

12-15-2004

## Genetically Correct: The Political Use of Reproductive Terminology

June Mary Zekan Makdisi

Follow this and additional works at: <https://digitalcommons.pepperdine.edu/plr>



Part of the [Science and Technology Law Commons](#), and the [Sexuality and the Law Commons](#)

### Recommended Citation

June Mary Zekan Makdisi *Genetically Correct: The Political Use of Reproductive Terminology*, 32 Pepp. L. Rev. Iss. 1 (2004)

Available at: <https://digitalcommons.pepperdine.edu/plr/vol32/iss1/1>

This Article is brought to you for free and open access by the Caruso School of Law at Pepperdine Digital Commons. It has been accepted for inclusion in Pepperdine Law Review by an authorized editor of Pepperdine Digital Commons. For more information, please contact [bailey.berry@pepperdine.edu](mailto:bailey.berry@pepperdine.edu).

# Genetically Correct: The Political Use of Reproductive Terminology

June Mary Zekan Makdisi\*

## TABLE OF CONTENTS

- I. INVENTION
  - A. *“Preembryo” and the Devaluation of the Early Extracorporeal Embryo*
- II. REDEFINITION
  - A. *“Emergency Contraception” and the Devaluation of the Early Incorporeal Embryo*
- III. DENIAL
  - A. *“Embryo Biopsy,” PGD, and Extracorporeal Production*
- IV. CONCLUSION

*“Clarity of language is essential to clarity of thought.”<sup>1</sup>*

In the last quarter century since the first *in vitro* baby made her debut,<sup>2</sup> society has witnessed a revolution in its understanding of reproduction and in its utilization of reproductive technologies. While not everyone agrees that its use is beneficial to society,<sup>3</sup> labeling has played a major role in shaping society’s views about reproduction and reproductive technology.

---

\* Associate Professor of Law, St. Thomas University School of Law; B.A. University of Pennsylvania; M.S. University of Pennsylvania; J.D. University of Tulsa College of Law. The author wishes to thank Ned Swanner for locating many hard-to-find resources and the St. Thomas University School of Law for generously providing a research grant. This article is dedicated to the author’s mother, Josephine Yalch Zekan, her first and most important teacher.

1. The Ramsey Colloquium, *Experimenting on Embryos is Unethical*, in REPRODUCTIVE TECHNOLOGIES 125, 127 (Carol Wekesser et al. eds., 1996).

2. Louise Brown, the first IVF-conceived baby brought to term, was born in England in 1978. Janet L. Dolgin, *Embryonic Discourse: Abortion, Stem Cells, and Cloning*, 31 FLA. ST. U. L. REV. 101, 106 (2003).

3. See, e.g., MARY WARNOCK, A QUESTION OF LIFE: THE WARNOCK REPORT ON HUMAN

An early (and continuing) example of how language has promoted a particular mind-set can be seen in the setting of abortion politics. Following *Roe v. Wade*,<sup>4</sup> the term “pro-abortion” was perhaps meant to capture one’s willingness to accept abortion as an acceptable alternative available to pregnant women. Those who did not believe that pregnant women had the right to terminate the biological life within were branded as “anti-abortion.” The negative terminology was soon reversed to a positive image – “pro-life” – thereby inferring that everyone else was “anti-life.” Not to be so depicted, those supporting *Roe* redesigned their position as “pro-choice.”<sup>5</sup> The classification enabled the separation of the theoretical (choice) from the actual (abortion). It also permitted a reconciliation between two seemingly inconsistent positions: respecting life while sanctioning its termination.

The above illustrates what has been identified as the central issue concerning the utilization of reproductive technologies: the interface of law with morality.<sup>6</sup> In consideration is the extent to which the law should intervene to prevent “immoral” conduct. Lord Devlin, referenced by the British, espoused the position that “if law did not enforce what society held to be morally right and wrong, then society itself would disintegrate.”<sup>7</sup> A prominent group in the United States, the American Fertility Society (now the ASRM),<sup>8</sup> rejects the concept of governmental interference with private

---

FERTILISATION AND EMBRYOLOGY xi (1985) (finding no consensus at the time); John A. Robertson, *Procreative Liberty in the Era of Genomics*, 29 AM. J.L. & MED. 439, 442-50 (2003). Robertson has devised a classification scheme in which he places those who do not approve of the new reproductive technologies as “strict traditionalists.” *Id.* at 442-44. At the opposite end of the spectrum are those adhering to a view he labels as “radical liberty.” *Id.* at 444-46. They would place no limits on the use of reproductive technologies, premised on a concurrent belief in extreme individualism. *Id.* The third group, in which he places himself, is labeled “modern traditionalist.” *Id.* at 446, 450. Viewholders in the latter group would accept use of reproductive technologies with few limitations, *Id.*, in order to promote adult individualistic choice. *Id.* at 467 (noting that the key to its use would be its importance to the decision-maker).

4. 410 U.S. 113 (1973).

5. See S. I. HAYAKAWA & ALAN R. HAYAKAWA, *LANGUAGE IN THOUGHT AND ACTION* 110 (Harvard 5th ed. 1990) (discussing abortion semantics in terms of “baby,” “murder,” “pro-life,” and “fetus”).

6. WARNOCK, *supra* note 3, at x.

7. *Id.* at xi. See also Charity Scott, *Why Law Pervades Medicine: An Essay on Ethics in Health Care*, 14 NOTRE DAME J.L. ETHICS & PUB. POL’Y 245, 248 (2000). Prof. Scott asserts that moral views are often enacted in law. See *id.* This is particularly important with respect to conduct that is considered unacceptable. While the law generally provides no reward for good behavior, it deals a “punch” to behavior that falls below the legal norm, as illegal conduct is subject to punishment. Declaring a particular behavior as illegal is a societal expression of consensus about the ethical wrongness of the conduct. *Id.* at 259-60. Social consensus and law are thus joined, thereby ending the public debate over the morality of the conduct because the crystallization in law had defined the boundaries. *Id.* at 260-62. Understanding this phenomenon helps explain why there would be an effort to orient the public to reach a consensus that sacrificial manipulations of the implanted embryo would be legally unacceptable. The implication is that other manipulations, prior to implantation, have not crossed the boundary and would thereby be permissible under the law.

8. Nanette R. Elster, *HIV and ART: Reproductive Choices and Challenges*, 19 J. CONTEMP. HEALTH L. & POL’Y 415, 416 (2003) (stating that ASRM represents American Society for Reproductive Medicine).

immoral behavior in the name of protecting the public good.<sup>9</sup> Instead, it sanctions the ethics of autonomy principled in the libertarian political philosophy<sup>10</sup> of individualism.<sup>11</sup> But if Devlin is correct, then forming a consensus about the moral correctness of reproductive technologies would be an important part of social acceptance. Labeling can be a key ingredient in bringing about consensus because words shape attitudes and beliefs<sup>12</sup> in conformity with those who select the label or classification.<sup>13</sup>

This article explores three sets of words that emerge as rallying points for social acceptance. Each set has in some way been advanced with the representation that it corresponds with protecting or promoting the “basic freedom” of reproductive choice.<sup>14</sup> The ensuing discussion raises the

9. The Ethics Committee of the American Fertility Society, *Ethical Considerations of the New Reproductive Technologies*, 46 FERTILITY & STERILITY 18S-19S (Supp. Sept. 1986) (hereinafter The Ethics Committee of the American Fertility Society I). This was reproduced almost verbatim in its later Report. See The Ethics Committee of the American Fertility Society, *Ethical Considerations of the New Reproductive Technologies*, 53 FERTILITY & STERILITY 20S-21S (Supp. June 1990) (hereinafter The Ethics Committee of the American Fertility Society II).

10. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 18S-20S; The Ethics Committee of the American Fertility Society II, *supra* note 9, at 21S-22S. Beneficence and justice were also considered to be important ethical theories. *Id.* The advantage of starting with a political philosophy or principled position is that there is greater overlapping consensus about those than about moral theories, such as the moral status of the early embryo. See R. Alta Charo, *The Hunting of the Snark: The Moral Status of Embryos, Right-to-Lifers, and Third World Women*, 6 STAN. L. & POL'Y REV. 11, 12 (1995). A principle of autonomy that regards the freedom to choose as the desired good conflicts with a natural law view of autonomy. See William E. May, *Bioethics and Human Life*, in NATURAL LAW AND CONTEMPORARY PUBLIC POLICY 41, 46 (David F. Forte ed., 1998) (noting one must forebear from making a choice at odds with a moral norm).

11. See THE CAMBRIDGE DICTIONARY OF PHILOSOPHY 718-19 (Robert Audi ed., 2d ed. 1999) (defining “political philosophy” wherein libertarianism was considered “committed to individualism”).

12. NOAM CHOMSKY, ON NATURE AND LANGUAGE 180 (Adriana Belletti & Luigi Rizzi eds., 2002).

13. HAYAKAWA & HAYAKAWA, *supra* note 5, at 106-08. David Healy, a Professor of Psychological Medicine is concerned that evidence-based medicine suffers from a similar phenomenon of engineering consensus through distortion. David Healy, *Manufacturing Consensus*, 34 HASTINGS CENTER REPORT 53 (July-Aug. 2004). He calls the state of affairs a “crisis,” revealing that marketing departments of drug manufacturers have, for the past twenty years, orchestrated clinicians’ views by failing to publish negative results or publishing “selected positive results.” *Id.* The persuasive effect of undisclosed “bad facts” is analogous to obscuring “bad facts” through deceptive labeling.

14. See generally Robertson, *supra* note 3, at 446 (promoting the use of reproductive technologies as “a basic freedom” that “translates easily into the language of individual rights”). He labels as “modern traditionalist” those, like himself, who generally approve of reproductive technologies with few limitations. *Id.* Robertson contrasts the “modern traditionalist” category with the only other two positions offered: “strict traditionalist” and “radical liberty.” *Id.* at 442-50. The word “tradition” or “traditional” evokes feelings of security through repetition of a process, methodology, or ideology. Values that are considered traditional generate a response that such values ought to be protected because of society’s long-standing recognition of their importance. Values that are traditional are considered fundamental and worthy of Constitutional protection. See, e.g., *Palko v. Connecticut*, 302 U.S. 319, 325 (1937) (finding constitutional rights to be “so rooted in

question of whether the labeling does, in fact, advance choice, or whether, as John Finnis observes, the language is being used instrumentally to get the collaboration of others.<sup>15</sup>

Part One traces the origin of the term “preembryo” and its infusion into legal discourse. This classification was an important hallmark for the acceptance of reproductive technologies because it oriented an isolation of the extracorporeal embryo as a separate object from the more developed embryo.<sup>16</sup> This enabled its devaluation and established the premise for later exploitation possibilities. Part Two highlights emergency contraception because of its recent consideration for over-the-counter purchases that would be sanctioned by a federal agency and that would suggest a contra-contraception function. Part Three considers terminology related to a relatively new clinical feature on the ART<sup>17</sup> horizon, preimplantation genetic diagnosis (PGD). This section poses the problem of misconception about PGD. The language used to portray the processes accompanying PGD fails to convey a true picture of the process. The lack of understanding is likely to encourage both use and acceptance rather than promote informed choice. To compound the problem, there is a general lack of legal oversight over PGD, which manipulates the early *in vitro* embryo. Acceptance would most likely not have been possible without the normalization of a devalued “preembryo.”

---

the traditions and conscience of our people as to be ranked as fundamental”); *Moore v. City of East Cleveland*, 431 U.S. 494, 503 (1977) (finding fundamental rights as those “deeply rooted in this Nation’s history”). Thus, to the extent that the label “traditionalist” is used, it triggers thoughts of a by-gone era where reproduction was associated with other “goods” and pre-dating the context of technology into which it has been thrust. While the term “liberty” evokes enthusiasm, the modifier “radical” removes it from reasonable consideration. “Strict” orients the audience to inflexibility, rigidity, thereby also distancing those viewholders as unreasonable. Before understanding the specific characteristics attributed to the position, the audience is already pre-disposed to embracing the category (and the author’s world view) of the “modern traditionalist” and rejecting the others. The phenomenon of being guided by words alone enables others to intentionally (or unintentionally) orient their audience by choosing words that give rise to the images desired by the chooser. HAYAKAWA & HAYAKAWA, *supra* note 5, at 106-08, 145.

15. John Finnis, *Unjust Laws in a Democratic Society: Some Philosophical and Theological Reflections*, 71 NOTRE DAME L. REV. 595, 597 (1996) (finding this use of language particularly where the selected terminology rallies around a seeming “common good” such as fundamental rights).

16. See HAYAKAWA & HAYAKAWA, *supra* note 5, at 145. People permit themselves, by this “intensional [sic] orientation,” to be guided by words alone rather than facts that may give rise to the words. *Id.* This enables words to be used (intentionally or unintentionally) as smokescreens or as misevaluators. *Id.*

17. ART has come to denote “assisted reproductive technology,” and is currently the preferred representation for the acronym. Westlaw search conducted on July 14, 2004 (493 references in journals and law reviews, 25 cases (the earliest of which was in 1996), texts, and bar journals). A less popular, and probably earlier representation of ART was to “artificial reproductive technology.” Westlaw search conducted on July 14, 2004 (68 references in the law review and journals database (with no reference in cases), the earliest article in each category being 1990).

## I. INVENTION

## A. "Preembryo" and the Devaluation of the Early Extracorporeal Embryo

The word "preembryo" became a household legal term in the early 1990s.<sup>18</sup> *Davis v. Davis*,<sup>19</sup> a seminal case regarding the disposition of cryopreserved embryos and the first American case to adopt the term, has a lot to do with its dissemination.<sup>20</sup> In *Davis*, a couple wished to dissolve their marriage after multiple unsuccessful attempts to produce biological children through *in vitro* fertilization (IVF).<sup>21</sup> Since seven healthy cryopreserved conceptuses remained after their last attempt, the Tennessee trial court faced a novel legal question of how it should dispose of them upon divorce.<sup>22</sup> At the root of the issue was how to classify the extracorporeal embryos that had been produced during the marriage.<sup>23</sup> If considered alive, then disposition should reflect custody law; if considered property, then that law would govern.<sup>24</sup> The term "preembryo" became the focal point because the label's acceptance or nonacceptance symbolized the frozen entities' legal characterization as life or property.<sup>25</sup>

To resolve the issue, the court relied on the testimony of the couple, who agreed that their intent and purpose was to produce children by means of IVF,<sup>26</sup> and that of four expert witnesses.<sup>27</sup> Drs. King and Shivers, a fertility

18. There have been at least 530 references to "preembryo" since 1990. Before 1990, the term was referenced only a handful of times. Westlaw search conducted on Jan. 10, 2004. A more recent case, *Kass v. Kass*, 696 N.E.2d 174 (N.Y. 1998), also required judicial resolution regarding the disposition of cryopreserved embryos following divorce. The issue differed significantly insofar as the couple had signed an agreement in advance of cryopreservation that was to have settled any later-arising dispute. See *id.* (affirming the disposition of the embryos in accord with the contractual interpretation of two of the appellate judges).

19. *Davis v. Davis*, 842 S.W.2d 588, 592-94 (Tenn. 1992). The trial court rendered its decision in 1989. *Davis v. Davis*, No. E-14496, 1989 WL 140495 (Tenn. Cir. Ct. Sept. 21, 1989).

20. Only a handful of law reviews used the term before *Davis*, while 80% of the more than 500 references to date refer to that case. Westlaw search conducted on July 8, 2004. So pervasive has its use become that a student in my 2003 Family Law class "corrected" me when I used the term "embryo" in connection with a case on surrogate agreements.

The first successful gestation following cryopreservation did not occur until 1983. Carl H. Coleman, *Procreative Liberty and Contemporaneous Choice: An Inalienable Rights Approach to Frozen Embryo Disputes*, 84 MINN. L. REV. 55, 55 (1999).

21. *Davis*, 1989 WL 140495, at\*2-3.

22. *Id.*

23. *Id.* at \*3.

24. *Id.* (considering the root issue to be when human life began).

25. See *id.*

26. *Id.* at \*20. Mrs. Davis testified further that she, unlike her husband, already viewed them as children. *Id.* at \*25.

27. *Id.* at 4.

specialist and embryologist who performed the fertility services for the Davis couple, and John Robertson, a noted legal scholar, identified the cryopreserved specimens as “preembryos” with just a “potential for life.”<sup>28</sup> In support, these witnesses declared that cellular specialization was lacking until after implantation and the formation of the primitive streak, an event that occurred between ten and fourteen days after fertilization.<sup>29</sup> Prof. Robertson argued that since it was “not clear” that a unique individual had been produced by fertilization, procreation had not yet occurred.<sup>30</sup>

The fourth witness, Dr. Lejeune, a world-renowned geneticist, refuted the others’ testimony, asserting that there was no such word as “preembryo” and that an embryo existed at the time of the first cellular division of the fertilized egg.<sup>31</sup> He noted that each cryopreserved specimen was genetically unique, and that the fertilized ovum was “the most specialized cell under the sun” because there was and would never be another cell like it.<sup>32</sup> Moreover, it alone contained all the instructions needed to form the unique individual that it would become.<sup>33</sup> Dr. Lejeune maintained that the embryo was alive and human, and that no scientist had ever opined that an embryo was property.<sup>34</sup> He further accused the British of having invented the word in order “to lead one to believe there is a difference between a preembryo and an embryo when there is no such entity as a preembryo.”<sup>35</sup>

After hearing all the testimony, the trial court found that human embryos were life and not property.<sup>36</sup> Therefore, it applied domestic relations law and awarded Mrs. Davis custody of the seven cryopreserved conceptuses for the purpose of implantation.<sup>37</sup> In reaching its decision, the court found that “the term ‘preembryo’ serves as a false distinguishing

---

28. *Id.* at \*3-4.

29. *Id.* at \*4. As support, the witnesses noted that differentiation did not occur until ten to fourteen days following fertilization, after implantation to the womb had occurred and the primitive streak had formed. *Id.* The court noted that one witness, Prof. John Robertson, considered that life did not commence until then. *Id.* Prof. John Robertson was, and is, a legal scholar who writes about reproductive issues, and was, and is, a member of the American Fertility Society’s Ethics Committee. *Id.* at \*20-21.

Dr. Irving Ray King was a reproductive endocrinologist who had treated Mary Sue Davis for six years for infertility, and Dr. Charles Shivers was an embryologist who had worked with Dr. King and the Davis’s for at least three years. *Id.* at \*2-4. Dr. Shivers conceded that genetic uniqueness was determined at the time of fertilization, but asserted that there was no way to distinguish the cells until after implantation and the appearance of the primitive streak at about fourteen days after fertilization. *Id.* at \*23-24.

30. *Id.* at \*4.

31. *Id.* at \*5, \*27 (referencing a medical dictionary).

32. *Id.* at \*5 (quoting the testimony of Dr. Lejeune).

33. *Id.* at \*28.

34. *Id.* at \*5, \*26-29. The three witnesses for Mr. Davis agreed that the entities were human, but argued that they had only the “potential for life.” *Id.* at \*4.

35. *Id.* at \*27 (mentioning the British, a clear reference to the Warnock Report, which was referenced as authority by Prof. Robertson).

36. *Id.* at \*1, \*7.

37. *Id.* at \*1.

term,"<sup>38</sup> pointing out that both Dr. King and Prof. Robertson had referred to the entities as "embryos" in their medical treatment notes and scholarly article on the case, respectively.<sup>39</sup> It also noted that Prof. Robertson's testimony indicated that the American Fertility Society (AFS) Report, of which he was a co-author and upon which the witnesses relied in advancing the term, was meant as guidance for fertility specialists about the requisite standard of care, primarily for litigation purposes.<sup>40</sup>

The Tennessee high court rejected the findings of the trial court and facilitated the destruction of the "preembryos."<sup>41</sup> The judge dismissed Lejeune's testimony and favored the "scientific" testimony of King, Shivers, and Robertson because their application of the term "preembryo" to a pre-fourteen-day-old entity was consistent with a report by the AFS.<sup>42</sup> The high court admonished the legal community to embrace the term "preembryo" because it viewed the semantical separation from the more developed embryo as legally significant.<sup>43</sup> It was concerned that nonacceptance of the term might influence judicial reasoning in a way that might harm IVF programs.<sup>44</sup> Having approved the AFS Report's terminology, the court then adopted the Report's reasoning regarding the legal status of the "preembryo" as person or property.<sup>45</sup> In reaching its decision that "preembryos" should be treated with "special respect" as urged in the AFS Report, the high court disavowed its use of property law.<sup>46</sup> But it did not explain how ordering the destruction of the "preembryos" could be meaningfully reconciled with the provision of "special respect."<sup>47</sup>

38. *Id.* at \*6.

39. *Id.* at \*7.

40. *Id.* at \*5-7. See also The Ethics Committee of the American Fertility Society I, *supra* note 9, at iv (listing Prof. Robertson's membership on the committee authoring the report).

41. *Davis v. Davis*, 842 S.W.2d 588, 604 (Tenn. 1992). This was in accord with Junior Davis's wish to no longer use them to procreate. *Davis*, 1989 WL 14095 at \*20.

42. *Davis*, 842 S.W.2d at 593-94. The court announced its utilitarian objective in adopting the testimony it branded "scientific" (securing the unfettered continuation of IVF operations). See *id.* But it did not acknowledge the potential interests on the part of the experts that could have motivated their position. See *id.* The court's acceptance of the proposed definition secured governmental non-oversight of fertility practices. See Maureen L. Condit & Samuel B. Condit, *The Appropriate Limits of Science in the Formation of Public Policy*, 17 NOTRE DAME J.L. ETHICS & PUB. POL'Y 157, 177 (2003) (where objectivity of scientific testimony is limited by conflicts of interest, resistance to oversight, and a desire to push the envelope).

43. *Id.* at 592-93. The high court acknowledged that the popular press and legal journals referred to cryopreserved specimen as "frozen embryos." *Id.* at 589.

44. *Id.* at 595.

45. *Id.* at 596-99.

46. *Id.* at 596-97, 598-602 (adopting the language of "special respect" and the right of procreational autonomy); Radhika Rao, *Property, Privacy, and the Human Body*, 80 B.U. L. REV. 359, 416-17 (2000) (invoking the very property concepts the court sought to distance).

47. Janet Dolgin, *Embryonic Discourse: Abortion, Stem Cells and Cloning*, 19 ISSUES L. & MED.



The document treated as scientific authority for the Tennessee high court's decision made multiple references to the term "preembryo."<sup>48</sup> The AFS Report also specifically defined the term in its "Definitions" section, which included only six terms altogether.<sup>49</sup> The report noted that: "In order to avoid confusion, the Committee found it necessary to adopt certain definitions for the purposes of this document."<sup>50</sup>

If the term "preembryo" had widespread acceptance and usage, why would their readers, who were specialists in reproductive medicine, be "confused" or require a specific identification and definition of the term? Perhaps it was because the AFS itself utilized the term "embryo" elsewhere to identify the products of *in vitro* fertilization.<sup>51</sup> In a report it coauthored, the AFS identified "embryos" as the pre-fourteen-day entities that were considered for transfer to a human womb.<sup>52</sup> In the same year, the AFS published other articles that employed the term "embryos" to identify the products of IVF – despite their developmental age of below fourteen days.<sup>53</sup> *Nature*, a journal that keeps its readers informed about cutting edge discoveries, also utilized the term "embryo" to refer to the entity that was a mere four cells in size,<sup>54</sup> which is at a developmental age far below fourteen days.<sup>55</sup> Perhaps the anticipated confusion stemmed from the fact that the term "preembryo" was really adjectival, describing a stage of embryonic development.<sup>56</sup>

---

203, 254 (2004) (asserting that "respect" talk was considered rhetoric because the embryos were treated as commodities). Most commentators take the position that the IVF embryo is entitled to "special respect" as neither person nor property. *See, e.g.*, Coleman, *supra* note 20, at 67. Some characterize the duties owed as "heightened." *Id.* Others characterized them as meaningless. Lisa Shaw Roy, *Roe and the New Frontier*, 27 HARV. J.L. & PUB. POL'Y 339, 365 (2003).

48. *See, e.g.*, The Ethics Committee of the American Fertility Society I, *supra* note 9, at i (referencing the term several times in the Table of Contents); The Ethics Committee of the American Fertility Society II, *supra* note 9, at i.

49. The Ethics Committee of the American Fertility Society I, *supra* note 9, at vii; The Ethics Committee of the American Fertility Society II, *supra* note 9, at vii.

50. The Ethics Committee of the American Fertility Society I, *supra* note 9, at vii; The Ethics Committee of the American Fertility Society II, *supra* note 9, at vii (asserting that "A preembryo is a product of gametic union from fertilization to the appearance of the embryonic axis. The preembryonic stage is considered to last until 14 days after fertilization. . ."). The other terms defined were couple, clinical trial, clinical experiment, egg (which was "used in a generic sense to mean either an oocyte or an ovum in an unfertilized state"), and indication. *Id.*

51. *See infra* notes 52-53 and accompanying text.

52. *See* Medical Research International and the Society for Assisted Reproductive Technology, The American Fertility Society, *In Vitro Fertilization-Embryo Transfer in the United States: 1988 Results from the IVF-ET Registry*, 53 FERTILITY & STERILITY 13 (Jan. 1990).

53. *See, e.g.*, Soon-Chye Ng et al., *Micromanipulation: Its Relevance to Human In Vitro Fertilization*, 53 FERTILITY & STERILITY 203 (Feb. 1990). This article appeared in the "Modern Trends" section of the journal with editorial attribution to Edward E. Wallach, who, as a member of the AFS Ethics Committee, contributed to both its 1986 and 1990 Reports. The Ethics Committee of the American Fertility Society I, *supra* note 9, at iv; The Ethics Committee of the American Fertility Society II, *supra* note 9, at iv.

54. *Embryo Research*, 344 NATURE, 19 April 1990, at 690.

55. *See* The Ethics Committee of the American Fertility Society II, *supra* note 9, at 31S-32S

56. *See, e.g.*, Esther Slater McDonald, *Patenting Human Life and the Rebirth of the Thirteenth Amendment*, 78 NOTRE DAME L. REV. 1359, 1362 n.15 (2003) (citing RONAN O'RAHILLY &

Prof. Robertson, a witness in the *Davis* case, recognized in his own writings that early development signified a pre-embryonic “stage.”<sup>57</sup> Parenthetically, he noted, without reference, that the pre-embryonic stages were “sometimes referred to as the conceptus or pre-embryo.”<sup>58</sup> This glide from adjective to noun artfully transformed a set of characteristics to an entirely new object<sup>59</sup> – “pre-” instead of “part” of embryonic development.

Clifford Grobstein, also a co-author of the AFS Report,<sup>60</sup> took the same approach in an earlier article.<sup>61</sup> Responding to the HEW Secretary’s concerns about whether to fund IVF research, Grobstein advocated for the

FABIOLA MÜLLER, *HUMAN EMBRYOLOGY & TERATOLOGY* 88 (3d ed. 2001) (noting that politics rather than science was responsible for creating the scientifically rejected term “preembryo”); Amanda J. Smith, J.B. v. M.B.: *New Evidence that Contracts Need to be Reevaluated as the Method of Choice for Resolving Frozen Embryo Disputes*, 81 N.C. L. REV. 878, 878 n.5 (2003) (citing Glossary, in *THE ETHICS OF REPRODUCTIVE TECHNOLOGY* 347, 348 (Kenneth D. Alpern ed., 1992) (asserting preembryo is a popular but not scientific term); *Report of the Ethical Advisory Board of the Department of Health, Education, and Welfare Concerning Research on In Vitro Fertilization, reprinted in part in SOURCE BOOK IN BIOETHICS* 88-89 (Albert R. Jonsen et al. eds., 1998) (using the terms embryo and embryo transfer, but also using the terminology of “human ova fertilized”); *Id.* at 341; *Committee to Consider the Social, Ethical and Legal Issues Arising from In Vitro Fertilization—First Interim Report of the Waller Committee, Victoria, Australia, reprinted in part in SOURCE BOOK IN BIOETHICS, id.*, at 343-45; *Report of the Committee of Inquiry into Human Fertilisation and Embryology: The Warnock Committee, United Kingdom, reprinted in part in SOURCE BOOK IN BIOETHICS, id.*, at 347-48; WARNOCK, *supra* note 3, at xv. See also Clifford Grobstein, *External Human Fertilization*, 240 SCI. AM., June 1979, at 57, 64-66 (noting that the stages of development following fertilization were continuous, and recognizing the preembryonic phase as one of the stages). During the preembryonic stage, the focal concentration of growth is on the formation of the protective support tissues within which the embryo properly develops. The Ethics Committee of the American Fertility Society II, *supra* note 9, at 32S. Even the AFS acknowledges the continuity from the moment of fertilization. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 26S (noting that where the zygote is alive and human, the process of growth is continuous, and division by stages is for convenience); The Ethics Committee of the American Fertility Society II, *supra* note 9, at 31S.

57. John A. Robertson, *Embryos, Families, and Procreative Liberty: The Legal Structure of the New Reproduction*, 59 S. CAL. L. REV. 939, 968 (1986). What was highlighted in cases such as *Davis* was that conception and the early embryonic stage could be separated from gestation. See *Davis v. Davis*, 842 S.W.2d 588, 596-98 (Tenn. 1992). It may also have been because the IVF manipulations and cryopreservation separated conception from internal gestation. Judith F. Daar, *Assisted Reproductive Technologies and the Pregnancy Process: Developing an Equality Model to Protect Reproductive Liberties*, 25 AM. J.L. & MED. 455, 455, 458 (1999).

58. Robertson, *supra* note 57, at 968.

59. Naming something classifies it in accord with the convenience of the classifier, orienting the audience to associations that are not necessarily accurate. HAYAKAWA & HAYAKAWA, *supra* note 5, at 106-08, 145-46.

60. The Ethics Committee of the American Fertility Society I, *supra* note 9, at iv (listing membership on the committee authoring the report). Prof. Kischer, an embryologist, states that Clifford Grobstein invented the term “pre-embryo.” C. Ward Kischer, *There is No Such Thing as a Pre-embryo*, available at <http://www.all.org/abac/cwk001.htm> (last visited Jan. 26, 2004). He also points to the AFS, of which Grobstein was a Report author, as “instrumental in the revision of the facts concerning Human Embryology.” *Id.*

61. Grobstein, *supra* note 56, at 57, 60-64.

disbursement of federal research monies, recounting the potential impact of IVF technology.<sup>62</sup> Interest in the issue was generated by a funding proposal that Pierre Soupart had submitted to the National Institutes of Health in the 1970s.<sup>63</sup>

Pierre Soupart was a medical researcher at the Vanderbilt University School of Medicine who had requested federal funding for a laboratory investigation of human fertilization.<sup>64</sup> Approval of his proposal was delayed to consider how to evaluate his proposal and others like it.<sup>65</sup> Congress had already established the National Commission for the Protection of Human Subjects of Biomedical and Behavioral Research in response to reports of research abuses.<sup>66</sup> Guidelines that it generated were meant to assure that subjects' interests were protected before funds could be approved.<sup>67</sup> To assist in this task, the Commission mandated the prior approval of a local Institutional Review Board that would apply the guidelines.<sup>68</sup> If the experiments involved human subjects that were endangered by risks deemed greater than "minimal," an additional review was required to be made by the Department of Health, Education and Welfare's (HEW's) Ethics Advisory Board (EAB).<sup>69</sup> The EAB would then advise the HEW Secretary as to whether the proposal should be funded.<sup>70</sup> IVF research proposals were severely hampered by this structure because the Commission had also validated the fetus as a human subject.<sup>71</sup> Because IVF was still in its

---

62. *Id.* at 67.

63. *Id.* at 60-64. The *Davis* high court also cited Grobstein as authority, specifically noting that language choice could impact legal rights. *Davis*, 842 S.W.2d at 592 & n.11. The court also acknowledged the influence of the AFS and other allied organizations. *Id.* at 594.

64. Grobstein, *supra* note 56, at 57.

65. *See id.*

66. Howard W. Jones, Jr., *The USA Experience*, in A TEXTBOOK OF IN VITRO FERTILIZATION & ASSISTED REPRODUCTION: THE BOURN HALL GUIDE TO CLINICAL AND LABORATORY PRACTICE 441, 441 (Peter R. Brinsden ed., 2d ed. 1999) (providing an excellent history of the development of IVF law).

67. *See id.*

68. *Id.* The guidelines in the Commission's 1975 report provided the basis of the Department of Health, Education and Welfare's research regulations, codified at 45 C.F.R. § 46. Dolgin, *supra* note 2, at 138. Subpart A (sections 46.101-46.126) discusses the basic policy regarding the protection of human subjects in research. Part B (sections 46. 201-46.211) lays out additional constraints when fetuses, pregnant women, and human in vitro fertilization is involved. The constraints are not limited to research; they extend to development and "related activities." 45 C.F.R. §§ 46.101-46.211 (2001).

69. *See id.*

70. STEPHEN S. HALL, MERCHANTS OF IMMORTALITY: CHASING THE DREAM OF HUMAN LIFE EXTENSION 100 (2003). The Department of Health, Education, and Welfare (HEW) established the EAB as its advisory body in 1977. *Id.* HEW became Health and Human Services. The Ethics Committee of the American Fertility Society II, *supra* note 9, at 8S. The National Institutes of Health, to which Grobstein applied for funding, is within the purview of HHS (then HEW). June Mary Zekan Makdisi, *The Slide from Human Embryonic Stem Cell Research to Reproductive Cloning: Ethical Decision-Making and the Ban on Federal Funding*, 34 RUTGERS L.J. 463, 472 (2003).

71. HALL, *supra* note 70, at 100.

infancy, IVF research always posed risks greater than “minimal.”<sup>72</sup> This finding triggered the additional scrutiny by the EAB and the personal decision of the Secretary,<sup>73</sup> who was always subject to political pressures.

In March 1979, the EAB concluded that the benefits of IVF research outweighed the risks.<sup>74</sup> It thereby determined that IVF research was ethically acceptable and referred Pierre Soupart’s proposal for funding consideration.<sup>75</sup> As the proposal awaited the HEW Secretary’s approval, Grobstein published an article on human fertilization in which he hoped to assuage HEW Secretary Joseph Califano’s concerns regarding the propriety of funding IVF research.<sup>76</sup> In his article, Grobstein urged that the pre-implantation embryo was undeserving of the dignitary standards normally applied to humans based on a lack of legal personhood coincidental to a rudimentary stage of biological development.<sup>77</sup>

Grobstein identified the most problematic issue as “the question of the stage in human development at which a ‘person,’ in the ethical and legal sense, comes into being.”<sup>78</sup> This presentation was a clever distraction from a different rhetoric that found significant the distinction of life versus non-life.<sup>79</sup> Suggesting “personhood” as the relevant standard permitted the easy application of the abortion standard that would support relative devaluation. Focus on the constitutional issue, however, diverted attention away from the fact that relative interests differed in the new context. In contrast with IVF considerations, abortion issues necessarily triggered a devaluation of fetal interests as they stood in conflict with the interests of a person already in existence.

In advancing his argument, Grobstein asserted that extracorporeal embryos were not persons primarily because they lacked both a conscious awareness and a visual appearance of personhood, which Grobstein suggested disabled them from evoking the necessary recognition and

72. *Id.*

73. *Id.* Federal regulations specifically required EAB approval of any proposals involving human IVF. The Ethics Committee of the American Fertility Society II, *supra* note 9, at 8S (citing 45 C.F.R. § 46.204(a) (1984)).

74. *See* Grobstein, *supra* note 56, at 57.

75. *Id.* It bears mention that even the EAB referred to the IVF-formed entities as embryos. *See* The Ethics Committee of the American Fertility Society II, *supra* note 9, at 35S.

76. *See* Grobstein, *supra* note 56, at 60.

77. *Id.* at 64-66.

78. *Id.* at 64.

79. *See, e.g.,* Coleman, *supra* note 20, at 66-67 (describing the range of views). Some believe that moral status (and thereby protection) attaches at the moment of fertilization. Charo, *supra* note 10, at 16. The author disagrees, in part because so many fertilized but unimplanted embryos never fully develop. *Id.* This view makes no distinction between the passive and the intentional. For example, it is inevitable that many children fall and skin their knees. That, however, does not excuse another from intentionally causing one particular child to do so.

emotive response from other persons.<sup>80</sup> Wedding his philosophy to biology, Grobstein described the rudimentary developmental condition of the pre-implantation embryo.<sup>81</sup> Although acknowledging the continuity of human development that was marked by progressive stages once fertilization had occurred,<sup>82</sup> Grobstein utilized the same rhetorical device later employed by Robertson in transforming a stage to an entity.<sup>83</sup> Merging his arguments, Grobstein declared that “[t]he stages involved not only are prepersons but also are preembryos.”<sup>84</sup>

Ultimately, Souper’s research was not funded.<sup>85</sup> The EAB was dissolved by virtue of a sunset clause and was not reestablished.<sup>86</sup> Thus, no IVF research could be publicly funded. Largely in response to the dissolution of the EAB, the AFS convened an Ethics Committee to provide guidelines for IVF research and experimentation.<sup>87</sup> The 1986 Report, which was cited as authority in the *Davis* opinion,<sup>88</sup> was a direct product of the Committee’s charge.

The AFS Report devoted most of its first thirty pages to discussing American law and ethics in the context of reproductive technologies, the bulk of which related in some way to IVF.<sup>89</sup> One point was to demonstrate that use of the new reproductive technologies could be viewed as ethical if incorporated within the existing framework of reproductive liberty.<sup>90</sup>

---

80. Grobstein, *supra* note 56, at 64, 66. Interestingly, Dr. Grobstein did not consider someone in an anencephalic baby a person. *Id.* at 64.

81. *Id.* at 64.

82. *Id.* at 64-66.

83. *Compare id.* at 66, with Robertson, *supra* note 57, at 968.

84. Grobstein, *supra* note 56, at 66. The article then justified the terminology by describing characteristics associated with the preembryonic stage of development, most notably, the ability to split and develop into more than one embryo (twinning). *Id.* at 66-67.

85. Hall, *supra* note 70, at 101

86. *Id.*

87. Jones, *supra* note 66, at 442. The author was another AFS Ethics Committee member who contributed to the 1986 and 1990 reports. The Ethics Committee of the American Fertility Society I, *supra* note 9, at iv; The Ethics Committee of the American Fertility Society II, *supra* note 9, at iv.

88. See *Davis v. Davis*, 842 S.W.2d 588, 593-94 (Tenn. 1992).

89. See The Ethics Committee of the American Fertility Society I, *supra* note 9, at 1S-31S. This was essentially repeated in its later Report. See The Ethics Committee of the American Fertility Society II, *supra* note 9, at 1S-36S.

90. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 3S-5S, 7S. This was reproduced almost verbatim in its later Report. See The Ethics Committee of the American Fertility Society II, *supra* note 9, at 3S-5S, 7S. Reproduction decisions have already been recognized as fundamental outside the IVF context. Lori B. Andrews & Nanette Elster, *Regulating Reproductive Technologies*, 21 J. LEGAL MED. 35, 45 (2000) (distinguishing the protection of privacy under *Griswold v. Connecticut*, 381 U.S. 479 (1965) and *Eisenstadt v. Baird*, 405 U.S. 438 (1972) and the protection of liberty under *Planned Parenthood v. Casey*, 505 U.S. 833 (1992)). Commentators such as Robertson believe the scope of the constitutional protection should be sufficiently broad to encompass IVF technologies. Andrews & Elster, *supra*. The rhetoric of procreative choice has generally been characterized as a negative right to be free from governmental intervention. M. Cathleen Kaveny, *Cloning and Positive Liberty*, 13 NOTRE DAME J.L. ETHICS & PUB. POL’Y 15, 16 (1999) (regarding cloning where there is a virtually absolute negative freedom of the adult to procreate with little regard for any “positive freedom of the child to come into

Significantly, this dovetailed with AFS's view of a governmental role that was essentially limited to financially supporting the research, safeguarding the right to exploit the preembryo, and protecting the interests of IVF embryos that were designated as potential future offspring.<sup>91</sup> Further, adopting the "intermediary" moral view of the IVF embryo provided for a low threshold of duties that would be owed, and easily outweighed by the competing interests of decision-makers and researchers.<sup>92</sup> Attaching a label of "preembryo" symbolized the separateness of the IVF embryo and reinforced the legal and ethical distinctions urged.<sup>93</sup> The utilitarian adoption of the term "preembryo" simultaneous with a minimization of its legal interests could thereby eliminate the barriers to research and clinical practice and lay the groundwork for eventual funding.<sup>94</sup>

The utilitarian approach was also taken in the Warnock Report,<sup>95</sup> which had influenced John Robertson, an instrumental witness in the *Davis* case.<sup>96</sup> Similar to Robertson, authors of the Warnock Report took the position that if the benefits of embryonic research were real, then it should be performed.<sup>97</sup> Therefore, a legal framework was necessary to assure that only certain conduct would be criminalized. Their vision was to define the parameters,

existence"); Elizabeth Heitman, *Infertility as a Public Health Problem: Why Assisted Reproductive Technologies are Not the Answer*, 6 STAN. L. & POL'Y REV. 89, 91 (1995).

91. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 18S-19S ("A third view . . . [a]ppplied to the new reproductive technologies. . . might include infertility treatment within the scope of guaranteed minimum health services."). Views that the role of government was limited were unchanged in the later Report. See The Ethics Committee of the American Fertility Society II, *supra* note 9, at 21S. Robertson advanced similar views on reproductive liberty in his legal scholarship. See, e.g., Robertson, *supra* note 57, at 953-67, 971-73. A vision of governmental non-interference is consistent with a general view of researchers. Condic & Condic, *supra* note 42, at 177 (noting a reluctance to accept oversight).

92. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 16S-18S. Very little was added to its later Report. See The Ethics Committee of the American Fertility Society II, *supra* note 9, at 17S-18S. Listed competing interests were the fertility specialist's duties to provide care to infertile clients, also deemed to include performing underlying research that would lead to such care. *Id.*

93. See The Ethics Committee of the American Fertility Society I, *supra* note 9, at 76S-78S.

94. *Id.* In its summary of special points of interest, the AFS Ethics Committee noted that the AFS community should persuade the HHS to revise its policies and encourage funding. *Id.* at 78S.

95. WARNOCK, *supra* note 3, at xvi.

96. See *Davis v. Davis*, No. E-14496, 1989 WL 140495, at \*21 (Tenn. Cir. Ct. Sept. 21, 1989) (referencing the Warnock Report); Robertson, *supra* note 57, at 972, 1035 & n.328. Robertson aligned himself with Grobstein in complaining about the interference of right-to-lifers in the embryo status issue and advocating the formation of a body committed to defining "currently acceptable standards of conduct with embryos." *Id.* at 1034. It is here that Robertson affirms the Warnock Report's approach. See *id.* at 1034-35. The consequence of going directly to the standards issue is that the primary issue of whether the embryo was a proper subject for risky manipulations was addressed only in the utilitarian view. Other principled positions – namely the deontological perspective of the right-to-lifers – was ignored as "political" interference. See *id.*

97. See WARNOCK, *supra* note 3, at xv, xvi.

regulate standards of research conduct, and license.<sup>98</sup> Formation of the HFEA was a consequence of their vision.

In adopting a working definition of what embryonic age should be acceptable as a subject of research, the Warnock Committee considered a variety of time lines.<sup>99</sup> Significantly, the entity itself was always considered alive, human, and an “embryo” that was in a continuing process of growth from the moment of conception.<sup>100</sup> Despite the recognition that any apportionment was arbitrary, the Committee calculated that a bright line determination was necessary “in order to allay public anxiety.”<sup>101</sup>

By relying on the above referenced works, the opinion rendered in *Davis* mainstreamed the “preembryo” label into legal discourse as well as the analytical structure generated by the philosophical bias of the AFS.<sup>102</sup> Unnoticed by those not well versed in developmental biology was the invention of the term by its transformation from an adjective to a noun.<sup>103</sup>

---

98. WARNOCK, *supra* note 3, at xvi, 64.

99. *Id.* at 65-66. Suggestions for the significant cut-off point included the time of implantation since unimplanted blastocysts would not further develop, *id.* at 60, the time that the primitive streak appeared, marking the early development of the embryo proper and the end of potential twinning at day fifteen, called “individuation,” *id.* at 59, 66, day twenty-two or twenty-three when the central nervous system began formation; or at the time the embryo was known to feel pain, which was far later, *id.* at 65.

100. *Id.* at xiv, xv, 65. Committee members agreed that [O]nce the process has begun, there is no particular part of the developmental process that is more important than another; all are part of a continuous process . . . . Thus biologically there is no one single identifiable stage in the development of the embryo beyond which the *in vitro* embryo should not be kept alive.

*Id.* at 65. While conceding the arbitrariness of any particular stage or developmental age chosen as acceptable for research purposes, the concession also lays the groundwork for a future consideration of pushing the limits on the fourteen-day standard set by the Committee. *See, e.g., id.* at 71 (offering as an example ectogenesis, the use of an artificial uterus to create a child wholly *in vitro*). Grobstein anticipated ectogenesis for the provision of replacement organs, but urged that such matters not be considered until technology forced their consideration. Grobstein, *supra* note 56, at 67. Instead, the author pressed for guidelines that enabled funding for fertilization and preimplantation research. *Id.*

The AFS adopts a bright-line fourteen-day rule, attributing the choice to a host of reasons characteristic of the fourteen-day preembryonic stage of development. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 27S. This carves out boundaries for what the Society considers as current ethical practice. *See id.* At the same time, it merges this time frame with a legal conclusion. It promotes the tenuous “respect” if selected for research, and a vague “concern beyond respect” if chosen for implantation. *See id.* at 28S. Yet, in a footnote, it notes the uncertainty of determining the precise time a particular developmental age is reached. *Id.* at 26S.

101. WARNOCK, *supra* note 3, at xv-xvi, 65.

The point was not however the exact number of days chosen, but the absolute necessity for there being a limit set on the use of embryos, in terms of a number of days from fertilisation [sic]. In this way the law would be clear. If the limitation on research were set in terms of stage of development or the capacity of the embryo to feel pain, then these limits might be subject to dispute. If the limit is in terms of days, on the other hand, this is a simple matter of counting, and there can be no dispute.

*Id.* at xv-xvi. The selection of a bright-line fourteen-day rule for permissive exploitation of the embryo was considered a “political compromise.” Charo, *supra* note 10, at 12 (regarding the Human Embryo Research Panel’s adoption of that view).

102. *See Davis v. Davis*, 842 S.W.2d 588, 594 (Tenn. 1992) (using the term “preembryo” as a noun).

103. *See id.*

Significantly, the conversion created an illusion that “preembryo” intimated *before* human embryonic life, rather than a stage *of* human embryonic life. Invoking the authority of science as a premise for its legal determination thereby enabled the *Davis* court to create a new construct and a new social norm.<sup>104</sup> Additionally, because the “preembryo” became separated from “embryo,” it could be withdrawn from visible moral controversy.<sup>105</sup> As a result, researchers and others who wished to benefit by its exploitation could be distanced from legal liability and psychologically freed of guilt.<sup>106</sup>

The AFS was thereby successful, by the *Davis* court’s acceptance of its term, in “providing disseminated knowledge of [its reproductive] positions”<sup>107</sup> and in beginning “to create a social structure”<sup>108</sup> that would

104. See Lisa C. Ikemoto, *The Code of Perfect Pregnancy: At the Intersection of the Ideology of Motherhood, the Practice of Defaulting to Science, and the Interventionist Mindset of Law*, 53 OHIO ST. L.J. 1205, 1290 (1992). The law’s defaulting to science not only results in normalizing the scientific values, it alters the concept of choice. *Id.* There are other instances of the law’s adoption of categories based on purported biological truths where there was no underlying biological truth to the category, or where it was ambiguous. But the adoption established the inevitable path of acceptance. See R. Alta Charo, *Biological Truths and Legal Fictions*, 1 J. HEALTH CARE L. & POL’Y 301, 305, 314 (1998) (noting the problems of defining life in reproductive biology).

105. Robertson argued for this. See generally Robertson, *supra* note 57, at 939. The AFS acknowledged that carving out a preembryo and assigning it a different status affected its social treatment – in particular, defining a physician’s liability and freedom to manipulate. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 26S, 29S; The Ethics Committee of the American Fertility Society II, *supra* note 9, at 31S, 34S.

106. This parallels the reasoning behind characterizing IVF embryos as having only “potential life.” One commentator notes the blatant circular reasoning: A human being is not protectable in the early stages of development because, as the Report claims,

It has no potential for further development. But in the case of the embryo produced in the laboratory, it has no potential for further development for the sole reason that researchers will not protect it. Because they wish to use it, they do not protect it; because they do not protect it, its natural potential for development is destroyed; because it thus ‘has no potential,’ it is declared ‘not protectable.’

The Ramsey Colloquium, *supra* note 1, at 129. See also Kevin P. Quinn, *The Politics of Embryonic Discourse*, 36 CONN. L. REV. 1163 (2004). Erroneously segmenting the pre-implantation and post-implantation stages of the human embryo such that a new definition of embryo has been created orients away from answering the difficult moral questions, enables instrumentation of nascent human life, and permits society to “mask that fact from itself.” *Id.* at 1164, 1165, 1167.

107. The Ethics Committee of the American Fertility Society I, *supra* note 9, at iii; The Ethics Committee of the American Fertility Society II, *supra* note 9, at iii. If there was no wrongdoing (because it was only “pre-”), then there would be no reason for the government to intervene to prohibit the conduct. Although some in society might consider the conduct immoral, the AFS rejects the role of government as protective of public morals. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 18S-19S; The Ethics Committee of the American Fertility Society II, *supra* note 9, at 20S-21S. Rather, governmental intervention is “to prevent substantial harm to offspring, for example, by requiring donor screening . . . .” The Ethics Committee of the American Fertility Society I, *supra* note 9, at 19S; The Ethics Committee of the American Fertility Society II, *supra* note 9, at 21S. This view of the government’s role supports one of the ethical decision-making principles adopted by the Committee: beneficence, or its corresponding negative aspect: “do no harm.” The Ethics Committee of the American Fertility Society I, *supra* note 9, at 19S, The Ethics Committee of the American Fertility Society II, *supra* note 9, at 21S, or nonmalfeasance.



accept the naturalness of technical manipulation in the reproductive sphere. The court itself made a legal determination premised on the acceptance of a political view that was in the guise of medical terminology.<sup>109</sup> The assertion that the court had grounded its decision in science thereby promoted its acceptance as unquestioned truth.<sup>110</sup>

Since the *Davis* decision, the term “preembryo” has been discredited.<sup>111</sup> Prof. Annas notes that almost no one uses the term, which he characterizes as euphemistic.<sup>112</sup> In legal literature, nevertheless, the term remains quite visible.<sup>113</sup> The concept of separateness that the term helped create is now

---

BARRY R. FURROW ET AL., *BIOETHICS: HEALTH CARE LAW AND ETHICS* 4 (4th ed. 2001). Since no harm is done, the government may not interfere, and the utilitarian ethical theory tied with the principle governs permissible conduct. *Id.*

108. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 16S; The Ethics Committee of the American Fertility Society II, *supra* note 9, at 17S.

109. See *Davis v. Davis*, 842 S.W.2d 588, 592-94 (Tenn. 1992) (“The Scientific Testimony”). Misguided use of the prefix “pre-” has been judicially adopted by another court in determining the disposition of cryopreserved embryos. In *Kass v. Kass*, 696 N.E.2d 174 (N.Y. 1998), the state high court adopted the term “pre-zygotes” to refer to the pre-implantation cryopreserved embryos and accepted the definition supplied by the party’s brief: “We use the parties’ term ‘pre-zygotes,’ which are defined in the record as ‘eggs which have been penetrated by sperm but have not yet joined genetic material.’” *Id.* at 175 n.1. The definition suggests a lack of moral controversy since the subject of the disposition would not have reached an embryonic existence. Once the court begins to use the term in context, however, it becomes clear that the term is applied far more broadly than the confines of the offered definition. The court relates: “Once a sperm cell fertilizes the egg, this fusion—or pre-zygote—divides until it reaches the four- to eight-cell stage, after which several *pre-zygotes* are transferred to the woman’s uterus by a cervical catheter.” *Id.* at 175 (emphasis added). Use of the term “pre-zygote” to refer to pre-implantation embryos necessarily means that mixing of genetic material has already occurred.

The blame for the misrepresentation may have originated with the clinic that produced the cryopreserved embryos. The term appeared in the clinic’s consent form, despite acknowledging (in its consent form) that insemination would have already occurred. *Id.* at 176.

What *Kass* illustrates is that euphemistic terminology is being utilized by medical professionals in a manner that could interfere with a client’s clear understanding about the nature of his and her reproductive decisions (regarding the disposition of their joined gametic material – i.e. embryos). It also demonstrates how such misleading terminology is adopted and applied in the judicial sphere.

Confusion also exists in legislative provisions. State statutes may be inconsistent in their definitions and usage of various ART terms. Unfortunately, this may lead to a lack of understanding of what, exactly is protected by the provisions. Helen M. Alvare, *The Case for Regulating Collaborative Reproduction: A Children’s Rights Perspective*, 40 HARV. J. ON LEGIS. 1, 30 (2003).

110. See Ikemoto, *supra* note 104, at 1293.

111. See, e.g., Coleman, *supra* note 20, at 55 n.1 (citing Richard A. McCormick, *Who or What Is the Preembryo?*, KENNEDY INST. ETHICS J. 1, 1 (1991)) (political term); McDonald, *supra* note 56, at 1362 n.15 (citing O’RAHILLY & MÜLLER, *supra* note 56, at 88) (noting that politics rather than science was responsible for creating the scientifically rejected term “preembryo”); Smith, *supra* note 56, at 878 n.5 (citing Glossary, in *THE ETHICS OF REPRODUCTIVE TECHNOLOGY*, *supra* note 56, at 348 (asserting preembryo is a popular but not scientific term)).

112. George J. Annas, *The Shadowlands – Secrets, Lies, and Assisted Reproduction*, 339 NEW ENG. J. MED. 935, 937 (1998).

113. There have been at least 530 references to “preembryo” since 1990. Westlaw search conducted on January 10, 2004. More than half the references were made since 1998, and at least 40 references were made within the last year. Westlaw search conducted Jan. 10, 2004. Some renowned legal scholars have reverted to use of the term “embryo” to describe the post-fertilization entity, but continue to assert that the term “preembryo” is “technically more accurate.” See, e.g., Daar, *supra* note 57, at 455 & n.4.

part of the analytical structure that makes the acceptance of reproductive technology in conjunction with manipulation and destruction of the early embryo palatable.<sup>114</sup>

## II. REDEFINITION

### A. “Emergency Contraception” and the Devaluation of the Early Incorporal Embryo

The term “emergency contraception” reflects a sense of urgency. It conveys a mood of necessity and impending disaster and demands remedy. It also suggests that the contraceptive consequences of the act generating the “emergency” can be prevented by the proposed antidote, commonly known as the morning-after pill or Plan B.<sup>115</sup> In 1997, the Food and Drug Administration (FDA) encouraged drug manufacturers to submit applications for approval of new products labeled for use as “postcoital emergency contraception.”<sup>116</sup> In support of the announcement, the FDA noted that active ingredients – estrogens, progestins, or a combination of hormones – had been used off-label to prevent pregnancy for some time.<sup>117</sup>

Since then, the FDA has not only approved new drugs for use as “emergency contraceptives,”<sup>118</sup> it has funded studies on the use of

114. See Carl H. Coleman, *supra* note 20, at 55 n.1 (citing McCormick, *supra* note 111, at 1 (discussing use of the term “preembryo” “as an exercise of linguistic engineering to make human embryo research more palatable to the general public”).

115. Ellen Goodman, *Let Science, Not Politics, Decide on Plan B; Contraception*, MIAMI HERALD, Feb. 27, 2004, at 27A, available at <http://www.herald.com>.

116. Prescription Drug Products; Certain Combined Oral Contraceptives for Use as Postcoital Emergency Contraception, 62 Fed. Reg. 8610-01 (Feb. 25, 1997). While the FDA usually waits for manufacturers to seek drug approval, it took an active role in seeking applications to market RU-486, DES, and “emergency contraception.” Lars Noah, *A Miscarriage in the Drug Approval Process?: Mifepristone Embroils the FDA in Abortion Politics*, 36 WAKE FOREST L. REV. 571, 578 (2001).

117. Prescription Drug Products; Certain Combined Oral Contraceptives for Use as Postcoital Emergency Contraception, 62 Fed. Reg. at 8610-01 (section I). The FDA referenced then-current literature that stated that clinical trials indicated a range of effectiveness of 55.3% to 94.2%. *Id.* Rounding to an effectiveness average of 74%, the FDA explained what the statistic meant as follows: If 100 women ingested the “emergency contraception” treatment following sexual intercourse during the potentially fertile second or third week of their menstrual cycle, only two would be expected to become pregnant. *Id.* If those same 100 women had foregone the hormonal treatment, eight women would be expected to become pregnant. *Id.* In short, use of emergency contraception drops the chances of pregnancy from 8% to 2%.

118. *Contraception; FDA Considers Over-the-Counter “Morning After” Pill*, MEDICAL LETTER ON THE CDC & FDA 20, Dec. 21, 2003, 2003 WL 8984229 (stating Plan B and Preven have been approved for marketing since 1998.) Preven was approved by the FDA in 1998 and Plan B in 1999. FDA’s Decision Regarding Plan B: Questions and Answers, at <http://www.fda.gov/cder/drug/infopage/planB/planBQandA.htm>. The two drugs’ active ingredient differs. Preven contains

emergency contraceptives by young adults,<sup>119</sup> and moved toward the approval of their use without a prescription.<sup>120</sup> When its Nonprescription Drugs Advisory Committee and Reproductive Health Drugs Advisory Committee approved their over-the-counter availability in December 2003,<sup>121</sup> supporters took the FDA committee's action to be "a very clear message . . . that emergency contraception is *basic birth control*. . . ."<sup>122</sup> As the central disseminator of information concerning medical technologies,<sup>123</sup> the imprimatur of the FDA has a powerful influence over consumers.

Despite the Committee's approval of the over-the-counter sale of emergency contraception, in May 2004 the FDA informed Barr Research, the sponsors of Plan B, that it could not approve their application for non-prescription use.<sup>124</sup> The FDA's primary concern was the effect of over-the-

---

levonorgestrel plus ethinyl estradiol (an example of the Yuzpe regimen). Administrative Documents, Center for Drug Evaluation and Research, Application Number: NDA 21045, at 2, at [http://www.fda.gov/cder/foi/nda/99/21-045\\_Plan%20B\\_admindocs.pdf](http://www.fda.gov/cder/foi/nda/99/21-045_Plan%20B_admindocs.pdf). Plan B contains levonorgestrel alone. Plan B Advisory Committee Meeting Agenda (Dec. 16, 2003) (Introduction), at [http://www.fda.gov/ohrms/dockets/ac/03/briefing/4015B1\\_04\\_FDA-Tab%201-Plan%20B%20Points%20.pdf](http://www.fda.gov/ohrms/dockets/ac/03/briefing/4015B1_04_FDA-Tab%201-Plan%20B%20Points%20.pdf).

One of the problems inherent in the FDA approval process is its reliance on industry-paid user fees. The revenues generated by the fees provide greater than fifty percent of budget of the FDA's Drug Evaluation Office. A former editor-in-chief of the *New England Journal of Medicine*, Arnold Relman, professor emeritus of the Harvard Medical School, deems this to be an "inherent conflict" of interest. Catherine Hollingsworth, *Industry's Control of Clinical Trials In Need of Change, Conference Told*, 2 PHARMACEUTICAL L. & INDUSTRY 799, 799-800 (July 16, 2004). To resolve the conflict, Relman suggests that the FDA office be tax-payer funded instead. *Id.*

119. Communication and Negotiation About Barrier Contraceptive Use Among Young Adults at Risk; Notice of Availability of Funds, 68 Fed. Reg. 15191-02 (March 28, 2003).

120. *Contraception; FDA Considers Over-the-Counter "Morning After" Pill*, *supra* note 118.

121. Tony Pugh, *FDA Panels Back Morning-After Pill*, KAN. CITY STAR, Dec. 17, 2003, at 1; Letter from Steven Galson, Acting Director of the Center for Drug Evaluation and Research, to Dr. Joseph Carrado, Senior Director, Regulatory Affairs, Barr Research, Inc., (May 6, 2004) (FDA Not Approvable Letter, NDA 21-045/S-011), at [http://www.fda.gov/cder/drug/infopage/planB/planB\\_NALetter.pdf](http://www.fda.gov/cder/drug/infopage/planB/planB_NALetter.pdf); Press Release, FDA News, FDA Issues Not Approvable Letter to Barr Labs; Outlines Pathway for Future Approval (May 7, 2004), at <http://www.fda.gov/bbs/topics/news/2004/NEW01064.html>.

122. Pamela Stallsmith, *Disputed Pills on Legislative Agenda Proposals on Morning-After Contraception Could Be Hard Sells Since Rejections Have Come Before*, RICHMOND TIMES-DISPATCH, Dec. 21, 2003, at B1 (quoting Bennet Greenberg, a lobbyist for Planned Parenthood Advocates of Virginia) (emphasis added). A consolidated group calling itself the Consortium for Emergency Contraception has been committed to having EC be seen as standard birth control since 1996. Anna Glasier, *Emergency Postcoital Contraception*, 337 NEW ENG. J. MED., Oct. 9, 1997, at 1058, 1063.

123. Lars Noah, *Medicine's Epistemology: Mapping the Haphazard Diffusion of Knowledge in the Biomedical Community*, 44 ARIZ. L. REV. 373, 435 (2002) (discussing evidence-based medicine).

124. Letter from Steven Galson, Acting Director of the Center for Drug Evaluation and Research, to Dr. Joseph A. Carrado, Senior Director, Regulatory Affairs, Barr Research, Inc., *supra* note 121. The original over-the-counter application was submitted in April 2003 by Women's Capital Corporation, the same group that had gained FDA approval in July 1999. Plan B Advisory Committee Meeting Agenda, *supra* note 118. Capital transferred sponsorship to Barr Research in November 2003, just the month before the joint FDA committee meeting that would decide Plan B's approval. Study #9728: *Plan B* OTC Label Comprehension Study, medical officer addendum, at 1, at [http://www.fda.gov/ohrms/dockets/ac/03/briefing/4015B1\\_06\\_FDA-Tab%202-2-Label%20Comprehension%20Study.doc](http://www.fda.gov/ohrms/dockets/ac/03/briefing/4015B1_06_FDA-Tab%202-2-Label%20Comprehension%20Study.doc).

counter availability on adolescent children under the age of sixteen.<sup>125</sup> Lack of sufficient data on the safety of the drug for that consumer age group stood in the way.<sup>126</sup> Based on the explanation in the “Not Approvable” letter from the acting director of the FDA, however, it is clear that the issue is far from closed.<sup>127</sup> Steven Galson, Acting Director of FDA’s Center for Drug Evaluation and Research, affirmed the FDA’s support of the initiative, calling the non-prescription availability of emergency contraception “an important incremental step forward in contraceptive availability.”<sup>128</sup> Dr. Galson offered specific recommendations on how to cure the infirmities in the application<sup>129</sup> and suggested that it anticipated future approval of over-the-counter availability by its commitment to “working toward the expeditious evaluation of Barr’s response to the Not Approvable letter.”<sup>130</sup>

Approval has been moving forward despite a 2001 FDA study revealing that, contrary to the expressed objective that EC was to be understood for use only as a back up, fully one third of the subjects tested considered Plan B to be a *substitute* for other contraceptive methods.<sup>131</sup> That is, as endorsed by a Planned Parenthood advocate, EC was regarded as “basic birth

125. Press Release, FDA News, FDA Issues Not Approvable Letter to Barr Labs; Outlines Pathway for Future Approval, *supra* note 121. The FDA will not approve use without demonstrable results from controlled clinical trials. Noah, *supra* note 123, at 435.

126. Press Release, FDA News, FDA Issues Not Approvable Letter to Barr Labs; Outlines Pathway for Future Approval, *supra* note 121.

127. See Letter from Steven Galson, Acting Director of the Center for Drug Evaluation and Research, to Dr. Joseph Carrado, Senior Director, Regulatory Affairs, Barr Research, Inc., *supra* note 121 (providing encouragement on amending the application and information on how to gain approval).

128. Press Release, FDA News, FDA Issues Not Approvable Letter to Barr Labs; Outlines Pathway for Future Approval, *supra* note 121.

129. Letter from Steven Galson, Acting Director of the Center for Drug Evaluation and Research, to Dr. Joseph Carrado, Senior Director, Regulatory Affairs, Barr Research, Inc., *supra* note 121. Approval for over-the-counter sales required that the sponsors provide data that confirmed the safety to the under-sixteen population or, in the alternative, to furnish a package and labeling design that would be uniform for both groups: the under-sixteen with prescription users and the sixteen and older over-the-counter users. *Id.* At no time was there a suggestion that EC should or would be made unavailable for adolescent use, notwithstanding the insufficient safety data. *Id.*

130. Press Release, FDA News, FDA Issues Not Approvable Letter to Barr Labs; Outlines Pathway for Future Approval, *supra* note 121.

131. Study #9728: Plan B OTC Label Comprehension Study, medical officer addendum, *supra* note 124, at 10 (Table 4). Answers to five separate questions that were designed to test consumer understanding of the following communication objective: “Plan B is intended as a back up method and should not be used for regular contraception.” *Id.* at 3. Breaking down the statistic further, subjects’ understanding that EC was to be used as a back up fell to 57% in the twelve to seventeen age group, of which there were seventy-six subjects. *Id.* at 12. Just over half (55%) of the 178 subjects whose educational level was below a high school degree understood that EC was for back up only. *Id.* at 13. Not surprisingly, of those who had a literacy level of eighth grade or lower (139 out of 393), less than half (46%) understood that EC was not a contraceptive substitute. *Id.* at 14. The statistics were derived from a study conducted from June 18, 2001 - July 18, 2001. *Id.* at 1.

control.”<sup>132</sup> Given the widespread misunderstanding about Plan B’s primary use and its promotion as a contraceptive,<sup>133</sup> legally approved under the rubric of “emergency contraception” or “EC,”<sup>134</sup> a discussion of its contraceptive nature is warranted, particularly in light of Plan B’s anticipated availability without a prescription.<sup>135</sup> At stake is the ability of potential users to make an informed choice about whether Plan B is right for them.

Unlike other methods, Plan B is employed after intercourse.<sup>136</sup> Therefore, it may have particular appeal to the “occasional sex” consumer for use as an alternative to pre-intercourse regimens. For example, Plan B may be embraced as a means of avoiding the long-term risks associated with daily birth-control pills.<sup>137</sup> Or, it could be welcomed as a positive alternative to the “turn-off” of prophylactic devices that often interrupt and that must be on hand at the precise moment of need. If all the regimens similarly prevent conception, then the choice of alternative could be based on those other secondary criteria.

But what if some methods only frustrated the sperm’s ability to fertilize while others could operate after the formation of an embryo, preventing its continued development? The distinction between those two operative functions may be paramount because some consider the former to be contraceptive and the latter to be abortifacient.<sup>138</sup>

---

132. See Stallsmith, *supra* note 122 at B1.. In fact, one of the reasons that EC has been promoted for over-the-counter availability is for weekend use among young people. See Glasier, *supra* note 122, at 1063; Hanna Klaus, *The Case Against Plan B*, 29 ETHICS & MEDICS 3, 3-4 (March 2004) (expressing concerns about the rise in STDs in the targeted group coincidental to EC availability and the unchanged abortion statistic that was promised as a benefit of EC).

133. See *supra* note 131.

134. U.S. Food and Drug Administration, FDA’s Decision Regarding Plan B: Questions and Answers, *supra* note 118.

135. See *supra* notes 129-30 and accompanying text.

136. See *supra* note 132.

137. Theoretically, however, EC also poses risks of stroke or other thrombotic events. Carolyn Westhoff, *Emergency Contraception*, 349 NEW ENG. J. MED., Nov. 6, 2003, at 1830, 1832.

138. See Roberto Rivera et al., *The Mechanism of Hormonal Contraceptives and Intrauterine Contraceptive Devices*, 181 AM. J. OBSTETRICS & GYNECOLOGY 1263, 1267 (Nov. 1999) (addressing the issue as considered important because some consider pregnancy to begin with fertilization); Horacio Croxatto et al., *Mechanism of Action of Hormonal Preparations Used for Emergency Contraception: A Review of the Literature*, 63 CONTRACEPTION 111, 111 (2001) (noting that EC’s function is important to some users “because of sensitive ethical issues”); Kevin T. McMahon, *Why Fear Ovulation Testing?* 28 ETHICS & MEDICS 3, 3 (June 2003) (citing Directive 36, under which medications preventing ovulation, sperm capacitation or fertilization are acceptable while those whose purpose or direct effect is removing or destroying a fertilized egg, or interfering with its implantation are unacceptable).

Some consider that implantation must have occurred before abortion is possible. Rivera et al., *supra*. This coincides with a social definition of pregnancy as beginning with implantation. Glasier, *supra* note 122, at 1063. Glasier states that “[t]he prevention of pregnancy before implantation is contraception and not abortion.” *Id.* The passage concedes that pregnancy has already been established by parsing out as relevant only post-implantation pregnancy. See *id.* Piggy-backing onto this rationale is that “even compounds known to interrupt established pregnancy cannot dislodge an implanted embryo, because implantation would not have occurred yet.” *Id.* Therefore, bold statements about EC’s operative function conceal the presence of a pre-implantation embryo. See, e.g., Susana Hayward, *Morning-After Pill Endorsed, Stirrs Fury*, MIAMI HERALD, Jan. 31, 2004, at

Because of these differences in opinion about the morality of interfering with the development of early embryos, labeling multiple functions under a common terminology of “contraception”<sup>139</sup> burdens a decision-maker’s ability to properly weigh and balance the birth control alternatives and select one that fits their personal beliefs. The encumbrance is hardly irrelevant or insignificant. What value can there be in ascribing constitutional protection to reproductive decisions<sup>140</sup> if the information necessary to the decision is obfuscated?

To resolve this issue in the context of Plan B, it is essential to disclose the manner in which births are controlled. Whether the drug is acceptable for personal use may very well depend upon the mechanism by which it works.<sup>141</sup> Not all EC or birth control pills are alike.<sup>142</sup> Some combined hormonal regimes work primarily to inhibit ovulation and thereby prevent

12A (“Critics think it’s an abortion pill, but it’s not, because if a woman is already pregnant it won’t work.”).

On the other hand, when the classical definitions are used for pregnancy and conception, the effect may be considered abortifacient. See Kevin T. McMahon, *supra*, at 4 (asserting that interference after fertilization is abortifacient). In the moral context, which is particularly relevant to consumers who must choose from alternatives, the interval between fertilization and implantation would be considered abortifacient because it terminates embryonic life. Teresa Stanton Collett, *Heads, Secularists Win; Tails, Believers Lose – Returning Only Free Exercise to the Political Process*, 20 U. ARK. LITTLE ROCK L. REV. 689, 707 (1998) (quoting NATIONAL CONFERENCE OF CATHOLIC BISHOPS, ETHICAL AND RELIGIOUS DIRECTIVES FOR CATHOLIC HEALTH CARE SERVICES, ¶ 45 (1994)).

Even if one were to argue that the term “abortifacient” overstates insofar as it includes an interference with an embryo’s growth prior to implantation, it does so no more than the term “contraception,” which includes a post-fertilization interference. The dispute over the proper terminology represents a divide in personal and religious beliefs about what moral duties are owed to the pre-implantation embryo.

139. The FDA permits each of the following drug effects to be labeled as contraceptive: delaying or inhibiting ovulation, inhibiting fertilization, or inhibiting implantation because of the drugs’ alteration of the endometrium. Prescription Drug Products; Certain Combined Oral Contraceptives for Use as Postcoital Emergency Contraception, 62 Fed. Reg. at 8610-01 (section II.A).

140. Reproduction decisions have already been recognized as fundamental outside the IVF context. Andrews & Elster, *supra* note 90, at 45 (distinguishing the protection of privacy under *Griswold v. Connecticut*, 381 U.S. 479 (1965), and *Eisenstadt v. Baird*, 405 U.S. 438 (1972), and the protection of liberty under *Planned Parenthood v. Casey*, 505 U.S. 833 (1992)).

141. See Rivera et al., *supra* note 138, at 1263 (recognizing that the mechanism by which the drug works will determine whether it will be acceptable).

142. See Office of Population Research at Princeton Univ. & Assoc. of Reproductive Health Professional, *Emergency Contraceptive Pills*, The Emergency Contraceptive Website (last revised April 2003), at <http://ec.princeton.edu/info/ecp.html>. For even easier access, the alternate website address has been linked to an attitude: <http://www.not-2-late.com>. The website was established by the Reproductive Health Technologies Project and the Office of Population Research at Princeton University to provide information that would increase access to EC. Melissa Sanders Wanner & Rachel L. Couchenour, *Hormonal Emergency Contraception*, 22 PHARMACOTHERAPY 43, 51 (2002). A toll-free number was also established by the group. Glasier, *supra* note 122, at 1063. Its purpose, like that of the website, was to promote the use of EC. Making people aware of its ease of availability was a means to that end. *Id.*

the possibility of fertilization.<sup>143</sup> Plan B, on the other hand, is a progestin-only regimen whose active ingredient is levonorgestrel.<sup>144</sup> Its use in an EC regimen is thought to cause critical alterations to the endometrium that present an obstacle to implantation.<sup>145</sup> Since fertilization may follow rapidly after intercourse during the most fertile phase of a woman's cycle,<sup>146</sup> administration of Plan B during this time would not be likely to prevent fertilization. Instead, it would more likely prevent a newly-formed embryo from implanting.<sup>147</sup> Because of its mechanism to restrict existing embryonic life rather than to prevent its formation, Plan B would be repugnant to some consumers, if they were made aware of this operative function.

Use of the term "contraception" that does not alert a woman to a post-fertilization meaning has not come about by accident. As oral contraceptives began to find a market in the mid 1960s,<sup>148</sup> concerted attempts were made by influential medical groups to alter long-standing definitions associated with reproduction.<sup>149</sup> Following the Second International Conference on Intra-Uterine Contraception in 1964, the

---

143. The daily oral contraceptive regimen (generally known as birth control pills or The Pill) contains several hormones in combination. Office of Population Research at Princeton Univ. & Assoc. of Reproductive Health Professionals, *supra* note 142. Estrogen and progestin are combined because using them together inhibits ovulation to a much greater extent than the use of either hormone alone. Rivera et al., *supra* note 138, at 1264.

The contraceptive method is not foolproof, however. When following the estrogen-progestin combination regimen, twenty-eight daily doses are followed by seven days without the hormones. *Id.* During these seven days, the absence of those hormones permits FSH and LH secretions to occur, thereby providing the possibility of fertility and with it, a risk of pregnancy. *Id.* To further avoid that result, some manufacturers of birth control pills have recently added other ingredients. *Id.*

144. Wanner & Couchenour, *supra* note 142, at 44; Office of Population Research at Princeton Univ. & Assoc. of Reproductive Health Professionals, *supra* note 142. Lenonorgestral, Plan B's regimen, only partially suppresses ovulation. Rivera et al., *supra* note 138, at 1264 (noting that about 40% of women still ovulate, thereby providing ripened eggs).

145. Croxatto et al., *supra* note 138, at 116-17; Rivera et al., *supra* note 138, at 1265-67 (asserting that although human data is hard to obtain, changes in the endometrium suggest hindrance of implantation); Glasier, *supra* note 122, at 1060 (asserting that although human data is hard to obtain animal data indicates that implantation is inhibited).

146. Ralph P. Miech, *Over-the-Counter Abortion*, 29 ETHICS & MEDICS 1, 2 (2004). During the fertile period of the cycle, sperm can migrate from the cervix to the distal end of the fallopian tube in five minutes. *Id.* (referencing DONALD R. COUSTAN, RAY V. HANING, JR., & DON B. SINGER, HUMAN REPRODUCTION: GROWTH AND DEVELOPMENT (1995)).

147. See Croxatto et al., *supra* note 138, at 117 (noting that the timing of Plan B's administration during the menstrual cycle was seen as relevant to its operative function); Rivera et al., *supra* note 138, at 1265-66 (noting that the operative function may vary depending upon when during the cycle it is administered and where ACOG acknowledged that EC has effect post fertilization); Wanner & Couchenour, *supra* note 142, at 44 (noting that mechanisms vary in accord with when used); Glasier, *supra* note 122, at 1059 (asserting that there is no direct evidence that EC prevents fertilization.). Thus, if ovulation has already occurred and the ripened egg fertilized, the embryo has nowhere to attach for continued development because the drug has disabled implantation. See Ron Hamel, *Rape and Emergency Contraception*, 28 ETHICS & MEDICS 1 (2003). Some call this effect abortifacient. Miech, *supra* note 146, at 2.

148. Miech, *supra* note 146, at 1. High-dose estrogen was among the first hormonal contraceptives. Wanner & Couchenour, *supra* note 142, at 43. The first major EC trial using the hormone was conducted in 1963 at Yale University. Croxatto et al., *supra* note 138, at 111.

149. Charles E. Rice, *Abortion, Euthanasia, and the Need to Build a New 'Culture of Life,'* 12 NOTRE DAME J.L. ETHICS & PUB. POL'Y 497, 510 (1998).

American College of Obstetrics and Gynecologists (ACOG) appointed a special committee on terminology.<sup>150</sup> In 1965, the committee redefined several terms.<sup>151</sup> Prominent among these was a new definition for “pregnancy.”<sup>152</sup>

Before 1964, scientists agreed that pregnancy was established at the time of fertilization<sup>153</sup> because that event was known to signal the beginning of embryonic life.<sup>154</sup> ACOG redefined pregnancy to begin with implantation of the embryo,<sup>155</sup> an event that occurs after the embryo has been growing for seven to nine days.<sup>156</sup> ACOG also attempted to change the meaning of “contraception.”<sup>157</sup> Instead of preventing fertilization, it was redefined to include post-fertilization interferences such as obstructing implantation.<sup>158</sup>

150. *Id.* An orchestrated effort to accomplish professional goals of reducing population at the expense of important women’s rights may be evidenced by the opening remarks made by Dr. J. Robert Wilson at a 1962 Population Council sponsored conference about IUDs. Lucinda M. Finley, *Female Trouble: The Implications of Tort Reform for Women*, 64 TENN. L. REV. 847, 872 (1997). Acknowledging the serious health risks associated with the use of IUDs, Dr. Wilson stated: “How serious is that for the particular patient and for the population of the world in general? Not very . . . Perhaps the individual patient is expendable in the general scheme of things, particularly if the infection she acquires is sterilizing but not lethal.” *Id.*

151. Interestingly, this was the same tactic employed by the ASRM (then AFS) in inventing the term “preembryo.” See *infra* notes 8-9.

152. Rice, *supra* note 149, at 511.

153. Rice, *supra* note 149, at 510.

154. Miech, *supra* note 146, at 1. Some medical dictionaries continue to adhere to the biological rather than social definition. See MOSBY’S MEDICAL, NURSING, & ALLIED HEALTH DICTIONARY 1389 (6th ed. 2002). Pregnancy is defined as “the growth and development . . . of a new individual from conception through the embryonic and fetal periods to birth.” *Id.* “Conception” is defined as “the beginning of pregnancy, usually taken to be the instant that a spermatozoon enters and ovum and forms a viable zygote.” *Id.* at 409. Therefore, pregnancy is established at the time of successful fertilization. Prof. John Robertson appears to concede that conception occurs at fertilization rather than implantation, noting that couples have to undergo “noncoital IVF conception to employ PGD.” John A. Robertson, *Genetic Selection of Offspring Characteristics*, 76 B.U. L. REV. 421, 449 (1996) (emphasis added). As the IVF event, as well as PGD, all must occur prior to implantation, it is clear that the timing of conception is fertilization. See *id.* at 448-49. It logically follows that contraception (contra conception) should interfere with fertilization, not implantation. See *id.* at 449.

155. Rice, *supra* note 149, at 511; Miech, *supra* note 146, at 1; David M. Smolin, *Should a Ban on Reproductive Cloning Include a Ban on Cloning for Purposes of Research or Therapy?* 32 CUMB. L. REV. 487, 496 (2001-2002) (asserting that the shifting of the definition of pregnancy further clouds the status of the pre-implantation embryo). Grappling with abortion and conception, the Court in *Webster v. Reproductive Health Services*, 492 U.S. 490 (1989), adopted a post-implantation definition of pregnancy to determine state interests. See Helen M. Alvare, *Catholic Teaching and the Law Concerning the New Reproductive Technologies*, 30 FORDHAM URB. L.J. 107, 119-20 (2002) (distinguishing abortion privacy doctrine from traditional privacy doctrine).

156. Miech, *supra* note 146, at 1.

157. *Id.*

158. *Id.* See also C. Ward Kischer, *A Commentary on the Beginning of Life: A View From Human Embryology*, LINACRE QUARTERLY, Aug. 1996, at 73, 76 (noting the orchestration of public acceptance of chemical contraception through re-definitions). The author, a former Anatomy Professor at the University of Arizona College of Medicine, quotes from Albert Rosenfeld’s 1969



The redefinitions essentially reclassified disparate mechanisms as if they were one. The new classification of the set was not likely for the instructional benefit of the consumer, but for the convenience of the classifier.<sup>159</sup> The likely reason for the redefinitions was to attempt to separate contraception from the hot-button issue of abortion in order to promote the social acceptance of chemical contraceptives.<sup>160</sup> By reclassifying, a shift in attitudes follows.<sup>161</sup> The manipulative purpose of the redefinitions may be evidenced by the confusion of terminology in some medical passages.<sup>162</sup>

For example, an attempt to separate EC from abortion may be accomplished by characterizing EC as contraceptive rather than abortifacient. To fulfill this goal, one medical researcher mixes the classical medical definition of pregnancy with the utilitarian definition of contraception to support her position.<sup>163</sup> She states: "The prevention of pregnancy before implantation is contraception and not abortion."<sup>164</sup> Tellingly, the passage concedes that pregnancy could have already occurred by parsing out as relevant only post-implantation pregnancy.<sup>165</sup> The medical commentator repeats this strategy as she further attempts to separate EC from abortion.<sup>166</sup> Glasier explains that "even compounds known to interrupt established pregnancy cannot dislodge an implanted embryo, because implantation would not have occurred."<sup>167</sup> Because Plan B would not sever an implanted embryo from the womb, Glasier thereby asserts that it is not abortifacient, regardless of the existence of pregnancy.<sup>168</sup>

---

book, which states: "A way around this impasse [chemicals that prevent implantation of already-formed embryos can be construed as abortifacient rather than contraceptive] has been suggested by Dr. A.S. Parkes of Cambridge: Equate conception with the time of implantation rather than the time of fertilization – a difference of only a few days." *Id.*, quoting from ALBERT ROSENFELD, *SECOND GENESIS: THE COMING CONTROL OF LIFE* 108 (1969). While the definition may have changed, the connotation already existed. That is, the intentional meaning of the word that is "suggested inside one's head" differed from the reformatted definition. HAYAKAWA & HAYAKAWA, *supra* note 5, at 37.

159. *See id.* at 107-08 (asserting that classification suits the convenience of the classifier).

160. *See* Glasier, *supra* note 122, at 1063; Rivera et al, *supra* note 138, at 1263, 1264. Likewise, the reluctance to accept emergency contraception has been attributed to its connection with abortion. *Id.*

161. HAYAKAWA & HAYAKAWA, *supra* note 5, at 108.

162. *See infra* notes 163-68 and accompanying text.

163. Glasier, *supra* note 122, at 1063.

164. *Id.* *See also* Kevin T. McMahon, *supra* note 138, at 3 (noting that Glasier's conclusion that EC is not abortifacient rests on her simultaneous definition that no pre-implantation effect is abortifacient).

165. Glasier, *supra* note 122, at 1063.

166. *Id.*

167. *Id.*

168. *Id.* Interestingly, despite its frequent use as an abortifacient to dislodge a post-implantation embryo, mifepristone, or RU-486, has also been classified as a contraceptive. *See, e.g.,* Wanner & Couchenour, *supra* note 142, at 49; Croxatto et al., *supra* note 138, at 112-13. RU-486 was also promoted as a contraceptive by the prestigious National Academy of Sciences. Rice, *supra* note 149, at 511. The manipulative and misleading classification of RU-486 is evident when its inventor preferred it to be labeled as a "contragestive" to distinguish it from a contraceptive, which prevents

Glasier reverts to a reformulated utilitarian definition of pregnancy when she attempts to mainstream EC's use.<sup>169</sup> Glasier asserts that "contraception" is to be used by a woman who "thinks that she might become pregnant."<sup>170</sup> An "abortifacient," according to Glasier, is something to be used "when she thinks she might already be pregnant."<sup>171</sup> By inserting the gloss of what a woman thinks on "contraception" and "abortifacient," Glasier qualifies those terms as if their meanings were dependent upon a woman's subjective views about whether she "might become" or "might already be" pregnant.<sup>172</sup> Glasier acts as though the actual physical condition of pregnancy were irrelevant.<sup>173</sup>

It would appear that Glasier's overall explanation is flawed. Her apparent concession that the state of pregnancy already exists before implantation means that conception must have occurred at fertilization, and not implantation. It should logically follow that contraception (contra conception) interferes with fertilization, not implantation.<sup>174</sup> Nevertheless, redefining "contraception" as "before implantation" ostensibly presents a euphemistic solution in bringing about the mainstream acceptance of EC by immunizing it from abortion politics.<sup>175</sup> The force of medical authority behind the utilitarian definition enables acceptance by such legal authority<sup>176</sup> as the FDA<sup>177</sup> and effectively forms the normative basis of Plan B's claim to act only contraceptively.<sup>178</sup>

The effect is problematic because the utilitarian definitions camouflage the potentially deleterious effects of EC on early human embryos. As a result, the veiled definitions impinge on the ability to make an informed

fertilization. Annette E. Clark, *Abortion and the Pied Piper of Compromise*, 68 N.Y.U. L. REV. 265, 303 n.183 (1993).

169. Glasier, *supra* note 122, at 1063.

170. *Id.*

171. *Id.* What makes this easy to accept by unsuspecting individuals is that pregnancy cannot immediately be detected. While conception must occur during the fertile ovulatory period, its occurrence inside the body is difficult to measure. See Rigel C. Oliveri, *Crossing the Line: The Political and Moral Battle Over Late-Term Abortion*, 10 YALE J.L. & FEMINISM 397, 404 (1998).

172. Glasier, *supra* note 122, at 1063.

173. See *id.*

174. The inventor of RU-486 recognized that a contraceptive prevents fertilization. Clark, *supra* note 168, at 305.

175. See Rice, *supra* note 149, at 510. Rice characterizes the approach as utilitarian. *Id.* at 525.

176. See Ikemoto, *supra* note 104, at 1293.

177. Drugs that inhibit implantation of an already formed embryo are permitted to be classified as contraceptive. Prescription Drug Products; Certain Combined Oral Contraceptives for Use as Postcoital Emergency Contraception, 62 Fed. Reg. at 8610-01 (section II.A). See also Rice, *supra* note 149, at 511 (noting that federal agencies have accepted ACOG's social definition of pregnancy).

178. See Miech, *supra* note 146, at 1.

reproductive decision with respect to Plan B that is in accord with one's personal beliefs. Simultaneously, unsuspecting men and women can easily be influenced to choose such products as Plan B for "emergency contraception."<sup>179</sup> In this fashion, the hidden imposition of viewpoint stymies the very freedom of choice that is championed by "free choice" advocates.

### III. DENIAL

#### A. "Embryo Biopsy," PGD, and Extracorporeal Production

During her regular check-up, Chris's physician discovered a small lump. To rule out malignancy, the physician ordered a biopsy. A small piece of living tissue was removed and examined microscopically to render a diagnosis that would either confirm or negate the existence of the targeted condition.<sup>180</sup> Depending upon the results, a course of action would be planned to treat or remove any diseased tissue.

Suppose that instead of a regular check-up, Chris sought the advice of a fertility expert because of unsuccessful attempts at pregnancy. Perhaps Chris might want additional advice on whether she could ensure that her offspring would not become afflicted with some particular genetic disease that ran in her family. Whether to improve the chances of becoming a parent or to eliminate the possibility of passing on certain genetic diseases, a clinician might suggest using preimplantation genetic diagnosis (PGD).

Using Chris's eggs, embryos could be produced externally *in vitro*. Each embryo would then undergo a biopsy so that a qualitative assessment could be made for each.<sup>181</sup> So far, this process resembles the medical model.

---

179. Use of misleading language is manipulation that affects autonomy "by reducing understanding." RUTH R. FADEN & TOM L. BEAUCHAMP, A HISTORY AND THEORY OF INFORMED CONSENT 348, 351, 362 (1986) (contrasting with persuasion, which influences through improved understanding). Silence that keeps people uninformed itself is a linguistic tool of orientation. See CHOMSKY, *supra* note 12, at 179. Past examples indicate that language is sometimes obscured to obtain consent that otherwise might not be forthcoming. See George J. Annas, *Questing for Grails: Duplicity, Betrayal and Self-Deception in Postmodern Medical Research*, 12 J. CONTEMP. HEALTH L. & POL'Y 297, 314 (1996) (discussing informed consent, research and therapy). See also Leon R. Kass, *Triumph or Tragedy? The Moral Meaning of Genetic Technology*, 45 AM. J. JURIS. 1, 8 (2000) (noting the ease of manipulating patients to "choose" the clinician's preferences by the clinician's overt or subtle presentation of questions, prognosis, and options).

Evidence of intent to influence is a practice, encouraged by ACOG, where obstetricians and gynecologists solicit patients to accept EC prescriptions during routine visits. Wanner & Couchenour, *supra* note 142, at 51. This includes women who are not sexually active. Westhoff, *supra* note 137, at 1833. Plan B is preferred because levonorgestrel in a progestin-only regime has been shown to be more effective. *Id.* at 1833-34. Dr. Westhoff has been a consultant for Barr laboratories, the sponsors of Plan B's over-the-counter use. *Id.* at 1834.

180. See MOSBY'S MEDICAL, NURSING, & ALLIED HEALTH DICTIONARY, *supra* note 154, at 206 (defining "biopsy").

181. See, e.g., Institute for Reproductive Medicine and Science of Saint Barnabas, *Preimplantation Genetic Diagnosis (PGD) for Translocations*, at [http://www.sbvif.com/pgd\\_translocation.htm](http://www.sbvif.com/pgd_translocation.htm) (last visited Feb. 11, 2004) (hereinafter Saint Barnabas) (intro section) (PGD

But unlike the medical norm, “embryo biopsy” in conjunction with assessment of the preimplantation embryo is not utilized as a precursor to treatment or cure.<sup>182</sup> Instead, PGD, which involves embryo biopsy, is

---

as “testing an embryo” and performing a “biopsy” on the embryo or blastomere); Janus Net Technology, Inc., *Reprogenetics Iis Preimplantation Genetic Diagnosis*, 2001, at <http://www.reprogenetics.com> (last visited June 7, 2004) (“Preimplantation Genetic Diagnosis consists of the biopsy of a single cell per embryo, followed by its genetic diagnosis through different techniques (FISH, PCR, or CGH), and the subsequent replacement to the patient of those embryos classified by genetic diagnosis as normal”); *The Early Show: Gender Selection: Fact or Fiction?* (CBS television broadcast, May 3, 2004), available at <http://www.cbsnews.com/stories/2004/05/03/earlyshow/living/parenting/main615163.shtml?CMP=ILC-SearchStories> (“PGD involves fertilizing eggs in a lab, extracting a cell from the embryos, determining the gender, and implanting only the desired sex.”); Inova Partnership, *Preimplantation Genetic Diagnosis (PGD): A Commentary on Its Utility and Potential Value*, (1999-2003) (section 2, entitled “The Role of Preimplantation Genetic Diagnosis (PGD)”) (PGD is for diagnosis followed by selective transfer). A link to the home page noted that the sites were designed for The Washington Center for Reproductive Medicine, thereby linking medicine with marketing. See also Beth Ary, *Pre-Implantation Genetic Diagnosis: How It Changes the IVF Experience*, LOS ANGELES RESOLVE, at <http://www.drarry.com/drarryPGD.htm> (last visited May 27, 2004). Dr. Beth Ary, a reproductive endocrinologist, provides PGD services at her clinic, The Reproductive Specialty Center, and markets it as a means to improve the “take home” baby rate. *Id.*; *Good Morning America: Perfect Features: Science May Pave Way For Designer Babies*, (ABC television broadcast, Dec. 26, 2003), available at [http://abcnews.go.com/sections/GMA/GoodMorningAmerica/GMA021226\\_DesignerBabies.html](http://abcnews.go.com/sections/GMA/GoodMorningAmerica/GMA021226_DesignerBabies.html) (last visited June 3, 2004). Good Morning America featured a story about PGD, interviewing The Fertility Institutes director Dr. Jeffrey Steinberg. *Id.* Touting PGD as providing “100 percent assurance” when used for gender selection, he described the process in this way:

In vitro fertilization techniques are used to obtain eggs from the mother, which are then fertilized in the lab with sperm obtained from the father. Through a sophisticated method called micro-manipulation, one or more cells are then removed from the developing embryo two to four days after fertilization. The removed cell or cells are used for analysis, with results obtained within 12 to 24 hours.

*Id.* See also Magdalena Bielanska et al., *Chromosomal Information Derived from Single Blastomeres Isolated from Cleavage-Stage Embryos and Cultured In Vitro*, 79 FERTILITY & STERILITY 1304 (2003).

Sometimes far less scientific descriptions are provided. See, e.g., Jerome Groopman, *Designing Babies*, WALL ST. J., Mar. 4, 2002, at A14; Gladys B. White & Michael E. McClure, *Introducing Innovation into Practice: Technical and Ethical Analyses of PGD and ICSI Technologies*, 26 J.L. MED. & ETHICS 5, 5 (1998) (“a method of extracting a cell from a very early embryo formed in vitro and then examining the DNA of that cell to make determinations about some of the genetic characteristics of the human embryo and resulting child”)

The cursory descriptions may very well ease anxieties that complex details could generate. The blandness also underplays the consequences of the PGD process, especially when conclusions of the propriety of its use is buttressed by reference to the familial, such as in this description: “[T]he eggs harvested from the prospective mother were mixed in the laboratory with her husband’s sperm, and the resulting embryos were tested.” Jerome Groopman, *supra* (emphasis added).

182. See Lars Noah, *Assisted Reproductive Technologies and the Pitfalls of Unregulated Biomedical Innovation*, 55 FLA. L. REV. 603, 652 (2003). Embryo biopsy in the context of PGD is not so much about treatment as it is about circumvention. See *id.* In the future, perhaps it may be used in conjunction with gene therapy to produce an on-site “cure,” much like the medical model. See Andrea Bonnicksen, *Genetic Diagnosis of Human Embryos*, in LIFE CHOICES: A HASTINGS CENTER INTRODUCTION TO BIOETHICS 407, 408 (Joseph H. Howell & William F. Sale eds., 2d ed. 2000) (referring to one clinic’s consent form). Since there is currently no evidence of such clinical

offered as a precursor to choice.<sup>183</sup> That is, based on the results of PGD, the would-be parents, in cooperation with clinicians, decide which embryos will be used to complete the reproductive process<sup>184</sup> begun when the embryos were produced *in vitro*. Only these will be implanted and allowed to continue their development *in utero*.<sup>185</sup>

Despite this stark reality, PGD has been described as a method for “therapeutic screening of embryos.”<sup>186</sup> The adjective “therapeutic” may salve but does not realistically describe the end, which is not therapy, but elimination. PGD has also been characterized as “another prenatal method of genetic selection.”<sup>187</sup> Manipulation occurs prior to birth and in that sense is “prenatal.”<sup>188</sup> However, such classification distorts because it suggests an affinity with prenatal testing that simply does not exist. The term “prenatal” conjures images of a state of being where a woman is already “with child”<sup>189</sup> – a woman whose physical, umbilical attachment corresponds with a unique emotional attachment to the entity within.<sup>190</sup> Because of the emotional investment in the unborn, decisions regarding its fate following an unhappy prenatal test result have been viewed as far more somber than those following PGD.<sup>191</sup> Those decisions are more detached, relating not to the unborn, but to the unimplanted.

The selection process that gives meaning to a reproductive choice also differs. In both prenatal testing and PGD, the consequence of a decision is

---

practice, it is more likely that the form, by reference to some noble therapeutic goal, is designed to assuage the guilt of those who select for less altruistic ends.

183. Barbara Katz Rothman, *Not All That Glitters Is Gold*, in LIFE CHOICES: A HASTINGS CENTER INTRODUCTION TO BIOETHICS 423, 428 (Joseph H. Howell & William F. Sale eds., 2d ed. 2000); Robertson, *supra* note 154, at 421, 449 (although unfettered use may be problematic, reproductive choice trumps other concerns at this time); Michael J. Malinowski, *Choosing the Genetic Makeup of Children: Our Eugenics Past-Present, and Future?*, 36 CONN. L. REV. 125, 203-07 (2003) (noting that “procreative liberty is at a historical” high because of ART, including PGD); Jeffrey R. Botkin, *Ethical Issues and Practical Problems in Preimplantation Genetic Diagnosis*, 26 J.L. MED. & ETHICS 17, 19 (1998).

184. See LORI B. ANDREWS et al., GENETICS: ETHICS, LAW AND POLICY 291 (2002) (stating that up to fifteen embryos may be produced in a single IVF cycle).

185. *Id.*

186. Jason Christopher Roberts, *Customizing Conception: A Survey of Preimplantation Genetic Diagnosis and the Resulting Social, Ethical, and Legal Dilemmas*, 2002 Duke L. & Tech. Rev. 12 (2002).

187. Robertson, *supra* note 154, at 448. See also Sherman Elias, *Preimplantation Genetic Diagnosis by Comparative Genomic Hybridization*, 345 NEW ENG. J. MED. 1569, 1570 (2001) (“extension of prenatal diagnosis”); Andrea Bonnicksen, *supra* note 182, at 409; Anita Cecchin, *Genetic Screening of Embryos: An Overview*, in REPRODUCTIVE TECHNOLOGIES 111, 112 (Carol Wekesser et al. eds., 1996); Botkin, *supra* note 183, at 17 (“new method of prenatal diagnosis”); Jeffrey R. Botkin, *Prenatal Diagnosis and the Selection of Children*, 30 FLA. ST. U. L. REV. 265, 281 (2003) (a form of prenatal diagnosis).

188. See Robertson, *supra* note 184, at 421.

189. See MOSBY’S MEDICAL, NURSING, & ALLIED HEALTH DICTIONARY, *supra* note 154, at 1393 (defining “prenatal diagnosis” and noting that the new entity is *in utero*).

190. See Barbara Katz Rothman, *supra* note 183, at 428.

191. See Robertson, *supra* note 154, at 449 (asserting that the decision to abort is more grave than decisions regarding the fate of embryos following PGD); Botkin, *supra* note 187, at 281 (PGD a “less ethically troubling” decision).

to change the status quo. In the traditional prenatal sense, status quo means that growth and development continue toward birth. Choice alters this by causing the termination of biological life – a decidedly negative consequence. By contrast, the exercise of reproductive choice following embryo diagnosis appears far more positive because it facilitates the continuation of life. Selection lifts an embryo from its state of indefinite suspension and perfects the promise of mortality.

The positive consequence of choice in the latter context is seductive. Certain genetic diseases, for instance, can be eliminated by selecting embryos free of the mutation.<sup>192</sup> As knowledge about the human genome expands, so will the number of genetic conditions and traits for which diagnostic testing will become available.<sup>193</sup> As a result, parents, drawn in by the allure of choice, will assume expansive control over the genetic traits of the embryos they choose to bear, including those driven by taste.<sup>194</sup>

Not everyone believes that this will result in an emotionally healthy society.<sup>195</sup> Some commentators are concerned about the objectification of children,<sup>196</sup> genetic discrimination,<sup>197</sup> and the slippery slope toward the

192. For a list of more than fifty “disorders” now able to be diagnosed by PGD, see Reproductive Genetics Institute, *Preimplantation Genetic Diagnosis* (2002-2003), at <http://www.reproductivegenetics.com/preimplantation.php> (last visited June 4, 2004).

193. MAXWELL J. MEHLMAN, *WONDERGENES: GENETIC ENHANCEMENT AND THE FUTURE OF SOCIETY* 2 (2003); Botkin, *supra* note 183, at 19.

194. See Andrea Bonnicksen, *supra* note 182, at 409-13, 417; Rothman, *supra* note 183, at 429. Because of the widespread ethos of “possessive individualism” in America and other modern cultures, access to genetic technologies is unlikely to be curbed by law or by appeal to moral argument. Regine Kollek, *Technicalisation of Human Procreation and Social Living Conditions, in THE ETHICS OF GENETICS IN HUMAN PROCREATION* 139, 147 (Hille Haker & Deryck Beylveled, eds. 2000). Moreover, as PGD becomes more normalized, it is likely to be viewed less and less as a choice that first drew couples to it and more and more as a compelled imposition. See Sonia Mateu Suter, *The Routinization of Prenatal Testing*, 28 AM. J.L. & MED. 233, 255 (2002) (analogizing to prenatal screening where the pressure to screen has become so strong that choice appears to be an illusion).

195. See, e.g., Vicki G. Norton, *Unnatural Selection: Nontherapeutic Preimplantation Genetic Screening and Proposed Regulation*, 41 UCLA L. REV. 1581, 1610, 1604 (1994).

196. *Id.*; Roberts, *supra* note 186, at 23-24; Malinowski, *supra* note 183, at 207-09 (expressing concern over the impact on children); Cecchin, *supra* note 187, at 112; Kelly M. Plummer, Comment, *Ending Parents’ Unlimited Power to Choose: Legislation is Necessary to Prohibit Parents’ Selection of Their Children’s Sex and Characteristics*, 47 ST. LOUIS U. L.J. 517, 520 (2003).

Interestingly, an argument offered to rebut this objection to PGD is that every parent-child relationship involves some instrumentation because of parental expectations and demands on children. See Donrich W. Jordaan, *Preimplantation Genetic Screening and Selection: An Ethical Analysis*, 22 BIOTECHNOLOGY L. REP. 586, 590 (2003). While this may have some initial appeal, it should be noted that to the extent that parents attempt to pigeonhole children, it is generally condemned. To borrow an old cliché: two wrongs do not make a right.

197. Norton, *supra* note 195, at 1604.

social acceptance of eugenics.<sup>198</sup> Additional concerns include the lack of regulation over ART in general, particularly since recent studies indicate that all children born of ART procedures are at a serious risk of harm.<sup>199</sup>

Despite the existence of these important unresolved issues that affect the whole of society, there is little to restrain the marketing or expansive utilization of PGD to achieve clients' preferential ends. Professor John Robertson, an influential legal scholar in the field of reproductive technologies, believes that utilization of PGD even for the sole purpose of gender selection may garner constitutional protection under the rubric of reproductive liberty.<sup>200</sup> While several commentators disagree,<sup>201</sup> the debate

---

198. Botkin, *supra* note 183, at 22 (rejection of those with disabilities); Susan M. Wolf et al., *Using Preimplantation Genetic Diagnosis to Create a Stem Cell Donor: Issues, Guidelines & Limits*, 31 J.L. MED. & ETHICS 327, 332-33 (2003) (welcoming PGD, but concerned about unregulated use that permits its use for traits rather than serious disease); David Cram & David de Kretser, *Genetic Diagnosis: the Future*, in ASSISTED REPRODUCTIVE TECHNOLOGY: ACCOMPLISHMENTS AND NEW HORIZONS 186, 195 (Christopher J. De Jonge & Christopher L. R. Barratt eds., 2002) (expressing concern over PGD's use in selecting merely desirable physical and social traits); Robertson, *supra* note 154, at 449-50 (recognizing the potential for abuse when applied to less serious conditions); Roberts, *supra* note 186, at 4 (noting that PGD could open the floodgates to "customizing conception"); Malinowski, *supra* note 183, at 203-04 (appreciating the eugenics issue, but noting that the American ethos of autonomy and procreative liberty would prevent governmental imposition); Charles P. Kindregan, Jr. & Maureen McBrien, *Embryo Donation: Unresolved Legal Issues in the Transfer of Surplus Cryopreserved Embryos*, 49 VILL. L. REV. 169, 201-03 (2004) (addressing the eugenics associated with embryo transfer); Suzanne Holland, *Selecting Against Difference: Assisted Reproduction, Disability and Regulation*, 30 FLA. ST. U. L. REV. 401, 408-09 (2003) (asserting legislation is needed to limit ART-associated eugenics). *But see* Judith F. Daar, *The Prospect of Human Cloning: Improving Nature or Dooming the Species?* 33 SETON HALL L. REV. 511, 540 (2003) (stating that there is no evidence of PGD resulting in the harms of commodification of children or eugenics).

Leon Kass expresses concern that use of genetic technologies as a whole negatively impacts human dignity. Kass, *supra* note 179, at 2-3, 7-9, 11-12 (2000). Power exercised by the medical profession will eugenically shape the form of mankind and deem some members of the human race inferior to others, based upon their genetic composition. *Id.* Norms of health and enhancement will become further blurred and without clear distinction. *Id.* The final tragedy, says Kass, is that experience shows us that the "improvements" rendered by the application of genetic technologies are unlikely to bring about greater human satisfaction. *Id.*

199. Jennifer L. Rosato, *The Children of ART (Assisted Reproductive Technology): Should the Law Protect Them From Harm?*, 2004 UTAH L. REV. 57, 59-61 (2004) (including low birth weight, multiple births, which are at an increased risk of serious health problems). Unlike most other medical interventions, clinical application of PGD was introduced without a rigorous research phase. Thus, long-term (and many short-term) ramifications have not adequately been identified. *See* Richard J. Tasca & Michael E. McClure, *The Emerging Technology and Application of Preimplantation Genetic Diagnosis*, 26 J.L. MED. & ETHICS 7, 8 (1998). An additional problem is the separation of economic classes where only top-earners will benefit from ART technologies. Sandra Anderson Garcia, *Sociocultural and Legal Implications of Creating and Sustaining Life Through Biomedical Technology*, 17 J. LEGAL MED. 469, 473 (1996).

200. John A. Robertson, *Preconception Gender Selection*, 1 AM. J. BIOETHICS 2, 3-4 (2001) (suggesting that a constitutional right to utilize technology may extend to sex selection). *Accord*, Donrich W. Jordaan, *supra* note 196, at 589 (stating that restriction on the use of PGD (or preimplantation screening and selection, as preferred by the author) interferes with procreative autonomy). *See also* MEHLMAN, *supra* note 193, at 174 (2003) (restricting genetic enhancement through PGD might be unconstitutional).

201. *See, e.g.*, Norton, *supra* note 195, at 1621-22 (believing there to be no constitutional basis for sex selection); Jodi Danis, *Sexism and "The Superfluous Female": Arguments for Regulating Pre-implantation Sex Selection*, 18 HARV. WOMEN'S L.J. 219, 249 & nn.148 & 167 (1995)

will remain largely theoretical until statutory and regulatory provisions are in place and tested.<sup>202</sup> But first, law-makers need to overcome their current deference to the medical profession.<sup>203</sup>

A general lack of oversight might explain how PGD has come to be offered for selection of embryos where the only criterion is gender preference, notwithstanding a seemingly contradictory view that the Constitution frowns upon gender discrimination.<sup>204</sup> Although promoters of the application of PGD for sex selection recognize the gender discrimination issue, some pooh-pooh the notion that it will have an ill effect on society.<sup>205</sup>

(distinguishing pre-implantation sex selection from abortion, sex selection abortion, sterilization, and other reproductive decisions).

Currently, it is unclear to what extent there may be constitutional protection. A constitutional right to procreate is generally thought to exist, based on such seminal cases as *Skinner v. Oklahoma*, 316 U.S. 535 (1942) (reproduction a basic civil right), *Eisenstadt v. Baird*, 405 U.S. 438 (1972) (right to be free of "unwarranted governmental intrusion" in reproductive decisions), and *Planned Parenthood of Southeastern Pennsylvania v. Casey*, 505 U.S. 833 (1992) (procreation central to 14th Amendment liberties). Carl H. Coleman, *Assisted Reproductive Technologies and the Constitution*, 30 FORDHAM URB. L.J. 57, 61 (2002). Some believe a right would extend to the use of ART to produce families. See Radhika Rao, *Reconceiving Privacy: Relationships and Reproductive Technology*, 45 UCLA L. REV. 1077, 1083, 1103-04, 1116 (1998) (viewing relational privacy as protecting the decision to form a family via ART provided that the couples own gametes are used).

Whether any such right would extend to the specific selection of embryos based on gender criteria could potentially depend upon the level of constitutional scrutiny applied to challenged legislation that banned PGD for that purpose. Susan M. Faust, *Baby Girl or Baby Boy? Now You Can Choose: A Look at New Biology and No Law*, 10 ALB. L.J. SCI. & TECH. 281, 299-300 (2000). It is argued that such legislation is likely to be upheld based on a state's legitimate interests in creating the ban. Plummer, *supra* note 196, at 525-44; Rachel E. Remaley, "The Original Sexist Sin": *Regulating Preconception Sex Selection Technology*, 10 HEALTH MATRIX 249, 260-66 (2000).

202. Scholars tend to speak in terms of "should not" and "argue against" rather than "legally cannot." See Botkin, *supra* note 187, at 290 (referring to authors Thomas Murray, Stephen Post, Peter Whitehouse, and Dena Davis). Moreover, self-regulating professional ethics have no legal effect and only discourage, but do not prohibit, the liberal use of PGD. See *id.* at 288-89.

203. Malinowski, *supra* note 183, at 207-08. Stemming from *Roe v. Wade*, 410 U.S. 113, 140-44, 148-50 (1973), there has been deference to the medical profession in a way that merges with procreative rights, bolstering parental control while limiting governmental interference. Malinowski, *supra* note 183, at 208. In fact, ART is likely not regulated because of procreative rights. *Id.* at 203-04. Prof. Alvare is more pragmatic. She asserts that the ASRM was influential in ensuring that inspectors certifying fertility labs under the Fertility Clinic Success Rate and Certification Act would have no authority over the clinical practices. Alvare, *supra* note 109, at 28.

204. See, e.g., Robert C. Post, *Fashioning the Legal Constitution: Culture, Courts, and Law*, 117 HARV. L. REV. 4, 17 (2003) (citing case where gender discrimination was presumed unconstitutional); James G. Dwyer, *A Taxonomy of Children's Existing Rights in State Decision Making About Their Relationships*, 11 WM. & MARY BILL RTS. J. 845, 917-18 (2003) (citing cases where custody determinations based on presumptions favoring the female gender was considered unconstitutional).

205. See, e.g., Robertson, *supra* note 154, at 452 (asserting it will not because of insufficient use); Botkin, *supra* note 187, at 281 (asserting that American cultural norms considered unlikely to produce the gender disequilibrium that has occurred in China); Claudia Kalb, *Brave New Babies*, NEWSWEEK, Jan. 26, 2004, at 44, 50-51 (rebutting the idea that PGD is discriminatory by reference to reproductive choice and potentially fewer abortions).



As evidence, some aver that the male to female ratio will not be disturbed because gender discrimination has been applied evenly to both sexes,<sup>206</sup> in stark contrast to what has occurred in the Chinese population.<sup>207</sup> Even the term labeling the use of PGD solely to select an embryo of the preferred gender suggests a non-discriminatory justification: It is euphemistically marketed as “family balancing.”<sup>208</sup>

The expression “family balancing” implies that balance is the valued good. In actuality, it is not really balance, but how the decision-makers feel about it, that matters.<sup>209</sup> Thus, gender preference, which itself has no intrinsic value, is provided palatable approval. This concept is bolstered by an appeal to tradition.<sup>210</sup> In the popular press, the topic of gender selection has been juxtaposed with stories about ancestral rituals and their failure to produce the gender-preferred offspring that were the subject of the ritual.<sup>211</sup> By such reference, gender discrimination appears understandable and normal, and PGD rises as the champion of tradition, replacing hocus-pocus with the accuracy and predictability of science and technology.<sup>212</sup> Thereby,

---

206. The Reproductive Specialty Center, *Pre-Implantation Genetic Diagnosis*, at <http://www.drury.com/pgd.htm> (last visited May 27, 2004) (noting that the clinic’s own statistics indicated an even number of requests to select girls or boys). Even so, there is evidence that sexism in the form of a preference for first-born males still exists. Faust, *supra* note 201, at 289-92.

207. The Reproductive Specialty Center, *supra* note 206; Mary Carmichael, *No Girls, Please*, NEWSWEEK, Jan. 26, 2004, at 50; Danis, *supra* note 201, at 232.

208. See, e.g., Genetics & IVF Institute, *Preimplantation Genetic Diagnosis for Family Balancing*, available at [http://www.givf.com/gender\\_selection.cfm](http://www.givf.com/gender_selection.cfm) (last visited Feb. 11, 2004); Saint Barnabas, *supra* note 186; Kalb, *supra* note 205, at 47.

209. See, e.g., Remaley, *supra* note 201, at 275-76 (disputing that PGD will lead to balanced families and arguing that it is sexist and discriminatory). Remaley disputes Wertz’s affirmation of the desire for a child of the same gender, DOROTHY C. WERTZ, SEX SELECTION, IN ENCYCLOPEDIA OF BIOETHICS 2212, 2215 (Warren Thomas Reich ed., 1995), noting that modern culture permits parents to enjoy activities with children of both sexes. Remaley, *supra* note 201, at 276-70. See also Barbara Kantrowitz, *One, Two, Three or More?* NEWSWEEK, Jan. 26, 2004, at 53. Although the article purports to justify “family balancing,” all it really does is identify the well-known benefits of having smaller families and noting parental preference for a child of a particular gender. *Id.* Since no benefit was expressed other than parental desire, affirming a choice to utilize PGD solely for gender selection appears to be the primary motive, especially since it was the trailer to a more extensive article on PGD. See also Reproductive Specialty Center, *supra* note 206 (“We think it is right to trust parents to make these decisions.”).

The May 2001 ASRM Ethics Committee Report initially stated that it was ethical for parents to choose an embryo based on their desire to have a child of a sex opposite to one already existing. Roberts, *supra* note 186, at 17. In September, 2001, John Robertson, the committee’s Chair, broadened the scope of what would be considered ethical. *Id.* at 19. The primary concern was not the prior existence of a child of the opposite sex, but rather that couples are fully informed about risks and are “counseled about having unrealistic expectations about the behavior of children of the preferred gender.” *Id.* Clearly it was reproductive choice rather than family balancing that was the real issue, at least for Prof. Robertson. The Ethics Committee retreated slightly the following February, stating that gender selection for the first child should be “discouraged.” *Id.* at 20. The ASRM did not, however, proclaim it to be unethical. *Id.* Thus, “discouraged” could be considered no more than aspirational at best, while the true root of the practice was related to parental choice.

210. See, e.g., *The Early Show: Gender Selection: Fact or Fiction?*, *supra* note 181.

211. See, e.g., *id.*; Karen Springen, *The Ancient Art of Making Babies*, NEWSWEEK, Jan. 26, 2004, at 51.

212. *The Early Show: Gender Selection: Fact or Fiction?*, *supra* note 181. The story asserts that “[f]or now, most experts agree, the best chances [to produce a child of the preferred gender] come

choice, as well as the means by which that choice is realized, becomes normalized.<sup>213</sup>

The achievement of social normalcy seems to be a recurring theme in the language of reproductive technology. With respect to PGD, including embryo biopsy and embryo diagnosis, it is normalized by association with the already widely-accepted IVF procedures,<sup>214</sup> and by its promotion as “a precision targeting of the sources of human suffering”<sup>215</sup> to which we each

from a procedure called PGD—Preimplantation Genetic Diagnosis.” *Id.* See also Remaley, *supra* note 201, at 249-50 (describing PGD as an accurate sex-selection technique, unlike the superstitious practice over the ages to accomplish that end).

213. See Ikemoto, *supra* note 104, at 1287-93. Utilizing the medicalization of childbirth and the availability of prenatal testing as examples, the author explains that mere availability of scientific intervention results in its use, even if not really needed. *Id.* at 1290-91. Assumptions about science as neutral and disinterested lead “to assumptions about the utilization of new technology as necessary and good.” *Id.* at 1290. Notwithstanding unresolved questions about whether utilization of new technology is even ethical, its use quickly becomes a social norm. *Id.* at 1292-93.

Some on-line descriptions about PGD on clinic web pages or popular press raised only ethical issues of gender selection. To the extent other issues were raised, they were rebutted by reference to choice. See, e.g., *The Early Show*, *supra* note 181 (“It’s up to parents to decide . . .”); *Good Morning America*, *supra* note 181; The Reproductive Specialty Center, *supra* note 206 (concern is rebutted by pointing out that it is already legal to abort for purposes of gender selection). Such assertions avoid recognizing that “legal” and “ethical” mean different things.

But see Groopman, *supra* note 181, at A14 (asserting that eugenics also a controversy, but rebutted with reproduction as personal choice); Kalb, *supra* note 205, at 46-47 (asserting that ethical issues include eugenics as well as sex discrimination). The article alludes to the acceptance of broad reproductive freedom by including a quote from Yury Verlinsky, a PGD expert from the Reproductive Genetics Institute in Chicago: “I tell them it’s normal and I tell them it’s male or female. . . . It’s their embryo. I can’t tell them which one to transfer.” *Id.* at 48. The deferential statement suggests non-directive counseling. But one wonders what part of PGD utilization is choice and what part is induced by marketing that “normalizes” the procedure and minimizes ethical concerns. Some clinics have recruited couples for PGD by offering it as a free bonus to their fertility programs. *Id.* at 44, 46. Furthermore, not all counselors believe they should be non-directional. Biesecker, *Privacy in Genetic Counseling*, in *GENETIC SECRETS: PROTECTING PRIVACY AND CONFIDENTIALITY IN THE GENETIC ERA* 108, 111-12 (Mark A. Rothstein ed., 1997). Although a eugenic motive may be laudable, particularly when it is to reduce genetic disease, in this context it also greatly impacts parental freedom of choice insofar as the true nature and consequences is not identified. See *infra* (cloning); June Mary Zekan Makdisi, *Involuntary Cloning: A Battery*, 79 ST. JOHN’S L. REV. (forthcoming 2005). Directive counseling at the crucial time also enables counselors to effectively market the procedure at a time that couples are at a heightened emotional state and therefore more vulnerable to persuasion.

214. See, e.g., The Reproductive Specialty Center, *supra* note 206 (“as in routine in vitro fertilization”). From the descriptions, it may not be clear when PGD departs from IVF. See also Genoma, *Preimplantation Genetic Diagnosis (PGD)*, at <http://www.laboratoriogenoma.it/eng/pgd.asp> (“The genetic material of the embryos (which is derived from both parents) is not altered in any way during a PGD cycle, and early embryological development is similar to natural conception, except that it occurs in the laboratory.”).

215. Groopman, *supra* note 181, at A14. Dr. Groopman is a Harvard Medical School Professor and chief of experimental medicine at Beth Israel Deaconess Medical Center, Boston. *Id.* According to Leon Kass, the elimination of suffering is a dominant principle that is promoted as a governing moral justification for embracing genetic technology as a whole. Kass, *supra* note 179, at 7-8, 11 (discussing genetic technologies in general). When voiced by scientists, who are incorrectly

can relate in some way. PGD is also normalized when it is endorsed as an improvement over prenatal testing, which has been presented as a more burdensome approach to reducing human suffering. The normalization also occurs whenever PGD is depicted as facilitating what has already been normalized in American culture, reproductive choice. But is it really just an extension of the ordinary, the “normal” made possible by the development of the technologically extraordinary?

The extraordinary technology involved in PGD facilitates cell removal and diagnostic testing.<sup>216</sup> Unlike prenatal testing, where the embryonic or fetal cells that are collected for testing have already been naturally sloughed from the developing body,<sup>217</sup> biopsy of an IVF embryo involves the removal of a single cell directly from the embryo.<sup>218</sup> An IVF embryo is cultured in a medium for two or three days until it has grown to a mass of about six or eight cells,<sup>219</sup> each of which is called a blastomere.<sup>220</sup> Then, in a departure from the IVF norm, one of the blastomeres is removed, often by aspiration through a glass micropipette.<sup>221</sup> The biopsy is complete and the isolated blastomere undergoes diagnostic testing.<sup>222</sup>

---

perceived as presenting morally neutral views, the information communicated to clients is tremendously persuasive. *Id.* Kass points out a problem with the ethos: Current standards directed at improving health are shifting ones that have no ultimate boundary. *Id.* at 10-11. Dehumanization and loss of human dignity result as humans move to elevate their biological nature and devalue their self concept as moral beings. *See id.* at 13-16.

216. Genoma, *How Is PGD Carried Out*, section on Polar Body Removal and/or Blastomere Biops (2002), at [http://www.laboratorigenoma.it/eng/pgd\\_polar.asp](http://www.laboratorigenoma.it/eng/pgd_polar.asp).

217. In amniocentesis, for example, fetal cells are collected from the surrounding amniotic fluid. MOSBY'S MEDICAL, NURSING, & ALLIED HEALTH DICTIONARY, *supra* note 154, at 81-82 (defining “amniocentesis”). In chorionic villus sampling, or CVS, cells are obtained from placental tissue. *Id.* at 356 (defining “chorionic villus sampling”). Fetal cell sorting tests cells that are circulating in the maternal blood. Lori B. Andrews, *Prenatal Screening and the Culture of Motherhood*, 47 HASTINGS L.J. 967, 970-71 (1996).

218. Sometimes two blastomeres are removed. *How Is PGD Carried Out*, *supra* note 216; *see also* Conception Technologies, *Announcing Preimplantation Genetic Diagnosis: PGD May Improve Chances for Successful Pregnancy and Birth*, (2001), at <http://www.conceptiontechnologies.com/pgd.asp> (last visited June 7, 2004).

219. *See* LUCINDA L. VEECK, AN ATLAS OF HUMAN GAMETE AND CONCEPTUSES: AN ILLUSTRATED REFERENCE FOR ASSISTED REPRODUCTIVE TECHNOLOGY 193 (1999); Karen Sermon & Inge Liebaers, *Preimplantation Genetic Diagnosis and Screening*, in REPRODUCTIVE MEDICINE: MOLECULAR, CELLULAR AND GENETIC FUNDAMENTALS 515, 516-17 (Bart C.J.M. Fauser et al. eds., 2003) (seven or more cells); *Id.* at 516 (also called a cleavage-stage biopsy); *See* VEECK, *supra* (also called a blastomere biopsy).

220. Moshe Zilberstein & Mabelle M. Seibel, *Preimplantation Genetics and Preimplantation Diagnosis*, in INFERTILITY: A COMPREHENSIVE TEXT 761, 763 (Mabelle M. Seibel ed., 2d ed. 1997).

221. Alan R. Thornhill & Karen Snow, *Molecular Diagnostics in Preimplantation Genetic Diagnosis*, 4 J. MOLECULAR DIAGNOSTICS 11, section “Materials and Methods” (2002), at <http://jmd.amjpathol.org/cgi/content/full/4/1/11>.

222. One of two testing procedures is generally applied. Luca Gianaroli et al., *Preimplantation Genetics in Human Embryology*, in BIOTECHNOLOGY OF HUMAN REPRODUCTION 301, 303 (Alberto Revelli et al. eds., 2003). The chromosomes may be analyzed for abnormality or gender by means of a technique called fluorescence *in situ* hybridization (FISH). *Id.*; Frances A. Flintner, *Preimplantation Genetic Diagnosis Needs to be Tightly Regulated*, 322 BMJ 1008 (2001), available at <http://bmj.com/cgi/content/full/322/7293>. Genetic diseases or conditions can also be confirmed

It is extraordinary that technology allows for the precise curettage of a single cell from something so tiny as an embryo. It is also extraordinary that the removal of such a huge proportion of matter (about one-sixth of the entire mass) does not leave the remaining embryo lacking – a reassurance offered repeatedly.<sup>223</sup> A few clinics that offer the service explain the reason for this remarkable phenomenon.<sup>224</sup> Because each blastomere of a six- to eight-celled embryo is totipotent, every cell contains the full component of genetic material.<sup>225</sup> Thus, removal of one cell will not leave the remaining embryo any less complete because it still has all the information needed for normal embryonic development.<sup>226</sup> Juxtaposing the explanation of totipotency with the further comment that the embryo will be “unaffected” suggests that there is no other significance to the totipotent characteristic of blastomeres. At the very moment that a client’s thoughts might stray, focus is diverted back onto the “unaffected” embryo. Thus, there is a dual use of language to guide acceptance of the process.<sup>227</sup>

Focus on the host embryo draws attention away from the consequence of totipotency on the separated blastomere.<sup>228</sup> The cell that is withdrawn is

by means of the polymerase chain reaction process, commonly known as PCR. Gianaroli et al., *supra*. Testing destroys the cell. Guido de Wert, *Ethics of Assisted Reproduction*, in *REPRODUCTIVE MEDICINE: MOLECULAR, CELLULAR AND GENETIC FUNDAMENTALS* 645, 650 (Bart C.J.M. Fauser et al. eds., 2003).

223. See, e.g., Saint Barnabas, *supra* note 181 (section entitled “Issues of Preimplantation Genetic Diagnosis - PGD”); Medical Market Analysts, Inc., *Preimplantation Genetic Diagnosis (PGD)*, at <http://www.seattleivf.com/pgd.html> (last visited June 7, 2004) (stating that the home page was designed for The Washington Center for Reproductive Medicine); Abington Reproductive Medicine, *Preimplantation Genetic Diagnosis at Abington Reproductive Medicine* (1997-2002), at [http://www.abington-repromed.com/our\\_services/content\\_layout2.cfm?pid=7](http://www.abington-repromed.com/our_services/content_layout2.cfm?pid=7) (last visited June 7, 2004). See also COLUMBIA ENCYCLOPEDIA, *Embryo Biopsy* (6th ed. 2004), available at <http://www.encyclopedia.com/html/e1/embryop.asp> (last visited June 7, 2004) (stating that PGD involves “embryo biopsy” in which a cell is removed from an embryo which itself is “unaffected”).

224. See, e.g., The Institute for Reproductive Medicine and Science of Saint Barnabas, at [www.sbivf.com/science/art\\_aneuploidy.htm](http://www.sbivf.com/science/art_aneuploidy.htm) (last visited on June 7, 2003).

225. *Id.*

226. *Id.* In layman’s terms, it means that the “cells are virtually identical to each other. Genetically testing these blastomeres can usually reflect the genetic integrity of the entire embryo.” Kentucky Center for Reproductive Medicine and IVF, *Preimplantation Genetic Diagnosis*, at <http://www.kcrm-ivf.com/pgd.htm> (last visited June 7, 2004). See also Fertility Centers of New England, LLC, *Fertility Centers of New England Announces World’s First Published Report of a Birth from a Cryopreserved Embryo Analyzed by Preimplantation Genetic Diagnosis (PGD)*, at <http://www.fertilitycenter.com/Services/pgd.htm> (last visited June 7, 2004) (“At this early stage of embryo development, all cells are equivalent and removal of one or two does not affect viability, cleavage rate, or rates of further development.”).

227. See CHOMSKY, *supra* note 12, at 179. Silence itself is a manipulative use of language. *Id.* (asserting that silence is a “gift” suppressing reality).

228. See June Mary Zekan Makdissi, *supra* note 213. After providing the clinics’ explanation about totipotency, sixty-three percent of my class of about seventy law students failed to make the connection that totipotency might also be significant to the severed blastomere (Torts class, Sept. 17, 2003).

not merely something that is lost but not needed, as the explanation implies. The significance of detachment is that once isolated, the totipotent blastomere takes on new relevance as an individual entity apart from the embryo from which it was removed; the removal causes the formation of an embryonic twin. That is, embryo biopsy results in the production of a clone with independent significance.<sup>229</sup> This is a remarkable and significant difference from the ordinary biopsy. Yet consumers, unless alerted, would have no idea that the results differ so dramatically from other biopsies.<sup>230</sup>

Following ordinary biopsy, where one has no expectation that the cells have independent moral relevance, the extracted cells are used to serve the diagnostic needs of the body from which they are drawn. By contrast, PGD is not generally offered to determine an appropriate therapy on the embryo from which the blastomere was withdrawn. Instead, the blastomere clone is exploited to serve the ends of the decision-maker.<sup>231</sup> In short, “embryo biopsy” is not just an extension of the ordinary, the “normal” made possible by the development of the technologically extraordinary. Use of the terms “embryo biopsy” or “embryo diagnosis” euphemistically masks the consequence of the process and the true nature of the biopsy and diagnosis. The resultant reduced understanding thereby impinges on a consumer’s autonomous choice to select or refuse the technology.<sup>232</sup>

#### IV. CONCLUSION

Each of the three sections above outlined the infusion of language that shaped public acceptance of some aspect of reproductive technologies.<sup>233</sup>

---

229. Makdisi, *supra* note 213. The AFS has itself recognized that the severed blastomere may become a unique individual human being. The Ethics Committee of the American Fertility Society I, *supra* note 9, at 26S. One of the Committee’s members recognized the potential for use in purposeful twinning, or reproductive cloning. See Robertson, *supra* note 57, at 1025 (anticipating human application of animal husbandry manipulations such as embryo-splitting).

230. While consent forms discuss the process and risks associated with the embryo whose cell is removed for analysis, they may not represent the clonal nature of the biopsy. See, e.g., IVF Labs, LLC, *PGD Information Package* 18-22, at <http://www.ivflabs.com/PGD-INFO-7-19-04.pdf> (last visited June 7, 2004) (consent form revised 8/22/03).

231. These ends are not limited to reproductive. A recent development in reproductives is to gestate not for the purpose of increasing family size per se, but to save a member of the family already afflicted with a disease that offers the hope of “cure” if provided the right transplant donor – that is, one who is an HLA match. Wolf et al., *supra* note 198, at 327. If a couple uses IVF to produce embryos, PGD can identify the HLA match. *Id.* That embryo can be implanted, birthed, and once born, used as a donor source for the designated donee, potentially throughout life. *Id.*

232. See FADEN & BEAUCHAMP, *supra* note 179, at 348, 351, 362 (noting that misleading language resulting in reduced understanding negatively impacts autonomy).

233. Other groups of words could have been discussed. Cloning, including reproductive, therapeutic, and cloning for research is one such group. See Henry T. Greely, *Banning “Human Cloning”: A Study in the Difficulties of Defining Science*, 8 S. CAL. INTERDISC. L.J. 131 (1998) (noting the manipulations, in part, and lack of legislators’ understanding of the term in formulating a bill of cloning); Makdisi, *supra* note 70, at 497-502 (discussing the proposed congressional bills related to cloning); Annas, *supra* note 179, at 300-01 (noting that “therapeutic research” connotes justification for the procedure as therapy when the treatment is really experimentation, physicians are really researchers, and patients are subjects). Another set of terms euphemizes abortion. See, e.g., Timothy J. Vinciguerra, *Notes of a Foot-Soldier*, 62 ALB. L. REV. 1167, 1181-82 (1999)

Because the connotation a layperson would understand the words under discussion to mean does not always comport with biological reality, there is a gap in common understanding. While word choices may have some perceived benefit in shaping consensus, the achievement of that goal interferes with the very principle of autonomy that is adopted by proponents of reproductive technologies. If the consumer doesn't understand how a "product" such as emergency contraception or PGD comports with personal moral views, how can an autonomous choice be made?<sup>234</sup> Where reproductive decisions must be made, truth includes not just a commentator's or even the "law's" conclusion about life versus non-life or acceptability versus non-acceptability. It includes the proper identification of the biological processes and facts so that others are permitted to make unmanipulated choices.

---

("multifetal pregnancy reduction"); Rosato, *supra* note 199, at 85 ("selective reduction"). Also, the term "products of conception" evidences commodification of the early embryo. Robyn Rowland, *Reproductive Technologies Harm Women*, in *REPRODUCTIVE TECHNOLOGIES* 37, 38 (Carol Wekesser et al. eds., 1996).

234. See Leon R. Kass, *Ageless Bodies, Happy Souls: Biotechnology and the Pursuit of Perfection*, *THE NEW ATLANTIS* 9, 12 (200321) (regarding the term "cloning-for-biomedical-research," which ignores the biological reality that an embryo is formed in the process). There may be no easy solution to terminology, but "[a]ccurate description is crucial to moral evaluation." *Id.*

