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The Unborn Plaintiff

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THE UNBORN PLAINTIFF

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IT is almost twenty-five years since Professor Winfield's article "The Unborn Child" was published.[1] The development of this area of the law during the past quarter century is probably summed up in the distinction between that title and the one to this article.

The defective or abnormal infant constitutes an increasingly pressing problem; the cost to society and in human happiness is beyond measurement.[2] Legal attempts at a solution have been, as may be expected, only partial. They are reflected in the distinct eugenic policy that is embraced in those statutes or by those principles of law that forbid marriage within the defined limit of consanguinity.[3] Again, both physically and mentally diseased persons are occasionally denied the capacity to marry, sometimes unjustifiably.[4]

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1. 4 U. TORONTO L.J. 278 (1942). That article was also published in 8 CAMB. L.J. 76 (1942).

2. It has been estimated that 250 thousand infants suffering from significant birth defects are born each year in the United States. MONTAGU, PRENATAL INFLUENCES 6 (1962).

3. See generally FOOTE & SANDER, CASES ON FAMILY LAW 2C-16 (temp. ed. 1962). Genetically speaking, the prohibition of marriage on the grounds of affinity are unjustifiable, and even some consanguinous prohibitions are subject to criticism. Moore, *A Defense of First Cousin Marriages*, 10 CLEVE.-MAR. L. REV. 136 (1961). See also Hefer, *'N Aantekening oor enkele aspekte van die verbod op huwelike tussen persons wat binne bespaalde grade aan mekaar verwant is*, 21 TYD. HED. H-R REG. 22 (1958); Note, 17 IOWA L. REV. 87 (1931). For the Roman Law attitude, which consisted of a denial of the appellation "children," see CODE THEOD. 3.12.1-2.

4. See FOOTE & SANDER, *op. cit. supra* note 3, at 2C-59. The prohibition against the marriage of epileptics has been criticized on the ground that the genetic factor in epilepsy is insignificant. At least three states (Indiana, Pennsylvania, and Wisconsin) have repealed the statutes setting out the restrictions.

See generally BARROW & FABING, EPILEPSY AND THE LAW (1956), WILY & STALLWORTHY, MENTAL ABNORMALITY AND THE LAW 163 (1962). Over half the states of the United States have eugenic sterilization laws that present a combined classification of epileptics, hereditary criminals, mental deficients, sex offenders, and syphilitics.

In Skinner v. Oklahoma, 316 U.S. 535 (1942), the Supreme Court struck down under the equal protection clause the Oklahoma Habitual Criminal Sterilization Act [OKLA. STAT. ANN. tit. 57, § 171 (1935)]. In Buck v. Bell, 274 U.S. 200 (1927), Mr. Justice Holmes upheld an order directing the sterilization of a feeble-minded inmate of an institution in Virginia, stating: "It is better for all the world if instead of waiting to execute degenerate offspring for crime, or to let them starve for their imbecility, society can prevent those who are manifestly unfit from continuing their kind. The principle that sustains compulsory vaccination is broad enough to cover cutting the Fallopian tubes .... Three generations of imbeciles are enough." *Id.* at 207. See CURRAN, LAW AND MEDICINE 802-09 (1960); FOOTE & SANDER, *op. cit. supra* note 3, at 2C-72-80; Cook, *Eugenics or Euthenics*, 37 ILL. L. REV. 287 (1943).

Restrictions upon persons suffering from venereal diseases are common. FOOTE & SANDER, *supra*, at 2C-80 (see also note 212 *infra*). Some states forbid marriage between persons suffering from pulmonary tuberculosis in its advanced stages. *E.g.*, WASH. REV.

Winfield's study was primarily comparative, and, since 1942, a number of legal systems have considered the question of "uterine personality" in tort law. Motivated by a common concern and backed by the tremendous increase in medical knowledge, almost all of the systems which have considered the problem have afforded at least some relief to a child for injuries sustained by it while in utero matris.

The legal analyses adopted in order to reach this result differ widely, however. In addition, the impact of medical advances upon this branch of the law has been so influential that one is compelled to consider the present state of modern scientific knowledge in order to outline the present boundaries of the law.

Doctors and lawyers have eloquently pleaded for clarification of the limits of therapeutic abortion; and one of the favorite arguments invoked in justification of the therapeutic termination of pregnancies is that which points to the devastating consequences on the fetus of German measles and irradiation.[5] The choice between whether we ought to solve a problem by bluntly removing it or instead perpetuate human suffering is beyond the scope of my inquiry. Suffice it to say that there is a great deal of merit in the arguments presented on both sides of this controversial question. But one thing is certainly clear: there is a powerfully articulate body of lawyers who feel that, with the present knowledge of the probabilities of serious deformity or abnormality, it is *unnecessary* to allow production of such infants to materialize.[6] Thus it seems strange that

CODE § 26.04.030 (1961). Cases of congenital tuberculosis have been reported in MONTAGU, PRENATAL INFLUENCES 308-09 (1962).

5. FOOTE & SANDER, *op. cit. supra* note 3, at 5B-11-29; G. L. WILLIAMS, THE SANCTITY OF LIFE AND THE CRIMINAL LAW (1957); Final Report, Los Angeles County Grand Jury 53 (1960); Culiner, *Some Medical Aspects of Abortion*, 10 So. AFRICAN J. FOR. MED. 9 (1963); Leavy & Kummer, *Criminal Abortion: Human Hardship and Unyielding Laws*, 35 So. CAL. L. REV. 123 (1962); Packer & Gambell, *Therapeutic Abortion: A Problem in Law and Medicine*, 11 STAN. L. REV. 147 (1959).

For religious viewpoints on this and related matters, see DALY, MORALS, LAW AND LIFE (1961); Curran, in ROSEN, THERAPEUTIC ABORTION 153-72 (1954).

6. In addition to authorities cited in note 5 *supra*, the American Law Institute has reported that:

> "Current American legislation does not provide for aborting probable defective offspring, except as such result might be reached under the half dozen statutes that prohibit 'unlawful' abortion without defining what is unlawful. Despite the uncertain legal status of eugenic as distinguished from therapeutic abortion, such operations are regularly performed by responsible physicians in hospitals throughout the country. . . .
>
> "The criminal law should speak unambiguously on the authority of the physician to act where he believes that continuance of the pregnancy entails substantial risk that the offspring will be a physical or mental casualty. The prospective birth of a seriously defective child may even constitute a threat to the mental health of the apprehensive mother, but it seems preferable to rest the matter directly on scientific prognostication of the child's state of health rather than on the more uncertain prediction of the mother's reaction."

MODEL PENAL CODE § 207.11, comment 4 (Tent. Draft No. 9, 1959).

legal systems have experienced difficulty in recognizing a right to compensatory relief for infants who were subjected to *unnecessary* tortious infliction of harm during prenatal life.

To Religion and Medicine, life begins at conception;[7] but, to Law, legal personality begins only at birth.[8] This jurisprudential concept is the origin of much of the difficulty.

I. History

A. *The Common-Law Foundations*

The early common-law commentators dealt with abortion and the situation in which an assault resulted in a miscarriage in the same terms. Thus in Coke's *Third Institute* the following appears:

> "If a woman be quick with child and by a potion or otherwise killeth it in her womb, or if a man beat her, whereby the child dieth in her body and she is delivered of a dead child, this is a great misprision, and no murder, but if the child be born alive and dieth of the potion, battery, or other cause, this is murder; for in law it is accounted a reasonable creature, *in rerum natura* when it is born alive."[9]

Blackstone was more effusive, declaring that:

> "Life is the immediate gift of God, a right inherent by nature in every individual: and it begins in contemplation of law as soon as an infant is able to stir in the mother's womb. For if a woman is quick with child, and by a potion or otherwise killeth it in her womb; or if any one beat her whereby the child dieth in her body, and she is delivered of a dead child; this though not murder was by the ancient law homicide or manslaughter. . . . An infant in [*sic*] ventre sa mere, or in the mother's womb, is supposed in law to be born for many purposes. It is capable of having a legacy, or a surrender of a copyhold estate made to it. It may have a guardian assigned to it; and it is enabled to have an estate limited to its use, and to take afterwards by such limitation, as if it were then actually born. And in this point the Civil law agrees with ours."[10]

At this early and formative stage of the common law, the child in utero was therefore not an object of ownership, but rather was

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7. "For many years while doctors scoffed the Church maintained that an embryo had life from the very beginning and that to destroy it was to take life. This contradicted the generally accepted opinion that life did not begin until around the time the mother felt the baby's movements. Scientists now believe as the Church has contended, that there is life from the moment of conception."
Sontheimer, *Abortion in America Today*, Woman's Home Companion, Oct. 1955, p. 44, in Foote & Sander, *op. cit. supra* note 3, at 5B-21.

8. See text at note 46 *infra*.

9. 3 Coke, Third Inst. 50 (1797).

10. 1 Blackstone, Commentaries Comm. 1, 129-30 (4th ed. 1771).

the subject of state protection. It was also recognized as capable of acquiring property rights, but this was conditioned by live birth. As *The Earl of Bedford's case* held: "[A]lthough filius in utero matris est pars viscerum matris . . . yet the law in many cases hath consideration of him in respect of the apparent expectation of his birth."[11]

It is interesting to speculate, as the Louisiana court did in construing its civil code,[12] as to whether the recognition extended to the child in criminal and property law was exclusive. Perhaps there was a general recognition of a uterine personality and the illustrations were made simply because they were relevant to questions that would immediately come to mind. But, whatever might have been the intention, decisions recognizing the unborn child as a being in law were limited to these two fields.[13]

In addition, the child was regarded as having a claim to life as evidenced by the rule requiring the staying of the execution of a pregnant woman until after its birth.[14]

It was upon these foundations that the American contribution to this branch of the law was laid. Though the path was a tortuous one, thorough debate and frank discussion, combined with a warm reception afforded to advances in science, have provided a fine example of the inherent creative aspect of the common law.[15]

B. *The Initial American View*

Despite the resulting disappointment, it was perhaps fitting that it fell upon Mr. Justice Holmes, while still on the Massachusetts Supreme Court, to first consider, in *Dietrich v. Inhabitants of Northampton*, the status of the fetus in common-law tort law.[16] The Holmes opinion bristled with dicta and an inexplicable er-

11. Michaelmas Term, 28 & 29 Eliz., 4 Coke 7 f.7 (1586) (Wilson ed. 1777), 77 Eng. Rep. 421. Coke's citations, omitted here, are discussed in Winfield, *supra* note 1, at 280.

12. Cooper v. Blanck, 39 So. 2d 352 (La. Ct. App. 1923). See also Pinchin N.O. v. Santam Ins. Co., [1963] 2 So. Afr. L.R. 254 (W).

13. R. v. Senior, 1 Moody C. C. 346 (1932); Villar v. Gilbey, [1907] A.C. 139; Elliott v. Joicey, [1935] A.C. 209. See also Thellusson v. Woodford, 4 Vesey Jr. 227 (1798), 31 Eng. Rep. 117 (1798), where Judge Buller's "let us see what this non-entity can do" speech is set out at pp. 321 and 163.

14. 2 HAWKINS, PLEAS OF THE CROWN 2.51.9 (Curwood ed. 1824); 2 HALE, PLEAS OF THE CROWN 412 (Dogherty ed. 1800), reports that a jury of twelve "discreet" women were empanelled to decide whether to delay execution. Hale goes on to say, "but I have rarely found but the compassion of their sex is gentle to them in their verdict, if there be any colour to support a sparing verdict." *Id.* at 413.

15. See Keeton, *Creative Continuity in the Law of Torts*, 75 HARV. L. REV. 463, 484-85 (1962): "Seldom in the law has there been such an overwhelming trend in such a relatively short period of time as there has been in the trend towards allowing recovery for prenatal injuries to a viable infant." Wendt v. Lillo, 182 F. Supp. 56, 62 (N.D. Iowa 1960) (div. action applying Iowa law).

16. Dietrich v. Inhabitants of Northampton, 138 Mass. 14 (1884).

ror.[17] Perhaps a good deal of the hardship flowing from it might have been avoided if subsequent courts had at least limited it to its holding. Holmes held:

> "[I]f we should assume . . . that a man might owe a civil duty and incur a conditional prospective liability in tort to one not yet in being, and if we should assume also that causing an infant to be born prematurely stands on the same footing as wounding or poisoning, we should then be confronted by the question . . . whether an infant dying before it was able to live separated from its mother could be said to have become a person recognized by the law as capable of having a *locus standi* in court, or of being represented there by an administrator."[18]

In the light of the result, as Holmes nowhere specifically answered the question he posed, his answer must be assumed to have been *no*, the infant not yet viable does not have legal personality.[19] Holmes' fiat is the extent of the authority of the case.

C. *Debate and Progress*

Subsequent courts, however, did not reopen the question for some sixty years; fortified by other broad considerations and reasoning, they denied the remedy. But this did not occur without difference of opinion.

In *Stemmer v. Kline*, Chief Justice Brogan (dissenting) joined issue with the basis of the Holmes opinion. He asked why the courts should feel restrained from breaking with the doctrine that a child *en ventre sa mere* has no separate being in the field of torts when in every other field of law a child has a separate being, is a person, if being in that category is for its benefit.[20]

17. Holmes argued that the analogy from the criminal statutes to tort law in fact hindered recovery on the grounds that the accused's act would be murder (homicide) only if the mother were "quick" with child. Holmes then noted the statutory provisions for the punishment of attempts to procure miscarriages and, noting the increase in punishment if the woman died after the attempt, seized upon the fact that there was no corresponding increase if the child died even after leaving the womb. The New York Law Revision Commission, Communication to the Legislature Relating to Prenatal Injuries, Jan. 23, 1935, at 6 n.4, points out the fallacy of this argument.

> "The argument of the court based on the last mentioned statute failed to take into consideration the fact that the first statute amply provides for punishment for the death of the child, and it would be unnecessary repetition to include the provisions of the first statute in the second. It is submitted that the court has neglected to perform the simple act of reading the two statutes together and has thereby drawn unfounded conclusions from the language of the last statute alone."

18. 138 Mass. at 16. Holmes went on to add: "[A]s the unborn child' was a part of the mother at the time of the injury, any damage to it which was not too remote to be recovered for at all was recoverable by her. . . ." *Id.* at 17.

19. This is discussed in detail in the text accompanying note 52 *infra*.

20. Stemmer v. Kline, 128 N.J.L. 455, 468, 26 A.2d 684, 687 (1942) (concurring opinion).

The argument that the right of action should be denied for reasons of practical convenience and public policy[21] was met by a more persuasive policy justification in the same year. The Supreme Court of Canada, in a decision that exerted a considerable influence on subsequent legal development in the United States, got to the root of the matter in stating that, since the child must carry the burden of infirmity that results from the other's fault, it is only natural justice that it, if born alive and viable, be allowed to maintain an action.[22]

Again, a broad justification for denial of relief was sought by the submission that in many cases it would be impossible to establish satisfactorily, except by speculation, the viability of the child and that its death or condition was proximately caused by the injury.[23] This was answered with the observation that the right to bring an action is clearly distinguishable from the ability to prove the facts. The first cannot be denied simply because the second may not exist.[24]

The limits of judicial creativity were then summoned by an Illinois court in an effort to make the injustice more palatable. It responded to the argument that where there is a wrong a remedy should be provided by saying this plea should be addressed to the legislature.[25] But the challenge was met squarely by the Ohio court: "No legislative action is required to authorize recovery for personal injuries caused by the negligence of another. Such right was one existing at common law."[26]

A Texas court was probably the most candid, expressing the basic fear that many false claims, difficult to refute, would follow if such a right of action were recognized.[27] The Maryland court retorted, however, that since the detection and elimination of faked claims is not new to judicial bodies, that argument should not prevent legitimate claims from being heard.[28]

Those courts that denied relief also appealed to the lack of precedent for such a right of action, argued that the fiction of the

21. Krantz v. Cleveland, 32 Ohio N.P. 445, 452 (1933).

22. Montreal Tramways v. Leveille, 4 D.L.R. 337, 344 (1933). The court in Bonbrest v. Kotz, 65 F. Supp. 138, 143 (D.D.C. 1946), tersely answered the "stability argument": "The law is presumed to keep pace with the sciences and medical science has made progress since 1884."

23. Magnolia Coca-Cola Bottling Co. v. Jordan, 124 Tex. 347, 360, 78 S.W.2d 944, 950 (1935).

24. Damasiewicz v. Gorsuch, 197 Md. 417, 437, 79 A.2d 550, 559 (1951).

25. Smith v. Luckhardt, 299 Ill. App. 100, 108, 19 N.E.2d 446, 450 (1939).

26. Williams v. Marion Rapid Transit Inc., 152 Ohio St. 114, 128, 87 N.E.2d 334, 340 (1949).

27. Magnolia Coca-Cola Co. v. Jordan, 124 Tex. 347, 360 (1935).

28. Damasiewicz v. Gorsuch, 197 Md. 417, 437, 79 A.2d 550, 559 (1951), adding that medical knowledge would do away with some of that difficulty.

civil law as to property rights and the criminal law were not of general application,[29] and relied on the *Restatement of Torts*.[30] Two courts expressed the fear that from recognition of a right of action would follow the capacity of the child to sue its mother, a question they were not asked to decide.[31]

The courts that finally did grant the remedy did little more, as has been seen, than to controvert persuasively the opposition arguments. Some invoked the *ubi jus, ibi remedium* maxim.[32]

It can be appreciated that the argument grounded upon lack of authority soon itself provided enough authority to allow courts to rely on stare decisis, and *Dietrich* fathered an impressive line of precedent.[33] After 1946, however, when a district court in *Bonbrest v. Kotz*[34] relied upon the dissent in *Allaire v. St. Luke's Hospital* to sustain the plaintiff's action,[35] a growing body of conflicting decisions developed, finally culminating in a number of courts overruling their previous decisions.[36]

In addition, other courts, considering the question de novo, have granted the child's right of action.[37] Today the majority rule permits some recovery, although, as discussed later, it may be limited and conditioned. Besides the four jurisdictions that have not had the opportunity to reconsider their pre-*Bonbrest* views,[38] the question must be regarded as still doubtful in three other states, primarily because of the broad reasoning adopted in opinions denying a right of action to the beneficiaries of an infant that died en ventre sa mere.[39]

Most of the cases have been heard on demurrers or motions

29. Allaire v. St. Luke's Hosp., 184 Ill. 359, 56 N.E. 638 (1900); *cf.* Tucker v. Carmichael & Sons, Inc., 208 Ga. 201, 65 S.E.2d 909 (1951).

30. RESTATEMENT, TORTS § 869 (1934).

31. Stanford v. St. Louis & S.F. Ry., 214 Ala. 611, 108 So. 566 (1926); Allaire v. St. Luke's Hosp., 184 Ill. 359, 56 N.E. 638 (1900).

32. Where there is a right, there is a remedy. *E.g.*, Smith v. Brennan, 31 N.J. 353, 157 A.2d 497 (1960).

33. *E.g.*, Turknett v. Keaton, 266 F.2d 572 (5th Cir. 1956) (diversity suit applying Texas law); Cavanaugh v. First Nat'l Stores, Inc., 329 Mass. 179, 107 N.E.2d 307 (1952); Bliss v. Passanesi, 326 Mass. 461, 95 N.E.2d 206 (1950); Jacketti v. Pottstown Rapid Transit Co., 67 Montg. Co. L. Rep. 37 (Pa. County Ct. 1950).

34. 65 F. Supp. 138 (D.D.C. 1946).

35. Allaire v. St. Luke's Hosp., 184 Ill. 359, 56 N.E. 638 (1900).

36. *E.g.*, Tursi v. New England Windsor Co., 19 Conn. 242, 111 A.2d 14 (1955); Amann v. Faidy, 415 Ill. 422, 114 N.E.2d 412 (1953); Steggall v. Morris, 363 Mo. 1224, 258 S.W.2d 577 (1953); Woods v. Lancet, 303 N.Y. 349, 102 N.E.2d 691 (1951); Puhl v. Milwaukee Auto Ins. Co., 8 Wis. 2d 343, 99 N.W.2d 163 (1959).

37. *E.g.*, Hale v. Manion, 189 Kan. 143, 368 P.2d 1 (1962); Poliquin v. MacDonald, 101 N.H. 104, 135 A.2d 249 (1957); Hall v. Murphy, 236 S.C. 537, 113 S.E.2d 790 (1960); Seattle First Nat'l Bank v. Rankin, 59 Wash. 2d 288, 367 P.2d 835 (1962).

38. These are Rhode Island, Alabama, Texas, and Michigan. La Blue v. Specker, 358 Mich. 558, 100 N.W.2d 445 (1960), is a clear indication that the next time the question is posed Michigan will join the majority.

39. Mace v. Jung, 210 F. Supp. 706 (D. Alaska 1962); Drabbels v. Skelly Oil Co., 155 Neb. 17, 50 N.W.2d 229 (1951); Howell v. Rushing, 261 P.2d 217 (Okla. 1953).

for summary judgment,[40] and after settlement of the particular legal controversy they have disappeared from the reports. To the writer's knowledge, at least one of these cases went to subsequent trial where the infant plaintiff lost on the issue of causation.[41] Perhaps it is valid to assume that others were not continued because of the same difficulty.

A good example of the judgments handed down by the courts is provided by *Tursi v. New England Windsor Company*:[42] "Where a *viable fetus* is injured en ventre sa mere through the negligence of the defendants he has, *when born*, a cause of action against them."[43] From this it appears that two conditions are required: viability and birth. Present controversy surrounds these requirements.

Apparently only one state has considered the advisability of legislative action. In 1917, the Missouri Children's Code Commission proposed the adoption of the following provision:

> "*Recovery for prenatal injuries:*
> "Any person who has sustained a prenatal injury shall be entitled to recover therefor as though he had been born at the time of sustaining such injury. This Act shall apply whether such person was born in or out of lawful wedlock."[44]

This proposal, however, was not adopted by the Missouri legislature.

II. Modern Controversy: When Does Protection Start and Is It Conditional?

Shortly after conception the zygote (fertilized ovum) goes through a period of cleavage (cell division), and finally a cluster of cells called the morula is formed. At about the sixth day, the morula divides into an inner and an outer layer of cells, and the

40. The opinions delivered on appeal from trial judgments are discussed at note 267 *infra*.

41. Hornbuckle v. Plantation Pipe Line Co., 212 Ga. 504, 93 S.E.2d 727 (1956). In this case, early in the mother's pregnancy she had been injured in a motor car collision. The infant plaintiff was born with a deformed foot, ankle, and leg. At the trial, two of America's leading authorities in the field of prenatal injuries, Professor T. Inghalls and Professor A. L. Hertig, gave expert evidence for the respective sides. Professor Hertig for the defense testified that at the time of the injury the limb buds of the infant had not yet formed, but that in any event it was inconceivable that only the right leg would be affected, regard being had to the developmental arrest theory which, at the time when the accident took place, would have rendered both limb buds, if in existence, vulnerable. See text accompanying note 159 *infra*. The jury accepted the defense contentions.

42. 19 Conn. Supp. 242, 111 A.2d 14 (1955).

43. *Id.* at 248. (Emphasis added.)

44. House Journal 571 (1919). The New York Law Revision Commission did not advocate any legislative action in its report. See note 17 *supra*.

inner cells then subdivide into a tri-partite cellular structure.[45] These compartments contain the fundamental materials necessary for the growth and development of the different parts of the human body. This organism, since it possesses the potentiality to develop into a human being, is probably entitled by force of nature to claim a potential "natural personality"; but it is only a fact in nature and is independent of the law, since "legal personality" is the grant of the law.[46]

In most legal systems, legal personality begins at live birth,[47] but when it is to the benefit of the infant in utero, as sometimes happens in property law, rights have been held to vest in it immediately provided it is subsequently born alive.[48] In tort law as well, the child dependent who was in utero at the time of its father's death has later been given a statutory right of action against the wrongdoer;[49] but such an action may not be maintained for its benefit while it is still in utero.[50] The mechanics of recognition has been the granting of conditional legal personality by means of the fiction of birth to the infant yet unborn. Although American courts have occasionally referred to the property law fiction,[51] they have not used

45. AREY, DEVELOPMENTAL ANATOMY 69-70 (6th ed. 1954); MONTAGU, PRENATAL INFLUENCES 20-23 (1962).

46. NEKAM, THE PERSONALITY CONCEPTION OF THE LEGAL ENTITY 24 (1938). Graveson describes "natural personality" as follows: "This natural personality is not concerned with legal capacities or prohibitions, so that a person may count the science of burglary or the art of forgery among his natural accomplishments simply because these are things which he can do. Again, one or more of his five senses may be deficient or overdeveloped. They are part of his natural personality." GRAVESON, STATUS IN THE COMMON LAW 111 (1953). See generally C. K. ALLEN, LEGAL DUTIES 28-70 (1931); DIAS & HUGHES, JURISPRUDENCE 283 (1957).

It seems necessary to have the additional requirement of a potentiality to develop into a human being, for, if we understand all living things to be cellular and grant natural personality to them, then spermatozoa that are also cellular must also be living. If "natural personality" demands "legal personality," as the American courts have held (see text at note 66 *infra*), then the dropping of a test tube of spermatozoa may well give rise to a cause of action. HART & SACKS, THE LEGAL PROCESS 495 (temp. ed. 1958).

47. See authorities cited *supra* note 46.

48. Tomlin v. Laws, 301 Ill. 616, 134 N.E. 24 (1922); *In re* Holthausen's Will, 175 Misc. 1022, 26 N.Y.S.2d 140 (Surr. Ct. 1941); Elliott v. Joicey, [1935] A.C. 209; Villar v. Gilbey, [1907] A.C. 139; Del Tufo, *Recovery for Prenatal Torts*, 15 RUTGERS L. REV. 61, 66 n.24 (1960); Winfield, *The Unborn Child*, U. TORONTO L.J. 278, 279 (1942).

49. Phair v. Dumond, 99 Neb. 310, 156 N.W. 637 (1916); Quinlen v. Welch, 23 N.Y.S. 963 (1893); Herndon v. St. Louis Ry., 37 Okla. 256, 128 P. 727 (1912); Nelson v. Galveston Ry., 78 Tex. 621, 14 S.W. 1021 (1890).

50. The George and the Richard, L.R. 3 Adm. & Eccl. 466, 24 L.T. 717, 20 W.R. 246 (1871); Manns v. Carlon, [1940] Vict. L.R. 280. *Cf.* Delatte v. United States Fid. & Guar. Co., 116 So. 2d 169 (La. 1959); Barry, *The Child en Ventre Sa Mère*, 14 AUST. L.J. 351, 356 (1941).

51. *E.g.*, Drobner v. Peters, 232 N.Y. 220, 133 N.E. 567 (1921) (which refused to extend the property law fiction to tort); Kine v. Zuckerman, 4 Pa. D. & C. 227, 228 (Dist. Ct. 1924). See also Hogan v. McDaniel, 204 Tenn. 235 (1958). *Compare* Nugent v. Brooklyn Heights Ry., 154 App. Div. 667, 139 N.Y.S. 367 (1913), *with* Steggall v. Morris, 363 Mo. 1224, 258 S.W.2d 577 (1953).

it as the basis for granting tort remedy, and they have removed the distinction between "natural" and "legal" personality. It remains to be seen why this has happened.

It will be recalled that Justice Holmes stated:

> "[I]f we should assume . . . that a man might owe a civil duty and incur a *conditional prospective liability* in tort to one not yet in being . . . we should then be confronted by the question . . . whether an infant dying before it was able to live separated from its mother could be said to [be] . . . a person recognized by the law as capable of having a *locus standi* in court. . . ."[52]

The words "conditional prospective liability" and the reference to the capacity to sue in court seem to be relevant to birth and legal personality. Apparently, Holmes was not considering the question of biological separability.[53] In *Dietrich*, however, the premature infant was found to have lived for some ten to fifteen minutes.[54] Thus, if the learned Justice denied relief on the basis of a lack of legal personality, he recast the definition of that concept and adopted the untenable proposition that legal capacity is conditioned by an ability to survive. A man suffering from advanced cancer probably has not the ability to survive; yet, if he is injured before he dies, it would be absurd to deny him relief in a court of law merely because he has no capacity to survive.[55]

A. *The Major Approaches*

1. *The Biological Approach*

Judge Boggs, in his influential dissent in *Allaire*,[56] flatly refused to contradict Holmes and was driven to interpret *Dietrich* as holding that a duty of care could not be owed to the fetus since it was not an entity that could *independently* come within the risk of the harm created by the defendant or one that ought to have been foreseen by him.[57] Judge Boggs then sought an independent plaintiff without considering further whether or not as a matter of law that plaintiff should enjoy legal personality and, if so, how it could be best achieved. Seizing upon the concept of viability—that

52. Dietrich v. Inhabitants of Northampton, 138 Mass. 14, 16 (1884). (Emphasis added.)

53. See CURRAN, LAW AND MEDICINE 117 (1960), wherein the whole dispute is summed up as one relating to "legal status."

54. There is some dispute as to whether the child lived at all. Stewart, *The Case of the Prenatal Injury*, 15 U. FLA. L. REV. 527, 530 (1963), doubts whether it survived birth.

55. The quantum of damages recoverable would be reduced, but this is irrelevant to the ability to bring suit.

56. Allaire v. St. Luke's Hosp., 184 Ill. 359, 56 N.E. 638 (1900).

57. This question is dealt with in detail in the text accompanying note 113 *infra*.

period of intrauterine development when an infant is able to live outside its mother's womb[58]—he declared separate existence to commence from that point. Having found his entity, he automatically extended to it the beginning of legal personality.

Therefore, from the start the common law precluded itself from adopting the civil law fiction of "birth for benefit." In correcting the scientific errors of both Holmes and Boggs, American courts have fused legal personality with biological existence. The Wisconsin Supreme Court had in fact adopted Boggs' dissent, but it denied the right to recovery on the ground that the infant was not yet viable at the time it was injured, despite the fact that it was subsequently born alive.[59] *Bonbrest v. Kotz*[60] was limited to the viable infant. Other courts followed suit.

With the increase in medical knowledge, the erroneous belief that "viability" constituted the origin of separate being fell increasingly under fire. Medicine emphasized that the crucial period of intrauterine development during which the fetus would be most susceptible to environmental influences was during the first trimester, long before viability.[61] Again, increased medical knowledge as to the effects of irradiation,[62] the etiology of certain infectious diseases,[63] and the importance of nutritional factors[64] indicate that healthy fetal development may depend upon factors existing at the time of, or even prior to, conception. A viability limitation, therefore, presents a potential of working injustice.

The courts might have argued that, as birth and viability are in a sense analogous facts vis-à-vis existence in the external world, there would be no need to underpin a fiction of birth by a true fact, since fictions in law are understood to be untrue. Thus viability could have been discarded as unnecessary,[65] the fiction adopted, and protection extended to the infant from the time of conception.

American courts, however, have persisted in a biological approach.[66] Finding "life" in medicine begins at conception, eight

58. BLACK'S LAW DICTIONARY 1737 (4th ed. 1951).
59. Lipps v. Milwaukee Ry. & Light Co., 164 Wis. 272, 159 N.W. 916 (1916).
60. 65 F. Supp. 138 (D.D.C. 1946).
61. See text at note 164 *infra.*
62. See text at note 233 *infra.*
63. See text at note 205 *infra.*
64. See text at note 148 *infra.*
65. The days of Benthamite "raving" at fictions fortunately are past, and it is conceded by many that they play an important and integral part in every legal system. See generally FRANK, LAW AND THE MODERN MIND 338-50 (Anchor ed. 1963); Fuller, *Legal Fictions* (pts. 1-3), 25 ILL. L. REV. 363, 513, 865 (1930-31); Van der Merwe, 26 TYD. VIR HED. R-H REG. 291, 294 (1963).
66. The height of this approach was reached in Kelley v. Gregory, 282 App. Div. 542,

states have accorded legal personality to the zygote.[67] There is no doubt but that this end result is proper and just, and it may be confidently asserted that in the future the courts will lift the bar of viability. The closer one gets to the estimated time of conception,[68] the more onerous will the plaintiff's burden of proof become. But this should not go to the right of action.

The only doubt that can be raised concerns the sequelae of the biological process of reasoning, for biology inevitably came into conflict with legal principles and policy foundations when the question of the availability of a wrongful death action on behalf of the beneficiaries of a stillborn infant was presented to the courts. Wrongful death actions are, strictly speaking, separate causes of action not dependent upon the rights of the decedent.[69] But the courts have not interpreted them in this manner. Absent specific indications to the contrary, the action is considered to be derivative.[70]

2. *The Causative Approach*

In addition to the biological approach outlined above and the civil-law approach, which regards the infant en ventre sa mere as born whenever birth would be to its advantage,[71] there is an approach

125 N.Y.S.2d 696 (1953), where it was held: "We ought to be safe in this respect by saying that legal separability should begin where there is biological separability." *Id.* at 543-44. See also Bennet v. Hymers, 101 N.H. 483, 485, 147 A.2d 108, 109 (1958).

Errors of biology have been perpetrated, however, as in Stemmer v. Kline, 128 N.J.L. 455, 26 A.2d 489 (1942), where the dissent stated: "While it is a fact that there is a close dependence by the unborn child on the organism of the mother, it is not disputed today that the mother and the child are two separate and distinct entities; that the unborn child has its own system of circulation of the blood separate and apart from the mother; that there is no communication between the two circulation systems." 128 N.J.L. at 466, 26 A.2d at 686.

It is only after approximately twenty-five days that the fetal heart begins to circulate blood. The interchange of blood between the child and the mother is, to say the least, absolutely essential. See MONTAGU, *op. cit. supra* note 45, at 36, 47.

67. Hornbuckle v. Plantation Pipe Line Co., 212 Ga. 504, 93 S.E.2d 727 (1956); Sana v. Brown, 35 Ill. App. 2d 425, 183 N.E.2d 187 (1962); Daley v. Meier, 33 Ill. App. 2d 218, 178 N.E.2d 691 (1961); Bennet v. Hymers, *supra* note 66; Smith v. Brennan, 31 N.J. 353, 157 A.2d 497 (1960); Kelley v. Gregory, *supra* note 66; Sinkler v. Kneale, 401 Pa. 267, 164 A.2d 93 (1960); Von Elbe v. Studebaker-Packard Corp., 15 Pa. D. & C. 2d 629 (1958). In addition, there is a dictum in Puhl v. Milwaukee Auto Ins. Co., 8 Wis. 2d 343, 99 N.W.2d 163 (1959), that suggests that from the time of conception Wisconsin will protect the infant.

68. The necessity for estimation lies in the fact that the female ovum is susceptible to implantation for only about four or five days during each twenty-eight day cycle, and spermatozoa may survive anywhere from two to 110 hours. GLAISTER, MEDICAL JURISPRUDENCE AND TOXICOLOGY 359 (11th ed. 1962).

69. PROSSER, TORTS § 105 (2d ed. 1955); Harris, Damages in Prenatal Injuries Cases 12 (unpublished manuscript 1962).

70. 2 HARPER & JAMES, TORTS § 24.4 (1956); Note, 110 U. PA. L. REV. 553, 557 (1962).

71. See generally 1 PLANIOL, TRAITÉ ELEMENTAIRE DE DROIT CIVIL § 366 (La. Law Inst. Transl. 1959); CIVIL CODE (JAPAN) 1; B.G.B. 1. This is also the approach of the common law relating to property rights.

that avoids a consideration of the legal status of the fetus and requires only that a causal link between plaintiff's condition and the defendant's wrongful act be established.[72] The dissection of the problem under this approach is purely causative and ignores the question of when the harm was caused to the child. But implicit in this view is a requirement that the plaintiff subsequently enjoy legal personality—that is, birth is the donor of the right. Not only is the general law of status left untouched, but there is no necessity to debate the validity of recognizing the child in utero through analogies drawn from other branches of the law. Under all three approaches, protection is or should be afforded from conception; but, if the infant dies in utero or is stillborn, the approaches lead to different results vis-à-vis a wrongful death action by the beneficiaries of the infant.

B. *Wrongful Death Actions*

The causative approach does not recognize the fetus as a person until birth. Therefore, if it dies before term, no action can be derived through it.[73] Under the civil law, "advantage" is the donor of the rights, and, if the fetus dies, there can be no derivative action because it could not be of any possible advantage to it to grant a recovery to its beneficiaries; a variation on this line of reasoning is the double fiction employed by some modern codes.[74] Under the biological approach, however, life is the donor of the rights; since once there is life there can also be death, the infant's action will be transmissible to its beneficiaries upon its death in utero.

A number of American courts have been called upon to decide whether the parents of a fetus that died in utero may recover under wrongful death statutes. The first American case allowing such an action was *Verkennes v. Corniea.*[75] In that case the mother suffered a ruptured uterus during labor that resulted in the death of both herself and her child. It was alleged that the attending doctor and the hospital were guilty of medical negligence in that she had not been furnished with the necessary care and treatment. The hospital's

72. Kine v. Zuckerman, 4 Pa. D. & C. 227 (1924); Joubert, 26 TYD. VIR HED. R-H REG. 295-97 (1963); Note, 46 HARV. L. REV. 344 (1932); Note, 15 HARV. L. REV. 313 (1901). There is also a suggestion of this approach in Smith v. Brennan, 31 N.J. 353, 364-65, 157 A.2d 497, 503 (1960); see also the dissenting opinion of Judge Cannon in Montreal Tramways v. Leveille, [1933] 4 D.L.R. 337, 367-68.

73. It is this fact that causes Del Tufo's about face. Del Tufo, *Recovery for Prenatal Torts*, 15 RUTGERS L. REV. 61, 66 (1960).

74. CODE CIVIL (AUSTRIA) art. 22, based upon DIGEST 50.16.129.

75. 229 Minn. 365, 38 N.W.2d 838 (1949).

demurrer to the father's claim was dismissed. The court relied on *Bonbrest v. Kotz, Montreal Tramways v. Leveille,* and Judge Boggs' dissent in *Allaire,* all of which, instead of supporting such a cause of action, in fact clearly opposed such a sweeping view.[76] In the next case, *Rainey v. Horn*[77] (again a malpractice suit[78]), the court reversed the trial judge's grant of a directed verdict, referring the matter back to the jury to allow it to consider the allegations of negligence.

As a result of these two decisions, one might perhaps entertain the suspicion that the courts, upset no doubt at *Smith v. Luckhardt,*[79] were descending upon doctors. But subsequent decisions were not confined to malpractice suits. Courts carried the biological approach to the conclusion that a wrongful death action is available even when there has not been live birth.[80] Other courts, however, have balked at this extension and have held that the legal personality of the fetus is conditioned by live birth.[81]

Medical knowledge made an invaluable contribution to that class of cases in which an injured infant stood at the bar of the court, since it buttressed the law's desire to compensate. But the question of wrongful death actions is pure policy and peculiarly within the lawyer's domain; thus scientific contribution in this situation is not helpful, and two courts have finally drawn the line beyond which medicine is unable to goad the law.

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76. "It is but natural justice that such an infant, if born alive, should be allowed to maintain an action. . . ." Boggs, J., in Allaire v. St. Luke's Hosp., 184 Ill. 359, 372 (1900). "Therefore when it was subsequently born alive and viable it was clothed with all the rights of action which it would have had if actually in existence at the date of the accident." Lamont, J., in Montreal Tramways v. Leveille, [1933] 4 D.L.R. 337, 344. Bonbrest v. Kotz, 65 F. Supp. 138 (D.D.C. 1946), relied heavily on the *Montreal Tramways* decision, and the whole judgment is specifically grounded on "survivorship."

77. 221 Miss. 269, 77 So. 2d 434 (1954).

78. It was alleged that before the mother went into labor the attending physician negligently attempted to force the birth of the baby by forceps. It was further alleged that the doctor began the attempt by using his hands and upon failure braced his feet against the mother and tugged with all his strength for a period of between fifteen and forty minutes to no avail. The mother was finally taken to a hospital where she gave birth to a stillborn child. The defense relied upon the allegation that the baby had turned in a manner that made normal delivery impossible; that, because the umbilical cord threatened to strangle it, the doctor attempted to return the child to a normal position; and that, after failure, the doctor attempted the forceps delivery.

79. 299 Ill. App. 100, 19 N.E.2d 446 (1939), where the doctor negligently determined a pregnancy to be a malignant tumor and applied radiation therapy. See text accompanying note 241 *infra.*

80. *E.g.,* Worgan v. Greggo & Ferraro, Inc., 50 Del. 258, 128 A.2d 557 (1956); Porter v. Lassiter, 91 Ga. App. 712 (Chatham Sup. Ct. 1955); Mitchell v. Couch, 285 S.W.2d 901 (Ky. 1955).

81. *E.g.,* Mace v. Jung, 210 F. Supp. 706 (D. Alaska 1962); Keyes v. Construction Serv. Inc., 340 Mass. 633, 165 N.E.2d 912 (1960); Shousha v. Matthews Drivurself Serv., 210 Tenn. 384, 358 S.W.2d 471 (1962); Hogan v. McDaniel, 204 Tenn. 235, 319 S.W.2d 221 (1958); Hall v. Murphy, 236 S.C. 257, 113 S.E.2d 790 (1960).

In *Hogan v. MacDaniel*[82] it was stated that, although medical science had experienced a great advance, the medical profession cannot create a right of action at law.[83] And, in *Drabbels v. Skelly Oil Co.*,[84] the court, noting that the question of whether a child born alive may sue for prenatal injuries was not before it, held that, while medical science may accelerate the birth of a viable child and thereby accelerate the time it comes into juridical existence as a person independent of the mother, it does not provide convincing authority that a child born dead ever becomes a person insofar as the law of torts is concerned.[85]

A wide split of authority has developed, and the biologists have advocated a "once a person always a person" rule, embracing it as a matter of logic.[86] We now have come to the position that, although originally it was illogical not to extend the rules of property law to tort law, when faced with the property law requirement of subsequent live birth we are irresistibly led to the contradiction of that extension as a matter of logic!

The primary dispute, of course, centers on the relevancy of birth. The biologists have their champions, and, clutching the epithets "arbitrary," "unjust," "illogical," and "intolerable," they have dismissed birth as being without significance.[87] If we want to talk in terms of logic—a requirement to which no system of law can ever wholly subscribe—we may just as well say that it is illogical for majority to begin at twenty-one years of age or that an infant is irrebuttably incapable of criminal intention on a Thursday but not on a Friday. Law requires some definitive clear-cut lines, particularly one which heralds the beginning of legal personality. It is inaccurate to characterize the law of status as arbitrary,[88] if that word is ever to have any meaningful content. Nor is an argu-

82. 204 Tenn. 235, 319 S.W.2d 221 (1958).
83. *Id.* at 243, 319 S.W.2d at 224.
84. 155 Neb. 17, 50 N.W.2d 229 (1951).
85. *Id.* at 23, 50 N.W.2d at 236.
86. See Stidam v. Ashmore, 109 Ohio App. 431, 167 N.E.2d 106 (1959).
87. Del Tufo, *supra* note 73; Stewart, *supra* note 54, at 535-41; Note, 110 U. PA. L. REV. 553, 556, 562 (1962).

At the moment of birth—and a child ought to be considered as live born if there is any sign of life (*i.e.*, heart beat, muscular movement, or respiration) after it has been delivered altogether outside the body of the mother whether or not the cord has been cut [NESBITT, PERINATAL LOSS IN MODERN OBSTETRICS 13 (1957)]—the child receives from the law the grant of legal personality. Thus, if it were to die shortly afterwards from injuries received in utero, the beneficiaries could sue under the statutes. See Steggall v. Morris, 363 Mo. 1224, 258 S.W.2d 577 (1953); Hall v. Murphy, 236 S.C. 257, 113 S.E.2d 790 (1960); New York Law Revision Comm'n, Communication to the Legislature Relating to Prenatal Injuries, Jan. 23, 1935.

88. See 2 HARPER & JAMES, TORTS §§ 18.3., at 1031 (1956), wherein the view is expressed that "arbitrariness" will always be the precipitate when lines have to be drawn.

ment putting cases on both sides of the line any more convincing.[89] Birth is an occurrence of such magnitude that this kind of syllogistic appeal is somewhat hazardous logic. On one side of the line, the wrongful death action is supported by an important policy interest, and the question that arises is whether the so-called logic that takes us over to the other side may also validly invoke the same policy foundation. For, if not, we are asked to untidy a jurisprudential cupboard for no reason whatsoever, certainly not for justice. Law receives its acceptance through the ends that it seeks to achieve, not through satisfying a logical progression after prima facie scanning.

To attack the requirement of live birth is, practically speaking, to abandon an interest in the fetus and to embrace a policy that declares that the beneficiaries of a stillborn infant ought to recover under the wrongful death statutes. This is not justifiable, and clearly our knowledge of science does not push us over any line where, in an earlier and different situation, ignorance checked our steps.

The hardship of many of the decisions denying relief lay in the fact that they required an infant to go through life, as it was so aptly put, bearing the seal of another's fault.[90] There is no such justification in the wrongful death situation.[91] Moreover, the infant is not a "breadwinner." Lord Campbell's Act[92] was originally designed to avoid the hardship of the common law that so often resulted in a deceased's dependents being put out onto the street. Although it is true that parents have been able to recover substantially for the loss of a minor child, the grant of compensation to the beneficiaries of such a minor, and a fortiori to the parents of an infant in utero, is in reality compensation for sentimental loss framed as though it were pecuniary loss.[93] The award is pure speculation and is duplicity

89. See, *e.g.*, Holmes, *Law in Science and Science in Law*, 12 HARV. L. REV. 443 (1899).

90. Montreal Tramways v. Leveille, [1933] 4 D.L.R. 337, 344.

91. "We are therefore not concerned here with whether an action may be maintained by a child injured while en ventre sa mere and born alive, and intimate no opinion thereabout, but where the mother suffered a miscarriage after approximately five and a half months of pregnancy. *The policy considerations which call for a right of action when a child survives do not necessarily apply in the absence of survivorship.*" West v. McCoy, 233 S.C. 369, 375 (1958). (Emphasis added.)

A New York court also stated that: "The considerations of justice which militate in favor of a right of action to compensate a living child for its lack of health *do not support a cause of action in behalf of the parents of a stillborn infant for their possible pecuniary loss.*" *In re* Logan's Estate, 4 Misc. 2d 283, 156 N.Y.S.2d 49, 51 (Surr. Ct. 1956). (Emphasis added.)

92. The Fatal Accidents Act, 1846, 9 & 10 Vict. c. 93, which was the forerunner of, and has become the generic name for, similar statutes.

93. PROSSER, TORTS §§ 105, 715 (2d ed. 1955).

of the same genus Professor Keeton so persuasively attacked in his article.[94]

A fundamental basis of tort law is the provision of compensation to an innocent plaintiff for the loss that he has suffered. Tort law is not, as a general rule, premised upon punishing the wrongdoer. It is not submitted that the tortious destroyer of a child in utero should be able to escape completely by killing instead of merely maiming. But it is submitted that to compensate the parents any further than they are entitled by well-settled principles of law and to give them a windfall through the estate of the fetus is blatant punishment.[95] The actual-pecuniary-loss basis of compensation in wrongful death actions has, where the award will be based on speculation, given way in some states to a fixed sum of money. It has been suggested that the same principles be adopted in the unborn plaintiff class of case.[96] One ought to be wary not only of overlooking the exceptional character of uterine personality and the basic *raison d'être* of the wrongful death remedy, but also of returning to archaism and to looking upon a child as a chattel.

The windfall to the beneficiaries is granted only by an insistence that potential natural personality demands the recognition of legal personality and that both begin with existence. The civil law stands diametrically opposed to this view, but even in the common law an incongruous position is reached in that there is a tort rule applying to the child in utero that is different from the property rule. It can only be hoped that this schizophrenia will be cured by future courts ignoring *Verkennes v. Corniea*.[97]

C. *The California Approach*

California must be treated separately. Section 29 of its civil code provides that: "A child conceived, but not yet born, is to be

94. Keeton, *Creative Continuity in the Law of Torts*, 75 HARV. L. REV. 463 (1962).

95. The mother has not been able to recover for injuries to the child. See, *e.g.*, Finer v. Nichols, 158 Mo. App. 539, 138 S.W. 889 (1911); Butler v. Manhattan Ry., 143 N.Y. 417, 38 N.E. 454 (1894). Nor has her action for a miscarriage been allowed to include the loss of the unborn child. See, *e.g.*, Thomas v. Gates, 126 Cal. 1, 58 Pac. 315 (1899); Webb v. Snow, 102 Utah 435, 132 P.2d 114 (1942); *cf.* Snow v. Allen, 227 Ala. 615, 151 So. 468 (1933).

But the mother can recover for the additional pain and suffering inflicted upon her. Ephrem v. Phillips, 99 So. 2d 257 (Fla. Dist. Ct. App. 1957); Witrak v. Nassau Electric Ry. Co., 52 App. Div. 234, 65 N.Y.S. 257 (1900); Bovee v. Donville, 53 Vt. 183 (1880); and for her anxiety caused by fear of a miscarriage of her child's deformity. Prescott v. Robinson, 74 N.H. 460, 69 A. 522 (1908); Carter v. Public Serv. Coordinated Transp., 47 N.J. Super. 379, 136 A.2d 15 (1957).

96. Anderson, *A Model State Wrongful Death Act*, 1 HARV. J. LEG. 28, 34-35, 42 (1964).

97. 229 Minn. 365 (1949); see text accompanying note 76 *supra*.

deemed an existing person, so far as may be necessary for its interests in the event of its subsequent birth."[98]

In *Scott v. McPheeters*,[99] it was held that the word "interests" is general in its application and inclusive of both personal and proprietary rights. In that case an eleven-year-old plaintiff alleged that during her delivery the defendant's negligent use of forceps and clamps had caused serious injuries to her brain and spine, resulting in permanent paralysis. The court, in overruling the order of a lower court which had upheld a demurrer, remarked that the common law of the United States was diametrically opposed to section 29. It could find no case either in the United States or the rest of the world in which similar statutes had been involved. (Actually, California law is almost indistinguishable from the civil law practice.)

In *Norman v. Murphy*,[100] the court again had an opportunity to consider the code provision. This time the critical question was the relationship of the words "in the event of its subsequent birth" to the meaning of "a minor person." Here a husband and wife brought an action to recover damages for the death of their unborn child, who had died as a result of an automobile accident. At the time of the accident, the mother was approximately four and one-half months pregnant. The court was required to decide whether such a fetus was "a minor person" within the meaning of those words in the wrongful death action provision of the Code of Civil Procedure.[101] The wrongful death action in California is not derivative, so the court apparently felt that it could not determine the question by complete reliance on section 29. After quoting that section and referring to section 270 of the Penal Code[102] and the definition of "a minor person" in sections 25 and 26 of the Civil Code, the court held: "[E]ven if the courts of this state should now hold that an unborn viable child is 'a person' within the meaning of our law, it could not be held to be a minor person."[103]

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98. Civ. Code § 29.

99. 33 Cal. App. 2d 629, 92 P.2d 678 (1939), *petition for rehearing denied*, 93 P.2d 562 (1939).

100. 124 Cal. App. 2d 95, 268 P.2d 178 (1954).

101. Civ. Code § 377: "When the death of a person not being a minor, or when the death of a minor person who leaves surviving him either a husband or wife or child or children or father or mother, is caused by the wrongful act or neglect of another, his heirs or personal representatives may maintain an action for damages against the person causing the death."

102. Section 270 requires a father to support a legitimate or an illegitimate minor child. Children conceived, but not yet born, are specifically included within that section. The court argued that, if unborn children were "minors," there would be difficulty in understanding why this specific inclusion was written into the section.

103. *Id.* at 100.

Unfortunately, the reasoning of the court smacks of artificiality; it would have been much easier to have held that section 29 is a condition to personality and that without live birth there can be no person at all, rather than to create in California three categories of persons—unborn persons, minor persons, and major persons.

III. Two Other Legal Problems

A. *Foreseeability*

The recognition in law of the unborn plaintiff has proceeded with little discussion as to the impact it has made upon fundamental principles in the law of torts.

If we assume a case wherein a pregnant woman has been injured and, as a result of her pregnancy, the injuries she suffers are increased, the fact of her pregnancy may be regarded as an abnormal susceptibility on her part.[104] There is no doubt that she will be able to recover for any additional or special injury under the "victim talem qualem," "thin skull," or "old soldier" rule.[105] The application of this rule is under the broad heading of "remoteness of damage" or "compensation"—the second step in a negligence action, the first step being a consideration of culpability. It proceeds upon a consideration of the foreseeability of harm to the plaintiff. Here the Riskers[106] and the Polemists[107] part ways. The former embrace a philosophy that foreseeability is all;[108] and, since two leading exponents of the risk principle on both sides of the Atlantic flatly accept the victim talem qualem rule as an exception to that principle,[109] the question may be asked whether by accepting the fact of pregnancy as too remote, and therefore not foreseeable for purposes of compensation, the fetus is also not foreseeable for the purposes of culpability. To the extent that *Polemis* is authority for the narrow relational test (equivalent to *Palsgraf*[110] in the United States) the opponents of the risk principle are also faced with the problem[111] of whether in the prenatal injury cases the courts should allow unforeseeable plaintiffs to sue.

Some of the American courts may have been aware of a duty

104. Hart & Honoré, Causation in the Law 161 (1959).

105. See text accompanying note 136 *infra*.

106. See Honoré, Book Review, 77 Harv. L. Rev. 595, 599 (1964).

107. That is, those who embrace the principle of *In re* Polemis, [1921] 3 K.B. 560, that a negligent actor is responsible for all the direct consequences of his negligent act. *E.g.*, Hart & Honoré, *op. cit. supra* note 104; Note, 1961 Camb. L.J. 30.

108. McKerron, *Foreseeability Is All*, 78 S.A.L.J. 282 (1961).

109. Keeton, Legal Cause in the Law of Torts 67-68 (1963); Williams, *The Risk Principle*, 77 L.Q. Rev. 179, 193-97 (1961).

110. Palsgraf v. Long Island R.R., 248 N.Y. 339, 162 N.E. 99 (1928).

111. Dias, *Remoteness of Liability and Legal Policy*, 1962 Camb. L.J. 178, 179.

problem;[112] in *Drobner v. Peters*,[113] the court held: "No liability can arise . . . except out of a duty disregarded and defendant owed no duty of care to the unborn child . . . apart from the duty to avoid injuring the mother."[114]

Certain writers have denied that a duty problem was ever real to the courts and have accused them of duplicity.[115] But this attitude solves nothing and is question-begging. Perhaps the above-quoted words mean no more than that no duty of care can be owed to a legal nonentity. This could have been the position in 1921, but by 1946, at least, the advance in medicine had exerted its influence on the law and had led to an acceptance of the fetus as an independent person in being: that is, both a person in whom legal personality could reside and an independent person to whom a duty of care could be owed. But, whatever the conundrums of *Drobner* might have been, the Texas court in *Magnolia Coca-Cola Bottling Co. v. Jordan*[116] met the issue directly in holding that, since the reasonable man's conscious care and solicitude are for the expectant mother and not for the unborn child apart from her, his obligations and liability in damages for his acts should be measured and determined from his viewpoint.[117]

Professors Harper and James find this statement "amazing,"[118] and, in attacking the decision, they invoke the example of a negligent driver who has "care and solicitude" only for the solitary driver of a bakery truck with which he collides and the pies within. Unknown to the driver there are some children in the back of the truck who are injured in the collision; the negligent driver is held liable for their injuries. They go on to say that "the limitation of the *Palsgraf* case contains no requirement that the interests within the range of peril be known or identified in the actor's mind, or even be in existence at the time of the negligence."[119]

112. See the writer's submission as to the Holmes opinion in *Dietrich*, text accompanying note 57 *supra*.

113. 232 N.Y. 220 (1921).

114. *Id.* at 224.

115. Thus Dean White wrote: "In fact, considerations of duty are never the substantive reasons for a decision but only the legal sounding explanation for it." White, *The Right of Recovery for Prenatal Injuries*, 12 LA. L. REV. 383, 401 (1952). See also Payne, *Foresight and Remoteness of Damage in Negligence*, 25 MODERN L. REV. 1, 18 (1962).

116. 124 Tex. 347, 78 S.W.2d 944 (1935).

117. *Id.* at 359, 78 S.W.2d at 949.

118. 2 HARPER & JAMES, TORTS § 18.3, at 1030 (1956).

119. *Ibid.* The actor's knowledge requirement was applied only in Walker's case. One text writer applauds the holding of non-liability because the company did not know of the child's existence. WINFIELD, TORTS 71-72 (7th ed. 1963). This is reminiscent of the "tumor cases," justifying liability on the part of doctors because they obviously

Perhaps the learned authors have been a little harsh in their criticism, for it is arguable that the court was not thinking in this subjective sense, but was postulating the anticipation of the reasonable man, who saddles the instant defendant with responsibility only insofar as he (the reasonable man) knows the interests to be within the range of peril. This becomes clear when regard is had to the court's further holding that: "We think that *tested by the knowledge, experience and conduct of the ordinary prudent man,* it 'owed no duty of care to the unborn child in the present case, apart from the duty to avoid injuring the mother.' "[120]

It is true that this statement is similar to that delivered in *Drobner,* but with this important distinction: the Texas court by its preamble set a standard, whereas the *Drobner* court merely stated a conclusion. A causal approach cannot avoid the issue,[121] because it is still open to the defendant to say that he, as a reasonable man, could not have anticipated the presence of an unborn child within the risks created by his conduct.

Professor Goodhart, who has been the leading exponent of the abolition of a distinction between foreseeability for the purpose of culpability and foreseeability for the purpose of compensation, was driven to submit that in fact it is reasonably foreseeable that a victim may suffer from an unusual susceptibility.[122] Dr. Williams disagreed, submitting that there is a distinction with respect to foreseeability between the test of initial liability and the test of extent of liability.[123] Pregnancy as an unusual susceptibility is relevant not only to the question of quantum but also to the question of liability. Therefore, we are required to take the fact of pregnancy out of the victim talem qualem category and place it squarely within the risk principle. Dr. Williams would rationalize the matter in the last resort under his doctrine of transferred negligence,[124] but it does seem essential that the standard be reformu-

have knowledge of the mother's condition. In terms of established tort principle, this view is quite objectionable. See also FLEMING, TORTS 158 (1957). But this is not what the Texas court embraced.

120. 124 Tex. at 355, 78 S.W.2d at 947. (Emphasis added.)

121. SALMOND, TORTS 81-82 (13th ed. 1961). The author states that it is difficult to see how a duty of care can be owed to an unborn person, but takes this question no further since he finds the real issue to be whether a living plaintiff has a right not to be injured by acts done before its birth.

122. Goodhart, *Liability and Compensation,* 76 L.Q. REV. 567, 581 (1960); Note, 78 L.Q. REV. 160, 161-62 (1962). This drew a retort from Dias in a note in 1961 CAMB. L.J. 23, 27: "If the full extent of the injury is somehow regarded as being foreseeable 'the average reasonable man' and 'the man on the Clapham omnibus' will have to give way to some new and nameless figure credited with far greater powers than his predecessors."

123. Williams, *supra* note 109, at 175.

124. If Dr. Williams regards "advanced in pregnancy" as being any sort of require-

lated to ensure that Scarlett O'Hara also tumbles down the stairs of foresight in law.

Alternatively, we must answer Professor Keeton's question of whether we consider the plaintiff within some class of persons to whom risk could be foreseen, the class being circumscribed by the limits of the risk,[125] by stating that conduct which creates a risk of harm to a woman includes also a risk of harm to her unborn child, if any.

B. *Causation*[126]

Once upon a time there was a camel that carried loads across the desert for its master, who had never loaded the animal too heavily. One day a prankster negligently placed a straw on top of a load and the camel collapsed, falling to the ground with a broken back.[127] Lawyers, to the horror of the medical profession,[128] often embrace the last straw theory of causation. Given an act or omission but for which the harm would not have ensued, the law may hold the actor liable for all damages.

The doctor has another view of causation. His emphasis is upon the initial rather than the immediate cause, with only a few exceptions such as the situation where *A* negligently dispenses poison pills that *B* swallows some weeks later; here the doctor considers the taking of the poison as the cause of *B*'s death, while to the lawyer, the cause was the negligent dispensing.[129]

In prenatal injury cases, the doctor, as an expert witness,[130] will be asked to establish causation in the legal sense, and in so doing he will be dealing with a concept of causation that is not only foreign to his concept of cause or etiology, but is also foreign to the traditions of his science.[131] Scientific cause is firmly rooted

ment, then, if maternal appearance is going to be a criterion, he is coming frightfully close to the unjust viability test or the unfair knowledge test.

125. KEETON, *op. cit. supra* note 109, at 83. See also CLARK & LINDSELL, TORTS § 702 (12th ed. 1961).

126. There are so many theories of causation and such a great deal has been written on this subject that it would be impossible to report, let alone attempt to reconcile, them within the scope of this paper. I have had to make an election and, in so doing, confess the choice to be purely personal. Recent writings in this field include: 2 HARPER & JAMES, TORTS ch. 20 (1956); HART & HONORÉ, CAUSATION IN THE LAW (1959); KEETON, *op. cit. supra* note 109; PROSSER, TORTS § 44, at 219-23 (2d ed. 1955); Williams, *Causation in the Law*, 1961 CAMB. L.J. 62.

127. This example is taken with modifications from the opinion of Chief Justice Bernstein in Tatman v. Provincial Homes, 382 P.2d 573 (Ariz. Sup. Ct. 1963).

128. See Powers, *After All Doctors Are Human*, 15 U. FLA. L. REV. 463, 477 (1963); Small, *Gaffing at a Thing Called Cause*, 31 TEXAS L. REV. 630, 631 (1953).

129. The example is taken from Williams, *supra* note 126, at 64.

130. There seems little doubt but that the question of causation in prenatal injury cases will require expert testimony. See Durivage v. Tufts, 94 N.H. 265, 51 A.2d 847 (1947); 110 U. PA. L. REV. 553, 590 (1962).

131. Small, *supra* note 128, at 648-56.

on a principle of repetition—there is a tendency to relate statistical relevance to causal relevance. This is not to say, however, that such absurdity results as finding a causal relevance between motor accidents and nylon stockings because most women involved in the former wear the latter. The doctor's cause tends to be something he has already proved. To him causes are either notorious or unknown, and, to the frustration of the lawyer, the area in between presents only possibilities.

Lawyers do not rank causes; percentages are not tacked onto them. In one case and in one set of circumstances the lawyer seeks to close the causal link by proving that degree of factual relevancy the law is prepared to label as a cause.[132] The lawyer does not seek *the* cause but *a* cause,[133] and in his search he asks the question, but for act *A* would harm *B* have resulted. If the answer is in the negative and if its probity is not so slight as to warrant being discarded under the de minimis principle,[134] then the lawyer's task as to causation, although not necessarily as to liability, is complete. Liability is fixed by balancing all the causes—called causes-in-fact. If on balance a cause that can be attributed to the defendant's fault is isolated as the more important, he is saddled with responsibility.

The gulf between the professions is the difference between scientific integrity and policy expediency. Mutual frustration flows between.

Doctors, unfortunately, employ legal-sounding tests; Dr. Fraser has written that: "Proof of a causal association requires evidence that the factor occurs more often in pregnancies giving rise to malformed children than in pregnancies giving rise to normal children."[135] This is not the lawyer's test of a cause-in-fact; it is an expression of the test by which responsibility is determined. The balancing of probabilities is a procedure; the result is as variable as the factual circumstances of any two cases.

Prenatal injury cases will in the foreseeable future be tried with a crowd of medical witnesses, and it ought to be understood

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132. *But see* PROSSER, TORTS § 44 (2d ed. 1955). Although the singular word "cause" is used here for the purpose of clarity, there is never a single, isolated cause of any occurrence. In addition there is often more than one cause justifying liability on the part of the particular defendant. I have merely attempted to illustrate the process whereby a "cause" is characterized. In a trial this process is repeated a number of times.

133. 2 HARPER & JAMES, TORTS § 20.2, at 1110 (1956).

134. See, *e.g.*, MCKERRON, THE LAW OF DELICT 258 (1959).

135. Fraser, *Causes of Congenital Malformations in Human Beings*, 10 J. CHRONIC DISEASES 97, 107 (1959).

that all the law requires is a matching of causes. One of them it calls the legal cause, and the isolation that follows this appellation should not be taken to mean that it is the only cause. It is merely the only cause with which Justice may saddle the wrongdoer with liability. That is where it seeks its validity—not in scientific isolation.

The victim talem qualem rule presents problems to doctors. It is merely an expression of a legal policy that a wrongdoer must take his victim with all his susceptibilities, abnormalities, and propensities. Thus, in *Smith v. Leech, Brain & Co.*,[136] the plaintiff's husband was employed by the defendant company as a galvanizer. His duties consisted of lowering articles into a tank of molten metal. Once, while so engaged, a piece of metal spattered out and burned his lip. The workman died of cancer, his tissues at the time of the accident being in a pre-malignant condition. The defendants were held liable for the death of their employee, the court having found that the burn caused the cancer. This ought not to be understood to mean that lawyers embrace, as a *scientific principle*, the belief that burns cause cancer; it only means that where a pre-existing dangerous condition is aggravated by a burn on the lip, that burn is the legal cause of the cancer.

The trauma-causation field is the battleground of medico-legal dispute, and, as most of the cases relating to prenatal injuries have dealt with allegations of a traumatic cause, it is to be expected that further professional difficulties will occur.[137]

In those jurisdictions in which the courts have allowed wrongful death actions to be brought by the beneficiaries of stillborn infants, the fact of an unhealthy pregnancy quite probably may be regarded as irrelevant because of the victim talem qualem rule and the defendant held liable for causing the abortion. Difficulties might arise, however, if it could be established—and it seems that this will have to be done by the defendant—that the health of the fetus was such that it would have inevitably and of its own accord aborted. If this can be established, the defendant ought not to be held liable.[138]

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136. [1961] 3 All E.R. 1159. See also Gulf Ref. Co. v. Atchison, 196 F.2d 258 (5th Cir.), *cert. denied*, 344 U.S. 833 (1952); Love v. Port Authority, [1959] Ll. L. Rep. 541.

137. EASTMAN & HELLMAN, WILLIAMS' OBSTETRICS 531-32 (12th ed. 1961). See also Hertig, *Minimal Criteria Required To Prove a Prima Facie Case of Traumatic Abortion*, 117 ANN. SURGERY 496 (1943). See text at note 272 *infra*.

138. See 2 HARPER & JAMES, TORTS § 20.3, at 1122-23 (1956); PROSSER, TORTS § 44, at 219-20 (2d ed. 1955); Peaslee, *Multiple Causation and Damage*, 47 HARV. L. REV. 1127 (1934).

IV. Relevant Medical Data[139]

A. *Research in the Area*

As we have seen, during the formative period of the law the courts denied relief to the infant plaintiffs, not upon any basic jurisprudential foundation, but upon errors of science. Medicine also proceeded for years upon the supposition that the cause of congenital malformation lay in hereditary factors. The landmarks in medical knowledge respecting the role of environmental factors were reached almost simultaneously with those of the law.

Gregg's paper on the Rubella virus appeared in 1942.[140] In the 1950's, irradiation was convincingly indicted,[141] and we have in recent years witnessed the devastating consequences of a sleeping drug.[142]

As of the present day, doctors and investigators are satisfied that environment plays an integral role in the etiology of congenital malformations;[143] there is general agreement that environment can be a catalyst to heredity,[144] and vice versa. Areas of disagreement are, on the whole, confined to whether specific environmental influences are causes of malformations. We have considered the difficulties present in the concept of medical cause.[145] It seems advisable not to limit the inquiry in this manner, but to consider also those factors present in the fetal environment that might *contribute* to congenital malformations.

Environmental factors may be broadly divided into two classes: environmental deficiencies and environmental agents. Under the

139. See Appendix *infra*.

140. Gregg, *Congenital Cataract Following German Measles in the Mother*, 3 Tr. Opth. Soc'y Australia 35 (1941). See text accompanying note 202 *infra*.

141. Miller, *Delayed Effects Occurring Within the First Decade After Exposure of Young Individuals to Hiroshima Atomic Bomb*, 18 Pediatrics 1 (1956); Plummer, *Anomalies Occurring in Children Exposed in Utero to the Atomic Bomb in Hiroshima*, 10 Pediatrics 687 (1952); Yamazaki *et al.*, *A Study of the Outcome of Pregnancy in Women Exposed to the Atomic Blast in Nagasaki*, 43 J. Cell Physiol. (Supp. 1 1954) 319. See text accompanying note 223 *infra*.

142. Lenz & Knapp, *Thalidomide Embryopathy*, 5 Arch. Env. Health 100 (1962). See text accompanying note 249 *infra*.

143. Eastman & Hellman, Williams' Obstetrics 527 (12th ed. 1961). See generally Nesbitt, Perinatal Loss in Modern Obstetrics 237-68 (1957) [hereinafter referred to as Nesbitt]; Fraser, *Causes of Congenital Malformations in Human Beings*, 10 J. Chron. Dis. 97 (1959); Fraser & Fainstat, *Causes of Congenital Defects*, 82 Am. J. Dis. Child. 593 (1951); Gruenwald, *Mechanisms of Abnormal Development* (pts. 1-3), 44 Arch. Path. 398, 495, 648 (1947); Inghalls, *Causes and Prevention of Developmental Defects*, 161 A.M.A.J. 1047 (1956); Penrose, *Heredity and Environment in the Causation of Foetal Malformation*, 166 Practitioner 429 (1951); Wacker, *Congenital Abnormalities*, 86 Am. J. Obst. & Gynec. 310 (1963); Warkany & Kalter, *Congenital Malformations* (pts. 1-2), 265 New Eng. J. Med. 993, 1046 (1961).

144. Arey, Developmental Anatomy 7 (6th ed. 1954); Warkany & Kalter, *supra* note 143, at 1050.

145. See text accompanying note 131 *supra*.

first heading may be assigned socio-economic factors,[146] geographical factors,[147] nutritional deficiencies,[148] maternal age[149] and health,[150] and psychological elements,[151] all of which may be relevant to the intrauterine development of the infant.

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146. This is closely related to nutritional factors, as the lower the status the poorer the diet tends to become.

147. See, *e.g.*, Edwards, *Congenital Malformations of the Central Nervous System in Scotland*, 12 BRIT. J. PREV. & SOCIAL MED. 115 (1958); Penrose, *Genetics of Anencephaly*, 1 J. MENT. DEFIC. RES. 4 (1957); *cf.* Hewitt, *Geographical Variations in the Mortality Attributed to Spina Bifida and Other Congenital Malformations*, 17 BRIT. J. PREV. & SOCIAL MED. 13 (1963).

148. There has been a vast amount of research in this field. Primarily this has been related to maternal diets in animals. It was determined that specific vitamin deficiencies produced defects. Warkany, *Congenital Malformations Induced by Maternal Dietary Deficiency*, 13 NUTRITION REV. 289 (1955). See also MONTAGU, PRENATAL INFLUENCES 57-112 (1962) [hereinafter referred to as MONTAGU]. Montagu expresses concern at the "fashionable" practice of adolescent females to remain slim through poor diets. That, combined with the increasing trend toward young marriages and pregnancies, creates a situation in which the mother often cannot provide a satisfactory environment for the healthy building of another body. *Id.* at 59.

See also Fraser & Fainstat, *supra* note 143, at 598-600; Sontag & Wines, *Relation of Mothers' Diets to Status of Their Infants at Birth and in Infancy*, 54 AM. J. OBSTET. & GYNEC. 994 (1947); Tompkins, *The Underweight Patient as an Increased Obstetric Hazard*, 69 AM. J. OBSTET. & GYNEC. 114 (1955).

There is almost no scope for legal liability here, as, whatever relevance the maternal diet has, pre-conception dietary behavior and socio-economic factors provide too wide and all encompassing variables for any duty to be distilled. Seattle First Nat'l Bank v. Rankin, 59 Wash. 288, 367 P.2d 835 (1962); *cf.* 110 U. PA. L. REV. 553, 582-83 (1962).

The only "unequivocal" link to be established between the maternal diet and defects in humans are the iodine deficiencies that give rise to endemic cretinism. This has provided a particular problem for Switzerland. See MONTAGU 97; WRIGHT, INTRODUCTION TO PATHOLOGY, ETIOLOGY, THE CAUSES OF ABNORMALITIES AND DISEASES (3d ed. 1958), quoted in CURRAN, LAW AND MEDICINE 29, 33 (1960).

Too much iodine, on the other hand, has caused the same condition. Galina, *Iodides During Pregnancy*, 267 A.M.A.J. 1124 (1962).

149. The optimum childbearing age is between twenty-three and twenty-eight. MONTAGU 117. GLAISTER, MEDICAL JURISPRUDENCE AND TOXICOLOGY 358 (11th ed. 1962), has collected data on maternal age at childbirth. This ranges from an incredible five years eight months to past fifty. In the September 20, 1963 issue of Time Magazine, a prize is reported for the submission of documentary evidence of a birth that will "beat" the "record" of one Hilda Gosney who gave birth at the age of fifty years seven months! *Id.* at 102.

150. Rubella and syphilis are dealt with in the text accompanying notes 202-22 *infra*.

Pregnancy can give rise to a maternal toxemic condition, the exact cause of which is unknown although numerous theories from hereditary factors to the uterine localization of the placenta abound. See Beinarz, in VILLEE, GESTATION 109 (1959). The condition may affect the fetus. MONTAGU 241. The issue of diabetic women have a high mortality rate. But what is important to the lawyer is the fact that a diabetic who has been subjected to a traumatic experience such as a motor vehicle collision may experience an aggravation of her condition with resulting deleterious consequences for the fetus. Again, a traumatic experience can push a pre-diabetic mother over the line. A defendant can be responsible in both these cases for whatever aggravation may ensue.

See Joslin, *The Relation of Trauma to Diabetes*, 177 ANN. SURG. 607 (1943). See also CURRAN, LAW AND MEDICINE 51 n.18 (1960).

In Valence v. Louisiana Light & Power Co., 50 So. 2d 847 (La. 1951), a mother alleged that she was between two and four months pregnant when she was a passenger in a bus that was negligently driven off the road into a ditch. The mother apparently received "only a slight jolt," but shortly afterwards she experienced a slight uterine discharge and a week later she was confined to a hospital for ten days. Five and one-half months

On the other hand, environmental agents are, broadly speaking, not subtractions, but positive influences. Medical science today can condemn with varying degrees of certainty a wide variety of teratogenic agents and stimuli that are capable of effecting abnormalities.[152]

It is obviously not permissible or feasible for experiments to be carried out upon humans,[153] and the studies that have been undertaken must all be considered subject to a number of qualifications that may be relevant to their overall validity and acceptance.[154] The problem of the accuracy in human investigation relates, *inter alia*, to maternal memory and bias, the necessity for retrospective investigation, the paucity of subjects, and the differences between the methods used by the various investigators and their differing views as to what constitutes a malformation.[155]

Hope for more accuracy in the future is to be found in the Collaborative Perinatal Research Project, presently carrying out its work at Bethesda, Maryland. There it is intended to follow up the outcome of approximately fifty thousand pregnancies in order to examine in depth the precise effect of already suspect factors, to investigate and identify factors not presently suspect, and to elucidate the mechanism by which these factors exert their influence. As of June 1963, 36,500 women were under study, approximately 29,000 had already been delivered, and 17,400 one-year-old children had been

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after the accident she gave birth to a stillborn infant weighing an incredible fourteen pounds. There was evidence that the mother was a diabetic who, five years before the accident, had given birth to a stillborn child. In addition, there was some evidence that she had failed to adhere to her diet. Her contention was that as a result of the accident she had been required to stay in bed for a large part of the gestation period and that her resultant obesity produced the secondary result that her child's weight also became excessive. The court, in rejecting this explanation, held that the lack of exercise and increased weight of the mother could not have affected the fetus. Noting her previous history, the fact that she was a diabetic, and the mortality rate of children from such mothers, the court refused to grant any relief, stating that only a layman might attribute the result to the accident.

151. See Yankauer, *An Evaluation of Prenatal Care and Its Relationship to Social Class and Social Disorganization*, 43 AM. J. PUB. HEALTH 1001 (1953).

152. Fraser, *Causes of Congenital Malformations in Human Beings*, 10 J. CHRON. DIS. 97 (1959). The author of that article is prepared to implicate only five agents: (i) radiation, therapeutic and atomic; (ii) rubella; (iii) toxoplasma organism; (iv) acute folic acid deficiencies; (v) synthetic progestins. As we have seen, his definition of cause is legally unacceptable. Warkany & Kalter, *supra* note 143, do not go much further.

153. HAMILTON, BOYD & MOSSMAN, HUMAN EMBRYOLOGY 206 (3d ed. 1962); Macintosh, *The Problem of Congenital Malformations*, 10 J. CHRON. DIS. 139, 142 (1959).

154. Fraser, *supra* note 152, at 100, sets out the methods presently adopted.

155. See Macintosh, *supra* note 153. Thus it is impossible to undertake any prospective investigations relating to toxaplasmosis, as a large number of women afflicted with the disease do not know that they have it. Warkany & Kalter, *supra* note 143, at 1047 (1961).

subjected to examination.[156] It is still too early for any authoritative findings to be announced, but the investigators estimate that the abnormal outcomes will include:[157]

(i) Prematurity: 10 per cent.
(ii) Congenital malformations: 7 per cent.
(iii) Stillbirths and neo-natal deaths: 3.6 per cent.
(iv) Mental retardation: 3 per cent.

A great deal of the information we possess at present has resulted from animal experimentation. This has its sequelae both for the doctor and the lawyer, because the information must be considered with a degree of caution. Two eminent teratologists, however, have said:

> "Thus, while one must caution that production of a specific congenital malformation in a laboratory animal by a particular means certainly does not imply that that defect has the same etiology in man, these studies reveal the existence of embryologic instabilities in mammals that can be transformed into malformations by environmental factors, and allude that such phenomena may also exist during human prenatal life."[158]

On the other hand, the position can be the reverse. For example, aminopterin has a far more severe effect on human fetuses than on rat fetuses.

B. *Critical Times and Environmental Agents*

The precise mechanism by which teratogenic agents exert their influences is in many cases unknown. The popular hypothesis is that described as the developmental arrest theory.[159]

Embryologists have discovered and tabulated the sequences of normal development,[160] and it has been determined that, at specific times and under genetic control, stages are reached at which the

156. The children will receive their final thorough examination when they reach the age of seven years.

157. Collaborative Project Reporter, *The Collaborative Perinatal Research Project: 5 Years of Progress*, Autumn, 1963.

158. Warkany & Kalter, *supra* note 143, at 1049 (1961).

159. Inghalls, *Causes and Prevention of Developmental Defects*, 161 A.M.A.J. 1047 (1956). The theory itself is not novel. See OGSTON, LECTURES ON MEDICAL JURISPRUDENCE 196 (1878). The great problem here relates to the fact that it is probably inaccurate to trace all abnormalities to one theory. The very word "arrest" would exclude those factors that cause persons to become "giants" (usually genetic factors are involved in this situation). Dr. Inghalls has been accused of putting all his "eggs in one basket." See Gruenwald's letter, in 162 A.M.A.J. 1077 (1956); Fraser's letter, in *id.* at 1651 (1956). It is extremely difficult for a lawyer to weigh all the pros and cons, for the simple reason that doctors generally do not write for the benefit of lawyers. Thus, everything Dr. Fraser writes in his letter must be read subject to his definition of "cause," the problems of which are discussed in the text accompanying note 135 *supra*.

160. A table of the sequences is set out in AREY, *op. cit. supra* note 144, at 106.

cells develop into tissues and organs. After this, at another critical time, proliferation takes place from the foundations so laid. Now, if a sufficient dosage of a teratogenic agent exerts its influence at one of these critical times, it may be understood that either foundational damage (*i.e.*, the influence at a critical differentiating stage) or secondary damage, in the sense of inhibiting or arresting the growth of organs already formed, may result.[161] Overgrowth or failure to regress[162] is also conceivable, and it has been suggested that this may result from excessive hormone stimulation.[163]

The critical stages in the differentiating phase occur within the first trimester, and a teratogenic factor producing its insult at this time will result in a great variety of defects, likely to be of a serious nature.[164] As the organs grow, their susceptibility to structural damage decreases, and arrest or degeneration will be the result of an insult. Each organ, however, has its own critical stage, and within the teratogenic zone the potential sequelae range from death to major, minor, or no defects.[165] Since a specific defect can be caused by a variety of unrelated agents, it is hazardous to work back from the deformity in the hope of isolating *the* cause.[166]

The variables are, therefore, the teratogenic dosage and the stage of fetal development. Dr. Inghalls submits that the sequences of normal development also determine the sequences of maldevelopment, and thus, given the malformation, it may be possible to determine the time at which the adverse influence was exerted.[167]

Doctors Warkany and Kalter have warned, however, that:

> "Another possible fallacy is attributing certain congenital malformations or syndromes to environmental events that coincide with the time of embryological development of the part or parts that became malformed . . . because in theory any interference with embryogenesis before such developmental milestones could also be responsible for the defects or a mutational or chromosomal aberration dating from before conception can manifest itself at such a 'critical period.' "[168]

They go on to submit, therefore, that it is permissible only to apply the critical time basis as a means of determining the latest time the origin of the malformation could have exerted its influence.

161. Inghalls, *supra* note 159, at 1051.

162. NESBITT 237; PATTEN, HUMAN EMBRYOLOGY 231-32 (2d ed. 1953).

163. Wilson, *Experimental Studies on Congenital Malformations*, 10 J. CHRON. DIS. 111, 115 (1959).

164. *Id.* at 119.

165. NESBITT 245-46.

166. *Cf.* PATTEN, *op. cit. supra* note 162, at 230.

167. Inghalls & Curley, *Principles Governing the Genesis of Congenital Malformations Induced in Mice by Hypoxia*, 257 NEW ENG. J. MED. 1121, 1126 (1958).

168. Warkany & Kalter, *supra* note 143, at 1050.

As a consequence, medical certainty will be found only in this negative sense. However, the rendering of a dormant factor into an active one is not necessarily excusable in law.[169]

Provided the malformation is such that an expert is able to determine whether it is the result of foundational damage or an arrest in proliferation, it is possible to state with reasonable certainty when the environmental agent must have produced its insult. The former malformation should have its origin in the first trimester, but the latter not necessarily so. Therefore, a plaintiff suffering from structural damage may find it impossible to succeed in his cause of action if the alleged wrongful act took place after the first trimester.

It must also be remembered that, if we accept that the factors causing uterine death may also be responsible for sublethal damage, this, combined with the fact that medical science is unable to account for the majority of prenatal deaths, means that medicine cannot account for the majority of malformations either. This has been so despite thorough post mortem examination of the infant and accurate clinical data regarding the mother.[170]

Teratogenic agents either upset the developmental pattern directly or affect it by subtracting an external component necessary to healthy intrauterine life. The developmental arrest theory is relevant not only to anatomical malformations, but also to mental abnormalities, though doctors can speak with even less certainty as to the etiology of the latter. Perinatal anoxia, however, has been singled out as a possible cause of these mental deviations.

C. *The Effects of Specific Environmental Agents*

We all live in societies that are maimed by the high incidence of cerebral palsy, epilepsy, mental retardation and deficiencies, behavior disorders, and minor impediments.

Doctors are now satisfied that not all these afflictions can be attributed to hereditary factors, as studies of epilepsy have shown.[171] Since these disorders usually reveal themselves in childhood, investigators have increasingly looked toward the perinatal period in order to ascertain their cause.

1. *Anoxia*

It is known that the greatest single cause of infant mortality is anoxia, and, knowing that deprivation of oxygen can kill, it seems

169. See text accompanying note 137 *supra*.

170. NESBITT 99; Wilson, *supra* note 163, at 123.

171. BARROW & FABING, EPILEPSY AND THE LAW 7, 11-34 (1956). Cerebral palsy is in addition rarely hereditary. NESBITT 191.

reasonable to conclude that it may also maim. Investigators have found that anoxia causes hemorrhages that may inflict serious damage to the coverings (pia mater; arachnoid) and white matter of the brain. The resultant destruction of nerve cells can be associated with the impairment of the function of certain areas of the brain.[172] The fetus, while in utero, is able to withstand without distress an oxygen pressure that would be found at an altitude of some thirty-three thousand feet. But this capacity to withstand low oxygen pressures does not mean that the fetus is able to tolerate a depression of its *usual* oxygen level for any appreciable length of time.[173]

A link between hyperoxia (too much oxygen) and blindness caused through retrolental fibroplasia has also been established.[174] All these facts provide strong indicia which led Doctors Lilienfeld and Passamanick to undertake a mammoth series of studies in an attempt to link brain disorders to perinatal factors.

They have suggested the existence of a continuum of reproductive casualty which, ranging from death through cerebral palsy, epilepsy,[175] mental deficiency,[176] and behavior disorders[177] to reading disorders,[178] is statistically relevant to the complications of pregnancy and prematurity. Factors include the duration of labor, malpresentations, multiple births, and placental disorders and diseases such as placenta previa, all of which may affect the maternal oxygenated blood supply to the fetus.

Concurrent with these inquiries, studies have been conducted of various drugs that can have a depressant effect on the respiratory system. This effect may be direct, resulting in a fetal inability to metabolize drugs that have passed transplacentally, or indirect, reacting upon the respiratory processes of the mother.[179]

Anesthetics, certain analgesics (pain killers), and sedatives have a depressant effect on the respiratory system, and thus Dr. Montagu has submitted that, since all anesthetics and most sedative

172. MONTAGU 336-37.

173. Eastman, *Mount Everest in Utero*, 67 AM. J. OBST. & GYNEC. 701, 707 (1954).

174. *Id.* at 711.

175. Lilienfeld & Pasamanick, *The Association of Maternal and Fetal Factors With the Development of Cerebral Palsy and Epilepsy*, 70 AM. J. OBSTET. & GYNEC. 93 (1955).

176. Lilienfeld & Pasamanick, *Association of Maternal and Fetal Factors With the Development of Mental Deficiency* (pt. 1), 159 A.M.A.J. 155 (1955) and see *id.* (pt. 2), 60 AM. J. MENT. DEFIC. 557 (1956). Prematurity was found to be of particular relevance in these studies.

177. Pasamanick, Rogers & Lilienfeld, *Pregnancy Experience and the Development of Behavior Disorder in Children*, 112 AM. J. PSYCHIATRY 613 (1956). See also Preston, *Late Behavioral Aspects Found in Cases of Prenatal, Natal and Postnatal Anoxia*, 26 J. PEDIATRICS 353 (1945).

178. Kawi & Pasamanick, *Association of Factors of Pregnancy With the Development of Reading Disorders in Childhood*, 166 A.M.A.J. 1420 (1958).

179. Sandberg, *Drugs in Pregnancy, Their Effects on the Fetus and Newborn*, 94 CALIF. MED. 287 (1961). See generally MONTAGU 322-60; NESBITT 110, 355.

and pain-relieving drugs serve to reduce the oxygen levels of both mother and fetus, in those cases in which such drugs must be used the obvious indication is that they should be used with the greatest caution.[180]

Dr. Inghalls attributes a great deal to anoxia;[181] Dr. Warkany is dubious.[182] *The* cause of these serious disorders is unknown; but anoxia is conceivably *a* cause, and, that being so, it seems that Dr. Eastman's recommendation in his Presidential Address to the 64th Annual Meeting of the American Association of Obstetricians ought to be followed. He suggested that oxygen should be administered to the mother as a matter of course during the last five to fifteen minutes of childbirth in order to protect the baby which may require it.[183]

It is not submitted that any such standard of obstetrical practice be required by law. The law's strength really lies in its ability to compensate. A preventive law in the sense of naked compulsion is uncalled for against a body of men intimately concerned with prenatal salvage. Obstetric standards required by law are high enough. The doctor who does not know the extent of the mother's anesthetized condition or who has not adopted impeccable care during delivery may well be presented with an emergency. His capacity to stay out of court is going to be directly proportional to his ability to save the cyanosized infant by resuscitation techniques and his general skill in handling the situation.[184]

2. *Diseases*

Certain diseases entering into the fetal environment may have serious effects upon the child. In this class of case, the limits of lia-

180. MONTAGU 341-42. See also Hellman & Hingson, *The Effect of Various Methods of Obstetric Pain Relief on Infant Mortality*, 53 N.Y.S.J. MED. 2767 (1953).

181. Inghalls, *Anoxia as a Cause of Fetal Death and Congenital Defect in the Mouse*, 80 AM. J. DIS. CHILD. 34 (1950); Inghalls & Curley, *supra* note 167, at 1121.

182. Warkany & Kalter, *supra* note 143, at 1047. See also Campbell, *The Effects of Neonatal Asphyxia*, 25 ARCHIV. DIS. CHILD. 351 (1950). Neonatal asphyxia is not a common cause of later mental or physical retardation. *Cf.* Fraser, *Neonatal Asphyxia*, 171 A.M.A.J. 1028 (1959)—a note of his report to the 15th British Congress of Obstetrics and Gynaecology, wherein he maintains a definite association exists between asphyxia at birth and subsequent epilepsy, lack of coordination, and personality defects.

183. Quoted in MONTAGU 333.

184. An excellent example of this is found in Lewis v. Read, 41 N.J. 121, 193 A.2d 255 (Sup. Ct. 1963). Here the dispute turned on whether the child's afflictions (deaf, dumb, subject to seizures) was the result of a congenital infirmity or the negligence of the physician attending at childbirth.

Another case is reported in the New York Times, Nov. 19, 1964, p. 31, col. 3. There a mother and her son recovered 158,000 dollars from the Doctors Hospital in New York City. It was alleged that the baby's birth was delayed by pressing towels against his head until the obstetrician arrived. Medical experts testified that this could have cut off the baby's oxygen supply and caused the irreparable brain damage. The case was apparently a complete reversal of the usual malpractice trial, as the plaintiff called thirteen witnesses and the defendant, a retired neurologist, one.

bility will be narrowed since fault can be found only when a disease has been communicated intentionally or negligently to the mother and thus to the fetus. Again, limits must be drawn as a practical matter, for, even assuming that it be determined with certainty that influenza exerts a deleterious effect upon the fetus, it would be asking too much of society to require every person who has contracted influenza to isolate himself completely from his fellows.

The transmission of teratogenic agents from mother to fetus usually takes place transplacentally. The placenta functions more as a filter[185] than as a barrier.[186] Viruses and gases on occasions may pass unmodified, but at other times some modification takes place.[187] Transplacental transmission is not, however, the only form of carriage, and experiments have determined that some transmission between mother and child can take place through the surrounding fluids.[188] The importance of this lies in the fact that the fetus enjoys no period of invincibility. Thus, though certain critical times are reached before the placenta functions properly,[189] teratogenic agents may still have had an opportunity to effect their serious insults.

Since viruses grow well on young proliferating tissue,[190] the consequences of viral infections are likely to be far more severe during the first trimester. The sequelae can range from death to mild changes, congenital anomalies being somewhere in between.[191]

The leading case on the negligent communication of diseases is probably *Evans v. Liverpool Corporation*.[192] There the visiting physician of a convalescent nursing home negligently discharged the plaintiff's son, who was still suffering from scarlet fever, with the result that the plaintiff's other three children became infected. Judgment was in fact rendered for the defendant, but on the basis of the now discredited rule that permitted a hospital to escape liability for negligent performance of professional duties by

185. AREY, *op. cit. supra* note 144, at 139; Sandberg, *Drugs in Pregnancy: Their Effects on the Fetus and Newborn*, 94 CALIF. MED. 267, 287 (1961).

186. It is an insuperable barrier to bacteria, however, AREY, *op. cit. supra* note 144, at 139.

187. See MONTAGU 48; Page, *Transfer of Materials Across the Human Placenta*, 74 AM. J. OBSTET. & GYNEC. 705 (1957). See generally Earn & Nicholson, *The Placental Circulation, Maternal and Fetal*, 63 AM. J. OBSTET. & GYNEC. 1 (1952); Potter, *Placental Transmission of Viruses*, 74 AM. J. OBSTET. & GYNEC. 505 (1957).

188. MONTAGU 51-56.

189. The placenta starts to function at about the fourth week, but only does so perfectly at the beginning of the fourth month. MONTAGU 51.

190. Because certain anti-cancer drugs act in a similar manner, these ought not to be administered to pregnant women. MONTAGU 355.

191. Adams, *Viral Infections in the Embryo*, 92 AM. J. DIS. CHILD. 109 (1956); Evans & Brown, *Congenital Anomalies and Virus Infections*, 87 AM. J. OBSTET. & GYNEC. 749 (1963).

192. [1906] 1 K.B. 160. See also Skillings v. Allen, 143 Minn. 323, 173 N.W. 663 (1919).

its staff.[193] An interesting aspect of the case was counsel's attempt to hold the hospital absolutely liable on a *Rylands v. Fletcher*[194] analogy. However, the court refused so to extend the principle; thus plaintiffs in this class of case will be required to prove defendants' negligence.

In this regard there has been some discussion of a requirement of either a contractual relationship between the parties[195] or actual knowledge of the danger plus a failure to give warning on the part of the defendant;[196] but it seems likely that all a plaintiff will have to show is that the doctor exhibited a lack of skill and care in diagnosis[197] or discharge.[198] As against a layman defendant, questions of special skill are irrelevant, and his liability will be grounded upon the ordinary principles of negligence.

With the notable exception of rubella (German measles) and syphilis, there has been little evidence and a great deal of speculation as to the ramifications of diseases. Adams and his co-workers found that when mice were injected with a human strain of influenza a decrease in the pregnancy rate and an increase in the fetal abnormality rate resulted.[199] On the other hand, Hartman and Kennedy found that maternal illness during the first trimester of pregnancy led to no appreciable increase in the incidence of congenital abnormalities.[200]

There is a body of opinion that would include various other contagious diseases, such as measles, chicken pox, and small pox,[201] as teratogenic. But, until further evidence is forthcoming, they cannot be indicted with any great measure of confidence.

a. *Rubella*

The lowly rubella virus has been connected beyond a reasonable doubt with a "flush-hand" of abnormalities, including deafness, muteness, dental defects, cleft palate, cardiac defects, cataracts,

193. The rule was abandoned in the United Kingdom in Cassidy v. Ministry of Health, [1951] 2 K.B. 343. Some American courts are following suit and shedding this unjustifiable immunity. *E.g.*, Bing v. Thunig, 2 N.Y.2d 662, 163 N.Y. Supp. 29 (1958).

194. L.R. 3 H.L. 330 (1868).

195. *E.g.*, Hales v. Kerr, [1908] 2 K.B. 601.

196. CLARK & LINDSELL, TORTS § 1775 (12th ed. 1961); *cf.* Davis v. Rodman, 147 Ark. 385, 227 S.W. 612 (1921).

197. Jones v. Stanko, 118 Ohio St. 147, 160 N.E. 456 (1928).

198. Evans v. Liverpool Corp., [1906] 1 K.B. 160.

199. Adams, *supra* note 191. See also Leck, *Incidence of Malformations Following Influenza Epidemics*, 17 BRIT. J. PREV. & SOC. MED. 70 (1963).

200. 5.4%: 5.2%. Hartman & Kennedy, *Illness in the First Trimester of Pregnancy*, 38 J. PEDIATRICS 306 (1951); Warkany & Kalter, *Congenital Malformations*, 265 NEW ENG. J. MED. 1046 (1961).

201. Manson, Logan & Loy, *Rubella and Other Virus Infections During Pregnancy*, H.M.S.O. 1960. See also MONTAGU 284-307.

mental deficiency, and microcephaly.[202] There are two theories as to the mechanism of the virus:

(1) It may prevent normal development by invading the differentiating cells; or
(2) It may invade the embryonic vascular tissue and, by damaging the blood vessels, disturb nutrition.[203]

But, whatever the theory, the fact remains that it is one of the most destructive of all environmental agents. One of its serious aspects is to be found in the fact that the infection may be so mild that not even the mother is aware of her condition.[204] Maternal immunization may not protect the fetus, and it has recently been reported that the virus possesses the ability to survive long enough to cause defects even when the mother suffered from the infection a few weeks before conception.[205]

Doctors have suggested that young girls be artificially infected[206] or have encouraged the practice of rubella parties,[207] at which the mother of an infected daughter would allow her to spread the disease among the female offspring of her friends. Besides the fact that rubella may have the, albeit rare, consequence of encephalitis,[208] a lawyer can only warn of the increased dangers involved in communicating the disease to outsiders, some of whom may conceivably be pregnant. A rubella party presents precisely such a risk, and it is one by reason of which the actor's conduct may be characterized as negligent. Thus the greatest care ought to be taken to ensure that the ramifications of what is essentially a good deed do not include that which was sought to be avoided.

The serious nature of German measles early in pregnancy has provided the main platform upon which is grounded the medico-legal desire to clarify the boundaries of criminal abortion.[209] There is no doubt that a number of abortions are performed each year

202. Bell, *On Rubella in Pregnancy*, 1 BRIT. MED. J. 686 (1959); Coffey & Jessop, *Rubella and Incidence of Congenital Anomalies*, 6 IRISH J. MED. SCI. 1 (1959); Inghalls, *Rubella, Its Epidemiology and Teratology*, 239 AM. J. MED. SCI. 363 (1960); Jackson & Fisch, *Deafness Following Rubella*, 2 THE LANCET 1241 (1959).

203. Skinner, *The Rubella Problem*, 101 AM. J. DIS. CHILD. 104, 107 (1961).

204. Wilson, *Experimental Studies in Congenital Malformations*, 10 J. CHRON. DIS. 111, 123 (1959).

205. Selzer, *Virus Isolation, Inclusion Bodies, and Chromosomes in a Rubella-Infected Human Embryo*, 2 THE LANCET 336, 337 (1963).

206. Skinner, *supra* note 203, at 106.

207. MONTAGU 283.

208. Warkany & Kalter, *supra* note 200, at 999 (1961).

209. The critical time is during the first trimester. *Id.* at 998. See also Pleydell, *Anencephaly and Other Congenital Anomalies*, 1 BRIT. MED. J. 309 (1960). He warns of the possibility of destroying healthy pregnancies if the abortion is performed as a result of infection during the latter half of the gestation period. After the passing of the critical time, infection presents a negligible risk. MONTAGU 281.

upon women who have contracted German measles, and it does seem unjust to expect the medical profession to practice in this zone of apparent criminality. Rubella certainly presents the most appealing case for therapeutic abortion, and it is probable that today, because of our knowledge of the disease and its probable results when contracted at critical times, such an exception, recognized in law, would not be subject to abuse.

b. *Syphilis*

The venereal disease syphilis is connected with the birth of congenitally syphilitic babies and the infliction of deafness and mental retardation.[210] Most of the knowledge in this field has been culled from individual cases.[211] Dr. Bonugli has reported that "no grounds appear to exist to support a belief that syphilis is spontaneously losing its power to attack, damage or destroy the products of conception in the human female."[212]

Syphilis is capable of producing its damage at the moment of conception. The Civil Senate of the Supreme Court of West Germany held that a cause of action had accrued to an infant plaintiff who sued a hospital alleging that, as a result of a negligent blood transfusion, the donor of which was syphilitic, plaintiff was caused, after her subsequent conception, to be born suffering from congenital syphilis.[213] But whether a common-law country would recognize a right of action arising from an act that simultaneously harmed and created the plaintiff is an open question.

Adopting a causative approach, it is relatively simple to impeach the manufacturer of defective baby food[214] or a pharmaceutical company that manufactures contraceptive pills which result in faulty spermagenesis,[215] even though the act of omission takes place not only before the birth but also before the conception of the child. Holmes' original query must now be answered by saying that it is possible to owe a prospective conditional liability to one not yet in being.[216] In *Zepeda v. Zepeda*[217] it was held that the fathering of an illegitimate child was a tort against the child. After going that

210. Warkany & Kalter, *supra* note 200, at 1046.

211. Pleydell, *supra* note 209, at 312.

212. Bonugli, *Untreated Syphilis*, 33 BRIT. J. VENER. DIS. 217, 222 (1957). Syphilis is likely to cause the spontaneous premature onset of labor should there be a post-conception infection. Eastman, *Prematurity From the Viewpoint of the Obstetrician*, 1 AM. PRAC. 343 (1947).

213. B.G.H.Z., 8, 243 (II Civ. Sen. December 20, 1952).

214. Kine v. Zuckerman, 4 Pa. D. & C. 227 (1924).

215. Van der Merwe, Note, 26 TYD. VIR HED. R-H REG. 294 (1963).

216. See note 18 *supra* and accompanying text.

217. 41 Ill. App. 2d 240, 190 N.E.2d 849 (1963).

far, however, the Illinois court refused relief, expressing the view that the legislature is the proper body to extend such a remedy. The court referred to the prenatal injury cases as follows:

> "The case at bar seems to be the natural result of the present course of the law permitting actions for physical injury ever closer to the moment of conception. In point of time it goes just a little further. The significance of this course to us is this: if recovery is to be permitted an infant injured one month after conception, why not if injured one week after, one minute after *or at the moment of conception*? It is inevitable that the date will be further retrogressed. How can the law distinguish the day to day development of life? If there is human life, *proved by the subsequent birth*, then that human life has the same rights at the time of conception as it has at any time thereafter. There cannot be absolutes in the minute to minute progress of life from sperm and ovum to cell, to embryo to fetus, to child."[218]

It therefore seems that a congenitally syphilitic child could have a right of action arising from the same act by which it is conceived.[219] However, in this class of cases the child will have to controvert parental immunity where it still exists.[220] It is submitted that maternal consent to the act of intercourse ought not to be extended to deny relief to the child.[221]

Closely related to this case would be the question of the right of action in the defective offspring of an incestuous union, and again it is submitted that the child ought to be able to recover. The fact that the child will have to sue through a guardian may not present too great a problem, since in certain circumstances, as in the syphilis cases, maternal annoyance may suffice.[222] But, in the incestuous union situation, a harder practical problem is presented.

3. *Irradiation*

The highest percentage of "law suit casualties" in the medical profession falls on those specialists practicing in the field of roentgenology and radiology.[223] Radiologists have been held responsible for

218. *Id.* at 249-50. (Emphasis added.)

219. *Cf.* Note, 77 HARV. L. REV. 1349 (1964).

220. *See* PROSSER, TORTS § 101, at 675-77 (2d ed. 1955). Compare Deziel v. Deziel, [1953] 1 D.L.R. 651, and Young v. Rankin, [1934] S.C. 499.

221. Hegarty v. Shine, 4 D.L.R. 288 (Irish 1878). If there has been fraud, however, the woman may recover. Crowell v. Crowell, 180 N.C. 516, 105 S.E. 206 (1920).

222. FOOTE & SANDER, CASES ON FAMILY LAW 5B-21a (temp. ed. 1962), reports a case of *"paternal* annoyance." In that case a husband recovered damages against an abortionist who had performed an illegal abortion upon the wife with her consent.

223. STETLER & MORITZ, DOCTOR AND PATIENT AND THE LAW 421 (4th ed. 1962).

causing death,[224] injuries through burns,[225] and even prompting "cancerphobia."[226] At least in South Africa, with reference to radiologists the implied consent usually found when a patient submits to medical treatment will be insufficient unless the doctors fully explain the potential dangers and risks involved in therapeutic treatment.[227]

There is no doubt that irradiation, be it atomic[228] or therapeutic,[229] has a detrimental effect on the fetus. Depending upon the dosage, the result may be intrauterine death,[230] maldevelopment or malformation,[231] the rendering of the conceptus sterile,[232] or the causing of mutational changes that may be transmissible to the descendants of the irradiated fetus.[233] The possibility that negligent irradiation may affect the germ cells and thus produce hereditary congenital malformations opens up a field of almost perpetual liability.[234] Perhaps the courts, when faced with this problem, may limit the liability by compensating the original plaintiff for his

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224. Hess v. Rouse, 22 S.W.2d 1077 (Tex. Civ. App. 1929).

225. Merkle v. Kegerreis, 350 Ill. App. 103, 112 N.E.2d 175 (1953); Simon v. Kaplan, 321 Ill. App. 203, 52 N.E.2d 832 (1944); McElroy v. Frost, 268 P.2d 273 (Okla. 1954); McCaffrey v. Hague, [1949] 4 D.L.R. 291.

226. Ferrara v. Galluchio, 5 N.Y.2d 16, 176 N.Y.S.2d 996, 152 N.E.2d 249 (1958).

227. Esterhuizen v. Administrator, Transvaal, [1957] So. Afr. L.R. 710; Lymbery v. Jeffries, 1925 A.D. 236. See Milner, *The Doctor's Dilemma*, 74 S.A.L.J. 384 (1957).

228. See authorities cited in note 141 *supra*. Professor Cavers in his recent article, *Improving Financial Protection of the Public Against the Hazards of Nuclear Power*, 77 HARV. L. REV. 644 (1964), discusses the question of cancer causation only, at p. 669. But his arguments as to strict liability are equally relevant in the case of fetal irradiation damage or the case where irradiation may lead to hereditary defects. *Cf.* Lloyd, *Liability for Radiation Injuries*, 12 CURRENT LEGAL PROB. 33 (1959). Lloyd finds the damage (*i.e.*, a radiation injury transmissible to offspring) too uncertain and intangible for legal remedy at present. *Id.* at 52.

229. There is, however, some dispute as to the ramifications of diagnostic dosages. See generally Dunlap, *Medicolegal Aspects of Injuries From Exposure to Roentgen Rays and Radioactive Substances*, 11 MO. L. REV. 137, 181, 186-88 (1946); Roland & Weinberg, *Radiation Effect on the Unborn Embryo Immediately After Conception*, 62 AM. J. OBSTET. & GYNEC. 1167 (1951); Stone, *Radiation Hazards in Obstetrics and Gynecology*, 15 N.Y. MED. 605 (1959).

230. Mayer, *Therapeutic Abortion by Means of an X-Ray*, 32 AM. J. OBSTET. & GYNEC. 945 (1936).

231. Warkany & Kalter, *supra* note 200, at 1048.

232. A "possibility." MONTAGU 460. *But see* Gruenwald, *Mechanisms of Abnormal Development*, 44 ARCH. PATH. 398, 405 (1947). X-rays are used for sterilization purposes. Dunlap, *supra* note 229, at 181-84. A recent article reports a case in which the mother's ovaries were exposed to a therapeutic dosage after which she conceived a child that has been born. To date no abnormalities have been detected. Welton & McSweeney, *Successful Pregnancy After Radiation Therapy for Carcinoma of the Cervix*, 88 AM. J. OBSTET. & GYNEC. 443 (1964).

233. AREY, DEVELOPMENTAL ANATOMY 185 (6th ed. 1954); Boyd, *Damage to Chromosomes by Therapeutic Doses of Radioiodine*, 1961-1 THE LANCET 997.

234. Statutes of limitations or prescription do not as a rule run against minors. See WINFIELD, TORTS § 804 (7th ed. 1963); Note, 110 U. PA. L. REV. 553, 574 (1962).

inability to procreate normal children, leaving the election whether to have children to the plaintiff without allowing him again to involve the negligent defendant in a later suit.

It has been suggested that fifteen or twenty roentgens at the fetal site will be sufficient to cause damage.[235] The serious nature of this submission may be appreciated by reference to the Nolan and Patterson report,[236] wherein it is stated that one dental X-ray machine in San Francisco produced 315 *r* at a single sitting. The posture of patients in a dental chair unquestionably exposes the pelvic area to the downward X-rays.[237]

There is some dispute as to whether the incidence of leukemia increases after fetal irradiation, even in diagnostic dosages.[238] Some further studies are necessary, but it seems clear that the pregnant uterus ought never to be exposed to X-rays, no matter how small the dosage.[239] This will raise problems when the mother requires therapeutic treatment in the fetal area, and in these circumstances it might be desirable to terminate the pregnancy.[240]

Two American decisions have dealt with the question of prenatal injuries caused by irradiation. In both, relief was denied as a matter of law. In *Smith v. Luckhardt*,[241] a physician negligently diagnosed a pregnancy as a tumor of the womb and administered six, one-half hour X-ray treatments over a period of three months. The child, who was born feeble-minded and crippled, lived to the age of thirteen years, but died subsequent to the commencement of the

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235. NESBITT 249. There is a dispute as to the dosages required in order to bring about each type of harm. Warkany & Kalter, *supra* note 200, at 1048.

236. Nolan & Patterson, *Radiation Hazards From the Use of X-Ray Units*, 61 RADIOLOGY 625 (1953). A dentist was held liable for X-ray burns in Ragin v. Zimmerman, 206 Cal. 723, 276 Pac. 107 (1929).

237. MONTAGU 458.

238. Cooper & Steinbeck, *Leukemia Following Irradiation in Utero*, 33 BRIT. J. RADIOL. 265 (1959); *cf.* Court, Brown & Doll, *Prospective Study of Leukemia Mortality of Children Exposed to Anti-natal Diagnostic Radiography*, 53 PROC. ROY. SOC'Y MED., 761 (1960); Ford, *Fetal Exposure to Diagnostic X-Rays and Leukemia and Other Malignant Diseases in Childhood*, 22 J. NAT'L CANCER INST. 1093 (1959).

239. MONTAGU 446-71. An exception may be radioiodine treatment, however, for the fetal thyroid functions only after about twelve weeks. Thus the administration of radioactive iodine is dangerous only after the elapse of this period. See Chapman, *The Collection of Radioactive Iodine by the Human Fetal Thyroid*, 8 J. CLIN. ENDOCRIN. 717 (1948).

In discussing causation problems, Gamble, in a note in 3 VAND. L. REV. 282 (1950), suggests the use of X-rays in order to determine damage while the child is still in utero. Something of this nature was done in *Sox* (see text at note 268 *infra*), but it does seem wise not to use X-ray at all.

240. Nice problems of balancing maternal-fetal interests arise here. See 110 U. PA. L. REV. 553, 581 (1962). As long as the tragedy in this class of case lies in survival rather than death (MONTAGU 453), it seems that the balance is heavily weighted in favor of the mother.

241. 299 Ill. App. 100, 19 N.E.2d 446 (1939).

suit. In *Stemmer v. Kline*,[242] however, the child, a microcephalic idiot, was still alive at the time suit was brought against a physician who, without the use of any one of several tests available and solely after a manual examination, also treated a pregnancy as a tumor. There has been much justifiable criticism by doctors of the relief granted in some of the trauma cases,[243] but these two decisions represent the zenith of injustice reached under the old rule. It is quite clear that in future cases of this type plaintiffs will experience little difficulty in succeeding.

4. *Drugs*

As long as there is a justifiable fear of a relationship between mental deficiency and perinatal anoxia, anesthetics, analgesics, and sedatives are contraindicated.[244] There are certain other drugs, however, that may affect the fetus by interfering directly with embryogenesis.

a. *The Synthetic Progestins*

Synthetic hormone substances, primarily progesterone, have been administered to women who threaten to abort, and there have been reports of resulting abnormal sexual development in the offspring. It is believed that the abnormalities may occur if the substances are administered at the critical time when the gonads begin to develop sexually.[245]

b. *Abortificients*

In 1952, Dr. Thiersch found that 4-aminopteroylglutamic acid was a successful therapeutic abortificient.[246] Dr. Meltzer reported a case in which he felt it advisable to allow a woman who had taken a large quantity of the acid to go to term, as Dr. Thiersch's contribution was alone in the field.[247] The child born to this

242. 128 N.J.L. 455, 26 A.2d 489 (1942). And see Pilgrim v. Landham, 11 S.E.2d (Ga. App. 1940).

243. See text accompanying note 274 *infra*. Criticisms founded on present-day medical knowledge of some of the decisions are a little hazardous, however, since most matters are heard on demurrer before any evidence has been introduced. The factual allegations set out in the opinions are, to say the least, skimpy.

244. See text accompanying note 180 *supra*.

245. The gonads are the generalized sex glands which under hormone exposure begin to develop sexually during the fifth to eighth week of pregnancy. See MONTAGU 349-50.

246. Thiersch, *Therapeutic Abortions With a Folic Acid Antagonist, 4-Aminopteroylglutamic Acid Administered by the Oral Route*, 63 AM. J. OBSTET. & GYNEC. 1298 (1952).

247. Meltzer, *Congenital Anomalies due to Attempted Abortion With 4-Aminopteroylglutamic Acid*, 161 A.M.A.J. 1253 (1956).

woman exhibited a number of anomalies. Dr. Warkany reported a similar case.[248] The acid is a volatile folic acid antagonist, the latter compound being essential to healthy uterine growth.

The likelihood of a child being able to bring an action against its mother who has failed in an abortion attempt is, from the practical point of view, slight. The courts would no doubt entertain such an action, but the problems of proof would be almost insurmountable. It seems, therefore, that prospective children will be protected only by the existence of a criminal sanction. The civil law is able to achieve little in this purely preventive field.

c. *Thalidomide*

The drug thalidomide (alpha N-Phthalimide glutarimide) achieved immense popularity because it did not produce the usual side effects of sedatives. It was sold literally by the ton in Western Europe, England, Canada, Brazil, and Japan.

Animal experiments, mainly on horses which are susceptible to human sleep-inducing drugs, led to no untoward events. Two attempts at suicide by means of the drug failed. Glowing reports in the medical press resulted.[249]

The first warning as to possible ill-effects was a suggestion that this drug might be a cause of periphereal neuritis,[250] but it was not until November 8, 1961, that Dr. Lenz in West Germany, concerned at the reports of the increasing number of children suffering from phocomelia, suspected the drug as being responsible. On November 15th he warned Grunenthal Chemie, the West German manufacturer, of his suspicions. And, on November 20th, at a meeting of Dusseldorf Pediatricians, without naming the drug publicly he expressed his suspicions. Grunenthal withdrew the drug from the West German market on November 26th, and radio, TV, and every newspaper in West Germany (on their front pages) publicized this action, warning pregnant women not to take the tablets.[251]

Meanwhile, Dr. Hayman of the British Manufacturing Company wrote to *The Lancet*, reporting that the drug had been withdrawn from the British Market.[252] On December 16th an Australian doctor, in a letter to the same journal, suggested the link and re-

248. Warkany, *Attempted Abortion With Aminopterin*, 97. AM. J. DIS. CHILD. 274 (1959).

249. See Mellin & Katzenstein, *The Saga of Thalidomide* (pts. 1-2), 267 A.M.A.J. 1184, 1187-90, 1238 (1962).

250. Florence, *Is Thalidomide to Blame?*, 2 BRIT. MED. J. 1954 (1960).

251. Taussig, *A Study of the German Outbreak of Phocomelia: The Thalidomide Syndrome*, 267 A.M.A.J. 1106, 1109 (1962).

252. 1961-1 THE LANCET 1262.

quested his British colleagues to forward any information that they might have[253] on the effects of the drug upon children in utero. A flood of correspondence followed, and reports coming from around the world confirmed the worst suspicions.[254]

The application to sell the drug in the United States was filed by the American licensee on September 12, 1960, but, as a result of what a Senate committee termed the "insight and courage"[255] of Dr. Frances Kelsey and despite the tremendous pressure brought by the drug company involved,[256] thalidomide was never approved for sale in the United States. Quantities of the drug, however, were dispersed to doctors, and at least nine children suffering from phocomelia were born in the United States after their mothers had taken thalidomide during the first trimester.[257]

The thalidomide tragedy raised interesting questions of law. On July 20th the Lord Chancellor, Lord Dilhorne, stated that the possibility that the drug caused the production of defective children was not sufficient to establish a "lawful" ground for an abortion. In so doing he crossed swords with the irrepressible Lady Summerskill.[258]

On July 25th suit was brought in the Supreme Court of Arizona, plaintiff alleging that she was three months pregnant, had taken thalidomide, and desired to undergo an abortion. An immunity from prosecution was requested.[259] The defendants in their reply brief stated that, if the facts were as presented, namely that the health of the mother was endangered, then Arizona law would be no bar to an abortion. Consequently, the judge ruled that there was no legal controversy and dismissed the application.[260]

In Liege, Belgium, a young mother, her husband, and her family doctor were charged with homicide.[261] The state alleged that they had killed a seven-day-old phocomelic baby by feeding it barbiturate-poisoned milk. At the subsequent trial, which took place in dramatic circumstances, the accused were acquitted.[262]

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253. McBride, in 1961-2 THE LANCET 1358.

254. *E.g.*, Letters by Lenz, Pfeiffer & Kosenow, and Speiers in 1962-1 THE LANCET 45, 303.

255. S. REP. No. 1744, 87th Cong., 2d Sess. 40, 43 (1962).

256. Including the suggestion of the possibility of a libel action against Dr. Kelsey. *Id.* at 42.

257. N.Y. Times (Western ed.) Dec. 13, 1962, p. 7, col. 5.

258. N.Y. Times, July 20, 1962, p. 12, col. 1.

259. *Id.*, July 26, 1962, p. 25, col. 1.

260. *Id.*, July 31, 1962, p. 9, cols. 1-2.

261. *Id.*, Aug. 8, 1962, p. 19, cols. 1-2.

262. *Id.*, Nov. 11, 1962, p. 1, col. 7. The court was cleared when spectators shouted to the jury to acquit the accused (*id.*, Nov. 8, 1962, p. 47, col. 8). On November 10th,

At least three civil suits have been filed against the pharmaceutical companies,[263] but to date none have come to trial. In West Germany, institution of criminal proceedings against the manufacturer is still under consideration.

There are two heartening aspects of the tragedy. The first is the responsibility that doctors have accepted in devising, reporting, and advising on schemes to take care of thalidomide babies.[264] The second is the political impetus it gave to reforming drug administration laws in a number of countries.

5. *Trauma*

The use of physical force against the mother may affect the fetus in a number of ways. There may follow a miscarriage (abortion, prematurity) or stillbirth. Again, the placenta may become detached, uterine bleeding may ensue, and maternal shock or emotional disturbance can exert a deleterious effect upon the fetus.

Much medical doubt pervades the question whether maternal trauma is a factor relevant to fetal health; it is solely responsible for abortions or miscarriages in only a small minority of cases,[265] and it is difficult to see how it can result in congenital malformations since its mechanism will operate in a subtractive manner rather than destroying physically the fetal structure, whether at the foundational or proliferational stage.[266] That being so, its relationship with mental deficiencies becomes relevant, since placental damage and shock may affect the oxygen supply. Anoxia as a cause of these disorders has been underlined with a great query, and so claims of this nature ought to be regarded with a fair measure of skepticism.

The overwhelming majority of cases reported in this article have arisen out of maternal traumatic experience, and it is clear that this will continue to provide the most fruitful source of litigation.[267]

when the verdict was due to be returned, feeling had run so high in favor of acquittal that police had to guard the court house.

263. (i) By an association of the victims of the drug against Grunenthal and filed in Frankfurt. The Observer, July 15, 1962. (ii) Diamond v. Merrell Co., for 2.5 million dollars. N.Y. Times, Oct. 5, 1962, p. 24, col. 1. (iii) Harvey v. Grunenthal Chem. Co. for 2.2 million dollars, in respect of twin children who were born suffering from phocomelia. *Id.*, Oct. 19, 1962, p. 33, col. 1.

264. *E.g.*, Trueta, *Care of Thalidomide Babies*, 1962-2 THE LANCET 1162.

265. The child is protected by the physics of its fetal existence in that the surrounding fluids, as a matter of hydraulics, provide a cushioning effect to any external blow. PATTEN, HUMAN EMBRYOLOGY 230 (2d ed. 1953); and see McNeil, *Accidental Injuries to Women*, 83 CALIF. MED. 30 (1955).

266. Gross mechanical injury rarely leads to malformation. See Gruenwald, *Mechanisms of Abnormal Development*, 44 ARCHIV. PATH. 398, 415 (1947).

267. Allegations that trauma was responsible for physical abnormalities were not proved after trial on the facts in the following cases: Hornbuckle v. Plantation Pipe

But the fetus itself may suffer a direct injury. This will usually occur when the maternal abdominal wall has been perforated or punctured. Although in most cases such an injury will cause the immediate onset of labor or will at least provide sufficient reason for a therapeutic abortion, it is also conceivable that this kind of wound might lead to fetal infection.

So far as may be culled from the rather scanty factual reports in the published decisions, there have been few cases involving a direct blow to the fetus, although in *Sox v. United States*[268] the infant plaintiff suffered head injuries as a result of a collision in which its mother received five fractures in the pelvic region close to the child's head.

The most fruitful potential source of actions with respect to direct fetal injury will be force applied during delivery. In this class of cases the infant has always succeeded.[269]

a. *Physical Trauma*

Death. As long as wrongful death actions are allowed in the prenatal injury field, traumatic abortion and stillbirth cases are going to be brought before the courts. The susceptibilities of some women to abort are legend, and many cases have allowed the mother

Line Co., 212 Ga. 504, 93 S.E.2d 727 (1956); Valence v. Louisiana Light & Power Co., 50 So. 2d 847 (La. 1951); Puhl v. Milwaukee, 8 Wis. 2d 343, 99 N.W.2d 163 (1959). And in Durivage v. Tufts, 94 N.H. 265, 51 A.2d 847 (1947), the plaintiff lost because he introduced no expert testimony. The plaintiff succeeded after trial in Sox v. United States, 187 F. Supp. 465 (E.D.S.C. 1960), and Seattle First Nat'l Bank v. Rankin, 59 Wash. 288, 367 P.2d 835 (1962).

The outstanding example of unjustified "causative" success was in the Canadian case of Montreal Tramways v. Leveille, 4 D.L.R. 337 (1933), in which the trauma was held to be the cause of club feet. It is hazardous to draw conclusions from the scanty facts provided in the opinions, but, if the plaintiffs finally succeeded in Von Elbe v. Studebaker-Packard, 15 Pa. D. & C. 2d 629 (1958) (three months after accident born with an "expanded" heart, collapsed lung, and clubbing of the right foot) and Smith v. Brennan, 31 N.J. 353, 157 A.2d 497 (1960) (born seventy-five days after accident with deformities of legs and feet), they could also join Canadian Company.

Allegations that trauma was responsible for mental injury were averred in the following cases in which the plaintiff succeeded in removing the legal bar: Daley v. Meier, 33 Ill. App. 2d 218, 178 N.E.2d 691 (1961) (subnormal mental faculties—mother one month pregnant at the time of the accident); Mallison v. Pomeroy, 205 Ore. 690, 291 P.2d 225 (1955) (cerebral palsy—mother three months pregnant at the time of the accident). See also Jasinky v. Potts, 153 Ohio St. 529, 92 N.E.2d 809 (1950).

268. 187 F. Supp. 465 (E.D.S.C. 1960). A similar case is the matter of Shousha v. Matthews Drivurself Serv., 210 Tenn. 384, 358 S.W.2d 471 (1962), wherein it was alleged that triplets were born "bruised, mashed and crushed." In addition, in Jasinky v. Potts, *supra* note 267, it was also alleged that the infant received a direct blow.

269. Bonbrest v. Kotz, 65 F. Supp. 138, 139 (D.D.C. 1946): "taken from its mother's womb through professional malpractice with resultant consequences of a detrimental character." See also Rainey v. Horn, 221 Miss. 269, 77 So. 2d 434 (1954); see text accompanying note 78 *supra;* Seattle First Nat'l Bank v. Rankin, 59 Wash. 288, 367 P.2d 835 (1962) (negligent attempt to deliver with forceps).

to recover for her own injuries flowing from a miscarriage.[270] On the other hand, other women have and may demonstrate an exceptional hardiness[271] in the face of physical insults.

Dr. Hertig, in a pioneer study, thoroughly examined one thousand abortuses and concluded that only one could be fairly attributed to external trauma.[272] In addition, he discussed the incidence of traumatic abortion with members of the Boston Obstetric Society, and the total opinion produced six accounts of bona fide traumatic abortion.[273] Dr. Hertig summed up the proof problem in the following manner:

> "The thesis of this report therefore may be summed up by stating that, in the opinion of the author, the plaintiff in a case of alleged traumatic abortion must present proof of the presence of a normal pregnancy at the time of the trauma and that the abortus shows objective clinical, embryological and pathologic evidence of the relationship to the trauma."[274]

The requirement of normality of the ovum may not be accepted as an exculpatory factor in a court of law. In any event it is difficult to see how fetal normality can be of any relevance where fetal death is occasioned by maternal death. Nevertheless, it deserves to be underlined that trauma as an isolated cause in the field of prenatal injuries plays a relatively minor and insignificant role. It must be accepted that the abolition of the legal barrier is not going to change the end result in a number of cases, and the irony of the matter is that, although courts of law have appealed time and time again to the advances in medical knowledge while assailing Holmes' view, the advance, if any, in the trauma field has served only to emphasize the irrelevance of trauma as a teratogenic agent.

Prematurity.[275] It may well be that prematurity is in itself an

270. See note 95 *supra*. For a critical appraisal of the granting of relief in these circumstances, see Note, 15 U. CHI. L. REV. 188 (1947).

271. See the exceptional case reported by OGSTON, LECTURES ON MEDICAL JURISPRUDENCE 200-01 (1878), in which an abortion attempt included the ingestion of drugs, kneeling and jumping on the stomach of a seven months pregnant woman, and, finally, perforation of the uterus with a pair of scissors. All of which failed to dislodge or apparently affect the fetus at all.

272. Hertig, *Minimal Criteria Required To Prove Prima Facie Case of Traumatic Abortion or Miscarriage*, 117 ANN. SURGERY 596 (1943).

273. They were (i) extreme exertion during a thunderstorm (1); (ii) auto accidents (3); (iii) climbing the mast of a sailboat during a sail race to fix a broken halyard (1); (iv) severe coughing (1). *Id.* at 605.

274. *Id.* at 598. An additional temporal factor was added: "When trauma is an etiologic factor in an abortion it must immediately precede by a matter of hours, the onset of the sequence of events that results in an expulsion of a normal ovum." *Id.* at 604.

275. Dr. Eastman found 73.8% of all premature births to be spontaneous. Eastman, *Prematurity From the Viewpoint of the Obstetrician*, 1 AM. PRAC. 343 (1947). In his study, Anderson found no case of prematurity that could be directly and unreservedly

injury, and where the child survives premature labor and birth,[276] absent other injuries, "premature birth actions" may be brought.[277] The premature infant is one that weighs twenty-five hundred grams (five pounds, eight ounces,) or less at birth[278] and is understandably an unfinished child. Thus its ability to cope with the external world is decreased.

Some investigators have submitted that a relationship exists between prematurity and physical growth, physical defects,[279] cerebral palsy,[280] other mental handicaps, and proneness to ill health.[281] The investigations as to these sequelae are still in the preliminary stages. Should a causal connection ever be satisfactorily established, an entirely new field of liability may be opened. It seems difficult to consider, however, that it will ever be possible for a child to argue that its present mental capacity is attributable to its premature birth and that absent prematurity, it would have achieved a greater academic success in life. One ought to be careful of embracing beliefs that can only be described as unwavering uterine predestination. On the other hand, the susceptibility of the prematurely born infant to infection or other disorders is more certain, and a wrongdoer's liability would probably be extended today to include the additional damage.[282]

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attributed to trauma. Anderson, *Causes of Prematurity*, 61 AM. J. DIS. CHILD. 72, 83 (1941).

276. The very immaturity of the child may reduce its ability to survive. But, in all jurisdictions, as long as it is born alive its cause of action may survive to its intestate estate. See note 87 *supra*.

277. The premature child may in addition suffer from congenital malformations. Often the abnormality is itself the cause of prematurity.

278. MONTAGU 398.

279. Dann, *The Development of Prematurely Born Children With Birth Weights or Minimal Post-Natal Weights of 1,000 gms. or Less*, 22 PEDIATRICS 1037 (1958); Drillien, *Physical and Mental Handicap in the Prematurely Born*, 66 J. OBSTET. & GYNEC. (BRIT. EMP.) 721 (1959).

280. Knobloch, *The Effect of Prematurity on Health and Growth*, 49 AM. J. PUB. HEALTH 1164 (1959); Knobloch, *Neuropsychiatric Sequelae of Prematurity*, 161 A.M.A.J. 581 (1956).

281. See James, *The Later Health of Premature Infants*, 22 PEDIATRICS 154 (1958); Lilienfeld & Pasamanick, *Association of Maternal and Fetal Factors With the Development of Mental Deficiency: I. Abnormalities in the Prenatal and Paranatal Periods*, 159 A.M.A.J. 155 (1955); Lilienfeld & Pasamanick, *The Association of Maternal and Fetal Factors With the Development of Mental Deficiency: II. Relationship to Maternal Age, Birth Order, Previous Reproductive Loss and Degree of Mental Deficiency*, 60 AM. J. MENT. DEFIC. 557 (1956).

282. RESTATEMENT, TORTS § 458 (1934); PROSSER, TORTS § 49, at 273 (2d ed. 1955). In Durivage v. Tufts, 94 N.H. 265, 51 A.2d 847 (1947), the plaintiff's premature child died after suffering from both measles and pneumonia following a cold. On cross-examination, the plaintiff husband conceded that he could not blame the defendant for the child's attack of measles, but opined that the defendant's fault could have led to the cold and the pneumonia, there being some evidence that the premature birth had weakened the child's resistance. No medical evidence was introduced by the plaintiffs,

In *Mays v. Weingarten*,[283] it was alleged that the prematurely born infant, as a result thereof, contracted bronchial pneumonia at the age of five weeks and that, as a further result of its weakened constitution, it would be congenitally susceptible to pain, suffering, and much inconvenience! In two other cases it was alleged that prematurity was related to blindness,[284] and there have been a number of cases where the prematurity resulted in early death.[285]

b. *Psychic Trauma*

It will be recalled that Dr. Hertig found only seven cases of bona fide traumatic abortion resulting from physical trauma. With reference to psychic trauma, Dr. Eastman reports that: "In the case of psychic trauma proof is immensely more difficult to obtain. In questioning many men with vast obstetrical experience most say that they have never seen such a thing."[286]

Maternal shock, unaccompanied by physical impact, may interfere with respiratory processes. Fetal oxygen deficiency may be the result. Once more the sequelae of anoxia become relevant. But lesser emotional injury may also have an important influence. The history of the development of the law relating to emotional injury and the law of prenatal injuries are closely related; both present a potentiality for fraudulent claims,[287] and both have raised nice questions of causation. Miscarriage, as a physical injury to the mother, has come to typify that class of nervous shock case in which the shock has been followed by the injury.[288] Originally, courts considered the problems arising in the shock cases on the basis of

however, and in the absence thereof the court was not prepared to indulge in the "sheerest speculation." *Id.* at 270.

283. 82 N.E.2d 421 (Ohio Ct. App. 1943). The plaintiff failed, however, as a matter of law. *Cf.* Williams v. Marion Rapid Transit Inc., 152 Ohio St. 114, 87 N.E.2d 334 (1949), wherein it was alleged that as a result of its mother's fall the prematurely born infant plaintiff had been turned in the womb, suffered from heart trouble, anemia, spasms, epilepsy, was crippled, and could not walk or talk like a normal person. It should be noted, however, that abnormal fetal positions should not be attributed to external trauma. See McNeil, *supra* note 265, at 31.

284. Damasiewicz v. Gorsuch, 197 Md. 417, 79 A.2d 550 (1951); Cavanaugh v. First Nat'l Stores, Inc., 329 Mass. 179, 107 N.E.2d 307 (1952).

285. *E.g.*, Keyes v. Construction Serv., Inc., 340 Mass. 633, 165 N.E.2d 912 (1960); Bliss v. Passanesi, 326 Mass. 461, 95 N.E.2d 206 (1950); Hall v. Murphy, 236 S.C. 257, 113 S.E.2d 790 (1960).

286. EASTMAN, WILLIAMS' OBSTETRICS 532 (12th ed. 1961).

287. FLEMING, TORTS 169 (1959); Bohlen, *Fifty Years of Torts*, 50 HARV. L. REV. 725, 733 (1937).

288. PROSSER, TORTS § 37, at 178 (2d ed. 1955). See, *e.g.*, Rogers v. Williard, 144 Ark. 587, 223 S.W. 15 (1920), wherein the defendant with knowledge of the plaintiff's pregnancy threatened to kill her husband, resulting in mental and physical pain and leading to a miscarriage. Durivage v. Tufts, 94 N.H. 265, 51 A.2d 847 (1947). Where no injury follows there can be no liability against a merely negligent defendant. HARPER & JAMES, TORTS § 18.9 (1956).

remoteness of damage, but today the analysis has moved to a consideration of the duty owed. Even this has not been helpful,[289] and there have been further shifts from foreseeability of physical harm[290] to foreseeability of injury by shock.[291] Furthermore, some jurisdictions still apply the corpori corpore or impact test, sometimes reduced to the most ridiculous levels.[292] An increasing majority of courts, however, have abandoned the requirement.[293] Present medical knowledge is in much the same confused state. Much of the literature has been based on anecdote.[294] Dr. Warkany has been particularly incisive and relates an example of medical conjecture in this respect: it has been determined experimentally that cortisone induces cleft palate in certain strains of mice;[295] in criticizing the search for new foundations for old fables, he writes that since maternal emotions "release adrenal hormones and since cortisone can induce cleft palate in certain strains of mice . . . new mechanisms [are] found for those who want to believe in ancient theory."[296]

Dr. Stott is the leading advocate of a relationship between psychological stress and abnormalities. He relates psychic disturbance to the incidence of Mongolism.[297] Moreover, he opines that the biological persistence of reproductive casualty is a fertility-regulator in modern society and, therefore, explains everything in terms of natural population control, a view that received some applause from Montagu.[298]

In this class of cases, legal technicality abounds, and confusion will only be increased should the prenatal injury cases ever be ex-

289. "Duty, it is agreed, depends upon foreseeability, but foreseeability, a vague concept at the best of times, is of quite exceptional vagueness when nervous shock is in issue." WINFIELD, TORTS 256 (7th ed. 1963). See generally Goodhardt, *The Shock Cases and Area of Risk*, 16 MODERN L. REV. 14 (1953).

290. Waube v. Warrington, 216 Wis. 603, 258 N.W. 497 (1935); Dulieu v. White, [1901] K.B. 669.

291. King v. Phillips, [1953] 1 Q.B. 429, approved by the Privy Council as a correct statement of the law in Overseas Tankship (U.K.) Ltd. v. Morts Dock and Engineering Co. Ltd. (The Wagon Mound), [1961] All E.R. 404, 415; HARPER & JAMES, TORTS § 18.4, at 1036 (1956).

292. HARPER & JAMES, TORTS § 18.4, at 1034 (1956); PROSSER, TORTS § 37, at 139 (2d ed. 1955).

293. See, *e.g.*, Orlo v. Connecticut Co., 128 Conn. 231, 21 A.2d 402 (1941); Bourhill v. Young, [1943] A.C. 92, 103.

294. See Hamilton, Boyd & Mossman, HUMAN EMBRYOLOGY 147 (3d ed. 1962).

295. Fraser & Fainstat, *Production of Congenital Defects in the Offspring of Pregnant Mice Treated With Cortisone*, 8 PEDIATRICS 527 (1951); Inghalls & Curley, *The Relation of Hydrocortisone Injections to Cleft Palate in Mice*, 256 NEW ENG. J. MED. 1035 (1957).

296. Warkany, *Congenital Malformations in the Past*, 10 J. CHRON. DIS. 84, 90 (1959); *cf.* Fraser, *Causes of Congenital Malformations in Human Beings*, 10 J. CHRON. DIS. 97, 107 (1959).

297. Stott, *Some Psychomatic Aspects of Casualty in Reproduction*, 3 J. PSYCHO. RES. 42 (1958).

298. MONTAGU 503-07.

tended to include harm suffered by the child as a result of the mother's emotional disturbances. Suffice it to say that for the foreseeable future that danger is remote.

V. What Is Needed

The battle in jurisprudence is almost over. The development of the infant's right of action has illustrated the inherent capacity of legal systems to adjust to new situations. No lawyer can believe, however, that money does in fact remove the seal of the defendant's fault and that anything the law may do can alleviate the misery of the crippled. If the unborn plaintiff is no longer absent from the courts by whim of law, it ought to be remembered that the medico-legal struggle for recognition of its right of action has been basically motivated by something broader than what may be regarded as an inevitable, just legal development.

Law cannot provide the solution. We may retrospectively compensate the tortiously damaged infant or prospectively require pharmaceutical concerns to take precautions against another thalidomide tragedy. Eugenic legislation plays a small part. The true solution is not to be found in the *words* of society, but in a stepped-up program of preventive medical research:

> "Mr. President, for 4 long years I have been urging the strengthening of what has come to be known as perinatal research. . . . On December 1, 1958, I discussed this with Premier Nikita Krushchev in Moscow. At that time, I urged a U.S.-U.S.S.R. partnership in finding the answer to the mysteries of how life develops and how so often and so tragically it emerges with defects.
>
> "In the years which have followed, I have been a strong supporter of the perinatal collaborative research project . . . .
>
> "This project is the greatest effort of its kind ever made in medical history.
>
> "I want every U.S. agency and doctor to gain the greatest insight which may become available through this project."[299]

That is the only answer.

299. 108 Cong. Rec. 15688 (1962) (remarks of Senator Humphrey). And see Editorial, 1962-1 The Lancet 303.

APPENDIX

Environmental Factors Known To Contribute to Congenital Malformations and Fetal Damage

General Biological Factors

Parental age
Order of pregnancy
Season of birth
Geographical location
Social class
Psychological factors
Blood incompatibilities (Rhesus factor)

Regional Factors (Genital Tract and Fetal Membranes)

Faulty implantation
Ectopic pregnancies
Twinning (Siamese twins, acardiac monsters)
Amniotic bands
Abnormal uterine position of fetus?

Maternal Dietary Deficiencies

Starvation (fetal rickets and ? other effects)
Trace deficiencies (*e.g.*, iodine in congenital cretinism)

Maternal Infections

Rubella; influenza?; poliomyelitis?; measles?
Toxoplasmosis
Syphilis

Hormones

Androgens; synthetic progestins; stilboestrol
Maternal diabetes and pre-diabetes?

Chemical Agents

(a) General

Hypoxia
Hyperoxia (retrolental fibroplasia)

(b) Drugs, Growth Inhibitors and Specific Antagonists

Antimitotics (*e.g.*, nitrogen mustard used therapeutically)
Antimetabolites (*e.g.*, aminopterin—used as an abortificient)

(c) Teratogenic Dyes

Physical Agents

X-rays (diagnostic and therapeutic)
Isotopes
Atomic radiation

(From Hamilton, Boyd & Mossman, Human Embryology 146 (3d ed. 1962))