

**WHEN SPECIES COLLIDE:**

**AN ANALYSIS OF THE USE OF ANENCEPHALIC  
INFANTS AND NON-HUMAN ANIMALS AS ORGAN  
DONORS**

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I. INTRODUCTION

Over the years, medical technology has continued to advance at a rapid pace. This has been particularly true in the field of organ donation and transplant.<sup>1</sup> It is now technologically possible to transplant both vital and non-vital, non-regenerative organs with almost routine ease.<sup>2</sup> This organ transplant process has great life-saving potential, but it is not without inherent costs. One such cost is the loss of life of the organ donor.

For every vital organ transplanted into a willing recipient, there is a corresponding loss of life which must be considered. In most cases, the organ donor has consented to the removal of his organs for transplant into another.<sup>3</sup> Although any loss of life is unfortunate, this altruistic, potentially life-saving decision to donate an organ is applauded. However, not all potential organ donors are capable of personally consenting to the donation of their organs for transplant.<sup>4</sup> The use of organs from such non-consenting donors has sparked an enormous ethical debate.

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\* This Article was written in response to the growing concern over the shortage of donor organs for organ transplantation and the corresponding bioethical issues raised by alternative organ sources. The author is a graduate of Nova Southeastern University Shepard Broad Law Center. The Article was written for a seminar on Bioethics.

<sup>1</sup> 42 U.S.C. § 274b(d)(2) (1994) (defining organ as encompassing solid organs, including the kidney, heart, liver, lung, and pancreas).

<sup>2</sup> Gloria J. Banks, *Legal & Ethical Safeguards: Protection of Society's Most Vulnerable Participants in a Commercialized Organ Transplant System*, 21 AM. J.L. & MED. 45, 53 (1995). Nonregenerative human tissues and organs are not capable of replacing themselves. Nonregenerative organs are broken down into the categories "vital" and "non-vital." Vital nonregenerative organs are those that are both irreplaceable and essential for the continued life of the donor. Some examples include the heart, lungs, liver, pancreas, stomach, and both of the kidneys. Non-vital nonregenerative organs include those that can be removed from a living donor without causing his or her death. Examples include one of two properly operating kidneys and a dissected portion of a functioning liver. *See id.*

<sup>3</sup> ULA UNIF. ANATOMICAL GIFT ACT 1987 § 2 (1993 & Supp. 1996) [hereinafter UAGA] (stating that any adult over the age of eighteen may make an anatomical gift for purposes of organ transplant).

<sup>4</sup> *Id.* (stating that those who are under the age of eighteen cannot personally make an anatomical gift under the UAGA).

Another source of ethical debate in the field of organ transplantation concerns the supply of transplantable organs. Scarcity of organs has become a major problem in the field of organ transplantation. The fact is that there are simply not enough organs to go around.<sup>5</sup> As medical technology improves and makes it possible for more people to become organ recipients, technology simultaneously diminishes the number of potential organ donors. For example, victims of fatal automobile accidents once accounted for approximately one-third of all available donor organs.<sup>6</sup> However, with the advent of air-bags and legislated safety measures such as seat belt laws, fewer people are dying in automobile accidents, and thus there are fewer donors from automobile accidents.<sup>7</sup> In addition, intensive medical screening for diseases such as Hepatitis C, HIV and AIDS has further widened the gap between needy recipients and willing donors.<sup>8</sup> The short supply of available organs means that government and science must find new sources for transplantable organs. Without such an effort, further advancements in the field of organ transplantation will be stymied.

The scientific community has responded to this challenge by identifying several alternative sources for donor organs. This article addresses two such potential sources for organ and tissue donation which are particularly controversial.<sup>9</sup> Both of these alternative sources have sparked public concern and ethical debate.

The first potential source of organs addressed in this article is the anencephalic infant.<sup>10</sup> Potential donors from this group, while lacking a voice of their own, have been the subjects of zealous advocacy and tremendous legal protection. Thus, despite the fact that organs and tissues

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<sup>5</sup> See Raja B. Khauli, *Issues and Controversies Surrounding Organ Donation and Transplantation: The Need for Laws That Ensure Equality and Optimal Utility of a Scarce Resource*, 27 SUFFOLK U. L. REV. 1225, 1226 (1993) (listing several factors likely to account for the low number of available transplantable organs); see also Andrea K. Scott, *Death Unto Life: Anencephalic Infants as Organ Donors*, 74 VA. L. REV. 1527, 1531 (1988) (stating that improved safety measures have decreased the supply of available organs and tissue).

<sup>6</sup> Khauli, *supra* note 5, at 1226.

<sup>7</sup> *Id.* (discussing the decrease in automobile accident-related donors).

<sup>8</sup> *Id.* (discussing how various medical screening procedures have diminished the number of organs suitable for transplant).

<sup>9</sup> These alternatives are referred to as “potential sources” for additional donor organs, because their role and utility in organ transplantation has not yet been adequately measured. The sources mentioned throughout this article have a “potential” for filling the vital need of donor organs.

<sup>10</sup> *The Medical Task Force on Anencephaly, The Infant with Anencephaly*, 322 NEW ENG. J. MED. 669 (1990) (defining anencephaly as a congenital absence of a major portion of the brain, skull, and scalp which develops early in gestation, usually within the first month, and is invariably fatal).

from this potential donor source are readily transplantable into human recipients, their use has been heavily restricted.<sup>11</sup>

The second potential source of organs addressed in this article is the non-human animal.<sup>12</sup> Advances in medical technology have made it possible for non-human animal organs to be transplanted into human recipients through a process known as xenografting.<sup>13</sup> Potential donors from this group not only lack the ability to speak for themselves, but have also been denied an effective voice through any medium, despite the efforts of animal rights advocates.<sup>14</sup> Therefore, unlike anencephalic infants, non-human donors have received little in the way of legal protection, and have been freely used as a source of donor organs in human transplantation. While non-human animals do not share any natural biological compatibility with humans, their use in human transplantation continues.<sup>15</sup> Some have argued that this is largely due to man's ego and his historic exercise of dominance over the non-human animal.<sup>16</sup>

This article examines the organ transplant problem with a focus on these two potential sources. Part II exposes the problem which, simply stated, is that a serious shortage of transplantable organs makes identification of new sources of donor organs a necessity. Part III deals with the anencephalic infant as a source of organs. It discusses the nature of this fatal birth defect, the manner in which these infants have been dealt with in the past, and how they are treated today. The article goes on to discuss why these infants may be a valuable potential source of organs for pediatric organ recipients. Finally, the section addresses the arguments against using these infants as a source for donor organs.

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<sup>11</sup> See *In re T.A.C.P.*, 609 So. 2d 588 (Fla. 1992) (stating that the organs of anencephalic infant may only be used for purposes of organ transplant after the infant is legally dead).

<sup>12</sup> One purpose of this article is to stress man's exercise of dominance over animals. At this time it is important to acknowledge that man himself is an animal. Therefore, for the remainder of the article, the term "non-human animal" will be used to refer to all animals that are not human.

<sup>13</sup> *Frequently Asked Questions About Xenotransplants*, [http://www.med.umich.edu/trans/transweb/faq/faq\\_xeno.html](http://www.med.umich.edu/trans/transweb/faq/faq_xeno.html) (visited Mar. 18, 1997). A xenotransplant is a transplant between species. Xenografting refers to the process of transplanting an organ from one species to another. See *id.*

<sup>14</sup> In addition to the non-human animal's inability to communicate their own feelings to the human world, animal rights organizations have also been deemed to lack standing under Article III to challenge a violation of the rights of an animal. See, e.g., Ruth R. Hamilton, Note, *Of Monkeys and Men—Article III Standing Requirements in Animal Biomedical Research Cases*: International Primate Protection League v. Administrators of the Tulane Educational Fund, 24 CREIGHTON L. REV. 1515 (1991) (discussing the seminal case in which Article III standing was denied to animal rights groups).

<sup>15</sup> The biological makeup of animals of different species is inherently different.

<sup>16</sup> See generally PETER SINGER, ANIMAL LIBERATION (2d ed. 1990) (providing an interesting and in-depth discussion of man's exercise of dominance over non-human animals).

Part IV shifts towards a discussion of the use of non-human animals as a source of donor organs. It discusses the moral and ethical aspects of man's use of non-human animals. It then addresses the potential usefulness of non-human animal organs in human recipients. Finally, this section focuses on the arguments against using non-human animals as a source of organs. Part V addresses the similarities and differences in the use of anencephalic infant and non-human animal organs as a means of addressing the organ shortage problem. Part VI offers some rather simple suggestions for increasing the organ donor pool without exploiting other sources. Finally, this article concludes that the answer to the organ shortage does not reside in the exploitation of those who lack a voice of their own. The Article stresses development and implementation of new methods of increasing traditional donor sources as the best and most ethical answer to the organ shortage problem.

## II. THE PROBLEM

### A. Organ Shortage

The concept of replacing diseased and damaged organs with healthy, functioning organs is not a novel one. Research into organ transplantation involving both human and non-human animals began as far back as the 18th century.<sup>17</sup> Although the early attempts at transplantation failed, the scientific community diligently pursued successful organ transplantation. In the latter half of the twentieth century, the scientific community witnessed its dream come to fruition as organ transplantation became a relatively routine medical procedure. Specifically, within the last twenty years, breakthroughs in tissue typing and immunosuppressant drugs,<sup>18</sup> have made it possible to perform greater numbers of organ transplants with corresponding higher survival rates for transplant recipients.<sup>19</sup> Today, it is possible to transplant approximately twenty-five different parts of the human body.<sup>20</sup> This includes transplants of kidneys, livers, hearts, pancreases, lungs and heart-lungs.<sup>21</sup>

Notwithstanding the technological developments in organ transplantation, scientists must now wrestle with a shortage of transplantable organs. The ability to successfully transplant many organs

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<sup>17</sup> United Network for Organ Sharing, Milestones in Organ Transplantation, [http://204.127.237.11:80/fct\\_mile.htm](http://204.127.237.11:80/fct_mile.htm) (visited Mar. 25, 1997).

<sup>18</sup> *Id.* (discussing how Jean Borel's discovery of the immunosuppressant drug cyclosporine in the mid-1970s made it possible for many more organ transplants to take place). Rejection caused by attack upon the newly transplanted organ by the recipient's immune system was, and still is to some degree, a major stumbling block to successful organ transplantation. *Id.*

<sup>19</sup> *Id.*

<sup>20</sup> United Network for Organ Sharing, Milestones in Organ Transplantation, *supra* note 17.

<sup>21</sup> *Id.*

of the human body is only as useful as the corresponding ability to procure an adequate number of transplantable organs. As new procedures have created more potential recipients, it has become increasingly evident that the search for sources of transplantable organs has lagged behind the ability to perform the actual transplants. Therefore, as new procedures create more potential recipients, the shortage of available donors becomes increasingly evident. The United Network for Organ Sharing (UNOS)<sup>22</sup> estimates that as of March 19, 1997, there were more than fifty-thousand people waiting for an organ transplant.<sup>23</sup> In addition, UNOS estimates that a new name is added to the national organ transplant waiting list every eighteen minutes.<sup>24</sup> Despite efforts aimed at increasing organ donation from traditional sources, the fact remains that many people die each year waiting for the organ they so desperately need.<sup>25</sup>

## B. Organ Procurement

In the United States, the decision to donate one's organs is a voluntary decision left to an individual, but subject to regulation by law. For example, an individual may choose to donate his organs for transplant, but may not sell them for the same purpose.<sup>26</sup> There are several laws which govern the organ donation process. One such law is the Uniform Anatomical Gift Act (UAGA).<sup>27</sup> The UAGA, adopted in some form by every state, permits the donation of organs by an individual, or if no such

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<sup>22</sup> See United Network for Organ Sharing, UNOS Overviews, <http://204.127.237.11:80/intro.htm> (visited Mar. 25, 1997). The United Network for Organ Sharing (UNOS) is a tax-exempt medical, scientific, and educational organization under contract to operate the national Organ Procurement and Transplantation Network (OPTN), and develop and sound organ allocation system which forbids favoritism based upon political influence, race, sex, or financial status. Instead, they rely upon medical and scientific criteria. UNOS is located in Richmond, Virginia, and is a private, non-profit corporation. UNOS members include every transplant program, organ procurement organization, and tissue typing laboratory in the United States. *Id.*

<sup>23</sup> United Network for Organ Sharing, United Network for Organ Sharing U.S. Waiting List Statistics, [http://www.unos.org/usd3\\_19\\_97.htm](http://www.unos.org/usd3_19_97.htm) (last modified Mar. 19, 1997); see also United Network for Organ Sharing, [http://204.127.237.11:80/sta\\_wait.htm](http://204.127.237.11:80/sta_wait.htm) (noting that the OPTN waiting list has increased by an average of 4253 potential recipients each year from 1988 through 1996).

<sup>24</sup> United Network for Organ Sharing, Facts About Organ Donation and Transplantation, [http://204.127.237.11:80/fct\\_fact.htm](http://204.127.237.11:80/fct_fact.htm) (visited Mar. 25, 1997).

<sup>25</sup> United Network for Organ Sharing, United Network for Organ Sharing Facts and Statistics: Reported Deaths on the OPTN Waiting List 1988–1996, [http://204.127.237.11:80/sta\\_dol.htm](http://204.127.237.11:80/sta_dol.htm) (last modified Jan. 13, 1997). According to UNOS, at the end of 1996 alone, 3916 people on the OPTN waiting list died waiting for an organ transplant. This figure has increased steadily over the years. For example, the number of needy recipients who died waiting for an organ transplant in the year 1988 was 1502. *Id.*

<sup>26</sup> See 42 U.S.C. § 274e(a)(b) (1995) (prohibiting the sale of human organs for use in transplant and providing for a penalty of a fine up to \$50,000 and/or imprisonment for up to 5 years).

<sup>27</sup> ULA UNIF. ANATOMICAL GIFT ACT 1987 §§ 1–12 (1993 & Supp. 1996).

election has been made, by the relatives of a decedent.<sup>28</sup> The UAGA requires that a donor be declared legally dead as a prerequisite to procurement of donated organs.<sup>29</sup> This declaration of death is generally made in accordance with the Uniform Determination of Death Act (UDDA)<sup>30</sup> or another similar state statute.<sup>31</sup> The UDDA defines death as either the irreversible cessation of heart rate and respiration or total brain death.<sup>32</sup> Working together, the UAGA and the UDDA are the cornerstones of organ donation in the United States, as they have traditionally supplied the majority of donor organs. However, these laws do not provide a manner to unite the available donor organs with needy recipients in the precious time following the death of the donor.<sup>33</sup>

This important component was provided by the National Organ Transplant Act of 1984.<sup>34</sup> By the 1980's, organ transplant had become sufficiently common that it offered hope to many people suffering from diseased organs.<sup>35</sup> However, the scarcity problem was already evident. There were simply an insufficient number of available donor organs to meet recipient demand. Many potential recipients sought media coverage to emphasize the need for organ donors. Their pleas sparked Congressional attention which eventually led to passage of the National Organ Transplant Act (NOTA) in October 1984.<sup>36</sup> NOTA created a national health policy regarding transplantation,<sup>37</sup> and provided for the establishment and operation of an Organ Procurement and Transplantation

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<sup>28</sup> *Id.*; see also Monique C. Gorsline & Rachelle L.K. Johnson, *The United States System of Organ Donation, The International Solution, and the Cadaveric Organ Donor Act: "And the Winner Is . . ."*, 20 J. CORP. L. 5, 16–18 (1995) (stating that while the 1968 version of the UAGA was quickly adopted by most of the fifty states and the District of Columbia, only a fraction of these states adopted the 1987 amendment to the UAGA); ULA UNIF. ANATOMICAL GIFT ACT 1987 (1993 & Supp. 1996) (providing tables of states adopting either the 1968 or 1987 version of the UAGA).

<sup>29</sup> See 8A ULA 29 § 1(1) UNIF. ANATOMICAL GIFT ACT 1987 (1993 & Supp. 1996) (stating the definition of the term "Anatomical Gift" as a donation of all or part of a human body to take effect upon or after death).

<sup>30</sup> ULA UNIF. DETERMINATION OF DEATH ACT §§ 13, 12A 589 (1993).

<sup>31</sup> *Id.*

<sup>32</sup> *Id.*

<sup>33</sup> There is a very short window of time, depending on the transplantable organ involved, in which to transplant the organ before it is no longer viable. Due to advances in technology and preservation techniques, vital organs may be procured and transported hundreds of miles to a recipient center for transplantation. Some examples of organs and their typical preservation time are: 4–6 hours for a heart, 12–14 hours for a liver, 48–72 hours for a kidney, 4–6 hours for a heart-lung, and 4–6 hours for a lung. United Network for Organ Sharing, Facts About Organ Donation, [http://204.127.237.11:80/fct\\_fact.htm](http://204.127.237.11:80/fct_fact.htm) (visited Mar. 25, 1997).

<sup>34</sup> National Organ Transplant Act of 1984, Pub. L. No. 980597, 98 Stat. 2339 (codified as amended in scattered sections of 42 U.S.C.) [hereinafter NOTA].

<sup>35</sup> United Network for Organ Sharing, OPTN/SR 1996 Annual Report, Appendix A, [http://204.127.237.11:80/UNOS\\_ar\\_97/append\\_a.htm](http://204.127.237.11:80/UNOS_ar_97/append_a.htm) (visited Mar. 25, 1997).

<sup>36</sup> See NOTA, 98 Stat. at 2339.

<sup>37</sup> See Gorsline & Rachelle, *supra* note 28, at 19 (discussing the impact of NOTA).

Network (OPTN) to create a national system capable of listing individuals who need organs, matching donors to potential recipients, and establishing medical criteria for the allocation of organs.<sup>38</sup> UNOS was awarded the OPTN contract, and presently maintains the national waiting list.<sup>39</sup> Unfortunately, NOTA has not proven the answer to the organ shortage problem. The reality is that, despite efforts to increase the available supply of organs,<sup>40</sup> the supply still falls substantially short of demand. Procurement from voluntary donations has been insufficient. Therefore, science has pursued other sources such as the two discussed in this article.

Problems with the use of organs from these two alternative sources begin with the basic premise that the organ donor system in the United States is based on voluntariness. It is arguable that the pursuit of transplantable organs from anencephalic infants and non-human animals has an inherent involuntariness to it. While these sources are different in that one is human and the other non-human, they are similar in that neither can speak for itself. Neither can assent, on its own, to its organs being taken and used for the benefit of a dying human being. Perhaps it is this very inability to choose, this involuntary taking, which makes these sources an ethical minefield.

## II. THE ANENCEPHALIC INFANT

The shortage of available organs for transplant is probably most obvious in the area of pediatrics.<sup>41</sup> Because of the relatively small body size of pediatric organ recipients, small organs are needed to fill this demand.<sup>42</sup> Such small organs can only come from small donors. But what happens when the parents of an infant, confronted with the fact that their infant has a medical condition which is absolutely incompatible with continued life,<sup>43</sup> choose to ease their loss by donating their infant's organs

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<sup>38</sup> United Network for Organ Sharing, *supra* note 35.

<sup>39</sup> *Id.*

<sup>40</sup> The UAGA is one example of an attempt to increase organ donation. UAGA § 8(a) (amended 1987) 8(a) ULA 29 (Supp. 1996). The UAGA permits anyone over the age of eighteen to make or refuse to make an anatomical gift. It also permits a certain group of people to authorize the gift of all or part of a decedent's body if the decedent has not executed an anatomical gift form nor indicated opposition to such a gift. *Id.* In addition, the ability to designate donor status as a part of the process of issuing identification cards and issuing and renewing driver licenses, is another example of an attempt to increase organ donation. *See, e.g.*, FLA. STAT. ANN. § 732.921(1) (West 1988 & Supp. 1997).

<sup>41</sup> *See* Phyllis Coleman, *Brother, Can You Spare a Liver? Five Ways to Increase Organ Donation*, 31 VAL. U. L. REV. 1, 23 (1996) (commenting on the various problems associated with pediatric donation and possible solutions).

<sup>42</sup> *Id.*

<sup>43</sup> By "absolutely incompatible with continued life" it is meant that the infant has a zero chance of survival due to its anencephalic condition. For an explanation of the term anencephaly, *see supra* note 10; *see also infra* Part II.A.

in order for another infant to survive? In the case of the anencephalic infant, quite possibly nothing at all. This is because the infant, despite its fatal defect, is born with a full host of rights which preclude hastening its death for the benefit of others.

#### A. Anencephaly Defined

Anencephaly is a fairly well defined, invariably fatal, congenital defect involving the absence of major portions of the brain, skull, and scalp.<sup>44</sup> Anencephaly does not mean the absence of the head or brain, but the absence of higher brain matter.<sup>45</sup> The condition results in an infant with only a brain stem and no higher brain function. These infants are not considered eligible organ recipients themselves, because to date, medical technology lacks the ability to transplant the human brain.<sup>46</sup>

The presence of the brain stem permits limited functions of the automatic nervous system such as breathing, digestion, circulation, sucking, swallowing, crying, and reflexive response to stimuli. The existence of these automatic bodily functions interferes with the use of organs from an anencephalic infant. This is because infants with functioning brain stems who can breathe on their own do not fit the current definition of death which would allow their organs to be harvested.<sup>47</sup>

#### B. The Dilemma Involving the Anencephalic Infant

The problem is dramatically evidenced in a case like that of Baby Theresa.<sup>48</sup> After having refused pre-natal screening tests which may have diagnosed her infant's condition, Laura Campo was told in her eighth

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<sup>44</sup> See Medical Task Force, *supra* note 10, at 669 (The Medical Task Force was composed of eight representatives from various medical organizations, and was formed to present a "consensus . . . of organizations of physicians caring for fetuses and infants with anencephaly"); Anencephaly is a neural tube defect affecting the skull and resulting in a large defect in formation of the brain that is incompatible with life. Pedbase, Anencephaly, <http://www.icondat...files/ANENCEPH.htm> (last modified May 21, 1994). This condition occurs in approximately one out of every one thousand live births. Its causation is not definitely known, but is seemingly linked to geographic, environmental, and nutritional factors. The condition arises in the first few days after conception, and is clearly evident by the twenty-sixth day of gestation. These infants have a distinctive appearance which includes the absence of the top of the head after the forehead. There is no treatment for the defect. The reported prevalence of the defect has steadily decreased since the late 1960s. This is mainly because the ability to diagnose this fatal defect through prenatal diagnosis using tests such as the Maternal Serum Alpha-Fetodrotein, ultrasound, and amniocentesis, has resulted in most of these pregnancies being electively terminated. See CDC Surveillance Summaries, <http://www.cdc.gov...ew/ss4404.html#TOC> (visited Aug. 25, 1995).

<sup>45</sup> See Medical Task Force on Anencephaly, *supra* note 10, at 669.

<sup>46</sup> Scott, *supra* note 5, at 1527.

<sup>47</sup> See *supra* note 30.

<sup>48</sup> *In re T.A.C.P.*, 609 So. 2d 588 (Fla. 1992).

month of pregnancy that the infant she was carrying was anencephalic.<sup>49</sup> In an admirable and heroic decision, Ms. Campo and the infant's father decided to carry the child to term in hope of donating its tiny organs to other children. After undergoing a voluntary cesarean section to prevent any further damage to the infant's organs which would render them useless for transplant,<sup>50</sup> Theresa Ann Campo-Pearson was born on March 21, 1992. The legal battle over her life and death began almost immediately.

Shortly after Theresa's birth, her parents requested that she be declared legally dead so that her organs could be harvested.<sup>51</sup> Much to the surprise of the parents, the request was denied by Theresa's health care providers out of concern for civil or criminal liability.<sup>52</sup> This concern arose because little Theresa did not fit Florida's statutory definition of "brain-death."<sup>53</sup> Therefore, taking her organs prior to her legal death would constitute homicide. Theresa's parents immediately filed a petition asking the court to declare Theresa legally dead. The court refused and the Fourth Circuit Court of Appeals affirmed on the basis that Theresa was not "brain dead." The question was then certified to the Florida Supreme Court.<sup>54</sup> Seven months later, the Florida Supreme Court handed down its ruling. The Court framed the issue as whether an anencephalic newborn is considered dead for purposes of organ donation solely by reason of its congenital deformity.<sup>55</sup> It answered this question in the negative.<sup>56</sup> The Court held that Florida common law had never recognized the cardiopulmonary definition of death which defined death as occurring with cardiopulmonary cessation.<sup>57</sup> However, the Court recognized the common law cardiopulmonary definition of death with this decision. This definition was not applicable to Baby Theresa because her heart continued to beat and she continued to breathe on her own.<sup>58</sup> In addition, the Court held that where one's cardiopulmonary functions are artificially maintained, the statutory exception to cardiopulmonary death, known as "whole-brain

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<sup>49</sup> *Id.* at 589.

<sup>50</sup> Most anencephalic infants are stillborn either because of death in-utero, or because of the inability of the exposed brain to withstand the pressure of passing through the birth canal. See Julie Koenig, *The Anencephalic Baby Theresa: A Prognosticator of Future Bioethics*, 17 NOVA L. REV. 445, 454 (1992). Stillbirth renders the infant's organs unsuitable for transplant. Furthermore, doctors are generally against performing elective cesarean sections in the instances because of the added risk to the health of the mother.

<sup>51</sup> See *In re T.A.C.P.*, 609 So. 2d at 589.

<sup>52</sup> *Id.*

<sup>53</sup> See FLA. STAT. ANN. § 382.009(1) (West 1991) (stating that death may be determined by the irreversible cessation of the entire brain, including the brain stem).

<sup>54</sup> See *In re T.A.C.P.*, 609 So. 2d at 589.

<sup>55</sup> *Id.*

<sup>56</sup> *Id.*

<sup>57</sup> *Id.* at 593.

<sup>58</sup> *Id.* at 595.

death," became operative.<sup>59</sup> "Whole-brain death" is said to occur when all brain functions have ceased, including brain stem functions.<sup>60</sup> This determination of death was also inapplicable to Baby Theresa because her cardiopulmonary function was not maintained artificially, and even if it had been, the existence of a functioning brain stem defeated the definition of "whole brain death."<sup>61</sup> Therefore, the Court held that at all times in question, Baby Theresa was not dead and any harvesting of her organs would have been illegal.<sup>62</sup> While Baby Theresa sparked an incredible amount of attention and controversy during her brief nine-day life, she died without any of her organs being donated.

Currently, no federal or state law permits the use of anencephalic infants' organs without first meeting the legal criteria of death as it pertains to all other people.<sup>63</sup> In fact, the few states that have proposed legislation that would place the anencephalic infant in a special category and permit harvesting of their organs prior to cessation of cardiopulmonary and brain stem functions have proven unsuccessful.<sup>64</sup> There are, however, legitimate arguments for the use of organs from these tiny donors.

### C. The Use of Anencephalic Organs

The main argument in favor of procuring organs from these infants is that anencephaly invariably results in death.<sup>65</sup> There is no question that most infants with this condition, if born alive, will die shortly thereafter. In addition, it is possible that these infants can provide desperately needed pediatric organs. The problem is that by the time these infants meet the common law or statutory definition of death, most, if not all, of their

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<sup>59</sup> *Id.*

<sup>60</sup> See FLA. STAT. ANN. § 382.009(1) (West 1991) (stating that death may be determined by the irreversible cessation of the entire brain, including the brain stem). This statute, along with the Florida Supreme Court's adoption of the common law definition of death bring Florida in accord with the UDDA. See *In Re T.A.C.P.*, 609 So. 2d at 594 n.10.

<sup>61</sup> See *In re T.A.C.P.*, 609 So. 2d at 592.

<sup>62</sup> *Id.* at 595.

<sup>63</sup> This is evidenced by the fact that all fifty states and the District of Columbia have adopted some version of the UAGA which states that organs may only be removed from the donor for purposes of transplant "upon death." UAGA § 8(a) (amend 1987) 8(a) ULA 29 (Supp. 1993).

<sup>64</sup> See Jay A. Friedman, *Taking the Camel by the Nose: The Anencephalic as a Source for Pediatric Organ Transplants*, 90 COLUM. L. REV. 917, 936 (1990) (discussing the California and New Jersey legislative proposals for dealing with anencephalic infants).

<sup>65</sup> See, e.g., Medical Task Force, *supra* note 10, at 672 (detailing the postnatal prognosis of death for all anencephalic infants). This invariable certainty of death is also the basis for the American Medical Association's recommendation that organs of anencephalic infants be permitted to be harvested prior to brain death after the confirmed anencephalic diagnosis by two doctors, and a request of organ donation by the infant's parents. Michael E. Young, *AMA Revives Baby Theresa Case: Panel Backs Organ Donation When Infants Have No Brain*, SUN-SENTINEL (Fort Lauderdale, Fla.), May 24, 1995, at 1A.

organs are virtually unusable as a result of the degenerative dying process.<sup>66</sup> Several suggestions for the care and treatment of anencephalic infants have been proposed.

Initial suggestions for preserving organ viability in the anencephalic infant while honoring the traditional brain death criteria came from the medical community. One of the first suggestions involved "cooling" of the body.<sup>67</sup> By cooling the body either through submersion in ice water or administration of cool intravenous solutions in the critical minutes before the heart stops beating, organ integrity is preserved.<sup>68</sup> The drawback to this procedure is that it actually hastens death and makes a determination of brain death impossible.<sup>69</sup> For these reasons, as well as the potential association with euthanasia, "cooling" has not become an acceptable method of preserving the organs of anencephalic infants.<sup>70</sup>

Another medical process which can be utilized to preserve the viability of organs from anencephalic infants is artificial ventilation.<sup>71</sup> This process was originally developed and implemented at the Loma Linda University Medical Center in California and became known as the "Loma Linda Protocol".<sup>72</sup> This protocol permits doctors to sustain anencephalic infants on a respirator from birth for a period of seven days.<sup>73</sup> By keeping the infant on a ventilator, its organs are preserved in a condition suitable for transplant.<sup>74</sup> During the seven day period, the respirator is removed every twelve hours to check for brain death. If the infant is not pronounced brain dead by an independent team of doctors within the seven day period, the

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<sup>66</sup> As the anencephalic infant goes through the process of dying it suffers from deprivation of oxygen as the respiratory functions begin to fail. This lack of oxygen results in permanent damage to the infant's organs, rendering them unsuitable for transplant. *See, e.g.,* Kenneth J. Ryan, *Tissue Transplantation from Aborted Fetuses, Organ Transplantation from Anencephalic Infants and Keeping Brain-Dead Pregnant Women Alive Until Fetal Viability*, 65 S. CAL. L. REV. 683, 689 (1991) (noting the damage to organs as a result of the dying process).

<sup>67</sup> *See* Scott, *supra* note 5, at 1547 (discussing medical and theoretical solutions to the problem of procuring organs from anencephalic infants).

<sup>68</sup> *Id.*

<sup>69</sup> *Id.*

<sup>70</sup> Because of its similarity to euthanasia, and the fact that cooling would make it impossible to apply the traditional brain death standards, this method has not been considered an accepted procedure. *See* Scott, *supra* note 5, at 1547.

<sup>71</sup> *See* Friedman, *supra* note 64, at 932.

<sup>72</sup> The Loma Linda Protocol was named after the Loma Linda University Medical Center. It represented the first protocol in the United States developed to initiate guidelines for utilizing the anencephalic infant as an organ donor. *See* Friedman, *supra* note 64, at 931. The protocol was prompted by a transplant performed by Dr. Leonard Bailey of Loma Linda University Medical Center in Los Angeles, California in October 1987. The transplant involved the heart of an anencephalic infant, named Baby Gabrielle, into a newborn named Paul. *See* Koenig, *supra* note 50, at 456.

<sup>73</sup> Friedman, *supra* note 64, at 932.

<sup>74</sup> *Id.*

infant is removed from the ventilator and allowed to die naturally.<sup>75</sup> The seven day limit was established because most anencephalic infants die within a one week period following birth.<sup>76</sup> Therefore, out of respect for the infant, its life is not sustained beyond seven days.

Out of the twelve infants that entered the Loma Linda Protocol, only two met the statutory definition of brain death within the protocol period.<sup>77</sup> However, no organs were harvested for transplant from either infant.<sup>78</sup> The protocol was viewed by its creators as an attempt to please everyone. It sought to give the parents an opportunity to donate their infant's organs and thus give closure to their tragic experience. It also sought to provide needed organs to dying children, while obeying the statutory requirement of brain death.<sup>79</sup> The protocol ultimately produced many negative reactions, and was later abandoned.<sup>80</sup>

Some of the arguments against the protocol concerned whether the anencephalic infant experienced pain, whether brain death could be adequately determined in an infant and whether the protocol violated federal law prohibiting the alteration of the duration of the life of a nonviable fetus ex-utero.<sup>81</sup>

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<sup>75</sup> *Id.*

<sup>76</sup> Joyce L. Peabody et al., *Experience with Anencephalic Infants as Prospective Organ Donors*, 321 NEW ENG. J. MED. 344, 345 (1989) (stating that ninety-five percent of live born anencephalic infants die within seven days).

<sup>77</sup> *Id.*

<sup>78</sup> *Id.* No organs were used from the two infants that met the definition of brain death within the seven day protocol period because no available recipients were located. Scott, *supra* note 5, at 1550.

<sup>79</sup> Friedman, *supra* note 64, at 932.

<sup>80</sup> One of the main criticisms of the protocol came from the medical community. It arose over the uncertainty as to whether anencephalic infants are able to experience pain. If these infants can feel pain, then keeping them alive by artificial respiration until brain death is prolonging that pain for the purpose of harvesting organs from these unconsenting donors solely for the benefit of others. Friedman, *supra* note 64, at 932–33. In response to this argument the Loma Linda doctors considered administering a painkiller as a prophylactic measure. However, doctors rejected the idea of administering painkillers, because the use of sedatives makes a determination of brain death even more difficult. *Id.* at 933. Furthermore, there is an additional criticism raised by the medical community with reference to the protocol. It is very difficult to determine brain death in an infant. In fact, the determination is so difficult that when the Task Force for the Determination of Brain Death set clinical guidelines for the determination of brain death in children, no recommendation was made for observation of seriously defective infants under the age of seven days. Scott, *supra* note 5, at 1545–56. The problem seems to be that all newborns have a very primitive higher brain function, and rely on their brain stems for most early functioning. Ryan, *supra* note 66, at 691. Thus, the difficulty in determining brain death in anencephalics and normal newborns is similar. *Id.*; see also Scott, *supra* note 5, at 1550 (discussing the Loma Linda Protocol and its unworkability).

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#### D. The Possibilities for Legislative Change

In response to the inability of the medical community to ethically satisfy the definition of brain death while still maintaining the integrity of the anencephalic infant's organs for transplant, some legal changes have been suggested. The two main suggestions for dealing with the anencephalic infant as an organ donor include a new definition of brain death, and the creation of a special statutory category for anencephalic infants as donors.<sup>82</sup>

A few states have attempted to statutorily change the status of anencephalic infants to facilitate donation of their organs prior to brain death.<sup>83</sup> California and Florida attempted to change their statutory definition of death to include the anencephalic infant.<sup>84</sup> The proposed change to the definition of brain death stated that an individual born with anencephaly is deemed to be dead.<sup>85</sup> However, these proposed measures failed in both states.<sup>86</sup> New Jersey pursued a different statutory change. Legislators in that state attempted to alter the state's adoption of the UAGA by eliminating the requirement that the death of a donor be a prerequisite to organ donation in the case of an anencephalic infant.<sup>87</sup> This measure also failed to pass.<sup>88</sup>

Each of these proposed measures has created a great deal of controversy over the meaning of life and death. One of the main arguments in opposition to changing the legal definition of death for anencephalic infants or permitting the harvesting of their organs prior to death is the "slippery-slope" argument.<sup>89</sup> This argument suggests that by changing the legal status of one group of individuals, the door is opened for that change to be made regarding other members of society.<sup>90</sup> According to this theory, if an exception to the law is made for the anencephalic infant, then terminally ill, elderly, or handicapped

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<sup>83</sup> See Friedman, *supra* note 64, at 936 (discussing the failure of statutory proposals from California and New Jersey that would have treated anencephalics differently than other human organ donors).

<sup>84</sup> *Id.*

<sup>85</sup> See Koenig, *supra* note 50, at 450; see also Friedman, *supra* note 64, at 936.

<sup>86</sup> Friedman, *supra* note 64, at 936 (discussing the failure of statutory proposals from California and New Jersey that would have treated anencephalics differently than other human organ donors).

<sup>87</sup> *Id.* at 937.

<sup>88</sup> *Id.*

<sup>89</sup> See Lisa E. Hanger, *The Legal, Ethical, and Medical Objections to Procuring Organs From Anencephalic Infants*, 5 HEALTH MATRIX 347, 356–57 (1995) (analyzing the fear that if anencephalic infants are considered differently for purposes of the definition of death, a “slippery slope” may evolve allowing others such as the handicapped, incompetent or terminally ill to also be re-categorized for purposes of organ transplant).

<sup>90</sup>

individuals may very well be next.<sup>91</sup> Taken to its extreme, the argument is made that virtually anyone who society deems less than perfect may be at risk of having their organs harvested prematurely for use in a more "productive" member of society.

Another argument against changing the definition of death for the anencephalic infant came from Dr. Joyce Peabody, Chief of Neurology at Loma Linda during the use of the Loma Linda protocol.<sup>92</sup> Dr. Peabody stated that any legislator committed to changing the law to allow the harvesting of organs from anencephalic infants who are not brain dead must also be willing, in the absence of organ transplantation, to bury a baby who breathes, cries, wakes, and sleeps on its own.<sup>93</sup> This is due to the fact that both a normal and an anencephalic infant, if born alive, share similar qualities as a result of brain stem functioning.<sup>94</sup> In fact, in the first days of life, the anencephalic infant and the healthy infant exist with approximately equal brain functioning ability.<sup>95</sup> It is not until after the first week of life that the healthy infant's higher brain functions begin to operate in any significant manner.<sup>96</sup> Certainly, a statement of opposition to changing the definition of death with reference to the anencephalic infant, coming from someone of Dr. Peabody's stature and experience, is a very powerful statement. It is likely that any legislature faced with an analogy such as that provided by Dr. Peabody will be very hesitant to permit a change in the law similar to those proposed above. Indeed, defining an infant who breathes and cries as "dead" seems to defy logic.<sup>97</sup> Thus, the only alternative for those who insist upon use of the anencephalic infant as an organ donor is to somehow exclude these infants from the definition of "person," thus making them ineligible for constitutional protection and not subject to the statutory definition of death.

#### E. The Anencephalic Infant as a "Person"

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<sup>91</sup> With regard to the terminally ill patient, we also see this slippery slope argument presented in the area of physician assisted suicide. There, the argument is that if physician assisted suicide is permitted, society may use it as a vehicle of genetic cleansing where people with serious or even not so serious defects are humanely killed off.

<sup>92</sup> Koenig, *supra* note 50, at 457.

<sup>93</sup> *Id.* at 458.

<sup>94</sup> See Scott, *supra* note 5, at 1545–46 (discussing the special problems associated with determining death in infants and the similarity in brain function of both a normal and anencephalic infant in the first seven days of life).

<sup>95</sup> Ryan, *supra* note 66, at 691.

<sup>96</sup> *Id.*

<sup>97</sup> Michelle A. Hughes, Comment, *Life, Death, and the Law: Should the Anencephalic Newborn Be Considered a Source for Organ Donation*, 6 REGENT U. L. REV. 299, 312 (1995).

Traditionally, live birth is the bright line test for determination of what constitutes a "person" as contemplated by the Fourteenth Amendment.<sup>98</sup> In the case of Baby Theresa, there is no doubt that she fit this criteria. As a legally recognized person, one is entitled to a host of basic natural rights among which are the rights to life, limb and property.<sup>99</sup> There is also a right to bodily integrity which may be easily derived from the right to life and limb. All of these rights are inalienable, and cannot be taken away by one's family or the state.<sup>100</sup>

It is the right to bodily integrity which dictates that someone may not forcibly enter the body of another for the purpose of organ procurement without first obtaining the person's voluntary, informed consent.<sup>101</sup> In some circumstances, for statutory and public policy reasons, voluntary informed consent may be insufficient. For example, a person cannot consent to the harvesting of one of their organs while they are living if such removal will prove fatal. Thus, even if an anencephalic infant could voluntarily consent to organ harvesting prior to achievement of brain death, such consent would be inadequate and invalid.

Some argue that harvesting organs from an anencephalic infant prior to brain death is acceptable because the infant's death is imminent. However, this leads down a "slippery slope." Adoption of such a view is tantamount to a suggestion that dying persons have no rights. Anyone with a terminal condition could similarly be targeted for organ harvesting prior to their death.

The significance of the Baby Theresa case and legislative efforts to change the manner in which anencephalic infants are classified for purposes of organ donation, is that through these mediums, the interests of otherwise voiceless infants are heard. Concededly, the words spoken are not those of the infant. It is important to note, however, that the words are those of the infant's parents. This makes them powerful and compelling for two reasons. As an initial matter, the parents share an intimate bond with the infant, and are presumed to be acting in the best interests of the infant.<sup>102</sup> Secondly, in most cases, the parents are in favor of donating the

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<sup>98</sup> See *Roe v. Wade*, 410 U.S. 113, 157 (1973) (stating that the use of the word "person" in the Constitution, and especially in the Fourteenth Amendment, only applies after live birth); see also Hughes, *supra* note 95, at 313 (discussing the personhood and legal rights of an anencephalic infant in a constitutional context); Friedman, *supra* note 64, at 924 (discussing the live birth rule and its common law interpretation).

<sup>99</sup> See Hughes, *supra* note 97, at 312 (discussing the natural rights of all persons that are incident to life).

<sup>100</sup> *Id.*

<sup>101</sup> *Id.* at 314–15.

<sup>102</sup> It can be argued that the donation of organs from the anencephalic infant is not in the best interests of the child.

infant's organs.<sup>103</sup> The ethical discussion surrounding anencephalic infant donors demonstrates a level of respect or deference to life virtually non-existent with reference to treatment of non-human animals as organ donors. It is arguable that the main obstacle in the path of utilizing organs from anencephalic infants prior to brain death is the inability to legally transform their existence to something less than "human." It is this "non-human" rationale that is used to justify the use of animals in organ transplantation.

#### IV. NON-HUMAN ANIMALS AS ORGAN DONORS

##### A. The Problem

When Dr. Leonard Bailey<sup>104</sup> of Loma Linda University Medical Center in California transplanted the heart of a baby baboon into tiny human Baby Fae, the transplant was met with general disapproval from the public, the media, and the medical community.<sup>105</sup> The disapproval came from the fear that Baby Fae's short three week life amounted to a human experiment. None of the critics, with the exception of a few animal rights advocates, voiced any concern whatsoever for the tiny baby baboon who had involuntarily had his life terminated.<sup>106</sup> This raises the question: Why are non-human animals considered acceptable sacrifices for human transplantation?

##### B. The Justification

It is impossible to analyze the use of non-human animals in human organ transplantation without first recognizing and acknowledging man's traditional use of animals. Throughout history, non-human animals have been used by man for work, food, clothing, entertainment, medicine, and experimentation. Since ancient times, animals have been viewed by man as being placed on the Earth by God for man's benefit.<sup>107</sup> Even the Bible contains passages that suggest that man should rule over the animals.<sup>108</sup>

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<sup>103</sup> Indeed, many suggest that consent from the parents of an anencephalic infant is all that should be required for the donation of organs from these infants. *See* Young, *supra* note 65.

<sup>104</sup> Dr. Bailey is the same doctor who performed the 1987 heart transplant from the anencephalic infant into a newborn which prompted the promulgation of the Loma Linda Protocol. *See supra* note 78 and accompanying text.

<sup>105</sup> This transplant took place in 1984 at Loma Linda University Medical Center. Many suggest that Dr. Bailey had a limited basis to believe that this type of cross-species transplant would succeed. In addition, many suggest that he performed the surgery to be the first in his field to perform such a transplant, and to gather publicity for himself and his transplant team. *See* PETER SINGER, *RETHINKING LIFE AND DEATH: THE COLLAPSE OF OUR TRADITIONAL ETHICS* 164–65 (1994).

<sup>106</sup> *Id.* (discussing how it is decided whose organs may be taken for transport).

<sup>107</sup> For an interesting ancient historical analysis of the origin of man's treatment and use of animals. *See* SUNNI BOYD, *ANIMAL RIGHTS* 17–29 (1990).

<sup>108</sup> *Id.*

However, along with these passages were warnings that animals should not be mistreated.<sup>109</sup> While most people agree that animals should be treated in a humane manner, actual use of animals is anything but humane. Ultimately, man has held himself out as something greater than the animal because he alone was made in God's image.

The first shocks to man's superior view of himself were felt after Charles Darwin announced his theory of evolution.<sup>110</sup> If man had evolved from the animal, then he was an animal himself. While this realization may have dealt a devastating blow to the theory that man was created in God's image to rule the rest of the earth, it did not shake man's superiority complex. Instead, man envisioned himself as superior to the non-human animal because of his ability to reason and dominate. This new view that man could discriminate against or exploit other animal species because such species were inferior to man was coined "speciesism."<sup>111</sup>

### C. What Rights Do Animals Have?

While being labeled a speciesist seems like something to avoid at all costs, most people engage in behavior every day that places them firmly within the definition. This is not to say that these are evil, ill-hearted people. Rather, it is second nature to the majority of humans to either engage in, acquiesce in, or allow their taxes to pay for things that sacrifice the interests of other species to the benefit of our own.<sup>112</sup> The reason that most people do not consciously scrutinize their treatment of animals is that there is nothing "wrong" with using non-human animals for human benefit.<sup>113</sup> The fact is that non-human animals have no legal rights.<sup>114</sup> Therefore, to a large degree the concept of "animal rights" is a fiction.<sup>115</sup>

The animal rights movement seeks recognition of legal rights for non-human animals. However, up to this point in time, the movement has framed its issues in terms of what is morally acceptable treatment of animals. The problem is that even if non-human animals are given moral rights, such rights are practically useless unless they assume the shape of law.<sup>116</sup> The animal rights movement insists that man give equal consideration to the interests of all beings, regardless of species, provided

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<sup>109</sup> *Id.*

<sup>110</sup> See SINGER, *supra* note 105, at 171–72.

<sup>111</sup> *Id.* at 173.

<sup>112</sup> See SINGER, *supra* note 16, at 9.

<sup>113</sup> See, e.g., Arthur B. LaFrance, *Bioethics and Animal Experimentation*, 2 ANIMAL L. 157 (1996); see also ERIC RAKOWSKI, EQUAL JUSTICE 356–63 (1991). Mr. Rakowski suggests that there is nothing wrong with the use of animals to benefit humans. However, he distinguishes the use of animals in medicine and science from their use for food, sport, clothing, etc. The latter uses he finds indefensible.

<sup>114</sup> Steven M. Wise, *Legal Rights for Non-Human Animals: The Case for Chimpanzees and Bonobos*, 2 ANIMAL L. 179, 179 (1996).

<sup>115</sup> *Id.*

<sup>116</sup> *Id.*

that the being can experience pain or pleasure.<sup>117</sup> In order for non-human animals to receive protection under the law, the concept that they are beings entitled to the same protections as human beings must be accepted.

#### D. Qualities of Animals Which Justify Equal Treatment

The main right at interest in this article with reference to the non-human animal is the right to life. Non-human animals do not possess this right in any meaningful sense. However, many argue that non-human animals are entitled to a legal proclamation of their right to life.<sup>118</sup> The premise which entitles these beings to a right to life is not the mere fact of being alive, but the ability to have a life in a biographical sense.<sup>119</sup> Many non-human animals can easily fulfill this requirement, and should therefore be entitled to a legal right to life.<sup>120</sup> The impact of granting non-human animals a legal right to life is that species differences alone could no longer justify the unequal treatment of human and non-human animals.<sup>121</sup>

However, if non-human animals are endowed with legal rights, many of the benefits to the human race which are derived from animals would be lost. This is strikingly evident in the field of medical research. Over the years, non-human animals have served as the expendable court jesters in the human kingdom. They have received the vaccines, tasted the drugs, and tried out the organs before any human being. Through scientific use of non-human animals, vaccines have been developed, drug safety has been tested, and organ transplantation has become possible. In fact, the first organ transplants were performed as animal to animal transplants.<sup>122</sup> Techniques were developed on animals which were later used to perform the first successful human transplants. Legally proclaiming that non-human animals have a right to life would necessarily entail obtaining their consent before they or their organs could be used for human gain. This consent would obviously not come from the non-human animal itself, but through an effective advocate using the doctrine of substituted

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<sup>117</sup> SINGER, *supra* note 105, at 174.

<sup>118</sup> For a detailed discussion of the right to life for non-human animals, see ETHICS AND ANIMALS 280–84 (Harlan B. Miller & William H. Williams, eds. 1983).

<sup>119</sup> *Id.* at 282. By having a life in a biographical sense, the author means the ability to maintain families and live together in social groups. There is also a suggestion that the ability to have forward and backward looking attitudes is important. Amazingly, beings ranging from the octopus to the great apes can fulfill this standard and are entitled to a legal right to life. *Id.* at 283.

<sup>120</sup> *Id.* at 283.

<sup>121</sup> See SINGER, *supra* note 105, at 174 (stating that according to some philosophers a difference in species is no longer an adequate basis for treating one species with more consideration than another).

<sup>122</sup> See Milestones in Organ Transplantation, United Network for Organ Sharing, [http://204.127.237.11:80/fct\\_mile.htm](http://204.127.237.11:80/fct_mile.htm) (visited Mar. 25, 1997).

judgment.<sup>123</sup> In addition, legally proclaiming the non-human animal's right to life may even require that harvesting of organs be prohibited prior to death.

Up to now, not once has the scientific community asked the animal if he or she was interested in participating in research for the benefit of mankind. While this involuntary participation in science is somewhat similar to that of the anencephalic infant, the difference is abundantly clear. The non-human animal not only lacks a voice of its own, it also has no effective voice from or through advocates.<sup>124</sup>

Many can justify the use of animals in medical research to isolate a virus or test the safety of a drug on the basis that a few animal lives sacrificed will potentially save hundreds of thousands of human lives.<sup>125</sup> However, such a justification becomes increasingly difficult to support when the numbers narrow as in the case of organ transplant. There, the choice is simply between the life of the non-human animal and the human animal. Only one can survive. It is a one-for-one trade off, and an uneven one at that.<sup>126</sup>

In the case of Baby Fae, the choice was the life of the defective human infant versus the life of the healthy baby baboon. The choice to the speciesist is clear. Any animal sacrifice is worth saving the life of a human being. However, if one sheds this speciesist mentality, the choice is also clear, but very different. The life of a healthy being should not be sacrificed to attempt to save the life of a dying being. It is the obvious conflict between these two positions that generates so much controversy.

#### E. Usefulness of Non-Human Animal Donor Organs

Non-human animal organs are considered a potential answer to the human organ shortage. This is because animals are numerous, their consent is not needed for transplant, there is no need to wait for them to die to harvest their organs, and they can be bred to end the organ shortage. By breeding the animals and harvesting the organs of the babies, there is also a source for desperately needed pediatric organs. The possibilities seem endless.

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<sup>123</sup> Substitute judgment is a doctrine where an advocate voices the wishes of one incapable of voicing his own wishes by stating what that person would choose to do or have done had he been fully capable of stating it for himself. Hughes, *supra* note 97, at 316.

<sup>124</sup> Hamilton, *supra* note 14.

<sup>125</sup> See RAKOWSKI, *supra* note 113, at 257.

<sup>126</sup> See Alan H. Berger, Panel II—Xenotransplantation: The Ethics, The Science, The Risk of Animal to Human Transmission, and Implications for the IACUC, <http://www.g-net.com/api/xeno2.htm> (last modified Mar. 15, 1007) (stating that it is not ethically or scientifically acceptable to sacrifice an animal life where the number of people it will benefit is probably only one).

However, inter-species organ rejection is a major barrier to breeding enough non-human animals to end the organ shortage. Once again, faced with a major dilemma, the scientific community has already found a partial answer to this organ rejection problem. To cure the problem with rejection, the animals that are bred for xenotransplant can now be genetically altered to grow "human-like" cells.<sup>127</sup> The result is a reduction of the problem of rejection inherent in inter-species transplants.<sup>128</sup> The potential problems become evident after just a few minutes of reflection. Even if animals are not entitled on their own to a right to life, how human-like must they become before they are entitled to the protections given a human being?<sup>129</sup> This issue has not been adequately addressed to date.

Two species of non-human animals offer particular promise in the area of xenotransplant. One is the baboon. The baboon has DNA which is strikingly similar to that of humans.<sup>130</sup> In addition, these animals have similar organ structure to humans. However, there are two drawbacks to utilizing their organs for xenotransplant. First, baboons are so similar to humans that scientists fear a public outcry from its use in xenotransplant.<sup>131</sup> Second, the baboon simply does not reproduce quickly enough.<sup>132</sup> It only has one offspring per pregnancy and is therefore not likely to provide the needed cure for the organ shortage.<sup>133</sup>

The other species of non-human animal considered promising in the field of xenotransplant is the pig. Surprising to many, pigs too share a similar organ structure to humans.<sup>134</sup> In addition, the use of pigs is not likely to draw any public outcry whatsoever considering that thousands of pigs sit on people's breakfast tables everyday.<sup>135</sup> Furthermore, pigs do

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<sup>127</sup> This involves the creation of "transgenic" animals with human immunological characteristics. See Thomas H. Maugh, *Will Pig Organs Bring a New Era?*, LOS ANGELES TIMES, May 18, 1996, at A1.

<sup>128</sup> Although rejection is a problem in all organ transplants, the problem is multiplied in inter-species transplants because of the differences in genetic characteristics of different species.

<sup>129</sup> See Berger, *supra* note 126 (raising the issue of whether a "non-human" with human genes becomes deserving of full human rights).

<sup>130</sup> The similarity in DNA is very significant and can be seen in other species of apes and monkeys. For example, the chimpanzee has DNA which is 98.4 percent identical to human DNA. SINGER, *supra* note 105, at 177.

<sup>131</sup> Rebecca D. Williams, *Organ Transplants from Animals: Examining the Possibilities*, [http://www.fda.gov/fdac/features/596\\_xeno.html](http://www.fda.gov/fdac/features/596_xeno.html) (visited Mar. 18, 1997). However, based upon the lack of public reaction to the sacrifice of the baby baboon used to perform the heart transplant for Baby Fae, it is arguable that no such public outcry would result from the use of baboons as donors.

<sup>132</sup> *Id.*

<sup>133</sup> *Id.*

<sup>134</sup> *Id.* at 2.

<sup>135</sup> Donna Alvarado, *Transplanting Animal Organs to Humans Moves Beyond Science Fiction*, SAN JOSE MERCURY-NEWS, Aug. 27, 1996.

offer a potential cure for the organ shortage problem. Pigs are easily bred and have large litters of piglets. They grow to sizes that would accommodate even the largest of human organ recipients, and they achieve that size in a relatively short period of time.<sup>136</sup> Despite these optimistic facts, there are inherent problems with the process of xenotransplantation that warrant careful consideration before this process is used in any widespread manner.

#### F. Arguments Against Xenotransplants

The arguments against the use of non-human animals in human organ transplantation center on the ethical considerations, the consent issue, and the risk of infectious disease. First, ethical considerations involved are the same as those discussed earlier in the article. The primary dilemma is again whether a healthy animal should be sacrificed to save a dying human being, and whether an animal should have any rights at all vis-a-vis his human counterparts. Where one comes down on these ethical issues depends upon his view of the sanctity of all life.

Next, there is the issue of consent. Obviously a non-human animal lacks the ability to communicate with the human scientist. However, unlike anencephalic infants, the issue remains whether these non-human animals should be given an effective voice through zealous advocacy.

Finally, there is perhaps the most disturbing concern, the risk of the spread of infectious disease. Many believe that transplanting non-human animal organs into humans could cause a serious disease epidemic. Because all non-human animals carry zoonoses,<sup>137</sup> any xenotransplant carries with it the inherent risk of xenogeneic infection.<sup>138</sup> Non-human animal organs can carry viruses which could allow a disease to "jump the species gap."<sup>139</sup> Transplanted organs or cells are a perfect way for such viruses to enter the human species because any virus present in the

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<sup>136</sup> *Id.*

<sup>137</sup> A zoonoses is defined as a disease of animals that can be transmitted to humans under natural conditions. Examples include toxoplasmosis and salmonella infections. Food and Drug Administration, Fact Sheet on Xenotransplantation, Definitions, <http://www.fda.gov/opacom/backgrounders/xeno.html> (last modified Sep. 20, 1996).

<sup>138</sup> A xenogeneic infection is a transmissible disease introduced from animals to humans through xenotransplantation. *Id.*

<sup>139</sup> An example of a virus which found its way across the species gap is the HIV/AIDS virus. While not attributable to a xenotransplant, the AIDS virus is an example of the devastating type of virus that can be communicated between species. The HIV virus is believed to have evolved from the simian immunodeficiency virus (SIV). These types of viruses may be totally innocuous in their host species, however, when introduced into another species may be invariably fatal. Another example of such a virus is a relative of the Herpes B virus which causes mere fever blisters in monkeys, but is always fatal in humans. Xenotransplants: Opening Pandora's Box?, <http://whyfiles.news.wisc.edu/007transplant/virus1.html> (last visited Mar. 18, 1997).

transplanted tissue or organ would bypass all of the natural barriers the human recipient has to such infection.<sup>140</sup>

The answer that science has developed to combat the potential for lethal viral infection is to locate animals that are specific pathogen free (SPF), meaning that they are free of any known diseases, and then breed them in sterile environments in the laboratory.<sup>141</sup> The moral aspect of this proposition alone should be bothersome to people. However, the fact remains that such a measure is still insufficient to guarantee the containment of any non-human animal virus.<sup>142</sup> Currently, there simply are no tests available to screen these animals for all of the viruses that they may be carrying.<sup>143</sup> Most of the viruses that the animals may carry are unknown to man, and therefore cannot be identified in the host animal donor. Furthermore, the risk of a serious epidemic is even higher if the xenotransplant is a success and the recipient lives a normal life.<sup>144</sup> Under those circumstances, it may be months or years before the recipient shows symptoms of a virus. By that time, the recipient may have already exposed many others to the virus. The real issues to be addressed in this area include whether any regulations in this area will be adequate, and whether the risks involved outweigh the potential costs. Such issues have not been definitively addressed and answered to date.

## V. COMPARING ANENCEPHALIC INFANTS AND NON-HUMAN ANIMALS AS DONORS

Both non-human animals and anencephalic infants are potential sources for transplantable organs. However, it is unlikely that either source can satisfy the present organ shortage.<sup>145</sup> Although one of these sources is human and the other is not, the similarities in their plights are striking. In addition, the differences between these two sources suggest that the traditionally more controversial source is the better choice.

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<sup>140</sup> *Id.*

<sup>141</sup> See University of Pittsburgh Medical Center, Virological Considerations in Xenotransplantation, <http://www.upmc.edu/news/babvirbg.htm> (visited Mar. 18, 1997) (discussing some suggested guidelines for isolating disease free animals and breeding them in captivity).

<sup>142</sup> See Dan Quinn & Shannon Flannery, *Federal Guidelines Needed to Ensure Safety in Animal-to-Human Organ Transplants*, <http://www2.nas.edu/whatsnew/24f6.html> (last modified Jul. 17, 1996) (discussing the inability to breed a disease free animal).

<sup>143</sup> Berger, *supra* note 126.

<sup>144</sup> *Id.*

<sup>145</sup> With the increased technology making a determination of anencephaly early enough for elective abortion, too few anencephalics are born to satisfy the organ shortage. Furthermore, the widespread use of safe xenographs is too far off to supply the organ shortage.

In comparing the anencephalic infant to the non-human animal with reference to organ donation, several similarities are evident. The most striking of these is that neither has the ability to speak for itself. Assuming *arguendo* that all that was needed to utilize organs from either of these sources was a valid consent, neither could give one. Therefore, neither one could consent to the taking of its organs for the benefit of a human life. Another similarity between these two potential organ sources is that both are considered less than human. The anencephalic infant is considered less than human because of its physical defect, and the non-human animal is considered less than human based on its species. These similarities breed differences, however, that make one source a more defensible choice.

The main difference between the anencephalic infant and the non-human animal is potential for life. The anencephalic infant has no chance of survival, while the non-human animal, if not targeted for organ donation, is likely to live a long and normal life. This is important because if the anencephalic infant were capable of survival, there would be no discussion of the use of its organs. The idea of using an anencephalic infant as an organ donor is that an infant with no chance of survival can possibly give life to a dying child. On the other hand, the idea is very different with non-human animals. There, a perfectly healthy being is sacrificed with only a remote chance that a dying human will be saved as a result. Thus, the crucial difference between the anencephalic infant and the non-human animal is in fact a difference of species.

Another difference is that while both of these groups lack a voice of their own, the anencephalic infant has an effective advocate while the non-human animal does not. The anencephalic infant has the advocacy of its parents, and the legislature. In addition, the parents of an anencephalic infant have meaningful access to the courts as was illustrated in the case of Baby Theresa. Despite the advocacy of animal rights groups, such groups can only lobby for animal rights, they cannot access the courts as a mean of redress.

Another difference is the relative usefulness of each group's organs. Provided that the anencephalic infant is not stillborn, its organs are readily transplantable into another infant. This is not so with reference to the non-human animal. The non-human animal is not of the same species, therefore any attempt to use its organs in human transplant, in the absence of genetic alteration, is much more likely to cause rejection in the recipient. Related to this difference is the fact that procuring organs from the anencephalic infant does not carry the same risk of causing a viral epidemic. The use of non-human animal organs on the other hand, can lead to a cross-species epidemic.

If either of these groups is to be used as a source of donor organs, all of the differences discussed above weigh in favor of using the anencephalic infant as a donor. However, even if the anencephalic infant is utilized as an organ donor, the facts seem to suggest this source will do very little, if anything, to relieve the organ shortage.<sup>146</sup> It must be determined whether the potential for controversy is outweighed by the relatively small benefit. Because this is not likely, the answers to the organ shortage may very well lie in more traditional, less controversial options.

## VI. ALTERNATE SOURCES FOR ORGANS

Many proposals have been made to increase the number of available donor organs including the commercialization of organ donation and a system of presumed consent.<sup>147</sup> Perhaps the best and least controversial way to increase organ donation and ease the organ shortage problem is to simply reinvent the wheel. If more time and money were spent on improving the current organ procurement process, the organ shortage may very well prove to be a thing of the past.

The system that is currently in place is largely dependent on altruism.<sup>148</sup> While this is probably not the best way to procure the largest number of organs, it can be very effective if properly implemented and followed. Under the current system, people can become organ donors in several ways. They can sign and carry an organ donor card, check the appropriate box on their drivers license applications, or state their desire to donate in their wills.<sup>149</sup> The problem is that for whatever reason, many people who are in favor of donating their organs simply do not take the necessary steps to ensure that their organs are donated upon their deaths.<sup>150</sup>

Therefore, the best method for increasing the number of available organs through voluntary donation is to simply make it easier for people to make the choice.<sup>151</sup> Few people actually wake up one morning and

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<sup>146</sup> See George J. Annas, *STANDARD OF CARE: THE LAW OF AMERICAN BIOETHICS* 196 (1993). Mr. Annas discusses the usefulness of the anencephalic infant as an organ donor considering that most women will choose to terminate the pregnancy after early diagnosis. He suggests that it may not be feasible for obstetricians to advocate organ donation because most of these infants will be stillborn.

<sup>147</sup> For a discussion of some of these alternatives to traditional organ procurement, see, e.g., Fred H. Cate, *Human Organ Transplantation: The Role of Law*, 20 *J. CORP. L.* 69, 83-87 (1994).

<sup>148</sup> Coleman, *supra* note 41, at 5.

<sup>149</sup> *Id.* at 5-6.

<sup>150</sup> *Id.* at 6-9 (discussing the many reasons why people do not donate their organs).

<sup>151</sup> See Gorsline & Johnson, *supra* note 28, at 39 (stating that a major problem in organ donation is that people do not make a choice).

decide that today is the day they will elect to become organ donors. The idea is that by implementing a few procedures that confront people with the decision and making that decision a mandatory choice, the number of organ donors should increase. This proposal is known as the Cadaveric Organ Donor Act (CODA).<sup>152</sup>

Under CODA, a national organ donor registry would be established with a single uniform database for recording the donative status of individuals across the United States.<sup>153</sup> Donor registration would be made possible through several mediums.<sup>154</sup> In addition, CODA would impose a duty on health care institutions to determine as soon as possible after admission of a patient whether that patient is on the national registry. If the patient is not on the registry, the health care institution has a duty to inform the patient of the options available, and provide the patient with the necessary forms.<sup>155</sup> Upon completion by the patient of the appropriate forms, the health care institution has a duty to immediately forward that information to the national registry.<sup>156</sup>

There are other ways that the number of organ donors can be increased without creating an entirely new system. One way is for doctors to simply comply with the wishes of their patients who are currently organ donors.<sup>157</sup> The problem is that in the delicate emotional hour of death, doctors will often ignore the wishes of the patient to donate his organs if there are voiced objections from relatives.<sup>158</sup> This is wrong. The decision to donate is the patient's and should belong solely to him or her.<sup>159</sup>

Currently, one way to donate organs is through making that election on the application for a drivers license or renewal.<sup>160</sup> The problem is that many applicants simply ignore the question on the application. Another suggestion for increasing organ donation is to provide a small fee discount to those who make the election.<sup>161</sup> Finally, neither of the aforementioned

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<sup>152</sup> See *Cadaveric Organ Donor Act*, 18 J. CORP. L. 547 (1993) (proposing a federal statute to regulate the donation of human cadaveric organs for transplantation purposes in order to increase their supply).

<sup>153</sup> *Id.* at 530.

<sup>154</sup> *Id.* at 530–31. The Act provides for registration of organ donor status through applications for social security numbers, drivers' licenses or identification cards, alien registration numbers, and through donor registration forms.

<sup>155</sup> *Id.* at 538–39 (discussing duties of health care institutions).

<sup>156</sup> *Id.* at 539.

<sup>157</sup> See Coleman, *supra* note 41, at 34 (stating that an increase in the organ supply is possible if doctors would simply obey the current law).

<sup>158</sup> See *id.* (noting that even where the deceased has indicated a clear intent to donate, doctors still often ignore the patient's wishes where relatives object).

<sup>159</sup> *Id.*

<sup>160</sup> See *id.* at 36; see also FLA. STAT. ANN. § 732.921 (West Supp. 1997) (providing for organ donor registration on application for license).

<sup>161</sup> See *id.* at 36.

procedures can work effectively without a national registry.<sup>162</sup> The national registry would record every organ donor, and therefore eliminate the need for donors to carry their organ donor cards.<sup>163</sup> In addition, the registry could increase available organs, if properly administered, by recording donor status, blood type, and the existence of a living will.<sup>164</sup>

All of the proposals made above, if implemented, are still unlikely to cure the shortage of pediatric organs.<sup>165</sup> The failure to donate is especially evident in the area of pediatric organ donation.<sup>166</sup> Few, if any, parents are thinking about donating their child's organs after the birth of a healthy child. Furthermore, at the time of a tragic event that takes the life of a child, it seems inappropriate to request consent from the devastated parents to harvest the child's organs.<sup>167</sup> One suggestion for combating this problem is to have parents elect whether they would want their child to be an organ donor on the application for a social security number.<sup>168</sup> This way, parents would be forced to at least consider the option at a time when the child is healthy.<sup>169</sup> Of course, as with any of the plans suggested here, consent could be withdrawn at any time.<sup>170</sup>

## VI. CONCLUSION

As medical technology improves, and organ transplants become common medical procedures, the gap between needy recipients and available organ donors is likely to continue to increase. Faced with this dilemma, several options are available. First, new sources for organ donation, like those discussed above, can be identified and utilized. Second, new methods can be discovered and implemented to increase organ donation from the current sources. The final, and most unlikely option, is to forego any further medical advances in this area, thus avoiding any further increase in the organ shortage.

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<sup>162</sup> *Id.* at 39.

<sup>163</sup> *Id.*

<sup>164</sup> *Id.* at 39–40.

<sup>165</sup> This is because all of the prior suggestions for increasing organ donation involve adult choices. Obviously an infant or child cannot apply for a driver's license or execute its own donor form. Therefore, some other method is needed to solve organ shortage in the area of pediatrics.

<sup>166</sup> Peabody, *supra* note 76, at 344 (estimating that nationally thirty to fifty percent of children under the age of two who are in need of organs and registered for transplant die waiting for those organs to become available).

<sup>167</sup> See Coleman, *supra* note 41, at 40.

<sup>168</sup> *Id.*

<sup>169</sup> *Id.* at 41.

<sup>170</sup> See UAGA, ULA Anat. Gift § 2(f) (1993 & Supp. 1996). This is consistent with the requirements of the UAGA which permits the revocation of a gift by a donor at any time.

As for locating new sources for organs, the two sources discussed in this article are not likely to provide the needed organs without creating controversial issues. The anencephalic infant as an organ donor will spark tremendous public debate and disapproval. The non-human animal, while not drawing as much public disapproval, may prove to be an unwise choice due to the potential for the spread of a lethal epidemic. However, if one of these sources must be chosen, the anencephalic infant is the more ethical choice.

The anencephalic infant has no chance of survival. Its organs, when healthy, are readily transplantable into another dying infant. In addition, the anencephalic infant has benefited and will continue to benefit from the intensive advocacy and protection of parents and the courts. Conversely, the non-human animal is a healthy being who, if not targeted for organ transplant, is likely to live a long life. Its organs are not readily transplantable into a recipient of another species. The non-human animal cannot voice its disapproval with having its life cut short to harvest its organs. Finally, and most importantly, the non-human animal has no effective advocate, and therefore, no person, law, or court to protect it from the speciesist practices of man.

Overall, this article suggests that, despite the fact that both of the sources discussed could provide some measure of relief to the organ shortage, neither source provides a degree of relief sufficient to justify the exploitation of those without a voice of their own. The wiser and more productive solution is to increase the number of voluntary donors by using some or all of the proposals mentioned above.