LAW, SCIENCE, AND REPRODUCTIVE TECHNOLOGY

by Peter Drahos[1]

Much has been written in recent years[2] about the impact of reproductive technology[3] on the law. Lawyers working and writing in the field have concerned themselves with the identification of specific legal problems raised by existing or possible reproductive technology. Examples of legal problems that have been discussed are the validity of surrogate motherhood contracts, the status of children born through the use of techniques of artificial insemination by donor (AID) or in vitro fertilisation (IVF) using donor sperm, and the impact of IVF on the laws of succession and trusts. Philosophers have also taken an interest in reproductive technology.[4] The beginnings of life and technological intervention in those beginnings have provided philosophers with actual and interesting examples for moral theorising. Recourse by moral philosophers to examples drawn from possible worlds no longer seems as necessary given the existence of techniques like IVF, cloning and recombinant DNA engineering.

---

1 Postgraduate student, Department of Jurisprudence, University of Sydney.

2 The published material in this field has become alarmingly vast in a comparatively short space of time. A good guide to the literature is G. McNabb, **Ethical and Legal Aspects of Human In Vitro Fertilization: A Select Annotated Bibliography**, Department of Librarianship, Melbourne College of Advanced Education, 1984.

3 In this paper the term reproductive technology is used to encompass scientifically developed techniques or methods which assist the process of human reproduction. These include artificial insemination, IVF, embryo flushing, embryo transfer, cloning and cryo-banking. There is little to be gained by more precise definition of the term. Developments in this field are rapid and any number of techniques may join the ranks of those which aid the process of human reproduction.

4 In Australia Peter Singer has been hard at work: W.A.W. Walters & P. Singer (eds) **Test-Tube Babies**, OUP, Melbourne, 1982; P. Singer & D. Wells, **The Reproduction Revolution**, OUP, Oxford, 1984. Singer is not alone. See, e.g., J. Passmore 'Philosophical aspects of experimenting with life', (1985) 17 **Australian Journal of Forensic Sciences** 103-118; M. Charlesworth, 'Biotechnology and bioethics - new ways of life and death', (1984) 61 (5) **Current Affairs Bulletin** 4-24.

One noticeable feature of the legal discussions dealing with reproductive technology is that the issues have received little consideration in the context of the relationship between law and science. While volumes have been written about law and science as self-contained traditions, disciplines or concepts and their relationship to morality, social change, progress, history and so on, less theorising has been done on the nature of the connections and interactions between law and science. This is not to say that science has not made its presence felt in legal theory. The similarities and dissimilarities between science and law have been the focus of considerable writing. There have been attempts to formalise law into a series of deductively constructed propositions,[5] and to apply the concept of science to the concept of law.[5] But, although there has been an overlap between law and science when theorising about law it remains true that the nature of the interaction between law and legal systems on the one hand and science and technology on the other has not been the subject of extensive analysis.[6]

There is instead a tendency to consider the interaction between science/technology and law at the level of specific problems and issues, such as the patentability of computer software or what legal controls are appropriate for recombinant DNA research.[7] Does the relative paucity of theory on the relationship between law and science matter? Is it important to consider reproductive technology in the context of the relationship between law and science? Regarding the first question, there is a growing feeling amongst lawyers that the law is in some sense being "left behind" by scientific and technological developments. Some lawyers have articulated this feeling and have drawn attention to the science/law relationship by some strongly worded claims, for example:

---

5 These approaches receive discussion in I. Tammelo, **Modern Logic in the Service of Law**, Springer-Verlag, Wien, 1978; H.U. Kantorowizc & E.W. Patterson, 'Legal science-a summary of its methodology', (1928) 28 **Columbia Law Review**, 679-707; R. Pound, 'Law and the science of law in recent theories', (1934) 43 **Yale Law Journal**, 525-536.

6 In Australia this is at least partly explained by the fact that there are few formal links between scientists and lawyers. For example, it was not until 1982 that the first Law Section was included at an ANZAAS conference (Australian and New Zealand Association for the Advancement of Science).

7 Examples of academic journals that are mainly devoted to such specific analyses are: **The Medico-Legal Journal, Jurimetrics, Australian Journal of Forensic Sciences, Law/Technology.**

> Science and technology constitute the most dynamic force for legal change which is at work in our country today.[8]

> The obligations placed upon lawyers by modern developments in science and technology are urgent, and unparalleled in the many centuries of the legal profession. The reason is, or ought to be self-evident; for the pitfalls strewing our way in this age of technology are of a nature and magnitude such as no prior system of jurisprudence has ever been called upon to face.[9]

Academic lawyers have suggested that the nature of the "law-science connection" is now an important area for study.[10] If claims about the connections between law and science/technology are to be evaluated, theories are needed that seek to explain the nature of those connections. Reproductive technology provides a good inroad into examining the nature of the interaction taking place between science/technology and the law. It is undisputed that reproductive technology has the potential to alter fundamentally patterns of human reproduction. Some writers go further and suggest that technologies like reproductive technology will have the effect of changing the basic character of the communities that choose to develop and apply them,[11] altering, rather than just implementing, the values of a community. Naturally claims like this are controversial. One means of assessing their plausibility is to consider the legal responses that have emerged in relation to reproductive technology as a totality rather than as separate, individual events. Concentrating exclusively on specific normative and legal problems raised by reproductive technology obscures deeper interactions between science and law.

The issue at stake here can be brought better into focus by considering the following question: What kind of legal system can a science oriented, highly technological society

---

8 M.D. Kirby, **The Law and Modern Technology**, Deakin University Press, Victoria, 1982, 7.

9 C.G. Weeramantry, 'Legal education for the age of technology: a plea for an interdisciplinary perspective' in A.R. Blackshield (ed.), **Legal Change**, Butterworths, Sydney, 1983, 153.

10 D.J. Whalan, 'The science-law relationship: are lawyers really necessary?', (1982) 56 **A.L.J.**, 658-662.

11 L.H. Tribe, 'Technology assessment and the fourth discontinuity: the limits of instrumental rationality', (1973) 46 **Southern California Law Review**, 617, 642.

expect to have? This switches attention away from individual legal problems which have come into existence as a result of technological advances and forces one to consider whether the interaction between science and technology on the one side and law and the legal system on the other is producing some specific trends and structural changes within the legal system.

This way of posing the question should not be taken to indicate a commitment to "technological determinism". Broadly speaking, technological determinism, a view associated with writers such as Ellul,[12] holds that technology has become such a dominant force in modern society that it moulds or controls much of human social endeavour. Ellul specifically distances himself from a crude technological determinism in which all human activity on a social and political scale is irreversibly determined by technology, although the following passage indicates that he supports some strong variant of technological determinism.

> We have already seen that, at the present, neither economic nor political evolution conditions technical progress. Its progress is likewise independent of the social situation. The converse is actually the case, a point I shall develop at length. Technique elicits and conditions social, political, and economic change. It is the prime mover of all the rest, in spite of human pride, which pretends that man's philosophical theories are still determining influences and man's political regimes decisive factors in technical evolution.[13]

On any strong version of technological determinism, law in the modern state is to be seen as a set of detailed technical rules that have been developed in response to the technologically created needs for order and efficiency.[14]

Perhaps few writers would hold to technological determinism in its extreme forms, but its influence as an idea can be seen easily enough in the writing that is done on the connection between law and science/technology:

> The technologies unfolding before us will raise technology above the level of subservience to people. Controls, regulations, and the collective strength of the international community will be needed. In the process, we are back where we started, for in attempting

---

[12] J. Ellul, **The Technological Society**, tr. J. Wilkinson, Knopf, NY, 1964.

[13] **Ibid.**, 133.

[14] **Ibid.**, 291-300.

> to gain freedom from technology we have lost our freedom[15]

> Science and technology are advancing rapidly. If democracy is to be more than a myth and a shibboleth in the age of mature science and technology and more than a triennial visit to a polling booth, we need a new institutional response. Otherwise, we must simply resign ourselves to being taken where the scientists' and technologists' imagination leads.[16]

In this paper technological determinism will not be examined further. I take the view that one can sensibly speak of specific changes occurring in the law as a result of technological and scientific development, without having to concede technological determinism to be true as a general account of the relationship between law and science/technology.

The statement that Western societies are highly technological is trite. But it also seems that new technologies are proliferating at a rapid rate; biotechnology, reproductive technology, information technology, genetic engineering technology, to name a few, are all techniques, methods of recent origin, which make regular guest appearances in our daily newspapers. The development of new technologies is also perceived by government to be an integral part of economic growth.[17] Support for new technology manifests itself at both a political level and at the level of executive action.[18] So at a time when both rapid technological development is occurring and governments demonstrate an interest in sustaining that development, it is appropriate to give some consideration to the cumulative impact of new technologies on the law and the legal system.

---

15 C,G, Weeramantry, **The Slumbering Sentinels,** Penguin, Australia, 1983, 24.

16 M.D. Kirby, **Reform the Law,** OUP, Melbourne, 1983, 238.

17 The Labour Government's policy of support for new high technology enterprises is examined in R. Joseph, 'Recent trends in Australian Government policies for technological innovation', 1984 2(1) **Prometheus,** 93-111.

18 See **Management and Investment Companies Act 1983** (Commonwealth); The purpose of this Act is to "... encourage the formation of businesses which utilise innovative technology, have the potential for rapid growth, are skill intensive, export oriented, internationally competitive, and significant generators of employment in Australia." **supra,** note 15, at 105.

This paper represents a start in this direction. In its use of examples it confines itself mainly to reproductive technology. Something should also be said about the use of science/technology as a block term in this paper. Clearly science and technology are distinguishable, but for present purposes the distinction need not be made. The links between science and technology are very close at present. Science, conceived of as basic research, has enabled certain technologies to flourish. For example, the discovery of the DNA molecule has had and will continue to have an enormous impact on biotechnology. At the same time technology has become an indispensable aid to scientific research. The use of computers as a research tool in science best illustrates this point. For the purposes of narrowing the range of the present inquiry, then, "science and technology" is used by me as a block term. Admittedly this fusion will mask some of the underlying complexities of the relationship between science, technology and law, but that is to some extent an unavoidable hazard of theorising.

Law and Science/Technology: the conflict view

In Australia, the interaction of science/technology and law has attracted the attention of some lawyers, most notably Kirby and Weeramantry. Their comments on that interaction, while not representing a detailed theory, reveal a definite view, a view in this paper termed the conflict view. According to the conflict view there exists an "inevitable tension" between science/technology and law, because it is the nature of law to be in "a final form"[19], whereas science and technology are instigators of change. This inevitable tension manifests itself in conflict and confrontation, a conflict in which law emerges the definite loser. Law is said to be rendered outmoded, irrelevant and counterproductive by scientific and technological development.[20] According to Weeramantry technology poses a set of unique dangers for the legal system, and the legal system is ill-equipped to deal with those dangers.[21]

---

[19] M.D. Kirby, 'Science, Technology and Law Reform', paper given at the Seminar on Science, Technology and the Law, Monash University/Law Council of Australia, 27 January 1977, 1-2. By "final form" Kirby does not mean unchangeable. He seems to be referring simply to the need for judicial decisions or statutes to be fixed within the legal system for some time so as to enable people to order their affairs.

[20] **Ibid.**, at 3.

[21] **Supra** note 13, at 22.

At a time when technological innovation is occurring with what is for some an overwhelming speed, adherents of the conflict view can point to many supporting examples. So, for example, it is pointed out that existing common law principles are either silent or inadequate to guard against the invasion of individual privacy by "intrusive technology".[22] It is also said that the national and international character of mass communications have turned the differences that exist between the various Australian jurisdictions concerning defamation law into a "source of much legal mischief."[23] Not surprisingly, reproductive technology is a rich source of illustration for those that hold to the conflict view. Developments like psychosurgery, organ transplantation, enzyme engineering, amniocentesis and genetic engineering are also all used to illustrate the conflict view.[24]

One prominent feature in the presentation of the conflict view is that its proponents never make clear the conception of law that underlies the view. There is usually no attempt to indicate what part, aspect or type of law it is that conflicts with science/technology. While advocates of the conflict view tend to use law as some sort of primitive term, there is implicit in the conflict view a particular conception of law, a conception which gives the conflict view more plausibility and weight then it deserves. Law, in the conflict view, tends to be presented as a set of fixed rules. Moreover, these fixed rules are seen as the dated, time-bound products of earlier generations or societies. Illustrations of time-bound rules of law encountering difficulties as a result of technological developments are plentiful. For example, the common law crime of larceny requires as one of its constituent elements the asportation of the thing stolen.[25] Where the thing being stolen is computer time this element of the offense would be difficult to satisfy. For the purposes of the criminal law a human organism becomes a legal person when he or she is born and has an existence independent of the mother.[26] As Glanville Williams observes[27] this rule, more or less unchanged since Coke's time, produces difficulties when applied to an IVF embryo. In some respects the IVF embryo satisfies the test (it has an

---

[22] **Supra** note 17, at 7.

[23] **Ibid.**, at 8.

[24] **Supra** note 13, see ch.4.

[25] C. Howard, **Criminal Law**, 4th edn., Law Book Co., Sydney, 1982, 172-173.

[26] See **R. v. Hutty** [1953] V.L.R. 338, 339.

[27] G. Williams, **Textbook of Criminal Law**, 2nd edn., Stevens & Sons, London, 1983, 290, note 6.

existence independent of the mother) and in others it does not (it has not been born).

Instances like these, "confirming" the conflict view of science/technology and law are easy enough to develop. Almost always these examples involve a legal rule that has, as a result of technological or scientific development, become deficient or inapplicable in some respect. Legal rules are chosen because a situation of conflict, or opposition, is both easier to develop and to sustain where there are rules involved. This fact stems from the nature of rules. Dworkin in distinguishing between rules and principles in the law, has made some valuable observations concerning the nature of rules.[28] The distinguishing feature of rules, he says, lies in their manner of application. Rules either apply to cover a situation or they do not. In Dworkin's words rules apply in "an all-or-nothing fashion."[29] Dworkin provides an example taken from the game of baseball to illustrate this particular feature of legal rules. In baseball, where a player has three strikes against him, an umpire has no choice but to give the player out. The rule in this case stipulates certain facts, and if they occur, the application of the rule determines that a certain result follow. Dworkin goes on to develop the difference between legal rules and legal principles by arguing that principles, unlike rules, have the "dimension of weight or importance."[30]

Like most distinctions to gain prominence in jurisprudence this distinction between rules and principles has attracted criticism.[31] Nevertheless, the distinction is an important one, and one that is particularly useful for present purposes, although it must be said that it represents only one step towards showing how incomplete is an account of law in terms of rules alone. As Roscoe Pound observed years ago, along with rules there are, in law, "principles, conceptions, and standards".[32] Inquiries in different directions also reveal present in the law received ideals, doctrines, systematic ideas and a received traditional technique.[33]

---

28 R.M. Dworkin, 'The model of rules', (1967-68) 35 **University of Chicago Law Review**, 14.

29 **Ibid.**, at 25.

30 **Ibid.**, at 27.

31 E.g., W. Twining & D. Miers, **How to Do Things With Rules**, 2nd edn., Weidenfeld & Nicolson, London, 1982, 128-133.

32 Pound, **supra** note 4, at 525.

33 **Id.**

One further attribute of rules needs to be identified. This is not an attribute that Dworkin identifies, although it seems to flow on from his discussion of rules and principles. Rules, for the most part and in contrast to principles, possess a low level of generality. The scope of operation of rules is, generally speaking, a narrow one. Dworkin uses, as an example of a rule of law, the rule that a will is invalid unless signed by three witnesses[34] (the Australian version of the rule stipulates two witnesses). Clearly this rule has a very limited application. It exists at a low level of generality and has no relevance to a vast range of human situations. By contrast principles possess a high level of generality. The principle "no man may profit from his own wrong" (Dworkin's example) has a potential range of application that extends to a number of different areas of the law.

The claim that rules have a low level of generality and that principles have a high level of generality is not a claim founded on a logical distinction in the way that, for instance, Dworkin claims that the all-or-nothing application of rules is a logical difference between rules and principles. Rather the low level of generality of rules should be seen as an attribute of rules that is usually but not always present. Examples of rules that possess a high level of generality are the rules of statutory construction, like the plain meaning rule, the golden rule and the mischief rule. Despite exceptions like these, it remains true that the vast majority of rules within the legal system, when compared to prinicples, can be said to possess a low level of generality.

Once the properties of rules are better identified the conflict view of the relationship between law and science/technology can be stated with more precision. The conflict occurs when rules of a low level of generality that were intended to cover one specific type of situation or activity, continue unchanged in their form and content, despite the fact that the activity or situation has become changed in some significant way by a scientific or technological development. The nature of the interaction being posited here is illustrated by the following examples, taken from advances in medical technology.

In modern times the law of assault has been criticised because, it is said, under the common law a surgeon who transplants an organ from one person to another is

---

[34] Supra note 26, at 28.

technically guilty of an assault.[35] This and other unsatisfactory features of the common law in its application to organ transplantation have, in Australia, prompted legislation to regulate the practice of organ transplantation.[36] The uncertainty produced by the operation of common law assault in relation to surgical operations has been cited as an example of law inhibiting the practice of medicine and constitutes one of a long line of examples portraying law as some sort of trouble-making dullard.

The development of the IVF technique has added to examples of this sort. For example, where a testator leaves property to all his children, does the term "children" include an IVF embryo stored in an embryo bank? Is an IVF embryo for legal purposes a person or property or neither of these things?

In the preceding examples and a host of others like it, there is not so much a conflict between law and science/technology as an invariance or asymmetry between a legal rule or rules and a set of new facts created by a particular technology. This asymmetry or invariance is of two types.

In one type of situation science/technology may create a new set of facts to which no legal rules obviously apply. For instance, the advances in space technology have produced a need for a new set of rules, a new legal regime to govern the exploitation and use of outer space.[37] Similarly the development of artificial intelligence in computers, something attracting a great deal of interest and work at this time, may well produce a set of legal rules unique to that development. One possibility is that the "artificially intelligent" computers of tomorrow may become protected by legislation similar to the kind that now protects some animal species.

In the second type of situation a legal rule may continue to apply to a factual situation that has been changed in some significant way thereby producing uncertainty or a result regarded as undesirable. A case, referred to

---

35 This point is discussed in ALRC 7, **Human Tissue Transplants**, 22-24.

36 E.g., **Human Tissue Act**, 1983 (N.S.W.); **Transplantation and Anatomy Act** 1979 (Qld).

37 A good account of the application of existing principles and rules of law to outer space and the fashioning of new ones for outer space is to be found in M. Lachs, **The Law of Outer Space**, Sijthoff, Leiden, 1972.

earlier, of where uncertainty is produced, is the application of the test for the acquisition of legal personality to the IVF embryo. The application of this test does not lead to a clear cut conclusion about the IVF embryo's status as a legal person because in some respects the IVF embryo satisfies the test and in others it does not. This uncertainty needs to be resolved, because as the scientific manipulation of embryonic life increases, it will become a matter of practical importance to ensure that the rules governing the criminal and civil liability of the manipulators are clear. An example of where undesirable consequences may arise as a result of the application of a rule of law to a set of novel, technologically created facts is to be found in the rule of perpetuities and the cryo-banking of human reproductive tissue, such as semen or embryos. Since both semen and embryos may be stored for hundreds of years, testamentary dispositions that previously did not offend the rule of perpetuities may now do so.[38]

Rules, then, when faced with new technologically produced facts frequently either do not apply to determine a conclusion with respect to those facts, or apply to those facts but apply badly. Where either of these situations occur criticisms of the law along the lines of the law being inappropriate, silent, uncertain or wrong on policy grounds are to be found in abundance. It is not being argued here that such specific criticisms are misplaced or ill founded. Rather the suggestion is that the apparently general conflict between law and science/technology is a highly localised invariance between narrowly formulated rules and certain specific technological developments. Furthermore once a conception of law as a set of rules is recognised as incomplete, the conflict view can be seen as forming only a part of an account of the interaction between science/technology and law. The particular examples of invariance between rules and technology should not be elevated to a general account of that interaction.

Law and Science/Technology: the inadequacy view

The conflict view is often accompanied by the claim that existing legal structures, parliamentary processes and social institutions in general are inadequate as means by which to arrive at decisions concerning the use of specific technologies and appropriate directions for scientific research. Both Kirby and Weeramantry make this sort of claim.

> The processes of change are fed by remarkable advances of science and technology, a great number of them in our

---

38 Examples of the types of problems that may arise are discussed in C. Sappideen, 'Life after death-sperm banks, wills and perpetuities', (1979) 53 **A.L.J.**, 311-319.

> own time: many of them within the last decade. ... So dazzling have been the changes and with such speed have they occurred that the law has in many areas fallen far behind. This indisputable fact raises serious questions about the ability of the parliamentary processes and legal decision making to cope with accommodating changes that are and will be necessary.[39]

> There is a yet more serious aspect of technological growth, which spells danger to law and established systems of government. ... The problem is whether law is to retreat before science in the near future, abandoning to the latter the control of decision-making in our society.[40]

In this paper the view that the legal system does not have the capacity to properly deal with the forces of science/technology shall be referred to as the inadequacy view. It should also be stated that the conflict view and the inadequacy view are logically separable, although they are often found together. One may hold to a conflict view of the relationship between law and science/technology while denying that the law or legal institutions are in some way threatened by this conflict.

The initial problem that one is confronted with when attempting to examine the claim that rapid technological and scientific changes are creating fundamental problems for the legal system is that it is difficult to find a detailed articulation of the claim. Usually the inadequacy view takes the form of an assumption in much of the literature in this area. It is very often implicit in the argument, or simply asserted rather than argued or demonstrated.

The lack of a precise formulation of the inadequacy view is perhaps an indication of the vagueness that is inherent in it. Kirby, a consistent propagator of this view, expresses it in terms of doubts about the ability of legal decision making and the parliamentary process to cope with technological change. Weeramantry, also, proposes the claim on a level of generality that is the same as Kirby's. According to Weeramantry, there is an incapacity on the part of legal institutions to deal with complex scientific and technological issues.[41]

---

[39] **Supra** note 17, at 13.

[40] C.G. Weeramantry, **The Law in Crisis**, Capemoss, London, 1975, 247.

[41] **Supra** note 13, ch.3. See also, C.G. Weeramantry, **An Invitation to the Law**, Butterworths, Sydney, 1982, 77-79.

The difficulty with the inadequacy view stems from the scope and ambiguity of terms like "legal decision making" and "legal institutions". In the Australian legal system, as in most developed legal systems the actual sources of legal decision making are many. Apart from the traditional sources of Parliament and the courts there are a number of other sources, including various tribunals (Administrative Appeals Tribunal), commissions (Australian Electoral Commission, National Companies and Securities Commission), regulatory bodies (Australian Broadcasting Tribunal), local councils etc.

Furthermore, if legal decision making is thought of as a process rather than an event, the description of what is involved in legal decision making is further complicated. For example, before a legal decision is taken in the formal sense of an Act of Parliament being passed, a number of bodies may have been involved in the steps leading to its formal creation. These bodies may include various government departments, law reform agencies, private organisations, professional lobbyists representing interested parties etc. Terms like "legal decision making" or "legal institutions" mask what are complex structures and processes. Once the manifold aspects and complexities of what is being referred to by such general terms are recognised, it also becomes evident that the claim that the legal system is incapable of coping with technological developments lacks specific content. For instance, is it the case that every institutional element comprising the legal system is somehow jeopardised by the developing new technologies? Alternatively is the claim the more restricted one that only certain parts of the legal system are in some way threatened by the new technologies?

At times, both Kirby and Weeramantry refer to the difficulties that have been posed for the common law by advances in science/technology, while at other times their claims are far broader. It is certainly true that some common law rules are no longer appropriate in their operation to certain technologically created situations, but it does not follow from this fact alone that the common law is in deep trouble, or that the legal system is threatened in some fundamental way.

In fact that the inadequacy view is overstated and needs to be reformulated in some way can be shown by looking at the manner in which the legal problems arising from reproductive technology have been dealt with in Australia. The first baby in Australia to be conceived through the IVF technique, was born in 1980 in Melbourne. Within a few years of that birth, every state in Australia had established a committee, or given a law reform commission, a reference to look into,

amongst other things, the legal problems associated with the IVF technique.[42] Victoria established the Waller Committee in May of 1982; Queensland established a Special Committee headed by Justice Demack in 1983; South Australia formed a Working Party in 1983; Western Australia formed an In Vitro Ethics Committee in 1983; Tasmania established a Committee in 1984 and the New South Wales Law Reform Commission received a reference in 1983 to inquire into all aspects of artificial conception. On a Commonwealth level three Commonwealth related bodies have dealt with aspects of reproductive technology; the National Health and Medical Research Council first began to examine the problems in this field in 1981;[43] the Family Law Council established the Asche Committee on reproductive technology in February of 1984,[44] and the Standing Committee of Attorney-Generals has had an involvement, spanning a number of years, in the development of model legislation concerning the status of IVF children.

On the basis of public sector time scales government reaction to the legal problems raised by IVF has been blindingly fast. Moreover legislation has not been slow in forthcoming. Victoria, New South Wales, South Australia, and Western Australia have all passed legislation dealing with the status of a child who was conceived using the IVF technique.[45] Victoria has plunged ahead of the rest of the states and enacted legislation (the **Infertility (Medical Procedures) Act** 1984) regulating infertility procedures in general. The Victorian legislation also creates a Standing Review and Advisory Committee, which has the task of monitoring various experimental procedures that involve the use of embryos.

In light of the rapid response to some of the legal problems created by reproductive technology, the view that the legal system is incapable of adequately responding to these sorts of problems seems overstated. At the same time such a view should not be discounted completely. The problem both with the conflict view and the inadequacy view is that

---

42 Details of the various committees and their reports can be obtained from the following recent report: **Creating Children** (Report of the Family Law Council incorporating and adopting the report of the Asche Committee on issues relating to AID, IVF, embryo transfer and related matters), Attorney-General's Department & AGPS, Canberra, 1985, 18-24.

43 See, NH&MRC, **Ethics in Medical Research**, AGPS, Canberra, 1983.

44 See, the report cited **supra** note 40.

45 Details of this legislation are contained in the report cited **supra** note 40, at 9 18-24.

they are not articulated in the context of some more specific and detailed theory about law. Theories of law abound these days. There are modern positivist theories, theories critical of positivism, sociological theories, economic theories etc. These broad groupings in turn contain differences of approach. For example, it has been suggested that sociological concepts of law fall into three broad categories:[46] juridical monism (law is taken to be "lawyer's law"); juridical pluralism (law exists at various layers or levels; "lawyer's law" is only one form of law); state law as the dominant but not exclusive form of law (this is said to offer a compromise between the two previous conceptualisations). Likewise, there is no shortage of schools of jurisprudence for the eager theorist to ponder. A writer working early this century identified the following schools of jurisprudence: constructive schools, historical schools, philosophical schools, analytical schools, comparative-apologetic schools and exegetical schools.[47] The very existence of so many different theoretical approaches to law indicates the complexity of law as an object of theorising.

Consequently to state that law conflicts with, or is in some way inadequate to cope with the forces of science/technology, is to state very little, unless the statement is accompanied by some detail as to what aspect, feature or type of law is being discussed. Relying on law as a general term, without in some way indicating which one of its many possible specialised theoretical aspects is being used as a referent leads to both oversimplification and error. The conflict view and the inadequacy view both demonstrate this. The conflict view, it has been argued in this paper, has plausibility at the level of rules in a legal system. But after the conflict view has been granted in the case of rules and science/technology, important questions as to the scope of the conflict view remain. For instance, the conflict view seems inaccurate when it comes to considering the interaction between legal standards and science/technology. Legal standards like the standard of proof and the standard of the reasonable man in the criminal law are not affected by technological developments in the ways that legal rules are. If anything the sophisticated techniques of today's forensic science have made the application of the standard of proof in criminal law trials a more exact process than it was early this century.

Similarly the conflict view sheds very little light on the way in which an established, traditional body of legal

---

46 R. Cotterrell, 'The sociological concept of law', (1983) 10 (2) **Journal of Law and Society**, 241, 244-247.

47 N. Isaacs, 'The schools of jurisprudence', (1917-18) 31 **Harvard Law Review**, 373-411.

principles is likely to operate in a society experiencing rapid technological change. Some legal principles may, of course, prove to have an ephemeral quality in the face of such change. Other legal principles, such as the principles of equity, that are possessed of distinctive moral qualities, may continue to have as much application and relevance for a highly technological society as they did for the society that existed in the early days of the Court of Chancery.

As was discussed earlier the inadequacy view of the relationship between law and science/technology is also an exaggerated one. Technologies like reproductive technology will not throw the legal system into catatonic shock. Instead such technologies will probably aid the shift that is taking place to legislators and administrators as the main sources of law-making within society.[48] Nor should the occurrence of such a shift be regarded as supporting an inadequacy view of the common law system. Writing in a broader context, the sociologist Daniel Bell has observed that the need for efficiency in contemporary society has produced much specialisation.[49] Man, he suggests, has become a smaller and smaller part of a larger and larger whole. In like fashion the common law system has also become a smaller part of the legal system, as result of the expansion of other sectors of the legal system.

The merit of both the conflict view and the inadequacy view lies not so much in their specific content, but in the fact that they draw attention to an important connection. Interest in the nature of the law and science/technology connection is likely to grow, as the spectacular achievements of technologies like reproductive technology continue to pose new social, legal and moral problems. The conflict view and the inadequacy view represent a starting point in considering the nature of this connection, a starting point to what is a long and complex story.

---

48 The point concerning the dominance of legislative and administrative forms in modern law is often made. See, T.J. Lowi, **The End of Liberalism**, 2nd edn., Norton, NY, 1979, 106. See, also, M.J. Horwitz, 'The changing common law', (1984) 9 (1) **Dalhousie Law Journal**, 55, 66.

49 D. Bell, 'Technology, nature and society', in **Technology and the Frontiers of Knowledge**, The Frank Nelson Doubleday Lectures, Doubleday & Co., NY, 1972-73, 25, 56.