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Patentability of Extinct Organisms Regenerated Through Cloning

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Introduction
Background
Patentability of Extinct Organisms Regenerated Through Cloning Under Section 101 Patent Eligibility
Patentable Subject Matter
Patentable Subject Matter Under Section 101
Product of Nature
Is Regenerated Organisms Natural?
Is Regenerated Organisms Unnatural?
Is Regenerated Organisms Unnatural?
Product of Nature Doctrine
Patentability of Extinct Organisms Regenerated through Cloning Under Section 102 Patent Requirements
Novelty Under Section 102 Patent Requirements
Novelty Under Section 102 Patent Requirements
Novelty

[35] *See supra* note 19 (explaining that a domestic cow has been used as a surrogate mother for an Asian gaur, and also reporting that a domestic house cat has given birth to an African wildcat by interspecies embryo transfer).

[36] *See supra* note 8.

[37] *See* Eli Lilly & Co. v. Premo Pharm. Labs., Inc., 630 F.2d 120, (3d Cir. 1980).

[38] The right to exclude is limited to subject matter falling within claim scope.

[39] *See* 35 U.S.C. §101 (1952).

[40] *See* Committee Reports accompanying the 1952 Patent Act. S. REP. NO. 82-1979 at 5 (1952); H. R. REP. NO. 1923 at 6 (1952).

[41] *See* Diamond, 447 U.S. at 309.

[42] *Id.* (*citing* Funk Bros. Seed Co. v. Kalo Inoculant Co., 333 U.S. 127 (1948)).

[43] *Id.* at 306.

[44] *Id.*

[45] *Id.* at 309.

[46] *See supra* note 3. The *Chakrabarty* decision opened the door for the patenting of many biotechnology related inventions. Purified DNA and genetically altered mice (called the Harvard oncomouse) have been patented. A key consideration in all of these applications is whether the material or organism sought to be patented is "naturally-occurring." For example, DNA does not occur in nature in a purified form outside of the nucleus of a cell, and it therefore constitutes statutory subject matter.

[47] *See* U.S. Patent No. 5,945,577 issued Aug. 31, 1999 (claiming an improved method of cloning a non-human mammal by nuclear transfer; no claims are directed to the cloned organism itself).

[48] *See supra* note 26 (explaining that the last known animal of a subspecies of Pyrenean mountain goat known as a bucardo was killed in January 2000 due to a tree that fell on its head; prior to its death, scientists had taken a tissue sample from one of the bucardo's ears for the purpose of reproducing the goat by cloning).

[49] *See* THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 465 (1982).

[50] BBC, *Spanish Mountain Goat: Cloning vs. Extinction*, (Jan. 11, 2000), *at* http://www.futureframe.de/news/000113-2.htm (last visited Apr. 6, 2001).

[51] *See* Stephen R. Edwards, *Conserving Biodiversity: Resources for Our Future*, in THE TRUE STATE OF THE PLANET 217 (Ronald Bailey ed., 1995).

[52] *See* 35 U.S.C. § 102 (2000).

[53] *See* 35 U.S.C. § 102(a) (2000).

[54] *See* 35 U.S.C. § 102(f) (2000).

[55] *See* Roslin Institute Online, *Cloning and Nuclear Transfer: Cloning in the Conservation of Rare Breeds* (explaining that offspring resulting from cloning process are "genetically identical" to the animals that provided the DNA-containing original cells), *at* http://www.ri.bbsrc.ac.uk/library/research/cloning/rarebreed.html (last visited Apr. 6, 2001).

[56] *See* Diamond, 447 U.S. at 309.

[57] *See* Verdegaal Bros. Inc. v. Union Oil Co. of California, 814 F.2d 628, 631(Fed. Cir. 1988).

[58] *See* In re Donohue, 766 F.2d 531, 533 (Fed. Cir. 1985) (holding that even if the claimed invention is disclosed in a printed publication, disclosure will not suffice as prior art if it was not enabling).

[59] *See* In re Wands, 858 F.2d 731, 737 (Fed. Cir. 1988).

[60] *See* I. Wilmut et al., *Viable Offspring Derived From Fetal and Adult Mammalian Cells*, NATURE, vol. 385, at 810-813.

[61] *See supra* note 19 (explaining that a group at Advanced Cell Technology, headed by Robert Lanza, was responsible for cloning Noah, the Asian gaur, and they are planning to clone the bucardo, and that other species already cloned, using interspecies surrogate mothers, include the African wildcat, Indian desert cat, red deer, mouflon sheep, and bongo antelope).

[62] *See* 35 U.S.C. § 102(f) (2000).

[63] *See* THE AMERICAN HERITAGE DICTIONARY OF THE ENGLISH LANGUAGE 688 (4th ed. 2000).

[64] *See* Sewall v. Walters, 21 F.3d 411, 415 (Fed. Cir. 1994) (conception exists when a definite and permanent idea of an operative invention, including every feature of the subject matter sought to be patented, is known).

[65] *See In re Thorpe*, 777 F.2d 695, 697 (Fed. Cir. 1985).

[66] *Id.* The prior art taught the use of a novolac phenol-aldehyde resin having an incorporated metal salt and specifically taught against the use of metal oxides in preparing the novolac phenol-aldehyde resin. Thorpe discovered a process for making the novolac phenol-aldehyde resin using metal oxides, which were less expensive materials. The Federal Circuit found that while Thorpe's process for making the novolac phenol-aldehyde resin differed from that of the prior art, the substantial similarity of Thorpe's resin to the prior art resin was sufficient to establish a *prima facie* case for rejection of Thorpe's product-by-process claims.

[67] *Id.*

[68] *Id.*

[69] *See* Mark L. Rohrbaugh, *The Patenting of Extinct Organisms: Revival of Lost Arts*, 25 AIPLA Q.J. 371 (1997).

[70] *See* Gayler v. Wilder, 51 U.S. 477, 497-498 (1850).

[71] *Id.* at 497 (holding that if an invention is patented or printed in a foreign country, then the U.S. public is presumed to have the benefit of the publicly disclosed invention and no patent will be granted for the invention; however, if the invention was merely used in a foreign country, then the invention might be "known and used in remote places for ages, and the people of [the U.S. will be] unable to profit from it" (where the inventor in the latter situation is not barred from obtaining a patent in exchange for disclosure to the public)).

[72] *Id.* at 478.

[73] *Id.* at 495.

[74] *Id.* at 496 (explaining that the trial court instructed the jury, "that if Connor had not made his discovery public, but had used it simply for his own private purpose, and it had been finally forgotten or abandoned, such a discovery and use would be no obstacle to the taking out of a patent by Fitzgerald or those claiming under him, if he be an original, though not the first, inventor or discoverer").

[75] *Id.* at 497-498 (explaining that if the Conner safe had passed away from the memory of Conner himself, and of those who had seen it, and the safe itself had disappeared, "the knowledge of the improvement was as completely lost as if it had never been discovered" and "[t]he public could derive no benefit from it until it was discovered by another inventor"; and further explaining that "if Fitzgerald made his discovery by his own efforts, without any knowledge of Conner's, he invented an improvement that was then new, and at that time unknown; and it was not the less new and unknown because Conner's safe was recalled to his memory by the success of Fitzgerald's").

[76] *Id.* at 498.

[77] *Id.*

[78] *Id.*

[79] *See* Coffin v. Ogden, 85 U.S. 120, 125 (1873) (questioning whether the proposition expressed by the proviso-that the second inventor would not be entitled to a patent where the invention is still in the memory of the first inventor-is a sound one).

[80] *See e.g.*, Dunlop Holdings Ltd. v. Ram Golf Corp., 524 F.2d 33, 35−36 (7th Cir. 1975) (citing *Gayler* as establishing that a patentee may be entitled to credit for making a new discovery or invention even though someone else actually made the discovery before he did because an abandoned invention will not defeat the patentability of the rediscovery of "lost art," and holding the patent invalid in view of prior commercial use by another that amounted to non−informing public use but not secret use); Western States Mach. Co. v. S. S. Hepworth Co., 147 F.2d 345, 350 (2d Cir. 1945) (holding that while the doctrine of lost arts applies to prior uses, a patent was found invalid in view of a former patent, which cannot qualify as lost art); Dalby v. Lynes, 64 F. 376, 379 (Mass. Dist. Ct. 1894) (finding a patent invalid because prior use was not forgotten or abandoned).

[81] *See* Mark L. Rohrbaugh, *The Patenting of Extinct Organisms: Revival of Lost Arts*, 25 AIPLA Q.J. 371, 404 (1997).

[82] *Id.*

[83] *Id.*

[84] *Id.* at 407.

[85] *Id.* at 406.

[86] *Id.* at 404.

[87] *Id.* at 405.

[88] *Id.* at 406.

[89] *See supra* note 19.

[90] *See supra* note 21.

[91] *See supra* note 19.

[92] *Id.*

[93] *See* Eli Lilly & Co. v. Premo Pharm. Labs., Inc., 630 F.2d 120, 137 (3d Cir. 1980).

[94] *See* 16 U.S.C. § 1533(a)(1) (1999).

[95] *See* Emma Dorey, *Huia Cloned Back to Life?,* NATURE BIOTECHNOLOGY, vol. 17, Aug. 1999, at 736. The Huia is an extinct bird that once flourished in New Zealand and is of great cultural importance to the Maori tribe.

[96] *See Bringing Back the Tiger*, abcNEWS.com (explaining that the Tasmanian tiger is a striped marsupial, the last known specimen of which died in captivity in 1936, and that hopes to resurrect the tiger depend on the presence of viable DNA in a six-month-old pup that has been preserved in alcohol since 1866) *at* http://www.abcnews.go.com/sections/science/dailyNews/cloning_tasmaniantiger000822.html. (last visited Nov. 24, 2000).

[97] *See* Richard Stone, *Cloning the Woolly Mammoth*, DISCOVER, Apr. 1999, at 58, 62.

[98] This situation is somewhat analogous to the space program in the 1960s. For many years, sending an astronaut to the moon was a primary objective of the space program. Once this mission was accomplished, there was far less interest in making repeat trips.

[99] *See* U.S. Patent No. 5,945,577 issued on Aug. 31, 1999.