

Moore v. Regents of the University of California: More for Biotechnology, Less for Patients

I. INTRODUCTION

Human biological materials¹ are frequently used in biotechnological research. These materials are useful in the development or production of novel hybridomas, cell lines, therapeutically active proteins, and antibodies for diagnostic or therapeutic purposes. Several interesting legal questions arise when these materials are obtained during a necessary therapeutic procedure. These issues include the respective rights of the parties to the products of the research and the consent that must be obtained for the use of the biological materials.

In *Moore v. Regents of the University of California*,² a patient, whose excised spleen was used to develop a cell line, asserted a right to share in the profits that were the result of research on his biological materials. The California Supreme Court decided that a physician must disclose his research interests and that the patient has no ownership interest in his biological materials which are used in the research.³

This Note discusses whether the common-law obligation of disclosure by the physician to the patient is applicable when human biological material is obtained during a necessary therapeutic procedure. Second, this Note considers whether the common-law doctrine of informed consent protects the patient's right to consent to the disposition of or use of the biological materials removed from his body. This Note explores whether the recognition of conversion as a cause of action expands the common-law doctrine. Finally, the most important issue, which arises out of the *Moore* case, is whether existing legal doctrines can effectively resolve the issues posed by the rapidly developing field of biotechnology, or alternatively, whether the advance of science, in particular biotechnology, has outpaced the development of the law.⁴

A. *Biotechnology*

Biotechnology is currently one of the most rapidly developing areas of science. The rapid growth and development are primarily attributable

1. The term "human biological materials" will be used to describe all materials obtained from humans that can be used in research including, but not limited to, blood, serum, saliva, urine, organs, and tissues.

2. 51 Cal. 3d 120, 793 P.2d 479, 271 Cal. Rptr. 146 (1990).

3. *Id.* at 146, 793 P.2d at 497, 271 Cal. Rptr. at 164.

4. See Wagner, *The Legal Impact of Patient Materials used for Product Development in the Biomedical Industry*, 33 CLINICAL RESEARCH 444 (1985) (Wagner suggested that the rapid development of biomedical science has outstripped the law's ability to keep up).

to two important discoveries. In 1953, Watson and Crick discovered the structure of DNA,⁵ which is the discrete unit responsible for the characterization of all living organisms.⁶ In 1973, Cohen and Boyer disclosed a method for transferring genetic information from one organism to another.⁷ Scientists have expanded the frontiers of science beyond these initial discoveries to create a field of science that was virtually nonexistent less than forty years ago.

Biotechnology comprises three main areas of technology: tissue and cell culture technology, hybridoma technology, and recombinant DNA technology.⁸ Tissue and cell culture technology generally include research directed toward the development of a cell line which can grow and reproduce in a continuous culture. Establishing a human cell line⁹ is particularly difficult; however, the probability of success is substantially increased when tumor cells are used.¹⁰

A second area of biotechnology, which is commercially important in the production of antibodies,¹¹ is hybridoma technology. A hybridoma is a cell that results from the fusion of an antibody-producing cell with a tumor cell.¹² The hybridoma retains the beneficial characteristics of

5. Prior to 1953, deoxyribonucleic acid (DNA) was believed to be the carrier of a part of the genetic specificity of the chromosomes. However, until the publication by Watson and Crick, the mechanism of exact self-duplication of the genetic material was unknown. The discovery by these scientists of the structure of DNA led to a proposed mechanism of self-replication. The proposed structure was a double helix comprising two complimentary chains. The mechanism of self-replication was postulated to proceed by separation of the two chains and enzymatic synthesis of new complimentary chains. Watson & Crick, *Genetical Implications of the Structure of Deoxyribonucleic Acid*, 171 NATURE 964 (1953).

6. U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, NEW DEVELOPMENTS IN BIOTECHNOLOGY: OWNERSHIP OF HUMAN TISSUES AND CELLS 41 (1987) [hereinafter OTA REPORT].

7. Cohen and Boyer discovered a process for conferring antibiotic resistance in *Escherichia coli* cells. Their method used restriction endonucleases, enzymes which are capable of cleaving double-stranded DNA to produce cohesive ends, to form plasmid DNA segments. The plasmids were then inserted into an *E. coli* by transformation. The procedure was suggested to be useful for the insertion of segments of prokaryotic or eukaryotic chromosomes into independent replicating bacterial plasmids. Cohen, Chang, Boyer, & Helling, *Construction of Biologically Functional Bacterial Plasmids In Vitro*, 70 PROC. NAT'L ACAD. SCI. 3240 (1973).

8. OTA REPORT, *supra* note 6, at 5.

9. A human cell line is defined as cells derived from humans which are capable of continuous and indefinite growth in culture. *Id.* at 33.

10. *Id.* at 5.

11. An antibody is a protein which binds to a specific foreign substance. *Id.* at 37.

12. Kohler and Milstein were the first to report the fusion of a B-lymphocyte with a myeloma cell. The fusion product, a hybridoma, produced homogeneous compositions of antibodies. Kohler & Milstein, *Continuous Cultures of Fused Cells Secreting Antibody of Predefined Specificity*, 256 NATURE 495 (1975).

each of the fusion partners, such as immortality and the ability to produce antibodies. Hybridoma technology has been essential in the development of monoclonal antibodies which are used as diagnostic and therapeutic agents.¹³

Recombinant DNA technology involves the manipulation of the DNA within a cell.¹⁴ For example, a gene which codes for a particular protein is inserted into the genetic material within a cell. The recombinant cell, which contains the foreign DNA, frequently is capable of expressing this genetic information to produce the foreign protein. This technology has been commercially utilized to produce recombinant organisms which are able to metabolically synthesize therapeutically important human proteins.¹⁵

The rapid increase in the development of biotechnology has resulted in an increase in the use of human biological materials in research. Human biological materials are indispensable as a source of important genetic information, such as a source of DNA that codes for a particular protein or antibody.¹⁶ Also, these materials, in particular human tissues and cells, are useful in the development of human cell lines or in the production of hybridomas.

Researchers obtain human biological materials by a variety of methods.¹⁷ One method of obtaining these materials is from volunteers, who frequently are compensated. A second common method is to request a sample from an organized repository.¹⁸ Also, these materials are frequently obtained directly from the patient, possibly without his knowledge or consent, following a surgical procedure or diagnostic test.¹⁹

B. *Biotechnology and Law*

The use of human biological materials in biotechnological research has raised several important legal questions.²⁰ These issues may be divided

13. See D. KATZ, *MONOCLONAL ANTIBODIES AND T CELL PRODUCTS* (1982).

14. OTA REPORT, *supra* note 6, at 5.

15. See A. BOLTON, *RECOMBINANT DNA PRODUCTS: INSULIN, INTERFERON AND GROWTH HORMONE* (1984).

16. Human proteins and antibodies are favored for therapy because they are allogenic (derived from a member of the same species) and therefore, less likely to initiate an immunogenic response in the patient.

17. OTA REPORT, *supra* note 6, at 52.

18. Organized repositories include American Type Culture Collection (ATCC); Human Genetic Mutant Cell Repository, Coriell Institute; National Cancer Institute, Biological Carcinogens Branch; and Cell Culture Center, Massachusetts Institute of Technology. *Id.*

19. *The Use of Human Biological Material in the Development of Biomedical Products: Hearings Before the Subcomm. on Investigations and Oversight of the House Comm. on Science and Technology, 99th Cong., 1st Sess. 83 (1985) [hereinafter Subcomm. Report] (statement of David A. Blake, Ph.D.).*

20. The Office of Technology Assessment identified the following issues:

into the following categories: (1) the rights of the physician in the products of his research that are derived from the use of another's biological material; (2) the rights of the patient in the products, profits, or knowledge that is a direct result of research on his biological material; and (3) information that must be disclosed to the patient by the physician regarding the use of the patient's biological materials and potential benefits arising from the research. The resolution of these issues will affect biotechnology research, the biotechnology industry, and the physician-patient relationship.

A recent development in patent law resolved one of these important issues. In 1980, the Supreme Court in *Diamond v. Chakrabarty*²¹ determined that a living, human-made microorganism is patentable subject matter under 35 U.S.C. § 101.²² Chakrabarty filed a patent application which claimed, in part, a genetically engineered bacterium. The patent examiner rejected the applicant's claims on the ground that microorganisms are "products of nature,"²³ and living things are not patentable

Are bodily substances "property to be disposed of by any means one chooses, including donation or sale?

Do property rights to their genetic identity adhere to individuals or to the species?

Who should make the basic decisions affecting the acquisition of tissues and cells, and under what circumstances should acquisition be permitted or denied?

What are patients and research subjects entitled to know about the potential commercial exploitation of an invention that uses their biological materials? And what is the probability that an individual's tissue and cells will end up in a commercial product?

How is it that inventions incorporating human cells are patentable in the first place? How similar is the invention to the original biological material?

What is the nature of the researcher's contribution versus the source's contribution to the invention?

Who should profit from federally funded research using human tissue? To what extent are the issues raised by ownership of human biological materials related to commercial relationships between universities and companies?

What are the implications of these issues for scientists, physicians, patients, volunteer research subjects, universities, and the biomedical product industry?

OTA REPORT, *supra* note 6, at 1.

21. 447 U.S. 303 (1980).

22. *Id.* at 309. Section 101 provides: "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title." 35 U.S.C. § 101 (1988).

23. The term "product of nature" generally refers to a substance which is naturally produced or naturally occurring and which is not made by man. The Patent Act of 1952 authorizes the grant of a patent when three statutory requirements are met: novelty, utility, and nonobviousness. The "utility" requirement is set forth in 35 U.S.C. § 101 (1988),

under section 101. The Supreme Court held that the genetically engineered organism was patentable subject matter under the statute.²⁴ To support its conclusion, the Court noted that the Committee Reports for the 1952 Patent Act expressed an intent to "include anything under the sun that is made by man" within the meaning of patentable subject matter under section 101.²⁵

Since the Court's decision in *Chakrabarty*, researchers routinely patent hybridomas, proteins, genes, and human cell lines produced through biotechnological research.²⁶ Upon the issuance of a patent, the researcher (patentee) may prevent others from making, using, or selling the patented invention.²⁷ When the patent claims subject matter of commercial value, the patentee can license to others the right to practice the invention or the right to sell the claimed subject matter. Therefore, the grant of a patent provides the researchers with certain rights and, in part, answers the question regarding the rights of the researcher in the products of his research. However, the grant or denial of a patent does not address the question regarding the rights of the patient in the products of the research.

The issue regarding the patient's rights in the products of research which directly result from the use of his biological materials has been raised in two recent disputes. The facts are clearly distinguishable on the following grounds: differences in the awareness of the patient in the research, the consent given prior to the use of the patient's biological materials, and the relationship between the patient and the researchers.

The first dispute involved the use of human lymph node cells to produce a hybridoma cell line. In 1981, Drs. Royston and Glassy were investigating the production of monoclonal antibodies with specificity

and the "novelty" requirement is contained in 35 U.S.C. §§ 101-02 (1988). The final requirement, "nonobviousness," is set forth in 35 U.S.C. § 103 (1988). In *Merck & Co., Inc. v. Olin Mathieson Chemical Corp.*, 253 F.2d 156, 161 (4th Cir. 1958), the United States Court of Appeals noted that "products of nature" may be patented when the three statutory conditions for patentability are satisfied. See Slutsker, *Patenting Mother Nature*, FORBES, Jan. 7, 1991, at 290 (several biotechnology companies have patented *purified* human proteins).

24. *Chakrabarty*, 447 U.S. at 318.

25. *Id.* at 309.

26. Because of the newness, complexity, and rapid development of biotechnology, the pendency period for biotechnology patent applications is longer than for others. In 1989, the pendency period ranged from two and one half to four years. This delay in issuance of patents may have an adverse effect on the United States biotechnology industry. Yoo, *Biotech Patents Become Snarled in Bureaucracy*, Wall St. J., July 6, 1989, at B1, col. 6.

27. Section 271 provides: "whoever without authority, makes, uses or sells any patented invention, within the United States during the term of the patent therefor, infringes the patent." 35 U.S.C. § 271(a) (1988).

for human cancer cells.²⁸ In particular, their research involved the fusion of lymphatic cells which were obtained from cancer patients²⁹ to an immortal cell line.³⁰ Dr. Hagiwara, a biology post-doctoral student from Japan, suggested that Drs. Royston and Glassy use lymph node cells from his mother, who was diagnosed as having cervical cancer.³¹ Dr. Glassy successfully developed a novel hybridoma cell line which produces antibodies to cervical cancer.³² The Hagiwaras asserted the rights to the cell line and the antibodies on the ground that the genes were responsible for the production of the antibodies and were derived from Hagiwara's cells.³³

It is important to note that, prior to the commencement of the research, the parties did not enter into an agreement with respect to the rights of the parties.³⁴ Unfortunately, the rights of the parties in the products of the research were not addressed by a court. The parties voluntarily settled their dispute, agreeing that the university would retain all patent rights and that the Hagiwaras would receive an exclusive license to practice the invention in Asia.³⁵

The second case involved the use of a patient's diseased spleen to develop a commercially valuable cell line. In September 1976, John Moore was diagnosed as having hairy-cell leukemia. Because he requested a second opinion, Moore was referred to David W. Golde, M.D., head of the Oncology-Hematology Department at the University of California at Los Angeles (U.C.L.A.) Medical Center. In early October, Dr. Golde confirmed the diagnosis and recommended a splenectomy. On the day before the surgery, Moore signed a general consent form which specifically authorized the splenectomy and provided for the disposal of any severed tissue by cremation.³⁶

28. Royston, *Cell Lines from Human Patients: Who Owns Them? A Case Report*, 33 CLINICAL RES. 442 (1985).

29. Specimens were obtained from the pathology department at the university. *Id.*

30. OTA REPORT, *supra* note 6, at 38. The particular cell line was a patented human lymphoblastoid B-cell line. This cell line is particularly efficient as a fusion partner with human lymphatic tissue. The parent cell line was derived from the culture of a spleen from a boy with hereditary spherocytosis. U.S. Patent No. 4,451,570, at col. 1, 2 (May 29, 1984).

31. Royston, *supra* note 28, at 442.

32. The novel hybridoma has been designated CLNH5 and is the claimed subject matter of a U.S. Patent. This hybridoma produces monoclonal antibodies which are reactive with cervical cancer cells. These antibodies are potentially suitable for use in the therapy of or diagnosis of cervical cancer. U.S. Patent No. 4,618,577, at col. 2 (Oct. 21, 1986).

33. Royston, *supra* note 28, at 442.

34. *Id.*

35. OTA REPORT, *supra* note 6, at 26.

36. The surgery consent form contained a provision for informing the patient of

Dr. Golde and Shirley Quan, a researcher at the U.C.L.A. Medical Center, obtained a sample of Moore's spleen from the pathologist. Using cell culture technology, Dr. Golde and Quan used Moore's spleen and established a cell line, the Mo cell line, which is capable of growing in a continuous culture for an indefinite period.³⁷ The Mo cell line produces a number of proteins of commercial interest.³⁸ Dr. Golde and Quan filed a patent application in 1981 and received a patent in 1984 claiming the Mo cell line, methods for producing proteins by culturing the Mo cell line, and methods for cloning DNA which comprises isolating mRNA³⁹ from Mo cells.⁴⁰

The Regents of the University of California, as assignee of the patent, Dr. Golde, and Shirley Quan entered into agreements with Genetics Institute, Inc. and Sandoz Pharmaceuticals Corporation (Sandoz) for the commercial development of the Mo cell line and the proteins produced by the Mo cells.⁴¹ These agreements allow Genetics Institute and Sandoz to use the Mo cells to develop commercial products in exchange for payments to Dr. Golde, Quan, and the Regents of the University.⁴²

Mr. Moore returned to the U.C.L.A. Medical Center several times between November 1976 and September 1983. Upon each visit, additional samples of his biological materials were removed.⁴³ During one of his visits in April 1983, Mr. Moore was presented with a consent form which specifically authorized the use of his blood and bone marrow in research. This consent form contained a clause which granted to the

the disposition of his severed tissue by means other than cremation. However, this space was left blank on Moore's consent form.

37. U.S. Patent No. 4,438,032, at col. 2-3 (March 20, 1984).

38. The Mo cells produce a number of naturally occurring proteins, including erythroid-potentiating activity, colony stimulating factor, human immune interferon, and neutrophil migration-inhibition factor. These proteins regulate the immune system and have a high commercial value as therapeutic agents. The Mo cells are also extremely valuable as a source of the genetic material for these proteins.

39. Messenger ribonucleic acid (mRNA) is the informational intermediate in protein synthesis. The genetic information is contained in DNA; however, a complex multi-step process is required for the transformation of the DNA's genetic information into the synthesis of proteins. Through a process known as transcription, an mRNA molecule is synthesized that is complementary to its DNA template. The mRNA is used in translation as a template for the synthesis of a specific protein. L. STRYER, *BIOCHEMISTRY* 597-618 (2d ed. 1981).

40. U.S. Patent No. 4,438,032, at col. 24-26 (March 20, 1984).

41. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 127, 793 P.2d 479, 482, 271 Cal. Rptr. 146, 149 (1990).

42. Genetics Institute has paid at least \$330,000 and Sandoz added an additional \$110,000.

43. These samples included blood, blood serum, bone marrow aspirate, and sperm.

University "any and all rights [Moore], or [Moore's] heirs, may have in any cell line or any other potential product."⁴⁴ Mr. Moore voluntarily signed this consent form after he was told that the form was a standard form and was necessary for continued medical treatment.

In September 1983, Moore returned to the Medical Center and was presented with an identical consent form. Mr. Moore inquired whether there was a commercial or financial interest involved in the research on his blood. He was not informed of the commercial value of his biological materials, but was told that the consent form was merely a formality. However, on this visit, Moore did not sign the consent form and therefore, did not grant to the University of California the rights in any cell line or products derived from his biological materials. Because of the unusual circumstances surrounding Moore's failure to sign the consent form, Moore sought legal counsel.

In 1984, Moore filed a lawsuit claiming that he was entitled to share in the profits resulting from the use of his biological materials in research. Moore asserted that Dr. Golde had an intent to do research on Moore's biological material prior to the surgery. Moore also asserted that Dr. Golde never informed him of any plans to conduct research on his spleen or other biological materials. The third amended complaint, which named Dr. Golde, Quan, the Regents of the University of California, Genetics Institute, and Sandoz as defendants, alleged thirteen causes of action, including conversion, lack of informed consent, and breach of a fiduciary duty.⁴⁵ The superior court sustained a general demurrer to the entire complaint on the grounds that the allegations regarding conversion were defective and that the remaining causes of action incorporated these defective allegations.

The California Court of Appeal reversed the superior court's decision and held that the complaint did state a cause of action for conversion. The court of appeal concluded that a person has a property right in his own biological materials and, absent his consent or lawful justification, the unauthorized use of his tissue constitutes conversion. Also, the court of appeal directed the superior court to address the remaining causes of action that had not been addressed in the court below. The California Supreme Court held that Moore's third amended complaint

44. Subcomm. Report, *supra* note 19, at 268.

45. Moore stated the following causes of action: (1) conversion; (2) lack of informed consent; (3) breach of fiduciary duty; (4) fraud and deceit; (5) unjust enrichment; (6) quasi-contract; (7) bad faith breach of the implied covenant of good faith and fair dealing; (8) intentional infliction of emotional distress; (9) negligent misrepresentation; (10) intentional interference with prospective advantageous economic relationships; (11) slander of title; (12) accounting; (13) declaratory relief. *Moore*, 51 Cal. 3d at 128 n.4, 793 P.2d at 482 n.4, 271 Cal. Rptr. at 149 n.4.

did state a cause of action for breach of the physician's fiduciary duty to the patient or lack of informed consent, but the complaint did not state a cause of action for conversion.⁴⁶ The bases of the court's decision will be discussed and analyzed in detail below.

II. PHYSICIAN'S DISCLOSURE OBLIGATION

Before considering the extent to which the physician's disclosure obligation is applicable to protect the patient from commercial exploitation, it is necessary to consider the basis of this disclosure obligation and the common-law doctrines of informed consent and physician's fiduciary duty.

A. Common Law Disclosure Obligations

The physician's disclosure obligation arises from the right of a patient to personal autonomy. This autonomy includes the ability "to determine what shall be done with [one's] own body."⁴⁷ This right protects the patient's interest in the exclusive ability to decide to reject or consent to treatment of his own body.⁴⁸ Because of the importance of personal autonomy, both the common law⁴⁹ and statutory law⁵⁰ impose an obligation of disclosure upon physicians.

The courts consider the relationship between a patient and his physician to be a fiduciary relationship.⁵¹ As a fiduciary, the physician has a duty to fully disclose any facts which materially affect the patient's rights and interests.⁵² The purpose of the full disclosure requirement is to provide the patient with an adequate basis to form an intelligent

46. *Id.* at 147, 793 P.2d at 497, 271 Cal. Rptr. at 164.

47. *Schloendorff v. Society of N.Y. Hosps.*, 211 N.Y. 125, 129-30, 105 N.E. 92, 93 (1914) ("Every human being of adult years and sound mind has a right to determine what all be done with his own body.').

48. *Cobbs v. Grant*, 8 Cal. 3d 229, 243, 502 P.2d 1, 10, 104 Cal. Rptr. 505, 514 (1972).

49. R. FADEN & T. BEAUCHAMP, *A HISTORY AND THEORY OF INFORMED CONSENT* (1986); F. ROZOVSKY, *CONSENT TO TREATMENT — A PRACTICAL GUIDE* (1984).

50. CAL. HEALTH & SAFETY CODE § 24171 (West 1984). Title 22 of the California Administrative Code requires hospitals to adopt a written policy on patient's rights. These rights include the right to receive sufficient information in order to give informed consent and the right to participate actively in decisions regarding medical care. CAL. ADMIN. CODE tit. 22, § 70707 (1990). *See also* 45 C.F.R. §§ 46.101 to -.409 (1990).

51. *Bowman v. McPheeters*, 77 Cal. App. 2d 795, 176 P.2d 745 (1947) (the relationship between the physician and patient is a fiduciary one). *See also* *Nelson v. Gaunt*, 125 Cal. App. 3d 623, 178 Cal. Rptr. 167 (1981) (duty of disclosure is a fiduciary one); *Berkey v. Anderson*, 1 Cal. App. 3d 790, 82 Cal. Rptr. 67 (1969); *Stafford v. Shultz*, 42 Cal. 2d 767, 270 P.2d 1 (1954).

52. *Bowman*, 77 Cal. App. 2d at 800, 176 P.2d at 748.

decision regarding consent to the proposed treatment.⁵³ A breach of this duty subjects the physician to liability,⁵⁴ especially when there is material concealment or misrepresentation.⁵⁵

Physicians have been held liable under an intentional tort theory when they do not make full disclosure prior to treatment. In *Schloendorff v. Society of New York Hospitals*,⁵⁶ a patient who consented only to an examination had a tumor removed while unconscious.⁵⁷ The New York Court of Appeals noted that a physician who performs an operation without the patient's consent commits an assault.⁵⁸ More recently, in *Barber v. Superior Court*,⁵⁹ the California Court of Appeal noted that a physician who performs treatment in the absence of informed consent commits an actionable battery.⁶⁰

Today, courts treat the failure of a physician to make a full disclosure as negligence, frequently referred to as lack of informed consent.⁶¹ Informed consent occurs when the physician discloses to the patient all material risks and alternatives to therapy in such a manner that the patient fully understands and may intelligently consent to treatment.⁶² The physician has a duty to inform the patient of all information that is material to his decision.⁶³ When the physician fails to obtain informed consent, he is liable for negligently failing his duty of reasonable disclosure.

The doctrines of informed consent and duty to disclose are not equivalent, but both are applicable in all cases. The former focuses on the patient's understanding of the risks or alternatives or whether the

53. See *Berkey*, 1 Cal. App. 3d at 790, 82 Cal. Rptr. at 67.

54. *Id.* at 803, 82 Cal. Rptr. at 77.

55. *Pashley v. Pacific Elec. Ry. Co.*, 25 Cal. 2d 226, 153 P.2d 325 (1944) (when there is a duty to disclose, the disclosure must be full and complete, any material concealment or misrepresentation will amount to a fraud sufficient to entitle the party injured to an action).

56. 211 N.Y. 125, 105 N.E. 92 (1914).

57. *Id.* at 128, 105 N.E. at 93.

58. *Id.* (except in an emergency situation when it is necessary to operate before consent can be obtained).

59. 147 Cal. App. 3d 1006, 195 Cal. Rptr. 484 (1983).

60. *Id.* at 1015, 195 Cal. Rptr. at 489.

61. D. DOBBS, *TORTS AND COMPENSATION — PERSONAL ACCOUNTABILITY AND SOCIAL RESPONSIBILITY FOR INJURY* 83 (1985).

62. *Canterbury v. Spence*, 464 F.2d 772, 780 n.15 (D.C. Cir. 1972) (effective consent, "informed consent," arises when the patient understands the alternatives to and the risks of the proposed therapy).

63. *Id.* at 786; *Cobbs v. Grant*, 8 Cal. 3d 229, 243, 502 P.2d 1, 11, 104 Cal. Rptr. 505, 515 (1972) (a physician has a duty of reasonable disclosure of the alternatives and of the inherent and potential risks of the proposed therapy, including all material information as determined by the patient's need).

consent was based upon sufficient information, while the latter focuses on the physician's disclosure.⁶⁴ For example, a physician may fully discharge his duty to disclose, but the patient may not comprehend or understand what the physician has told him. In this case, the physician has satisfied his disclosure obligation; however, the consent is not considered "informed consent."

The doctrine of informed consent is generally applied in instances in which the physician unreasonably withholds information that is material to the patient's decision to consent to therapy. In one case, the physician may be negligent for failing to disclose the inherent risk of therapy.⁶⁵ In another case, the physician may be negligent for failing to disclose the extent of the patient's injuries.⁶⁶ Both cases focus on the patient's condition and the available choices and risks of the proposed therapy.

B. Statutory Disclosure Obligations

Statutes establish the standard of disclosure that is applicable when patients are used in medical experimentation. Federal regulations, which were promulgated by the Department of Health and Human Services (DHHS),⁶⁷ specifically enumerate the basic elements that are required for informed consent.⁶⁸ However, the application of these regulations is

64. *Canterbury*, 464 F.2d at 780 n.15 (the duty of disclosure is described as the *sine qua non* of informed consent).

65. See R. KEETON, PROSSER & KEETON ON TORTS § 32, at 190-191 (5th ed. 1984).

66. Courts have held that failing to disclose the extent of a patient's injuries constitutes fraudulent concealment. *Bowman v. McPheeters*, 77 Cal. App. 2d 795, 800, 176 P.2d 745, 747 (1947).

67. 45 C.F.R. §§ 46.101 to -.409 (1990).

68. The basic elements of informed consent are:

- (1) A statement that the study involves research, an explanation of the purposes of the research and the expected duration of the subject's participation, a description of the procedures to be followed, and identification of any procedures which are experimental;
- (2) A description of any reasonably foreseeable risks or discomforts to the subject;
- (3) A description of any benefits to the subject or to others which may reasonably be expected from the research;
- (4) A disclosure of appropriate alternative procedures or courses of treatment, if any, that might be advantageous to the subject;
- (5) A statement describing the extent, if any, to which confidentiality of records identifying the subject will be maintained;
- (6) For research involving more than minimal risk, an explanation as to whether any compensation and an explanation as to whether any medical treatments are available if injury occurs and, if so, what they consist of, or where further information may be obtained;

limited to research involving human subjects conducted by DHHS or funded by DHHS.⁶⁹ Also, the regulations exempt research involving the collection or study of pathological specimens or diagnostic specimens.⁷⁰ Therefore, the federal regulations are not controlling when human biological materials are obtained during or after a necessary therapeutic procedure.

A number of states have enacted legislation to protect the rights of individuals who participate in medical experimentation.⁷¹ California has attempted to provide minimum statutory protection for individuals under the Protection of Human Subjects in Medical Experimentation Act.⁷² The Act sets forth the experimental subject's bill of rights,⁷³ which are

(7) An explanation of whom to contact for answers to pertinent questions about the research and research subject's rights, and whom to contact in the event of a research-related injury to the subject; and

(8) A statement that participation is voluntary, refusal to participate will involve no penalty or loss of benefits to which the subject is otherwise entitled, and the subject may discontinue participation at any time without penalty or loss of benefits to which the subject is otherwise entitled.

Id. § 46.116.

69. *Id.* § 46.101.

70. *Id.* § 46.101(b)(5).

71. California, New York, and Virginia have enacted such legislation. OTA REPORT, *supra* note 6, at 95.

72. CAL. HEALTH & SAFETY CODE §§ 24170-24179.5 (West 1984).

73. Section 24172 provides:

As used in this chapter, "experimental subject's bill of rights," means a list of the rights of a subject in a medical experiment, in a language in which the subject is fluent. Except as otherwise provided in Section 24175, this list shall include, but not be limited to the subject's right to:

- (a) Be informed of the nature and purpose of the experiment.
- (b) Be given an explanation of the procedures to be followed in the medical experiment, and any drug or device to be utilized.
- (c) Be given a description of any attendant discomforts and risks reasonably to be expected from the experiment.
- (d) Be given an explanation of any benefits to the subject reasonably to be expected from the experiment, if applicable.
- (e) Be given a disclosure of any appropriate alternative procedures, drugs or devices that might be advantageous to the subject, and their relative risks and benefits.
- (f) Be informed of the avenues of medical treatment, if any, available to the subject after the experiment if complications should arise.
- (g) Be given an opportunity to ask any questions concerning the experiment or the procedures involved.
- (h) Be instructed that consent to participate in the medical experiment may be withdrawn at any time and the subject may discontinue participation in the medical experiment without prejudice.
- (i) Be given a copy of the signed and dated written consent form as provided

similar to the DHHS regulations.⁷⁴ However, the Act's definition of "medical experiment" does not include research using severed human tissue.⁷⁵ As in the case of the federal regulations, the state regulations generally apply to research on the human body as a whole and are not applicable when the biological materials are obtained during a necessary procedure and subsequently used in research.

C. *Moore v. Regents: Disclosure Obligation*

The California Supreme Court, in *Moore v. Regents of the University of California*,⁷⁶ articulated a new standard for a physician's disclosure obligation. The *Moore* court held that a physician must disclose his personal interests, which potentially affect his medical judgment, to satisfy his fiduciary duty of disclosure and to obtain informed consent.⁷⁷ These personal interests include the physician's research or economic interests.⁷⁸ It is important at this point to note that only the physician's research or economic interests, which are "unrelated to the patient's health" and "that may affect [the physician's] medical judgment," must be disclosed.⁷⁹ This new standard requires a determination of the research or economic interests that affect a physician's medical judgment.

The *Moore* court's decision was based on three general principles. The first principle is the right of the patient to personal autonomy.⁸⁰

by Section 24173 or 24178.

- (j) Be given an opportunity to decide to consent or not to consent to a medical experiment without the intervention of any element of force, fraud, deceit, duress, coercion, or undue influence on the subject's decision.

Id. § 24172.

74. 45 C.F.R. §§ 46.101 to -.409 (1990).

75. Section 24174 provides:

As used in this chapter, "medical experiment" means:

(a) The severance or penetration of tissues of a human subject or the use of a drug or device, as defined in Section 26009 or 26010, electromagnetic radiation, heat or cold, or a biological substance or organism, in or upon a human subject in the practice or research of medicine in a manner not reasonably related to maintaining or improving the health of such subject or otherwise directly benefiting such subject.

(b) The investigational use of a drug or device as provided in Sections 26678 or 26679.

(c) Withholding medical treatment from a human subject for any purpose other than the maintenance or improvement of the health of such subject.

CAL. HEALTH & SAFETY CODE § 24174 (West 1984).

76. 51 Cal. 3d 120, 793 P.2d 479, 271 Cal. Rptr. 146 (1990).

77. *Id.* at 132, 793 P.2d at 485, 271 Cal. Rptr. at 152.

78. *Id.*

79. *Id.*

80. *Id.*

The second principle is the requirement that, to be effective, the patient's consent to treatment must be informed consent.⁸¹ Thirdly, the physician has an obligation to disclose all information which is material to the patient's decision.⁸² Based upon these three principles, the court concluded that a physician must disclose personal interests that may affect his professional judgment.⁸³

Prior to the *Moore* decision, the scope of the physician's disclosure obligation was measured by the information material to the patient's decision.⁸⁴ Information is considered material if "a reasonable person, in what the physician knows or should know to be the patient's position, would likely attach significance to the risk or cluster of risks in deciding whether or not to forego the proposed therapy."⁸⁵ This standard considers only the inherent dangers and alternatives to proposed therapy.⁸⁶ This standard does not require disclosure of the physician's personal interests.

The *Moore* Court, in noting that informed consent requires disclosure of a physician's personal interests,⁸⁷ cited *Magan Medical Center v. California State Board of Medical Examiners*.⁸⁸ The California Court of Appeal in *Magan* held that a statute which prohibited medical partnerships from owning pharmacies was constitutional.⁸⁹ The *Magan* court, however, noted that a physician "who has a financial interest in where his prescriptions are filled" may be influenced by a profit motive in prescribing a drug for his patient.⁹⁰ The *Magan* court stated, "Certainly a sick patient deserves to be free of any reasonable suspicion that his doctor's judgment is influenced by a profit motive."⁹¹

An earlier case in California required disclosure of more than the physician's economic interests. In *Bowman v. McPheeters*,⁹² the California Court of Appeal noted that the physician's fiduciary duty requires disclosure of all facts which materially affect the patient's rights and

81. *Id.*

82. *Id.*

83. *Id.*

84. *Cobbs v. Grant*, 8 Cal. 3d 229, 245, 502 P.2d 1, 11, 103 Cal. Rptr. 505, 515 (1972).

85. *Canterbury v. Spence*, 464 F.2d 772, 787 (D.C. Cir. 1972).

86. *See Morgenroth v. Pacific Medical Center, Inc.*, 54 Cal. App. 3d 521, 126 Cal. Rptr. 681 (1976) (physician's disclosure that the proposed procedure carried risk of death or serious disease met the materiality requirement).

87. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 129, 793 P.2d 479, 483, 271 Cal. Rptr. 146, 150 (1990).

88. 249 Cal. App. 2d 124, 57 Cal. Rptr. 256 (1967).

89. *Id.* at 128, 57 Cal. Rptr. at 259.

90. *Id.* at 132, 57 Cal. Rptr. at 262.

91. *Id.*

92. 77 Cal. App. 2d 795, 176 P.2d 745 (1947).

interests.⁹³ This standard, as applied to the duty to disclose, appears to be broader than the disclosure requirement under the doctrine of informed consent. The *Bowman* standard requires disclosure of information that affects the patient's rights and interests, and not disclosure only of the physician's interests. However, the *Moore* Court failed to cite *Bowman* in support of its conclusion.

The *Moore* court noted that a physician who has a research interest in his patient has potentially conflicting loyalties.⁹⁴ The court suggested that a physician may perform tests which are of no benefit to his patient.⁹⁵ However, the performance of an unnecessary test will require consent by the patient.⁹⁶ The court suggested that the decision to undergo tests is made exclusively by the physician.⁹⁷ However, under California law, the decision to consent to tests or therapy is vested exclusively in the patient.⁹⁸

The *Moore* Court held that Moore's third amended complaint stated a cause of action for breach of the physician's disclosure obligation;⁹⁹ however, the court did not decide whether Moore could prevail on this issue. Two important elements of breach of the physician's disclosure obligation are materiality¹⁰⁰ and causation.¹⁰¹ In order for Moore to succeed on remand, he must prove these two problematic elements.

The question is whether a physician's personal interests in using his patient's biological materials is "material," especially when the proposed procedure is necessary. Information is material if a reasonable person would be likely to attach significance to the information in deciding whether to undergo the proposed therapy.¹⁰² The use of a patient's tissue after it is removed, especially if the tissue is diseased and is the cause of the patient's illness, is not likely to be considered significant in making a decision to consent to treatment.¹⁰³ As the courts generally recognize,

93. *Id.* at 800, 176 P.2d at 748.

94. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 130, 793 P.2d 479, 484, 271 Cal. Rptr. 146, 151 (1990).

95. *Id.*

96. *Id.*

97. *Id.*

98. *Cobbs v. Grant*, 8 Cal. 3d 229, 244, 502 P.2d 1, 10, 104 Cal. Rptr. 505, 514 (1972).

99. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 125, 793 P.2d 479, 480, 271 Cal. Rptr. 146, 147 (1990).

100. *Canterbury v. Spence*, 464 F.2d 772, 786 (D.C. Cir. 1972).

101. *Cobbs*, 8 Cal. 3d at 245, 502 P.2d at 11, 104 Cal. Rptr. at 515.

102. *See supra* note 85.

103. Certain religious groups have beliefs or traditions which do not allow the use of human biological materials in research or transplantation. *See CAL. HEALTH & SAFETY CODE* § 7152 (West Supp. 1991); Subcomm. Report, *supra* note 19, at 122 (statement of Thomas Murray).

the patient is usually more concerned with the risks or alternatives to the proposed therapy. Therefore, a physician's personal interests in the use of his patient's biological materials is not likely to be considered material, especially when the proposed therapy is necessary or highly recommended.

The problem of proving a causal relationship was noted by the California Supreme Court in *Cobbs*.¹⁰⁴ The standard for showing a causal relationship requires the patient to show that if the material information had been disclosed, the patient would not have consented to the therapy.¹⁰⁵ If the physician would have disclosed the information and the patient would have consented, then no causal relationship exists, and the physician is not liable for his failure to disclose the information.

In *Moore*, Golde informed Moore that a splenectomy was necessary to treat his disease. Based upon Golde's recommendation, Moore consented to treatment without knowledge of Golde's research interests. For Moore to show that Golde breached his duty of disclosure under the doctrine of informed consent, Moore must show that he would not have consented, or more properly, a reasonable person would not have consented,¹⁰⁶ to the proposed splenectomy. Because the splenectomy was necessary to treat Moore's illness, the disclosure of Golde's research interests prior to surgery arguably would not have affected Moore's decision to consent to the procedure.

In his dissenting opinion in *Moore*, Justice Mosk suggested that the cause of action for breach of the disclosure obligation is not sufficient to protect patients from commercial exploitation.¹⁰⁷ First, Justice Mosk noted that under a reasonably prudent person standard causation will be difficult to show.¹⁰⁸ Secondly, the nondisclosure cause of action does not give the patient affirmative rights; the action only allows the patient to withhold consent.¹⁰⁹ Justice Mosk further noted that the cause of action does not give the patient the right to share in the profits from commercialization,¹¹⁰ which is the primary purpose of Moore's suit. Also,

104. *Cobbs v. Grant*, 8 Cal. 3d 299, 245, 502 P.2d 1, 11, 104 Cal. Rptr. 505, 515 (1972) (between the physician's failure to inform and the injury to the plaintiff there must be a causal relationship which arises only if the patient shows that he would not have consented if he was given the information).

105. *Id.* See also *Canterbury v. Spence*, 464 F.2d 772, 790 (D.C. Cir. 1972).

106. *Cobbs*, 8 Cal. 3d at 245, 502 P.2d at 11, 104 Cal. Rptr. at 515 (the court adopted an objective test, whether a prudent person in the patient's position would have consented if adequately informed).

107. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 182, 793 P.2d 479, 521, 271 Cal. Rptr. 146, 188 (Mosk, J., dissenting).

108. *Id.* at 179, 793 P.2d at 519, 271 Cal. Rptr. at 186 (Mosk, J., dissenting).

109. *Id.* at 180, 793 P.2d at 520, 271 Cal. Rptr. at 187 (Mosk, J., dissenting).

110. *Id.*

a nondisclosure cause of action potentially affects only those in a physician-patient relationship.¹¹¹ The parties who profit from the commercialization of the patient's biological materials may escape liability if they are not in a physician-patient (fiduciary) relationship.

In *Moore*, the court stated that Quan, the Regents, Genetics Institute, and Sandoz were not in a fiduciary relationship with Moore.¹¹² The *Moore* court concluded that these defendants are liable for Golde's acts only on the basis of secondary liability, for example, respondeat superior.¹¹³ Such a relationship will be extremely difficult to prove, especially with respect to Genetics Institute and Sandoz. These defendants did not direct or participate in Golde's wrongful acts, but became involved long after the splenectomy. Therefore, these parties will most likely avoid liability.

The new standard of disclosure, as articulated by the *Moore* court, will not be an effective means for protecting the patient from commercial exploitation. The California Supreme Court requires disclosure of the physician's personal interests that are unrelated to the patient's health and that may affect the physician's medical judgment.¹¹⁴ However, this high disclosure standard may be rendered ineffective by the remaining elements of the cause of action, materiality and causation. If the failure of the physician to disclose his personal research interests is not a cause of the patient's injury, then the physician may not be held liable.

The *Moore* court noted that a physician's research interests "may affect his judgment."¹¹⁵ However, a physician's research interest, in reality, is secondary to his interest in treating the patient. Also, research on human biological material is unpredictable. The probability of discovering a commercially valuable product is extremely low.¹¹⁶ The court's assertion that the physician's judgment may be affected by a desire to advance his research objectives without considering the potential benefits to the patient is unlikely.

A more appropriate standard would require disclosure of all information that is related to the *patient's interests*. This standard was articulated by the California Court of Appeal in *Bowman v. McPheeters*.¹¹⁷ In *Bowman*, the court stated that as a part of the physician's fiduciary duty, the physician has a duty to disclose all facts which

111. *Id.* at 181, 793 P.2d at 521, 271 Cal. Rptr. at 188 (Mosk, J., dissenting).

112. *Id.* at 133, 793 P.2d at 486, 271 Cal. Rptr. at 153.

113. *Id.*

114. *Id.* at 131-32, 793 P.2d at 485, 271 Cal. Rptr. at 152.

115. *Id.* at 130, 793 P.2d at 484, 271 Cal. Rptr. at 151.

116. OTA REPORT, *supra* note 6, at 55.

117. 77 Cal. App. 2d 795, 176 P.2d 745 (1947).

materially affect the patient's rights and interests.¹¹⁸ A patient certainly has an interest in knowing whether his physician plans to use his biological materials in research. A patient may obtain great personal satisfaction in knowing that his biological materials are being used in medical research. The *Bowman* standard properly views the requirement of disclosure from the patient's perspective and not from the physician's perspective.¹¹⁹ Recognition of this standard does not create new rights for the patient; it only requires disclosure of all information that affects the patient's rights and interests.

III. CONVERSION

A. Common-Law Doctrine

Conversion is based on the common-law action of trover.¹²⁰ Trover was originally defined as an action on the case for the recovery of damages against a finder of another's goods who wrongfully converted the goods to his own use.¹²¹ This tort became an action for "any wrongful interference with or the detention of the goods of another."¹²² The plaintiff, if successful in his pleading, was generally awarded damages in the value of the chattel at the time of dispossession.¹²³

The modern doctrine of conversion protects the owner or person entitled to possession of property from another exercising unjustified and unwarranted control over it.¹²⁴ Conversion has been defined as "any act of dominion wrongfully exerted over another's personal property in denial of or inconsistent with his rights therein."¹²⁵ An action for conversion of personal property requires the plaintiff to show the following elements: "(1) plaintiff's ownership or right to possession of the property at the time of conversion; (2) defendant's conversion by a wrongful act

118. *Id.* at 800, 176 P.2d at 748.

119. In *Cobbs*, the court rejected as a standard for disclosure the practice of a reasonable medical practitioner and adopted a reasonable prudent person in the patient's position as the appropriate standard. *Cobbs v. Grant*, 8 Cal. 3d 229, 243, 502 P.2d 1, 10, 104 Cal. Rptr. 505, 514 (1972).

120. RESTATEMENT (SECOND) OF TORTS § 222A comment a (1965).

121. BLACK'S LAW DICTIONARY 1351 (5th ed. 1979).

122. *Id.*

123. *Id.* Trover can be contrasted with replevin, which is an action by the owner or the person entitled to possession of goods to recover the goods from another. *Id.* at 1168.

124. *Poggi v. Scott*, 167 Cal. 372, 139 P. 815 (1914) (the foundation for the action of conversion rests upon the unwarranted interference by a defendant with the dominion over the plaintiff's property from which injury results).

125. *Igauye v. Howard*, 114 Cal. App. 2d 122, 126, 249 P.2d 558, 561 (1952).

or disposition of plaintiff's property rights; and (3) damages."¹²⁶

The first element requires the plaintiff to assert ownership or a right to possession of the property at the time of conversion. This element has three aspects which require consideration: ownership or right to possession, property, and time. The settled rule is that absolute ownership of the property is not a prerequisite to maintaining a cause of action.¹²⁷ The plaintiff need only have an immediate right to possession at the time of conversion.¹²⁸ When the plaintiff has a special interest or qualified right in the property and possession or right of possession at the time of conversion, the combination is sufficient to maintain an action for conversion.¹²⁹ Examples of special interests or qualified rights include liens,¹³⁰ an interest as a bailee or bailor,¹³¹ equitable title,¹³² an interest arising from services rendered,¹³³ and secured interests.¹³⁴

The second aspect for consideration is the kinds of property that may be converted. Originally, conversion was applicable only to tangible personal property.¹³⁵ The basis of this limitation was that intangible property could not be lost and subsequently found, which was the original

126. *Baldwin v. Marina City Properties, Inc.*, 79 Cal. App. 3d 393, 410, 145 Cal. Rptr. 406, 416 (1978).

127. *Everfresh, Inc. v. Goodman*, 131 Cal. App. 2d 818, 820, 281 P.2d 560, 561 (1955).

128. *Hartford Fin. Corp. v. Burns*, 96 Cal. App. 3d 591, 598, 158 Cal. Rptr. 169, 172 (1979).

129. *Pope v. National Aero Fin. Co.*, 236 Cal. App. 2d 722, 46 Cal. Rptr. 233 (1965); *In re Dino*, 17 Bankr. 316 (Bankr. Fla. 1982); *Ax v. Schloot*, 118 Ind. App. 458, 81 N.E.2d 379 (1948).

130. *Bastanchury v. Times-Mirror Co.*, 68 Cal. App. 2d 217, 156 P.2d 488 (1945) (a lienholder may maintain an action for conversion); *In re Dino*, 17 Bankr. 316 (Bankr. Fla. 1982) (lienholder with possession or a right of possession may bring an action for conversion).

131. *Hollywood Motion Picture Equip. Co. v. Furer*, 16 Cal. 2d 184, 105 P.2d 299 (1940) (when bailee uses property to detriment of bailor, such use is conversion); *Treasure Cay, Ltd. v. Investors Int'l Constr. Corp.*, 259 So. 2d 169 (Fla. Dist. Ct. App. 1972) (bailee may maintain an action for conversion if he has a present or immediate right of possession).

132. *Hart v. Meadows*, 302 S.W.2d 448 (Tex. Civ. App. 1957) (equitable title is sufficient to support an action for conversion).

133. *Arques v. National Superior*, 67 Cal. App. 2d. 763, 155 P.2d 643 (1945) (a person with an interest in property arising from services rendered may maintain an action in trover).

134. *Hartford Fin. Corp. v. Burns*, 96 Cal. App. 3d 591, 158 Cal. Rptr. 169 (1979) (secured party with right to immediate possession is entitled to maintain a conversion action).

135. R. KEETON, *supra* note 65, § 15, at 91. See *Stern v. Kaufman's Bakery, Inc.*, 191 N.Y.S.2d 734 (N.Y. Sup. Ct. 1959) (court held that a door to door bakery route consists solely of the goodwill of the customers, which is intangible and not a proper subject of conversion).

basis for trover and conversion.¹³⁶ Real property was also excluded for the same reasons.¹³⁷ The modern doctrine expanded the scope of the term "property" to include intangible personal property.¹³⁸

The third aspect of this first element is the temporal aspect. The plaintiff is required to have an interest in the property, either ownership and the right of possession or actual possession, at the time of the wrongful act of the defendant.¹³⁹ The importance of this temporal aspect in *Moore* will be discussed below.

The second element is defendant's conversion by a wrongful act or disposition of the plaintiff's property rights.¹⁴⁰ Conversion does not require that there be an actual taking of the property.¹⁴¹ If the defendant wrongfully exerts control or ownership of the property or applied the property to his own use, the defendant's act constitutes conversion.¹⁴²

B. *Moore v. Regents: Conversion*

In *Moore*, the California Supreme Court held that the plaintiff's third amended complaint did not state a cause of action for conversion.¹⁴³ The court qualified its holding by stating that it did not hold "that excised cells can never be property for any purpose whatsoever."¹⁴⁴ However, the California Supreme Court concluded that "the use of excised cells in medical research does not amount to a conversion."¹⁴⁵

In support of its holding and conclusion, the *Moore* Court suggested that finding for the patient, who is the source of the cells, will impose

136. R. KEETON, *supra* note 65, § 15, at 91.

137. *See California Mut. Ins. Co. v. Robertson*, 213 Cal. App. 3d 1172, 262 Cal. Rptr. 173 (1989).

138. *See A & M Records, Inc. v. Heilman*, 75 Cal. App. 3d 554, 142 Cal. Rptr. 390 (1977) (recorded musical performances are subject to conversion); *Fabricon Prods. v. United Cal. Bank*, 264 Cal. App. 2d 13, 70 Cal. Rptr. 50 (1968) (a check is a subject of conversion); *Shahood v. Cavin*, 154 Cal. App. 2d 745, 316 P.2d 700 (1957) (money can be the subject of conversion when a specific sum capable of identification is involved); *Mears v. Crocker First Nat'l Bank*, 84 Cal. App. 2d 637, 191 P.2d 501 (1948) (shares of corporate stock and stock certificates are subjects of conversion); *In re Estate of Corbin*, 391 So. 2d 731 (Fla. Dist. Ct. App. 1980) (conversion may be brought for the wrongful taking of an intangible interest in a business, including goodwill).

139. *General Motors Acceptance Corp. v. Dallas*, 198 Cal. 365, 370, 245 P. 184, 186 (1926).

140. *Baldwin v. Marina City Properties, Inc.*, 79 Cal. App. 3d 393, 410, 145 Cal. Rptr. 406, 416 (1978).

141. *Igaue v. Howard*, 114 Cal. App. 2d 122, 126, 249 P.2d 558, 561 (1952).

142. *Id.*

143. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 147, 793 P.2d 479, 497, 271 Cal. Rptr. 146, 164 (1990).

144. *Id.* at 142, 793 P.2d at 493, 271 Cal. Rptr. at 160.

145. *Id.*

upon scientists a new tort duty that will have a chilling effect upon medical research.¹⁴⁶ The California Supreme Court noted that Moore's attempt to bring an action under a theory of conversion is "recognized as a request to extend that theory."¹⁴⁷ The *Moore* Court cited three reasons for not imposing liability for conversion: (1) policy considerations; (2) resolution is better left for the legislature; and (3) an alternate cause of action is available.¹⁴⁸

The *Moore* Court's analysis regarding conversion initially focused on whether Moore's claim of conversion fits within the existing law.¹⁴⁹ Moore asserts that he continued to own his cells following their removal, he never consented to the use of his cells in medical research, and the unauthorized use of his cells constitutes conversion.¹⁵⁰ The *Moore* Court concluded that the application of conversion to the present case "would frankly have to be recognized as an extension of the theory."¹⁵¹

As discussed above, an action for conversion requires ownership or a right to possession of the subject converted. The *Moore* Court concluded that Moore did not retain a right to possession of his cells after removal and considered whether he retained an ownership interest in his excised cells.¹⁵² The California Supreme Court decided that Moore did not retain an ownership interest in his cells following removal.¹⁵³

The first reason for concluding that Moore did not retain an ownership interest in his excised cells was the lack of judicial precedent supporting such a claim.¹⁵⁴ Because this is a case of first impression, the parties' and the court's research did not disclose a case on point which held that a person retains an interest in his excised cells.¹⁵⁵ The *Moore* Court dismissed the unwanted publicity cases¹⁵⁶ as not analogous

146. *Id.* at 134, 793 P.2d at 487, 271 Cal. Rptr. at 154.

147. *Id.* at 142, 793 P.2d at 493, 271 Cal. Rptr. at 160.

148. *Id.*

149. *Id.* at 136, 793 P.2d at 488, 271 Cal. Rptr. at 155.

150. *Id.* at 134, 793 P.2d at 487, 271 Cal. Rptr. at 154.

151. *Id.* at 136, 793 P.2d at 488, 271 Cal. Rptr. at 155.

152. *Id.*

153. *Id.*

154. *Id.*

155. *Id.* The *Moore* court found that this was not surprising because statutory law, both federal and state, dealing with human biological materials does not address property rights of a person in his severed biological material. These statutes are directed to the proper disposal of the materials in accordance with public policy. See CAL. GOV'T CODE §§ 27491.44-27491.47 (West 1988) (provisions governing the conduct of coroners with respect to human biological materials); CAL. HEALTH & SAFETY CODE § 7054.4 (West 1970 & Supp. 1991) (human tissues are disposed of in a method to protect the public health and safety); CAL. HEALTH & SAFETY CODE §§ 7150-7156.5 (West 1970 & Supp. 1991) (provisions governing anatomical gifts).

156. *Motschenbacher v. R. J. Reynolds Tobacco Co.*, 498 F.2d 821 (9th Cir. 1974);

to the present case.¹⁵⁷ Finally, the *Moore* Court concluded that recognition of a property interest in excised biological materials is not necessary to protect human privacy and dignity; fiduciary duty and informed consent more properly protect these interests.¹⁵⁸

The *Moore* Court's analysis regarding the ownership or right to possession of Moore's human biological materials raises several interesting legal questions. The first question requires a consideration of the temporal aspect of the first element of conversion. To sustain a conversion cause of action it is not necessary that Moore have an ownership interest in his biological materials if he had actual possession at the time of the alleged wrongful act.¹⁵⁹ If conversion occurred at the time of the taking,¹⁶⁰ then Moore had the requisite possession to maintain a conversion action. Moore should have asserted and the court should have recognized that the conversion of his biological materials occurred when these materials were removed, not after Moore lost possession. If conversion is properly viewed as occurring at the time of Moore's splenectomy or at each subsequent visit for the withdrawal of additional biological materials, then a cause of action for conversion clearly exists under common-law principles.

Under the Uniform Anatomical Gift Act,¹⁶¹ California law recognizes a qualified property right in one's body. This qualified right is the ability to make anatomical gifts, which effectively is the ability to direct the disposition of one's body or parts thereof at death.¹⁶² Under the Act, the donor may also designate a specific donee,¹⁶³ which implies a

Lugosi v. Universal Pictures, 25 Cal. 3d 813, 603 P.2d 425, 160 Cal. Rptr. 323 (1979) (every person has a proprietary interest in his own likeness and unauthorized use is actionable as a tort).

157. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 138, 793 P.2d 479, 490, 271 Cal. Rptr. 146, 157 (1990). The *Moore* court reasoned that Moore's cells were not unique because every human has the ability to manufacture lymphokines. However, the court failed to recognize the fact that Moore's cells were unique because they were infected with HTLV-II. This novel retrovirus was first identified in the Mo cell line. Chen, *Human T-cell Leukemia Virus Type II Transforms Normal Human Lymphocytes*, 80 PROC. NAT'L ACAD. SCI. 7006 (Nov. 1983); Chen, *Molecular Characterization of Genome of a Novel Human T-cell Leukemia Virus*, 305 NATURE 502 (Oct. 6, 1983).

158. *Moore*, 51 Cal. 3d at 140, 793 P.2d at 491, 271 Cal. Rptr. at 158.

159. See *Igaue v. Howard*, 114 Cal. App. 2d 122, 127, 249 P.2d 558, 561 (1952) (plaintiff need not be the owner of the property because actual possession at the time of conversion is sufficient).

160. Justice Broussard suggested that under the traditional common-law principles of conversion, Moore could maintain an action to recover damages. *Moore*, 51 Cal. 3d at 151, 793 P.2d at 499, 271 Cal. Rptr. at 166 (Broussard, J., concurring and dissenting).

161. CAL. HEALTH & SAFETY CODE §§ 7150-7156.5 (West 1970 & Supp. 1991).

162. *Id.* § 7150.5.

163. *Id.* § 7153(b).

right to designate the use of an anatomical gift for research purposes.¹⁶⁴ Because a person has the right to direct the use of his biological material at his death, a person should legally have the same rights with respect to his biological materials prior to death.¹⁶⁵ This qualified property right should be recognized as a sufficient interest in biological materials to entitle the patient to a conversion action for the wrongful or unauthorized use of those materials. Whether the plaintiff had an unlimited or limited right in his biological materials is not an appropriate consideration in deciding a motion for summary judgment. So long as a right existed, summary judgment is not appropriate.

A second question is whether human biological materials, in particular tissues and organs, are tangible or intangible property that is subject to conversion. The *Moore* Court expressly refused to hold that “excised cells can never be property for any purpose whatsoever.”¹⁶⁶ However, the question remains whether excised cells can ever be considered property for purposes of conversion.

Two cases, in dicta, suggested that human biological materials are tangible property. In *United States v. Garber*,¹⁶⁷ Ms. Garber was indicted for failing to report as income money that she received in exchange for her plasma.¹⁶⁸ The United States Court of Appeals noted that “blood plasma, like a chicken’s eggs, a sheep’s wool, or like any salable part of the human body, is tangible property.”¹⁶⁹ Based upon this statement, human biological material is arguably the proper subject of conversion.

The second case, *Venner v. State*,¹⁷⁰ was cited by the California Court of Appeal in its decision. The issue in *Venner* was whether balloons, which were filled with narcotics, found in Venner’s feces were illegally seized.¹⁷¹ In dictum, the *Venner* court noted that “[i]t could not be said that a person has no property right in wastes or other materials which were once a part of or contained within his body, but which normally are discarded after their separation from the body.”¹⁷² As in *Garber*, the *Venner* court’s language suggests that human biological materials

164. *Id.* § 7153(a)(1).

165. Justice Broussard stated that, under California law, the patient has the right to determine the use of a body part after its removal. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 151, 793 P.2d 479, 499, 271 Cal. Rptr. 146, 166 (1990) (Broussard, J., concurring and dissenting).

166. *Id.* at 142, 793 P.2d at 493, 271 Cal. Rptr. at 160.

167. 607 F.2d 92 (5th Cir. 1979).

168. *Id.* at 93. Her blood contained a rare antibody useful in the production of blood typing serum.

169. *Id.* at 97.

170. 30 Md. App. 599, 354 A.2d 483 (1976).

171. *Id.* at 600, 354 A.2d at 485.

172. *Id.* at 626, 354 A.2d at 498.

may be considered one's tangible property. These two cases support the existence of a property right in one's biological materials. This property right should be sufficient to maintain an action for conversion.

The California Supreme Court placed undue reliance in the availability of an alternate theory for imposing liability. The *Moore* Court suggested that the patient's interests are properly protected under the doctrine of informed consent or by the physician's fiduciary duty.¹⁷³ As discussed previously, Moore would have to prove both the materiality of the information that was withheld and a causal relationship to impose liability and to be entitled to a recovery.

The *Moore* Court also relied on California statutory law in support of its conclusion. The court cited California Health and Safety Code section 7054.4, noting that a patient has limited control over his excised biological materials.¹⁷⁴ Section 7054.4 requires the safe disposal of human biological materials following the conclusion of their scientific use.¹⁷⁵ The court concluded that this statute drastically limits a patient's control to the extent that the remaining rights in the excised material are not sufficient for purposes of common-law conversion.¹⁷⁶ However, absolute ownership is not necessary to maintain an action for conversion.¹⁷⁷ The California courts previously recognized a qualified interest in property as sufficient for purposes of conversion law.¹⁷⁸

To further support its rejection of Moore's conversion theory, the *Moore* Court asserted that the subject matter of a U.S. Patent¹⁷⁹ "cannot

173. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 140, 793 P.2d 479, 491, 271 Cal. Rptr. 146, 158 (1990).

174. *Id.* at 136, 793 P.2d at 488, 271 Cal. Rptr. at 155.

175. Section 7054.4 provides:

Notwithstanding any other provision of law, recognizable anatomical parts, human tissues, anatomical human remains, or infectious waste following conclusion of scientific use shall be disposed of by interment, incineration, or any other method determined by the state department to protect the public health and safety.

As used in this section, "infectious waste" means any material or article which has been, or may have been, exposed to contagious or infectious disease.

CAL. HEALTH & SAFETY CODE § 7054.4 (West Supp. 1991).

176. *Moore*, 51 Cal. 3d at 140, 793 P.2d at 492, 271 Cal. Rptr. at 159.

177. *Everfresh, Inc. v. Goodman*, 131 Cal. App. 2d 818, 820, 281 P.2d 560, 561 (1955) (established rule is ownership, either general or special, or right to immediate possession, is all that is required to maintain an action for conversion, and it is not a requirement that the plaintiff be the absolute owner).

178. *See Ruiz v. Bank of Am. Nat'l Trust & Sav. Ass'n*, 135 Cal. App. 2d 860, 287 P.2d 409 (1955) (a qualified interest in an automobile is sufficient); *Bastanchury v. Times-Mirror Co.*, 68 Cal. App. 2d 217, 156 P.2d 488 (1945) (a lien is a sufficient interest for conversion).

179. U.S. Patent, No. 4,438,032 (March 20, 1984).

be Moore's property."¹⁸⁰ The court noted that the Mo cell line is factually and legally distinct from Moore's cells.¹⁸¹ Under United States Patent Law,¹⁸² the Mo cell line may be considered distinct from Moore's spleen cells.¹⁸³ However, in the present case, Moore's spleen was the subject of the conversion which produced the Mo cell line. The Mo cell line is properly viewed as a modified version of Moore's cells. Although the Mo cell line is distinct, the discovery of this cell line would have been impossible without Moore's biological materials. Therefore, the Mo cell line is properly viewed as the "product" of the conversion and not as the property "converted" or the "subject" of the conversion.

Prior to the splenectomy, Moore signed a consent form which authorized the disposal of his severed tissue by cremation. However, Golde and Quan used the tissue to develop the Mo cell line. In *Hollywood Motion Picture Equipment Co. v. Furer*,¹⁸⁴ the defendant used the plaintiff's property to the detriment of the plaintiff.¹⁸⁵ The court noted that "[i]f a bailee, having no authority to use the thing bailed, uses it, or having authority to use it in a particular way, uses it in a different way, unauthorized by the terms of the bailment . . . such unauthorized use constitutes a conversion."¹⁸⁶ Because Golde and others were authorized to dispose of Moore's biological material by cremation and applied Moore's biological materials to an unauthorized use for their own benefit, a cause of action for conversion exists.

After determining that the recognition of a conversion cause of action required an extension of the common-law theory, the *Moore* court concluded that an extension of the common-law doctrine would not be appropriate.¹⁸⁷ The primary reason for the *Moore* court's refusal to extend liability was the fair balance between competing policies. The first policy consideration was the protection of an individual's right to

180. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 141, 793 P.2d 479, 492, 271 Cal. Rptr. 146, 159 (1990).

181. *Id.*

182. 35 U.S.C. §§ 1-376 (1988).

183. The Mo cell line was established from Moore's spleen cells by Golde and Quan. The Mo cell line, which is capable of continuous culture for an indefinite period of time, is not naturally occurring, but is a product of human ingenuity. Even though these cells retain some of the characteristics of Moore's spleen cells, such as the ability to produce proteins, the cell line is factually distinguishable from Moore's cells. Because the Mo cell line was "made by man" and Moore's spleen cells are "naturally occurring," only the former are patentable subject matter under 35 U.S.C. § 101. See *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

184. 16 Cal. 2d 184, 105 P.2d 299 (1940).

185. *Id.* at 189, 105 P.2d at 302.

186. *Id.*

187. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 143, 793 P.2d 479, 493, 271 Cal. Rptr. 146, 160 (1990).

personal autonomy.¹⁸⁸ The second policy consideration was the desire to protect persons engaged in socially useful activities from civil liability.¹⁸⁹ The court sought to protect the patient's interests without imposing an undue burden on socially beneficial biotechnological or medical research.¹⁹⁰ The court concluded that liability based upon the existing disclosure obligations provides sufficient protection of the patient's rights without having a chilling effect on research.¹⁹¹

The *Moore* court concluded that the extension of the common-law doctrine to recognize a cause of action for conversion would have an adverse effect on research.¹⁹² The court suggested that the free flow of medically useful human biological materials would be compromised if conversion law was extended.¹⁹³ The court asserted that biotechnological and pharmaceutical companies would not be willing to invest in research if such research would subject the company to potential liability.¹⁹⁴

The exchange of scientific materials is not as free and efficient as the California Supreme Court suggested. Many universities and corporations have entered into collaborative research agreements that usually define the rights of the parties in any discoveries or products of the collaborative efforts.¹⁹⁵ These agreements typically prohibit the transfer of research materials to persons who are not a party to the agreement.¹⁹⁶ The effect of these agreements has been a decrease in the flow of information and scientific samples.¹⁹⁷ Secondly, because of the importance of human biological materials in the development of commercial products,

188. *Id.*

189. *Id.*

190. In the OTA Report, the uncertainty surrounding the resolution of disputes between physicians and patients, with respect to their respective rights, was suggested to have an impact on both academic research and the biotechnology industry. The Report further suggested that biotechnology companies are unlikely to invest in developing, manufacturing, or marketing a product when uncertainty exists. OTA REPORT, *supra* note 6, at 27.

191. *Moore*, 51 Cal. 3d at 146, 793 P.2d at 495, 271 Cal. Rptr. at 162.

192. *Id.*

193. *Id.*

194. The court characterized the use of biological materials in research as purchasing a ticket in a litigation lottery. *Id.*

195. One example of such an agreement is the standard Cooperative Research and Development Agreement currently in use by the National Institutes of Health and the Alcohol, Drug Abuse and Mental Health Administration (NIH/ADAMHA). See D. MURRAY & P. O'CONNOR, A GUIDE TO CORPORATE SPONSORED UNIVERSITY RESEARCH IN BIOTECHNOLOGY — ISSUES, CONTRACTS, MODELS, AND PERSONNEL (1983).

196. Also, materials may be transferred between the parties with certain restrictions that limit the use of the materials, for example limiting the use to only research purposes. The NIH/ADAMHA material transfer agreement contains such a provision.

197. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 170, 793 P.2d 479, 513, 271 Cal. Rptr. 146, 180 (1990) (Mosk, J., dissenting).

companies are more restrictive in the exchange of samples in order to retain their competitive edge.¹⁹⁸

The *Moore* court also suggested that the availability of patent protection increases the availability of research materials.¹⁹⁹ The court failed to recognize two important considerations. First, patented materials must be available to the public,²⁰⁰ but the use of patented materials is limited. The patent grants an affirmative right to the patentee to prevent others from making, using, or selling the patented invention.²⁰¹ Although the grant of a patent, in theory, places the patented subject matter in the public domain, making the patented materials freely available to the public, the use of such materials cannot be adverse to the patentee's rights. The *Moore* court seemed to overlook this important limitation.

Secondly, the court failed to clearly distinguish between patented materials and human biological materials. Products of nature, such as human biological materials, are not patentable subject matter under the United States Patent Law.²⁰² As discussed previously, a patented material and the human biological material from which the patented material was derived are legally and factually distinct. Also, patented material is only a part of the material necessary for important medical research.²⁰³ Therefore, the *Moore* court's suggestion that the availability of patent protection increases the availability of research materials is erroneous.

The *Moore* court articulated a second reason to support its decision to refuse to extend liability. The court stated that the decision whether to extend the common-law doctrine of conversion is better left to the legislature.²⁰⁴ The court noted that such a decision requires the gathering

198. Biotechnology companies can protect the products of their research efforts by two methods: patents and trade secrets. Where trade secret protection is chosen, the material must be kept secret to preserve protection. U.S. CONGRESS, OFFICE OF TECHNOLOGY ASSESSMENT, *NEW DEVELOPMENTS IN BIOTECHNOLOGY: U.S. INVESTMENT IN BIOTECHNOLOGY* 103 (1988).

199. *Moore*, 51 Cal. 3d at 145 n.40, 793 P.2d at 495 n.40, 271 Cal. Rptr. at 162 n.40.

200. Section 112 of the United States Patent Law imposes a requirement that the specification of the patent contain a written description of the invention to enable any person skilled in the art to make and use the invention. 35 U.S.C. § 112 (1988). If the preparation of the patented subject matter can not be sufficiently described in writing, the material must be deposited in an acceptable depository. 37 C.F.R. §§ 1.801 to -.803 (1990). The fiction underlying the enablement requirement is that an inventor is granted an exclusive right of limited duration (17 years) in exchange for the disclosure of his invention to the public.

201. 35 U.S.C. § 271 (1988).

202. *Merck & Co. v. Olin Mathison Chem. Corp.*, 253 F.2d 156 (4th Cir. 1958).

203. *See supra* notes 17-19.

204. *Moore v. Regents of Univ. of Cal.*, 51 Cal. 3d 120, 147, 793 P.2d 479, 496, 271 Cal. Rptr. 146, 163 (1990).

of empirical information, the solicitation of expert advice, the holding of hearings, and the choice between complex policies.²⁰⁵ The court also noted that the existence of statutes which govern the disposition and use of human biological materials suggests that the legislature is competent to act in this area.²⁰⁶ The court cited an Office of Technology Assessment (OTA) Report as evidence that the United States Congress is interested in resolving the problems with respect to the use of human biological materials in research.²⁰⁷ However, the *Moore* court did not hesitate to extend the doctrine of informed consent.

Finally, the *Moore* court relied upon the existence of an alternate theory of liability to support its conclusion. The court stressed the importance of the physician's disclosure obligation as protection for the patient, "without hindering socially useful activities."²⁰⁸ However, as discussed above, the physician's disclosure obligation does not give the patient affirmative rights, and may be no more than a "paper tiger."²⁰⁹

IV. CONCLUSION

The California Supreme Court in *Moore* articulated a new standard of disclosure for informed consent. This new standard requires the physician to disclose his personal interests that are unrelated to the patient's health and that may affect his medical judgment.²¹⁰ The court implied that this disclosure obligation is sufficient to protect the patient's interest. However, the burden on the patient in proving materiality and causation renders this obligation illusory. Furthermore, it fails to recognize affirmative rights in the patient regarding a right to direct the disposition of his biological materials and a right to share in the profits gained from the use of his biological materials. Therefore, the physician's disclosure obligation is not an effective means of protecting patients from commercial exploitation.

Secondly, the *Moore* court concluded that a patient does not retain an interest in his biological materials once the materials are removed from his body.²¹¹ Based upon this conclusion, the court held that Moore could not maintain a cause of action for conversion.²¹² The most important aspect of this holding is the implication that the patient, whose

205. *Id.*

206. *Id.*

207. *Id.* See OTA REPORT, *supra* note 6. Congress may have decided not to act in this area and to allow the common law and the courts to resolve the disputes.

208. *Moore*, 51 Cal. 3d at 147, 793 P.2d at 497, 271 Cal. Rptr. at 164.

209. *Id.* at 180, 793 P.2d at 520, 271 Cal. Rptr. at 187 (Mosk, J., dissenting).

210. *Id.* at 131-32, 793 P.2d at 485, 271 Cal. Rptr. at 152.

211. *Id.* at 137, 793 P.2d at 489, 271 Cal. Rptr. at 156.

212. *Id.* at 147, 793 P.2d at 497, 271 Cal. Rptr. at 164.

biological materials are the basis of the discovery, has no rights with respect to the products of the research. The patient also does not have a right to share in the profits.

The court's decision is a victory for the biotechnology industry. The *Moore* court effectively limits liability to only those persons in a fiduciary relationship with the patient. Biotechnology companies are free to use human biological materials without the threat of litigation should the patient discover that his biological materials were the basis for the development of commercial products. However, it is not clear whether a state that is more interested in protecting the patient's rights than in protecting biotechnology researchers and industry will reach the same result.

The primary lesson of *Moore* is to recognize the importance of full disclosure to the patient. Proper disclosure should include: (1) a brief discussion informing the patient of the physician's plans to use the patient's biological materials in research; (2) whether such use will benefit the patient, physician, or anyone in the future; (3) the purpose for using the materials in research; and (4) the likelihood that such research use will lead to a commercial product. By disclosing this information, the physician will satisfy his fiduciary duty of disclosure and the new standard of disclosure for informed consent. In addition, when the physician properly obtains the patient's consent for the use of his biological materials, the physician will preclude a conversion action. With proper planning and consideration of the patient's rights and interests, the *Moore* case will never be repeated.

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