org/2009/10/17/vii-alba-tcp-summit-special-declaration-for-a-universal-declaration-of-mother-earth-rights/> last viewed 7 October 2012.

disciplinary focus of the legal field, any reform will need to be diligently formulated, precisely articulated and elegantly integrated into the existing environment in order to be viable.

9. AFTERWORD: DEEPENING THE COHERENCE

The Preamble to UDHR has its ontological commitments tacitly written into the various Articles. Notwithstanding the Asian Values debate discussed in this thesis, it can be seen that those very commitments are consistent across many cultural and wisdom traditions. One way of examining the similarity is to look at various forms of monism. Schaffer (2008) succinctly states that whilst there are many types of monism, they are all similar in that they 'attribute oneness'.[1] This oneness exists simultaneously with reality as ordinarily perceived. Limited universal holism can be classified as a form of monism, as Schaffer (2008) observes that an argument for monism can be advanced by way of quantum mechanics.[2] In advocating this position, Schaffer cites Esfeld's arguments for limited universal holism. As such, limited universal holism fits into the monist category.

9.1: Limited Universal Holism and Monist Ontologies

As noted above, monism is an ontological position that is recurrent across many wisdom and cultural traditions. Throughout the ages and across diverse cultural traditions there has been the belief that human kind exists as an undivided whole at a latent level of reality. The ontological structure of holism is apparent in ethno-cultural systems as diverse as Sufism, Hinduism, Buddhism, Christianity, Classical philosophy and Shamanism (Cranston 1973;[3] Harner 1980;[4] Khan 1990;[5]

[1] Schaffer, J. (2008) 'Monism', ed: Zalta, E.N., The Stanford Encyclopaedia of Philosophy, available at <http://plato.stanford.edu/entries/monism/> last viewed 20 June 2012.
[2] Ibid, 3.2.2.
[3] Cranston, M. (1973) *What are Human Rights*, Beadly Head, London.
[4] Harner, M. (1980) *The Way of the Shaman (3rd Ed)*, Harper & Row, New York.
[5] Khan, H.I. (1990) *The Sufi Message: The Unity of Religious Ideals*, Volume 9, International Headquarters of the Sufi Movement, Geneva.

Marcin 2006;[6] Zimmer 1951[7]). Many cultures and belief systems throughout the world and at various times have internally upheld monist ontological structures. Unifying principles are evident in ontological structures as diverse as those employed by both ancient and neo Shamans, by Classical Greek scholars, ecclesiastical scholars such as St. Thomas Aquinas and St. Augustine, in the Vedantic thinking that underpins Hinduism, by Buddhist monks and the aborigines of Australia. It is also a distinguishing feature of Earth Jurisprudence as Cullinan (2011) observes that Earth Jurisprudence '…is closely aligned with many ancient wisdom traditions and cosmologies of indigenous peoples.'[8] In a similar vein, Johnston (2007) shows that even jurisdictions that currently reject the human rights doctrine, such as Islamic states in the Middle East, should become aware that traditional *shari`a* law has been shown to be consistent with the human rights culture.[9] This can be attributed to the observation made by Khan (1990) which shows that these same jurisdictions have monism as a vital element of their culture through the mystical tradition of Sufism.[10]

As a result it is reasonable to assert that the notion of monism is, in a substantive sense, a universal belief notwithstanding the ethno-cultural lens through which it has been articulated and assimilated. However it is important to note that Wolsterhoff (2006) observes that when monism is espoused by either religious or Classical philosophies, they tend to use an internalist epistemology in its

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[6] Marcin, R.B. (2006) *In Search of Schopenhauer's Cat: Arthur Schopenhauer's Quantum-Mystical Theory of Justice*, Catholic University Press.
[7] Zimmer, H. (1951) *Philosophies of India*, ed. Campbell, J., Princeton University Press, Princeton, New Jersey.
[8] Cullinan, C. (2011) 'A History of Wild Jurisprudence' in Burdon, P. (ed) *Exploring Wild Law: The Philosophy of Earth Jurisprudence*, Wakefield Press, Kent Town, 12.
[9] Johnston, D.L. (2007) 'Maqasid al-sharia'a: Epistemology and Hermemeutics of Muslim Theologies of Human Rights', 47, 2, *Die Welt des Islams*, 147-187.
[10] Above n4.

derivation.[11] The principal criticism directed toward the predominantly internal epistemology employed in such reasoning to support holism is its subjectivity. Furthermore, notwithstanding that monism as an ontological construct is a recurrent meme, seeking substantive details that unify every value system in the world presents a fractious conundrum; indeed such an accord has been *ultra vires* the existing human rights doctrines and infrastructure. However, Huxley's seminal work, *The Perennial Philosophy*, sought to expose some significant conceptual similarities in the mosaic of wisdom traditions encompassing the globe.[12] Smith (1991) posited that the relationship between the world's wisdom traditions and their underlying relationship to the nature of things may be likened to the different panels in a stained glass window, each colouring the light that passes through in a unique way.[13] Such a notion creates a pragmatic imperative to embrace the view that each tradition is an ethno-culturally subjective synthesis of the underlying monist structure of nature.

Whilst debate about the existence of monism continues, the face of this dispute is changing. Some form of monism is now being explored in diverse disciplines within the empiricist tradition. These disciplines include transpersonal and parapsychology, consciousness research, analytic philosophy and quantum physics (Esfeld 2001;[14] Grof 2000;[15] Radin 2006;[16] Stapp 2007;[17] Penrose 1989,[18]

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[11] Wolsterhoff, W. (2006) 'Epistemology of Religion' eds: Greco, J. and Sosa, E. *The Blackwell Guide to Epistemology*, Blackell Publishing, Oxford, 303-325.
[12] Huxley, A. (1944) *The Perennial Philosophy: An Interpretation of Great Mystics, East and West*, Harper-Collins, New York.
[13] Smith, H. (1991) *The World's Religions,* (2nd Ed), Harper-Collins, New York.
[14] Esfeld, M. (2001) *Holism in Philosophy of Mind and Philosophy of Physics*, Kluwer Academic Publishers.
[15] Grof, S. (2000) Psychology of the Future: Lessons from Modern Consciousness Research, SUNY Press, New York.
[16] Radin, D. (1987) *The Conscious Universe: The Scientific Truth of Psychic Phenomena*, Harper Edge, San Francisco.
[17] Stapp, H. (2007) *Mindful Universe: Quantum Mechanics and the Participating Observer*, Springer, New York.
[18] Penrose, R. (1989) *The Emperor's New Mind*, Oxford University Press, Oxford.

1994[19]). Rather than supplant traditional arguments for monism, the evolving modern arguments corroborate the structure of this construct. In so doing they reduce any ethno-cultural assertion of an exclusive proprietary interest over the construct of holism to as misguided an argument as a debate whether the element carbon originates in New Zealand or Europe.

The aforementioned several modern disciplines articulate theories of monism in response to observed phenomena. Laszlo (2003) notes that this is exemplified in many instances, such as *quanta* in superposition or in an entangled state. He cites instances of coherence in fields of consciousness research; in the field of biophysics, in cellular biology through the organisation of cells; in evolutionary biology; through the emergence of galactic constants in physical cosmology and the emerging field of quantum computing.[20] The significance of these new disciplines is that the arguments against monism cannot be reductively attributed to ethno-centric cultural imperialism as these disciplines are grounded in scientific method.

The observation that at a physical level all human beings are subject to monism (via limited universal holism) as a function of being made from particles which are themselves reducible to sub-atomic *quanta*, is supplemented by research into human experience that supports holism. Radin (2006) asserts that human beings have a capacity, albeit somewhat limited, to experience a level in which their consciousness appears irrevocably interconnected with that of other human beings.[21] Current scientific literature calls this phenomenon 'transpersonal connection'. Laszlo (2004) observes that

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[19] Penrose, R. (1994) *Shadows of the Mind: A Search for the Missing Science of Consciousness*, Oxford University Press, Oxford.
[20] Laszlo, E. (2003) *The Connectivity Hypothesis: Foundations of an Integral Science of Quantum, Cosmos, Life, and Consciousness*, Inner Traditions, Rochester.
[21] Radin, D. (2006) *Entangled Minds: Extrasensory Experiences in Quantum Reality*, Paraview, New York.

the transpersonal connection can manifest itself as the quasi-instantaneous transmission of information between separate people.[22]

It may be argued that because holism is not an aspect of ordinary awareness, it is inappropriate to assimilate this construct into social institutions. However, a lack of ordinary awareness of holism negates neither the nature nor structure of reality. For example, we have no sensation of movement yet we know that the earth revolves upon its own axis, and also orbits around the sun. Walking up a flight of stairs our mind conducts a symphony of biochemical and biomechanical processes whilst computing an array of complex spatial calculations in order to perform the desired act, and yet we are not aware of the independent elements that constitute the whole act. Wilson (2002) showed that humans can be aware of 40-60 'bits' of information per second, whilst the unconscious is processing up to 11,200,000 'bits'.[23]

Consciousness research explores one quintessential element of human beings that could be of value to the human rights discussions. It was flagged in chapter 6.9.1 that at present the category of 'human person' and to what extent rights should attach to the individual is vague and ill defined. Future developments in consciousness studies may assist the resolution of this quandary via a deeper understanding of human nature. Baars (1997) defines consciousness, in the simplest possible terms, as the 'driver' of the human brain.[24] Satinover (2001) observes that advances in technology (such as imaging) have contributed to a resurgence of interest in studying

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[22] Laszlo, E. (2004) *Science and the Akashic Field: An Integral Theory of Everything* 2nd ed, Inner Traditions, Rochester.

[23] Wilson, T.D. (2002) *Strangers to Ourselves: Discovering the Adaptive Unconscious*, Harvard University Press, Cambridge.

[24] Baars, B. (1997) *In the Theatre of Consciousness: The Workspace of the Mind*, Oxford University Press, Oxford.

consciousness.[25] Notwithstanding the robust discussion that surrounds the phenomenon of consciousness and its unresolved relationship with *qualia*,[26] two types of theories are of interest; both quantum mechanical and field theories. Whilst critics of quantum mechanical theories of consciousness assert that one mystery (quantum mechanics) is used to explain another mystery (consciousness),[27] one must acknowledge that such attempts incorporate the ontology of holism to try to explain the complex consciousness that distinguishes human life. A theory of consciousness that employs the ontology of holism, if widely accepted, will assist the articulation of a precise statement to whom human rights attach. Hence this is an area of interest to the ongoing dialogue in the sphere of human rights. The Penrose-Hameroff Objective Reduction model of individual consciousness is predicated upon the existence of a unified quantum field at the root of physical reality.[28] Similarly, Lipkind (2005) examines the various field models of consciousness and concludes there are several epistemologically viable theories that assert that there is a singular discrete field of consciousness in which all human beings reside.[29] Jerry Wheatley (2001) spent thirty years researching and writing his *magnum opus, The Nature of Consciousness, The Structure of Reality*, and affirmed the conclusion that individuals in Classical reality are a 'fractionalisation of a whole'. [30]

Both theories provide an explanation of consciousness that bridges the divide between the underlying monism and the perception of discreteness that characterises ordinary human

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[25] Satinover, J. (2001) *The Quantum Brain: The Search for Freedom and the Next Generation of Man*, John Wiley & Sons Inc, New York.
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[29] Above n25.
[30] Wheatley, J.D. (2001) *The Nature of Consciousness, the Structure of Reality*, Research Scientific Press, Phoenix.

experience. Whilst neither of these theories has been accepted as definitive, they attempt to explain the substance of the inter-human being connection espoused in transpersonal and parapsychology. Moreover, they employ the ontology of supervening holism and incorporate it into the on-going professional discourse within the discipline. Esfeld has embarked upon a similar discussion in the field of analytic philosophy.[31]

Aside from the increasing acceptability of holism, some consciousness researchers claim that the sophisticated consciousness that characterises human existence is an emergent property consequent to the prolific and constant computation undertaken by the human brain. Advances in medical imaging have allowed mapping the neural correlates of some conscious experiences. Newberg and Waldman (2006) indicates that the parts of the brain that are active in a peak religious experience are identical in both Christians and Buddhists, notwithstanding differences in the suite of beliefs between the two faiths and the subjective experiences being perceived by the subjects.[32] Such data provides a fertile basis to pursue a deeper understanding of the latent similarities that exist between people and cultures the world over, as evidence indicates that some significant similarities transcend the differences humans have traditionally perceived.

9.2: Deepening the Coherence

Concordant with the coherentist view of an individual's cognitive map, every belief an individual holds is a single element within their entire suite of beliefs. As noted in this thesis, the greater the number of cohering beliefs, the greater the epistemic stability of the entire cognitive web. The

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[31] Above n13.
[32] Newberg, A., Waldman, M.R. (2006) *Why We Believe What We Believe: Uncovering Our Biological Need for Meaning, Spirituality and Truth*, Free Press, New York.

conclusion that coherence with limited universal holism strengthens the epistemic status of the ontological commitments that underpin modern human rights leads to one issue for future consideration. There is an apparent consonance between the monism advocate by limited universal holism and the monism espoused by wisdom and mystical traditions. A corollary question emerges: if limited universal holism coheres with the ontological commitments of the Preamble to the UDHR, could there also be coherence between these seemingly disparate value systems?

It is at this juncture that the significance of this area becomes obvious. The ontological construct of limited universal holism is derived within a scientific paradigm. Limited universal holism emerged from the cognitive synthesis of experimentally derived scientific data. The significance of this is that the epistemological process engaged to produce limited universal holism is different to that used in both the Preamble to the UDHR and religious and mystical traditions. Limited universal holism as a monist ontological construct has the effect of swinging the epistemological pendulum toward externalism. When contrasted with the assertions for monism from ethno-culturally derived sources this represents a significant epistemological shift. The imperative for acquiescence shifts from an ethno-cultural footing to the acceptance of an ontology derived from an analysis of scientific evidence. If coherence between the various wisdom and mystical traditions and limited universal holism can be shown, then that coherence would (by extension) include coherence with the ontological commitments that underpin modern human rights. Such coherence could act as a catalyst to allow some of the ethno-cultural criticisms of modern human rights to be reconsidered and possibly transcended.

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