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## Judicial Decision-Making in the Age of Biotechnology

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# JUDICIAL DECISIONMAKING IN THE AGE OF BIOTECHNOLOGY

GEORGE P. SMITH, II\*

## I. INTRODUCTION

This essay is divided into five parts. The first will examine, in broad-brush, bioethics as a discipline, language, and political movement. The second explores the politics of morality and the role bioethicists have in assisting with the tasks of judicial decisionmaking. Part three tackles the feasibility of promoting a deliberative democracy within the new Age of Biotechnology. Part four considers forensic or scientific evidence. The final section of this essay considers how Elizabeth Taylor, Reva Shane Lewis of the CBS soap opera, *Guiding Light*, Thomas Donaldson, and the sheep, "Dolly," shape the contours of this new Age of Biotechnology and, indeed, present fascinating contemporary paradigms of the diversity confronting the judicial system as it attempts to cope with the startling advances of The New Biology.<sup>1</sup>

My major premise, minor premise, and conclusion are one and the same for they conduce to an acceptance of the fact that the social constructs and legal tools necessary for the modern judiciary to meet head-on and deal with the contentious issues of bioethics and biotechnology are already in place. To resolve problems arising from these potential quagmires, perhaps the major concern is for the courts to remain forever vigilant to the interlinking relationships or synergistic forces found in law, science, ethics, and medicine.<sup>2</sup> Without vigilance and enhanced awareness of the dynamic and fluid situation here, both the

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1. See GEORGE P. SMITH, II, MONOGRAPH, DEVELOPING A STANDARD FOR ADVANCING GENETIC HEALTH AND SCIENTIFIC INVESTIGATION (1997); Burkhard Bilger, *In Living Color, the Gray Areas of Science*, N.Y. TIMES, Oct. 26, 1998, at A13.

2. See generally George P. Smith, II, *Biotechnology and The Law: Social Responsibility or Freedom of Scientific Inquiry*, 39 MERCER L. REV. 437 (1988); George P. Smith, II, *Toward an International Standard of Scientific Inquiry*, 2 HEALTH MATRIX 167 (1992).

bench and the bar “will increasingly lack understanding of the questions to be asked, let alone the answers to be given” in this New Age of Science.<sup>3</sup>

What is called for is a modified form of judicial activism—not grounded in the heresy of deconstruction—but rather one shaped by reason, understanding, and contemporary social policy and one that is calibrated by the scientific gatekeeping role of the federal courts. When, owing to exigencies of time, laws become largely impotent or even moribund, and new ones are not enacted because of the legislator’s lethargic passivity, ignorance, or failure to release themselves from the vortex of emotionalism which enmeshes certain issues, then it remains for the courts to seize the initiative and fill the void of indecisiveness. Through interpretative policies guided by reason, common sense, equity, and analogy, the courts can chart with confidence a new common law of biotechnology—one that begins to build a framework for principled decisionmaking upon which stability and predictability can be assured. Absent this legal mechanism or process of decisionmaking, it remains for science to direct the future course of development for the new Age of Biotechnology and law to remain a reactive force. Ideally, however, a full partnership of interest and action should be sought by law, science, ethics, and medicine if progress is to be achieved over the succeeding years.

### BIOETHICAL IMPERATIVES

#### *Newton’s Law*

Sir Isaac Newton’s third law of physics applies as much to scientific advancement as it does to other aspects of life itself. Accordingly, for each and every action there is an equal and opposite reaction.<sup>4</sup> For every new and daring biotechnological advancement, a new medico-legal challenge is presented—a challenge rooted in complex social, religious, moral, and ethical vectors of force.

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3. See Michael D. Kirby, *Human Rights—The Challenge of The New Technology*, 60 AUSTRALIA L.J. 170, 181 (1986). See generally David Shenk, *Biocapitalism: What Price the Genetic Revolution?*, 295 HARPER’S MAG., Dec. 1997, at 37.

4. See VAN NOSTRAND’S SCIENTIFIC ENCYCLOPEDIA 1972 (Douglas M. Considine ed., 7th ed. 1989) for a discussion of Sir Isaac’s Laws of Force and Motion.

*Bioethical Concerns and Connections*

Bioethics can be seen as having no defined essence which sets it apart as a distinct study or discipline. Rather, its individuation derives from a de facto set of issues interrelated by what might be termed "family resemblances." While a common thread joining all of the issues is exceedingly difficult to find, the central core comprising the list of these issues, without question, is a felt concern over the technology of control of man's body, his mind, and quality of life.

Many of the concerns of bioethics are concerns of public policy—or with legislation and policy guidelines—at state, local, and federal levels, that need to be enacted and enforced with respect to all of the issues comprising the de facto set. It has been suggested that bioethical concerns are but those prohibitions all rational people urge everyone to follow in an effort to avoid evils on which common agreement exists.

Outside the individual context of determining how one treats another, for moral acceptability to be given at the broader societal level, a democratic consensus must be reached acknowledging that a certain good must be promoted though its promotion causes some degree of harm. It is within this setting where much of what is recognized as "bioethics" is focused. While individual morality operates primarily within a system of restraints, policies affecting society as a whole operate on a level where promotion of good is a moral option. The pivotal question thus becomes, "What goods ought to be restrained (e.g., scientific research)?" Of necessity, priorities, values, and goods must be weighed, balanced, and compared. Whenever the benefits and the risks of a particular course of action are weighed, it is well remembered that those very elements in the balancing test are based upon judgments about values, with the penultimate goal being the formulation and validation of a final action which minimizes human suffering and maximizes the social good.<sup>5</sup>

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5. See generally GEORGE P. SMITH, II, *BIOETHICS AND THE LAW: MEDICAL, SOCIO-LEGAL AND PHILOSOPHICAL DIRECTIONS FOR A BRAVE NEW WORLD* (1993); George P. Smith, II, *Biomedicine and Bioethics: De Lege Lata, De Lege Ferenda*, 9 J. CONTEMP. HEALTH L. & POL'Y 233, 237 (1993); Norman Daniels et al., *Is Justice Enough? Ends and Means in Bioethics*, 26 HASTINGS CTR. REP. 9 (1996).

### *A Political Movement*

In a more specific sense, bioethics encompasses a whole political movement.<sup>6</sup> It is a movement which seeks to harness political forces to deal with a plethora of ethical problems relating to health care delivery, both at the *micro* and the *macro* level of economic distribution. It also endeavors to respond—often through legislative reforms—to complex issues such as physician assisted suicide, cryonic suspension, genetic discrimination in the workplace, abortion, privacy, sterilization, human experimentation, collaborative reproduction by use of *in vitro* fertilization, artificial insemination, cloning, and personal relationships necessary to create a family by homosexuals and lesbians.<sup>7</sup>

All too often, contemporary society's concerns over the need for regulating ethical regimes to guide or even control these activities has driven it in turn to seek medical laws about areas such as death and dying, genetic counseling and screening, reproductive technologies, and organ transplants. Often there is little choice for legal passivity or inaction since "the law is a primary vehicle for resolving disagreements about public policy and the treatment of real persons."<sup>8</sup> And today, Americans seem to be reshaping their political questions ultimately into judicial questions.<sup>9</sup> Yet, a healthy degree of skepticism is needed to see the inherent limitations on the legal system in its efforts to regulate biomedical developments.<sup>10</sup> Each legal tool used must be constantly fine-tuned and re-evaluated by ever changing public policies—all with the purpose of determining which of the tools is best fitted to deal with specific biomedical problems<sup>11</sup> and which one validates a final action that ideally minimizes human suffering and maximizes the social or common good.

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6. See Carl E. Schneider, *Bioethics in the Language of The Law*, 24 HASTINGS CTR. REP. 16. See also ROGER W. DWORKIN, LIMITS: THE ROLE OF LAW IN BIOETHICAL DECISION MAKING 5-7, 11 (1997).

7. See Schneider, *supra* note 6, at 16; DWORKIN, *supra* note 6, at 1, 2. See also Dorothy C. Wertz, *Society and The Not-So-New Genetics: What Are We Afraid Of? Some Future Predictions From A Social Scientist*, 13 J. CONTEMP. HEALTH L. & POL'Y 299 (1997); George P. Smith, II & Roberto Iraola, *Sexuality, Privacy and The New Biology*, 67 MARQ. L. REV. 263 (1984).

8. DWORKIN, *supra* note 6, at 2.

9. See Schneider, *supra* note 6, at 16. See also George P. Smith, II, *Procreational Autonomy v. State Intervention: Opportunity or Crisis for a Brave New World?*, 2 NOTRE DAME J.L. ETHICS & PUB. POL'Y 635 (1986).

10. See DWORKIN, *supra* note 6, at 2.

11. See *id.*

### *The Future*

An overriding concern of any study of applied bioethics over the years to come is the extent to which diverse notions about ethics and bioethics will be reconciled and, consequently, whether a comprehensive moral philosophy of medicine will emerge from this reconciliation. To date, philosophical bioethics has dominated religious bioethics. As awareness of cultural diversity intensifies, societal differences increase among cultural groupings, and indeed, fundamentalism grows, it may well be seen that religious values—which underlie public dialogue on scientific issues within this group—will come to the forefront and even dominate.<sup>12</sup>

## II. THE POLITICS OF MORALITY

### *Bioethicists as Expert Witnesses*

Former President Ronald Reagan has observed that “politics and morality are inseparable.”<sup>13</sup> Consequently, since “morality’s foundation is religion, religion and politics are necessarily related. We need religion as a guide; we need it because we are imperfect.”<sup>14</sup> In this regard, it is well to recall the biblical admonition that “Where the Spirit of the Lord is, there is liberty.”<sup>15</sup>

In the realm of the New Biology, courts inevitably are being required, either implicitly or explicitly, to take positions on one or more complex moral issues. When situations as this occur, it is arguably better for the judges forced with the responsibility for making decisions to have an “informed understanding of the relevant normative issues and available moral positions, than a superficial, uninformed view.”<sup>16</sup>

In a secular pluralist society, however, care must always be taken by the courts to foreswear acceptance of any one claim to intrinsic moral superiority. Rather, multiple moral perspectives may be presented and evaluated when provided by a case in litigation.<sup>17</sup> Bioethicists, or those trained in analyzing and studying moral issues, might well be considered as proper experts to assist

12. See David C. Thomasma, *Edmund D. Pellegrino on The Future of Bioethics*, 6 *CAMB. Q. HEALTHCARE ETHICS* 373 (1997).

13. Ronald Reagan, *Politics and Morality are Inseparable*, 1 *NOTRE DAME J.L. & PUB. POL’Y* 7, 10 (1984).

14. *Id.*

15. 2 *Corinthians* 3:17. See generally Pierre Schlag, *Law as The Continuation of God by Other Means*, 85 *CAL. L. REV.* 427 (1997).

16. E. Haavi Morreim, *Bioethics, Expertise, and the Courts: An Overview and an Argument for Inevitability*, 22 *J. MED. & PHIL.* 291, 293 (1997).

17. See *id.* at 294, 295.

the judiciary in probing these issues when they are cast inextricably within medico-legal cases.<sup>18</sup> Very often, bioethicists are sought as experts by courts for their expertise in moral argument and persuasion.<sup>19</sup>

Yet, as Professor John C. Fletcher of the University of Virginia cautions, care must be taken to make a qualitative distinction between expertise *about* an ethical issue and expertise *in* ethics (or making specific moral judgments). A vast scholarly knowledge concerning particular issues does not, *ipso facto*, translate into any particular expertise in or ability to make either specific moral judgments or to pursue subsequent actions in complex clinical cases. Stated simply, bioethicists should aspire to obtain a level of expertise on particular issues and related policy options and avoid status classifications as "experts" in making clinical case judgments. Rather, bioethicists should content themselves to be expert consultants.<sup>20</sup>

Dr. Edmund D. Pellegrino of the Georgetown University School of Medicine, no doubt the foremost Roman Catholic bioethicist in the country, has cautioned that there is a real danger for the judiciary in relying upon ethics expert witnesses to assist in reaching an ethical resolution of disputed, substantive, or normative questions.<sup>21</sup> The adversarial atmosphere found within the courtroom all too often destroys the important pedagogical function of an ethics expert; the clinical experiences and vast knowledge of prevailing ethical practices, together with the experts' analytical skills in assessing moral arguments, are all called into question and challenged on complex legal grounds.<sup>22</sup> Equally as important for Dr. Pellegrino is his belief that "the role of the courts is to resolve legal, not moral disputes."<sup>23</sup> Accordingly, he argues that when matters of morality underpin law, "they should be argued as widely and openly as possible when a law is being framed and not in the narrower arena of a court proceeding."<sup>24</sup>

18. *See id.*

19. *See* John C. Fletcher, *Bioethics in a Legal Forum: Confessions of an Expert Witness*, 22 J. MED. & PHIL. 297, 318 (1997).

20. *See id.* at 317.

21. *See* Virginia A. Sharpe & Edmund D. Pellegrino, *Medical Ethics in the Courtroom: A Reappraisal*, 22 J. MED. & PHIL. 373, 378 (1997).

22. *See id.* at 374, 378.

23. *Id.* at 378.

24. *Id.* at 379. *See also* Neomi Rao, *A Backdoor to Policy Making: The Use of Philosophers by the Supreme Court*, 65 U. CHI. L. REV. 1371 (1998) (arguing that the Court should base its decisions on precedent, on history, and on recognition of the judicial limits of authority, and stay away from philosophical straight jackets).

By assuming the role of a non-activist, passive umpire in bioethical cases, and thereby deferring to hoped-for legislative initiatives, the courts—all too often—foredoom a passive legislative lethargy which may guarantee years of inaction and uncertainty. Obviously, each court must balance its responsibility to interpret the existing laws using contemporary standards of justice with its responsibility to delegate lawmaking responsibilities to legislatures. Yet the judiciary must be mindful that it has, in a very real way, a shared responsibility for lawmaking with the legislature; under the common law tradition, the courts have a clear and decisive role to play in not only interpreting but in shaping new policies and laws.<sup>25</sup>

Even with the growing dominance of legislation, common law adjudication—both at the state and federal levels of government—remains a vital form of lawmaking.<sup>26</sup> Yet, it is to be remembered that, from a conservative or traditional viewpoint,

Common law judges have no power to issue advisory opinions or proffer generalized codes of conduct. They have no power to rule for the future even about problems that seem certain to arise. This means that for the common law to deal with a technology the technology must exist and have operated in a way that angered someone enough for that person to have claimed injury and sought legal redress. Thus, to the extent that a rapid response or a response in advance to a biosocial development is important, the common law cannot provide it. Common law is reactive, not proactive.<sup>27</sup>

### *Science and Religion*

The two great systems of human thought are science and religion. The predominant influence over the conduct of most individuals may be said to be religion. When science intrudes into daily life it does not make its presence felt intellectually, but rather through technology.<sup>28</sup> Although there is a religious perspective present in the lives of most, religion's stylized, institutionalized role has declined sharply over the years. While traditional Christian doctrines are being displaced from personal consciousness, they are not being replaced by rational scientific

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25. See Morreim, *supra* note 16, at 293.

26. See DWORKIN, *supra* note 6, at 7, 8.

27. *Id.* at 9. See also Schneider, *supra* note 6, at 17, 19.

28. See PAUL DAVIES, GOD AND THE NEW PHYSICS I (1983).



thought, for science is just as elusive and inaccessible to the public as organized religions.<sup>29</sup>

Because contemporary existence has been altered dramatically by scientific achievement through technological applications, lives are changed radically—with the corresponding conclusion that traditional religions often appear to be lacking in modern relevance in resolving both personal and social problems.

If the Church is largely ignored today it is not because science has finally won its age-old battle with religion, but because it has so radically re-oriented our society that the biblical perspective of the world now seems largely irrelevant. As one television cynic recently remarked, few of our neighbors possess an ox or an ass for us to covet.<sup>30</sup>

The deep questions of existence are approached differently by science and religion. While science is based on both careful observation and experimentation which in turn allow for theories to be constructed connecting different experiences, religion asserts unalterable truths which cannot be modified to accommodate changing ideas. Accordingly, the true believer stands by his faith regardless of whatever evidence may be deduced against its efficacy.<sup>31</sup> Yet for the scientist, if scientific irregularities prove a theory to be fallacious, it will be abandoned and a new approach adopted.<sup>32</sup>

### *Science and Technology*

The reality of social behavior is that science and technology are the great engines of modern times, and these engines drive and force constant change. Far from becoming simpler, the very real promise of science and technology is that they will become more difficult and, indeed, unyielding. Finding definitive solutions to both the tendentious problems and the opportunities they present is especially difficult since no "solution" can ever be taken as final—this because "with changing technology come changing dimensions of the problems."<sup>33</sup>

Indeed, error has a high pragmatic value in science, for it is viewed as but the process of induction. Science, then, cannot be

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29. *See id.*

30. *Id.* at 2.

31. *See id.* at 6.

32. *See id.* *See generally*, George P. Smith, II, *Pathways to Immortality in the New Millennium: Human Responsibility, Theological Direction or Legal Mandate*, 15 ST. LOUIS U. PUB. L. REV. 447 (1996).

33. Michael D. Kirby, *Health Law and Ethics*, 5 J.L. & MED. 31, 34-35 (1997). *See generally* LEE M. SILVER, *REMAKING EDEN* (1997).

seen as a mere collection of facts. Rather, it is to be framed, initially, by a question or a set of questions. "Most often the labor begins with a wrong hypothesis; experiment exposes the fallacy; the question is reframed and confronted with experiment until at last the wisely framed question leads to a new finding supported by secure evidence."<sup>34</sup>

Chief Justice Warren Burger held to the view that law and ethical standards are not proper subjects of research and discovery. Rather, they must be considered to be the fruits of slow evolutionary processes. "The law," he opined, "does not search out as do science and medicine; it reacts to social needs and demands."<sup>35</sup> Law is but a means, a tool, and not an end in itself. Accordingly, "tools are not ordinarily made to hammer out solutions to hypothetical problems but for real problems, which means that the problem must arise, exist, and be recognized before the law reacts to provide a solution."<sup>36</sup>

#### *Law's Purpose*

There is general agreement that the principal purpose of law is not only to define and protect individual rights and ensure public order, but to resolve disputes and redistribute wealth and thereby optimize economic efficiency.<sup>37</sup> Additionally, laws should dispense justice, provide a structure for preventing or compensating injury, and be "a lever for moving human behavior."<sup>38</sup> Accordingly, all legal systems may be viewed correctly as existing "to effect some change in human behavior."<sup>39</sup> By seeking to alter socio-cultural influences, law can truly shape and reshape behavior.<sup>40</sup>

As observed, law is the language of social regulation.<sup>41</sup> It thus obeys systemic imperatives often irrelevant and in conflict with efforts to achieve a genuine understanding and wise resolution of moral issues.<sup>42</sup> As a language, law competes with other languages of religion and morality, of love and friendship, of cus-

34. GERARD PIEL, *SCIENCE IN THE CAUSE OF MAN* 94, 95 (1961).

35. Warren E. Burger, *Reflections on Law and Experimental Medicine*, in 1 *ETHICAL, LEGAL AND SOCIAL CHALLENGES TO A BRAVE NEW WORLD* 211, 211 (George P. Smith, II ed., 1982). See generally GEORGE P. SMITH, II, *MONOGRAPH, ETHICAL IMPERATIVES IN LAW AND MEDICINE* (1997).

36. Burger, *supra* note 35, at 211.

37. See Owen D. Jones, *Law and Biology: Toward an Integrated Model of Human Behavior*, 8 J. CONTEMP. LEGAL ISSUES 167 (1997).

38. *Id.* at 167.

39. *Id.*

40. See *id.*

41. See *id.* at 168.

42. See Schneider, *supra* note 6, at 22.

tom and compromise, and of pragmatism and social accommodation. These other languages are spoken more comfortably, fluently, and with more conviction in daily life than the language of law.<sup>43</sup>

### III. TOWARD AN ETHIC OF OPENNESS AND PARTICIPATION

As a way to meet and possibly even lift the veil of ignorance and suspicion from the biotechnological sciences, it has been suggested that the scientific ethic of openness be recovered. This ethic holds to the idea that not everything worth doing must be done secretly and at top speed.<sup>44</sup> Indeed, open dialogue among members of scientific, philosophical, ethical, and general communities at large is crucial before and during the time "biomedical geniuses" are released from their bottles—not afterwards. When the culture of science changes in this respect and becomes more open, the chances of socio-medico-legal misdirections and even mishaps are minimized significantly.<sup>45</sup>

#### *Deliberative Democracy*

As more bioethical conflicts arise over issues such as abortion, physician-assisted suicide, patient autonomy, and informed consent, controversies will proliferate. No doubt then, the central question raised is what is the proper foundation upon which informed bioethical debates can be undertaken. Deliberative democracy has come into vogue recently, and been advanced as the foundation upon which this dialogue can commence.<sup>46</sup>

With the central purpose of deliberative democracy being to promote the legitimacy of collective decisions,<sup>47</sup> this concept seeks to expand both the number and use of deliberative forums where citizens may enter into discourse over the contentious issues of the new Age of Biotechnology. Through moral disagreement comes ideally a "manifest mutual respect" for opposing views, or in other words, mutually respectful decisionmaking.<sup>48</sup>

43. See *id.* at 21.

44. See Arthur Caplin, *Why Don't They Love Us Anymore?*, 2 Newsletter, Center for Bioethics, Univ. of Pa. at 4 (Spring 1997).

45. See generally Symposium, *Genetics and the Law: The Ethical, Legal and Social Implications of Genetic Technology and Biomedical Ethics*, 3 U. CHI. L. SCH. ROUNDTABLE 416 (1996). See, e.g., Rick Weiss, *Scientists Seek Panel's Advice on In-Womb Genetic Tests*, WASH. POST, Sept. 25, 1998, at A2.

46. See Amy Gutmann & Dennis Thompson, *Deliberating About Bioethics*, 27 HASTINGS CTR. REP. 38 (1997). See also Weiss, *supra* note 45.

47. See Gutmann & Thompson, *supra* note 46, at 39.

48. See *id.* at 40.

Through subsequent deliberating stages of debate, leaders in turn present their proposals, citizens respond, revisions are made, citizen reaction is received, and the stages recur. The best example of this process is seen in Oregon's efforts in the early 1990s to structure priorities for publicly funded health care under Medicaid. Initially, the priorities list designed by the Oregon Health Services Commission was shaped primarily by utilitarian cost-benefit calculations. Encountering much public criticism, a comprehensive process of consultation was undertaken which gave the Commission an opportunity to have wide community outreach through open meetings. With further deliberations by the Commission, a revised list was drawn up and submitted and was regarded generally as a marked improvement over the original plan.<sup>49</sup>

Deliberative democracy, viewed as but a complement to the legislative process, is an attractive idea. The principal drawback to its effective implementation is that the average, ordinary, reasonable American is not sufficiently informed to enter into meaningful discourse on the ramifications of the new Age of Biotechnology. Logic is all too often put on "hold" while emotional feelings control and often resolve the debate.<sup>50</sup> Similarly, hard economic realities are repeatedly ignored or postponed until the time their ultimate and forced implementation causes more discord and havoc than would have occurred if they had been considered as a first order priority.<sup>51</sup>

Stated otherwise, perhaps the greatest single reason why—even with an ethic of openness within a deliberative democracy—little constructive debate can occur at the community level is the inability of the public to understand the language of the scientists, or in other words, the language of statistics.<sup>52</sup> Given an unsophisticated citizenry, it becomes even more important for the courts and the legislatures to recognize their joint responsibility to fill the breach.<sup>53</sup>

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49. See *id.* at 41.

50. See George P. Smith, II, *Nuisance Law: The Morphogenesis of an Historical Revisionist Theory of Contemporary Economic Jurisprudence*, 74 NEB. L. REV. 658, 733 *passim* (1995) (discussing the demise of the average, ordinary, reasonable person).

51. See Stephen F. Williams, *Limits to Economics as a Norm for Judicial Decisions*, 21 HARV. J.L. & PUB. POL'Y 39 (1997).

52. See Robert Schwartz, *Genetic Knowledge: Some Legal and Ethical Questions*, in BIRTH TO DEATH: SCIENCE AND BIOETHICS 25 (David C. Thomasma & Thomasine Kushner eds., 1996).

53. See *id.*

## IV. SCIENTIFIC GATEKEEPING

*Experts in Scientific Evidence*

It is agreed, generally, that the reliability of evidence derived from a scientific principle depends upon three factors: "(1) the validity of the underlying theory; (2) the validity of the technique applying that theory and (3) the proper application of the technique on a particular occasion."<sup>54</sup> Thus, neither an invalid technique nor a valid technique applied improperly will yield reliable results.

In February, 1998, at a meeting of the American Association for the Advancement of Science, Supreme Court Justice Stephen Breyer cautiously encouraged the developing practice among some federal judges of appointing independent experts to assist in evaluating highly technical and scientific evidentiary proofs.<sup>55</sup>

Since 1923 with the case of *Frye v. United States*,<sup>56</sup> and more definitively with *Daubert v. Merrell Dow Pharmaceuticals*<sup>57</sup> in 1993, the courts have struggled with decisions regarding what information to admit or exclude as evidence involving scientific disputes. Indeed, Chief Justice Rehnquist's opinion in *Daubert*, in which he concurred in part and dissented in part, recognized the gatekeeping responsibility of judges under Rule 702 of the Federal Rules of Evidence, but observed that this responsibility does not impose "on them either the obligation or the authority to become amateur scientists in order to perform that role."<sup>58</sup>

Relevance, admissibility, weight, and sufficiency of evidence are the most significant concepts in the law's epistemology. Therefore, since scientific expert testimony is evidence, it is subject to scrutiny under each of these four classifications. The scientific reliability of scientific evidence was, under *Daubert*, made the very benchmark of its admissibility.<sup>59</sup> Thus, the very purpose

54. PAUL C. GIANNELLI & EDWARD J. IMWINKELREID, SCIENTIFIC EVIDENCE 2d at §1.1 (1993). See generally FED. JUD. CTR., REFERENCE MANUAL ON SCIENTIFIC EVIDENCE (1994); Symposium: *International Perspectives on Scientific Evidence*, 30 U.C. DAVIS L. REV. 941 (1997).

55. See Breyer *Cautiously Endorses Use of Neutral Experts*, WASH. POST, Feb. 17, 1998, at A2.

56. 293 F. 1013 (D.C. Cir. 1923).

57. 509 U.S. 579 (1993).

58. See *id.* at 600, 601. See also D.H. KAYE, SCIENCE 75-77, 87-99 (1997). The framework for principled decisionmaking which the Supreme Court has constructed for the admission of scientific evidence includes Federal Rules of Evidence 104(a), 201(b), 401, 402, 403, 702, 703 and 706(a) as well as Federal Rules of Civil Procedure 50(a) and 56.

59. See Scott Brewer, *Scientific Expert Testimony and Intellectual Due Process*, 107 YALE L.J. 1535, 1542 (1998).

of the Daubert rule, then, was to reduce—if not eliminate—the flow of “crank science” into the adjudicative processes.<sup>60</sup>

In *Frye* the solution to evaluating scientific expert testimony was thought to be found by simply having the courts rely upon credentialed scientists in order to determine whether so-called “experts” were properly credentialed. This, of course, presents a vexatious quandary: if nonscientific, nonexpert judges and juries are not regarded as competent to judge the *content* of expert information, how then are they to be recognized as competent to judge *credentials* of those who would give expert information?<sup>61</sup>

Epistemic competence may be thought of correctly as but a matter of degree—for not all experts are equally competent, just as not all non-experts are equally epistemically incompetent.<sup>62</sup> Sadly, a putative expert’s demeanor or ethos, training in speech and theater, ability to convey a “glow” to otherwise acceptable positions and exude confidence as well as seem sincere and convincing are all too often evaluated at a higher level than is an expert’s medical expertise.<sup>63</sup>

The central concern emerging from this inquiry, then, is how a scientifically untrained judge becomes sufficiently competent to perform the gatekeeping task set by *Daubert*.<sup>64</sup> “Moreover, assuming the judge admits the evidence, how could a scientifically untrained trier of fact, whether judge or jury, be sufficiently epistemically competent to assess competing putatively scientific claims by competing expert witnesses when, *ex hypothesis*, that fact finder does not have the requisite expertise to judge the evidence itself?”<sup>65</sup>

In 1997, writing for the majority in the case of *General Electric v. Jones*,<sup>66</sup> Chief Justice William H. Rehnquist ruled that a district court’s determination—based on scientific evidence—should be upheld unless it is demonstrated to be manifestly erroneous. This standard, more commonly known as “an abuse of discretion,” applies generally to the entire spectrum of a trial court’s evidentiary rulings.<sup>67</sup>

Although the majority fails to explore in depth the judge’s gatekeeping role, an insightful concurrence by Justice Stephen Breyer sets forth some concrete steps to be taken in order to

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60. *See id.* at 1631.

61. *See id.* at 1627.

62. *See id.* at 1678.

63. *See id.* at 1622 *passim*.

64. *See id.* at 1551-52.

65. *Id.* at 1552.

66. 118 S. Ct. 512 (1997).

67. *See id.* at 517.

allow judges to conscientiously meet their roles as evidentiary gatekeepers. Admonishing the judiciary to exercise with special care its gatekeeping duties (e.g., determining whether particular testimony is reliable) when law and science intersect,<sup>68</sup> Justice Breyer lists four important guidelines. First, he suggests the district judge use the pre-trial conference, under Rule 16 of the Federal Rules of Civil Procedure. This Rule allows the judge to narrow the scientific issues in dispute.<sup>69</sup> Second, judges should use pre-trial hearings when they have the opportunity to examine potential experts.<sup>70</sup> Third, the court should consider the appointment of a special master or specially trained law clerks.<sup>71</sup> Finally, Justice Breyer suggests that judges employ Rule 76 of the Federal Rules of Evidence to appoint their own experts.<sup>72</sup>

While observing that the United States Supreme Court received sixty *amicus curiae* briefs during its 1997 term which allowed professional organizations and others to offer written opinions and facts about scientific controversies before the court, Justice Breyer has applauded a five year pilot project to be undertaken by the American Association for the Advancement of Science which will seek to develop lists of neutral experts and place them, upon request, with federal judges.<sup>73</sup>

### *The French Technocrat*

In France, a new class of legal decisionmakers has been given formal recognition as "technocrats." Although given special training in science, mathematics, physics, chemistry, economics, law, decision theory, and administration, it is an overstatement to conclude these individuals create a system different from the United States where scientists make those decisions that judges and juries would make normally. Rather, the French technocrat is trained to be a generalist manager—one whose skills in management and organizational decisionmaking give him the "competence with science to comprehend its use in policy decisions."<sup>74</sup> Although not comprising an elite scientific cadre, "it does seem clear that they are far better trained in scientific matters than the average American judge or juror."<sup>75</sup>

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68. *See id.* at 519.

69. *See id.* at 520.

70. *See id.*

71. *See id.*

72. *See id.*

73. *See Breyer Cautiously Endorses Use of Neutral Experts, supra* note 55.

74. Brewer, *supra* note 59, at 1566 n.128.

75. *Id.*

Perhaps it would be well for the American judiciary to study whether this French approach to judicial administration would have a practical value in the U.S. court system.

### *A New Court of Biological Science*

It may be practical at this time to revisit and possibly reshape the idea first proposed by Professor Arthur Kantrowitz in 1967 of structuring a Science Court<sup>76</sup> and elevating the idea today to the status of a Biological-Bioethical Science Court.

Among the very positive achievements of the rather short-lived presidency of Gerald Ford was the creation of a presidential advisory group to study new advances in science and technology. In 1976, the task force issued an interim report<sup>77</sup> and took up the idea of how a structure or mechanism could be created whereby the scientific bases for controversial public policy could be resolved when technical disputes arose between biased experts.<sup>78</sup> The task force concluded that the basic mechanism needed for reform was an adversary hearing which would be open to the public and be governed by a disinterested referee. The "expert" proponents of opposing scientific positions would present their cases before a panel of scientist-judges—with the judges themselves being drawn from consultations with scientific societies and other professional organizations, and in no way subject to personal bias with an organizational affiliation with parties working in the area of dispute.<sup>79</sup>

After evidence is heard, questioned, and defended, three-judge panels would proceed to prepare a report on the dispute, noting the points upon which the advocates agree and reaching judgments where disputed statements of fact are at issue. Their jurisdiction would also allow specific research projects to be suggested as a method of clarifying unsettled points.<sup>80</sup>

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76. See Arthur Kantrowitz, *Proposal for an Institution for Scientific Judgment*, 156 SCIENCE 763 (1967).

77. Task Force of The Presidential Advisory Group on Anticipated Advances in Science and Technology, *The Science Court Experiment: An Interim Report*, 193 SCIENCE 653 (1976) [hereinafter Task Force]. President Reagan endorses the finding of this task force. See *Presidential Candidates Answer Science-Policy Questions*, PHYSICS TODAY, OCL. 1980, at 49, 50.

78. See Allan Mazur, *The Science Court: Reminiscence and Retrospective*, 4 RISK 161 (1993).

79. See Jeffrey N. Martin, *Procedures for Decisionmaking Under Conditions of Scientific Uncertainty: The Science Court Proposal*, 16 HARV. J. LEGIS. 443, 451 (1979).

80. See Task Force, *supra* note 77, at 653.



The whole idea of a Science Court then, and as restructured here into a Biological Science or Bioethics Court, would be to reduce the extension of authority beyond competence and thereby avoid what has been defined as tyranny.<sup>81</sup> Stated otherwise, the whole point of a new science court proposal would be—much as it was proposed years ago—to allow for a structured process whereby separate biological and scientific issues could be analyzed by experts on science and policy questions and, in turn, be evaluated by public representatives charged with making informed policy choices. Informed gatekeeping could then be a practical, rather than aspirational, goal for the judiciary to set and achieve.<sup>82</sup> No final scientific answers would be forthcoming in a Science Court. Rather, conclusions would be reached by reliable procedures which in turn would demonstrate those reasonable steps taken to ensure “the best possible provisional answer” is given.<sup>83</sup>

Reconsidering the feasibility of a Biological Science Court certainly forces a need to perhaps revisit, as well, whether a specialized court for the environment would also enhance the efficient, expeditious administration of justice.<sup>84</sup>

## V. PARADIGMS OF THE NEW BIOLOGY

### *Decorporation*

While Peter Jennings may have surprised his ABC news audience on the evening of April 27, 1998, with his report on body transplants, Professor Robert J. White of the Case Western Reserve Medical School has been experimenting since the early 1960s with first isolating monkey brains<sup>85</sup> and, more recently, with several decorporated heads.<sup>86</sup> Indeed, in 1971, a group of Cleveland neurosurgeons transplanted successfully several monkey heads onto the bodies of other monkeys and then proceeded to revive the transplanted heads to a state of full consciousness

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81. See *id.*

82. See James A. Martin, *The Proposed “Science Court,”* 75 MICH. L. REV. 1058, 1064 (1977).

83. See *id.* at 1058.

84. See George P. Smith, II, *The Environment and the Judiciary: A Need for Cooperation and Reform*, 3 B.C. ENVTL. AFF. L. REV. 627 (1974); Scott C. Whitney, *The Case for Creating A Special Environmental Court System*, 14 WM. & MARY L. REV. 473 (1973).

85. See generally Robert J. White et al., *Isolation of The Monkey Brain: In Vitro Preparation and Maintenance*, 141 SCIENCE 1060 (1963) (detailing the isolation and sustained viability of five rhesus monkey brains).

86. See Robert J. White et al., *Cephalic Exchange Transplantation in the Monkey*, 70 SURGERY 135 (1971).

for some thirty-six hours. And, according to any reasonable definition of what being alive for the brain is (e.g., generation of brain waves), the scientific procedure was recorded as a success.<sup>87</sup>

Interestingly, U.S. Patent Number 4,666,425 is for a device for perfusing an animal head. More specifically, the invention relates to both a method and device for providing a physical and biomedical level of support for decorporated heads.<sup>88</sup> It is speculated, furthermore, that maintenance of a severed human head would not be that difficult of an undertaking.<sup>89</sup>

Technically, once achieved, the severed and conscious human head would have a mental capacity approximately the same as a quadriplegic and might well suffer—rather predictably—from analogous problems of depression over the loss of a functioning healthy body and, of course, varying degrees of isolation from people not willing to accommodate or accept them. Using voice controlled computer systems and other devices adapted to quadriplegic life, decorporated heads could be afforded a surprising degree of autonomy.<sup>90</sup>

Words such as “alive,” “comatose,” and “dead” are all used properly to describe a severed head. Thus, if a head were able to see, think, and talk, would it be improper for it to be considered alive? In many respects, the individual who is paralyzed below the neck is in the same state as a decorporated head and always regarded as being alive. Indeed, the word “paralyzed,” while being a valid adjective, does *not* deny definitionally or taxonomically such people are still alive.<sup>91</sup>

Accordingly, the word “decorporated” could be used to reference those whose heads are severed in much the exact same way as the word “paralyzed” is used—certainly not as a word connoting or denoting a denial of life but, instead, merely adjectival to acknowledge a certain life condition. So long as a severed head is conscious and communicative, it may be regarded properly as alive. Once consciousness is lost, however, the head would then fit the definition of comatose. Eventually, with the loss of

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87. See White, *supra* note 85, at 1061.

88. See generally CHET FLEMING, *IF WE CAN KEEP A SEVERED HEAD ALIVE . . . : DISCORPORATION AND U.S. PATENT 4,666,425* (1998).

89. See *id.* at 30-31. See also *ABC World News Tonight with Peter Jennings* (ABC television broadcast, Apr. 27, 1998).

90. See Chet Fleming, *If We Can Keep a Severed Head Alive: A Response to Belliotti's Review*, 4 *BIOETHICS* 162, 163 (1990). See generally Robert Bahr, *A New Ethical Question: Head Transplants?*, *SCIENCE DIG.*, May 1977, at 76 (discussing ethical and physical challenges of transplanting heads).

91. See Fleming, *supra* note 88, at 30.

brain waves and the cessation of molecular reactions, the head is then to be seen as dead—regardless of whether blood is still being pumped through it.<sup>92</sup>

*Elizabeth Taylor*

Elizabeth Taylor decided, reportedly in 1990, that she would combine decorporation with cryonic suspension and ultimate cloning. Educated to these new scientific advances by her friend Michael Jackson, Ms. Taylor will, at death, allow her head to be removed surgically from her body and stored in a specially designed container termed a “cryostat” where it will first be packed in ordinary ice and placed subsequently in dry ice where its temperature will be lowered to minus 109 degrees Fahrenheit. Ultimately, the head will be cooled by liquid nitrogen to minus 320 degrees where it will be stored long term.<sup>93</sup> These neuro-suspensions cost \$50,000. Alcor, one of four cryotoriums in the country, has presently twenty-two neuro-suspensions and thirteen whole bodies.<sup>94</sup> In America, altogether, there are some seventy-three suspended humans, with fewer than one thousand worldwide.<sup>95</sup>

At an appropriate scientific time, Ms. Taylor’s head could be used—at least theoretically—to regenerate, from a single cell, a new clone of her. Alternatively, her head could be transplanted to a reanimated cadaver with a body free from drug, alcohol, and food addictions that plagued her originally. *The National Enquirer* magazine quoted Ms. Taylor as saying upon her revival or regeneration, she would be finally “able to live the life I’ve always wanted, without a body constantly racked by pain and discom-

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92. See *id.* at 30-31. Under the Uniform Brain Death Act of 1978, section 1 states that “an individual who has sustained irreversible cessation of all functioning of the brain, including the brain stem, is dead.” Unif. Brain Death Act §1, 12 U.L.A. 65 (Supp. 1996). A decorporated entity under this proposed law could be recognized arguably as alive.

Under section 1 the 1980 Uniform Determination of Death Act, “an individual who has sustained either (1) irreversible cessation of circulatory and respiratory functions, or (2) irreversible cessation of all functions of the entire brain, including the brain stem, is dead.” Unif. Determination of Death Act, §1, 12 U.L.A. 593 (Supp. 1996). Accordingly, under part one of this Act, a decorporated entity would be dead legally, because of the clear loss of circulatory and respiratory functions. Yet under part two, the animated brain would be alive and thus, the person arguably still alive. See generally David J. Roy et al., *Death, Dying and the Brain*, 13 PRIMARY CARE 367 (1986).

93. See Jerome George et al., *Liz’ Crackpot Plan for Eternal Life*, NATIONAL ENQUIRER, Jan. 16, 1990, at 50.

94. See Clint O’Connor, *Putting Death on Ice: Cryonicists Preserving Bodies for a Possible Thaw*, *Second Chance at Life*, PLAIN DEALER, June 15, 1997, at 1J.

95. See *id.*

fort."<sup>96</sup> She is reported to have continued saying that she would not have "to turn to drugs and alcohol to escape" the miseries of life and she could eat whatever she wanted in her new state.<sup>97</sup>

*Thomas Donaldson*

Thomas Donaldson, a forty-six year old resident of Santa Barbara County, California, believed to be dying because of an inoperable malignant brain tumor, made newspaper headlines in 1990 when he sought judicial recognition of his right to self-determination by seeking to be "suspended" *before* he was pronounced legally dead.<sup>98</sup> Before the tumor spread throughout his brain and damaged it irretrievably, he wanted his head to be severed from his body and placed in cryonic suspension. Together with samples of tissue and blood, Mr. Donaldson expected, over time, that his body would be regrown. With other individuals using cryonic suspension, the suspension had been performed *after* they were pronounced dead. Here, Mr. Donaldson sought to have what he asserted was his constitutionally protected right to be cryonically suspended *pre-mortem*. In order to complete the suspension, Donaldson petitioned the State of California to exculpate those physicians and their assistants who, in reality, would be assisting in his murder-suicide.<sup>99</sup>

On January 29, 1992, the California Court of Appeals denied Mr. Donaldson's request to have his body cryogenically preserved *pre-mortem*, or before his terminal illness caused death.<sup>100</sup> Characterizing Donaldson's request as profoundly different from the physician-assisted withdrawal of life-support systems in the more traditional right-to-die cases, the court stated that one placed on life-support systems takes a "detour" that normally postpones an immediate encounter with death—with the withdrawal of treat-

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96. George et al., *supra* note 93, at 50.

97. *See id.*

98. *See* Donaldson v. Lungren, 4 Cal. Rptr. 2d 59 (Cal. Ct. App. 1992). *See also* Cynthia Gorney, *Frozen Dreams: A Matter of Death and Life*, WASH. POST, May 1, 1990, at D1 (discussing Thomas Donaldson's attempt to have his body cryonically suspended *pre-mortem*).

99. *See* Gorney, *supra* note 98. *See also* Robert W. Pommer, III, Donaldson v. Van de Kamp: *Cryonics, Assisted Suicide, and the Challenges of Medical Science*, 9 J. CONTEMP. HEALTH L. & POL'Y 589, 590 (1993) (explaining how the *Donaldson* court rejected the argument that the right to die cases allowed a patient to receive cryonic suspension before his natural death, but instead characterized the request as tantamount to physician-assisted suicide). For further discussion of the history and legal and medical aspects of cryonic suspension, see GEORGE P. SMITH, II, *MEDICAL-LEGAL ASPECTS OF CRYONICS: PROSPECTS FOR IMMORTALITY* 1-35 (1983).

100. *See* Donaldson, 4 Cal. Rptr. 2d at 60.

ment merely allowing a delayed death to occur.<sup>101</sup> With the *Donaldson* case, however, no life-extending measures would have been discontinued. Instead, a third party would have been allowed to kill Mr. Donaldson and thereby hasten Donaldson's ultimate death encounter. Observing that such actions have never been given judicial recognition or validated by statute, the court refused to act in such a manner. Under the facts, the court went on to recognize the legitimate state interest in protecting society from allowing third parties to either aid or abet suicide, and held that Mr. Donaldson's assistant could not aid, advise, or encourage Donaldson's own suicide.<sup>102</sup>

Shortly, after this ruling by the Court of Appeals, Mr. Donaldson's cancer went into remission. And, as of June 15, 1997, he was still in remission.<sup>103</sup>

### *Reva Shane Lewis*

The CBS continuing afternoon drama, *Guiding Light*, has recently introduced television viewers to a fascinating plot wherein the leading lady in the series, Reva Shane Lewis, was cloned by a grieving husband who thought his original Reva had died in a plane crash. With great dramatic scripting, the original Reva survives and now must compete with her clone to reestablish herself as the one *true* Reva. The misguided scientist who created Reva's clone is now torn between taking the high ethical road and placing a self-imposed moratorium on his further research into this field or unwittingly falling into the snares of the unscrupulous entrepreneur, Alan Spalding, who would like to not only clone himself but become a cloning magnate.

The continuing point of wonderment must be the extent to which life imitates scientific art or art merely imitates life on the biological edges. There can be little doubt that, in a very real sense, *Guiding Light* has become a bioethical laboratory.

### *Dolly*

When in February, 1996, Scottish scientists documented proof that for the first time an adult mammal was cloned in the

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101. See *id.* at 63.

102. See *id.* at 63-65; George P. Smith, II, *supra* note 32, at 465-67. See generally George P. Smith, II, *All's Well That Ends Well: Toward a Policy of Assisted Rational Suicide or Merely Enlightened Self-Determination?*, 22 U.C. DAVIS L. REV. 275 (1989).

103. See O'Connor, *supra* note 94, at 1J.

person of a sheep named Dolly,<sup>104</sup> both national and international concerns were raised that this startling achievement could well presage the ability to clone human beings.<sup>105</sup>

Although not verified scientifically, a claim by a scientist from Geneva, Switzerland, Dr. Erhard S. Hiestand, asserted a genetically engineered headless human clone has been created in Japan and was to be used to supply organs for transplant surgery.<sup>106</sup>

Earlier this year, Chicago scientist G. Richard Seed announced his intention to clone a human being.<sup>107</sup> And in New York, another scientist, Stuart A. Newman, applied for a patent on a method for making creatures that are part human and part animal, called chimeras.<sup>108</sup> While U.S. Patent Office policy forbids granting patents on human beings and is thus consistent with the Thirteenth Amendment's prohibition of slavery, the Patent Office has never been faced, until now, with the issue of the extent to which an animal could be human before determined to be worthy of patent protection.<sup>109</sup>

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104. See Rick Weiss, *Scottish Scientists Clone Adult Sheep*, WASH. POST, Feb. 24, 1997, at A1; Rick Weiss, *Animals in U.S. and Europe Now Pregnant With Clones; Methods Mimic Those That Created Dolly*, WASH. POST, June 28, 1997, at A1 (discussing Dr. Ian Wilmut's cloning of the sheep named Dolly and attempts to replicate the experiment with sheep in other species). See also Rick Weiss, *Japanese Clone 8 Calves From Cow: New Process Shows Commercial Potential*, WASH. POST, Dec. 9, 1998, at A1 (discussing the "most efficient application of cloning technology" to date, the successful cloning of several calves from a single adult cow).

105. See Weiss, *Scottish Scientists Clone Adult Sheep*, *supra* note 104. See also Mona S. Amer, *Breaking the Mold: Human Embryo, Cloning and Its Implications for a Right to Individuality*, 43 UCLA L. REV. 1659 (1996) (discussing the benefits, complexities and derivative property rights arising from blastomere separation); *Will Cloning Beget Disaster?*, WALL ST. J., May 2, 1997, at A14 (describing views of theologians and scientists regarding the cloning of mammals). See generally *Scientific Discoveries in Cloning: Challenges for Public Policy: Hearings Before the Subcomm. on Pub. Health & Safety of the Senate Comm. on Labor & Human Resources*, 105th Cong. 22 (1997) (statement of George J. Annas, Professor and Chair of Boston Univ. Health Law Dept.).

106. See Mike Foster, *Scientists Create Headless Human Clone . . . So They Can Harvest Its Body Parts*, WKLY. WORLD NEWS, Jan. 13, 1998, at 40-41.

107. See Rick Weiss, *Scientist Plans to Clone Humans*, WASH. POST, Jan. 7, 1998, at A3. See also Rick Weiss, *Cloned Human Embryo Created, South Korean Researchers Say: Announcement is Not Accompanied by Any Scientific Evidence*, WASH. POST, Dec. 17, 1998, at A3 (discussing researchers' claim to have cloned from a 30-year old woman a human embryo, which they later destroyed).

108. See Rick Weiss, *Patent Sought on Making of Part-Human Creatures*, WASH. POST, Apr. 2, 1998, at A12.

109. See *id.* See generally Rick Weiss, *What is Patently Offensive? Policy on 'Immoral' Inventions Troubles Legal, Medical Professionals*, WASH. POST, May 11,

Clonal propagation, or artificially induced sexual reproduction, is characterized by the creation of individuals derived from a single parent and identical, in genetic profile, to that parent. Accordingly, those derived from only a single parent—without benefit of origin from sexual congress—are recognized as members of the same clone. Throughout the plant and microbial (e.g., bacteria) kingdoms, as well as in many lower animals (e.g., earthworms), examples of clonal reproduction may be seen.<sup>110</sup>

Research into artificial sexual reproductive techniques, and more specifically, cloning, is said to “go to the very nature of the individuality which is implicit in any legal order. . . .”<sup>111</sup> Accordingly, ethical and religious objections tie to the nature of cloning as being an unreasonable and “unnatural” interference with “normal” procreative processes.<sup>112</sup> It is not only a form of inbreeding but is said to endanger evolutionary development and the very values of human diversity which come from it.<sup>113</sup>

Fears of the degradation of parenthood, then, and the dehumanization of man by the promotion of genetic bondage or slavery as a consequence of genetically engineering individuals according to preconceived designs, underscore the conclusion that human cloning is a direct assault on the principle of the sanctity of human life.<sup>114</sup>

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1998, at A21 (discussing the extent to which moral criteria may or should be applied in deciding to grant a patent for animal-human hybrids).

110. See Francis C. Pizzulli, Note, *Asexual Reproduction and Genetic Engineering: A Constitutional Assessment of the Technology of Cloning*, 47 S. CAL. L. REV. 476, 482 (1974).

111. *Id.* at 499. See generally John A. Robertson, *Liberty, Identity and Human Cloning*, 76 TEX. L. REV. 1371 (1998) (discussing the ethical, legal and policy justifications and criticisms of human cloning).

112. See Pizzulli, *supra* note 110, at 499.

113. See *id.* at 560. A British scientific panel recommended research into the cloning of human embryos be allowed, thereby advancing the idea that a genetic spare parts industry for damaged human bodies may be feasible. The panel was, however, careful to state that human cloning should never be allowed. See T.R. Reid, *British Panel Supports Research on Cloning*, WASH. POST, Dec. 9, 1998, at A28.

114. See *A Continuation of The National Discussion on Human Cloning: Hearings on Ethics and Theology Before the Subcomm. on Pub. Health & Safety of the Senate Comm. on Labor & Human Resources*, 105th Cong. (1997). See generally Vincent Kiernan, *The Morality of Cloning Humans: Theologians and Philosophers Offer Provocative Arguments*, CHRON. HIGHER EDUC., July 18, 1997, at A13 (discussing opposing moral and ethical views and potential consequences of human cloning); Bill Broadway, *A Rush to Judgment on Human Cloning? U-Va. Scholar Warns Not Enough Is Known to Ban Procedure Permanently*, WASH. POST, Feb. 7, 1998, at C8 (discussing politicians' and academics' concerns regarding a permanent ban on human cloning).

Behind these ethical concerns lie the constitutional values of privacy and of personal autonomy—the protection of which is surely a valid secular purpose for legislation. Any state purpose then, that protects the sanctity of human life contains a combination of religious, moral, and secular purposes. If, for example, a legislative ban of cloning achieved a coalescence of these purposes, it might well be expected to encounter difficulty in the courts—especially those which do not view “morality legislation” as proper. Indeed, some statutes have been invalidated because they were found to have an improper purpose of enforcing morals *qua* morals.<sup>115</sup>

Two legislative approaches to the issue of human cloning present themselves: enforcing a total prohibition on this form of sexual reproduction in order to safeguard ideals of humaneness and the sanctity of life—together with personal privacy and individual autonomy—or promoting a selective regulation of cloning thereby seeking to accommodate the humanitarian goal of providing infertile couples with biologically linked descendants and thereby promote the improvement of the gene pool.<sup>116</sup>

In March 1997, President Clinton banned the use of federal funds for human cloning,<sup>117</sup> but settled subsequently on a five-

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115. See *Baird v. Eisenstadt*, 429 F.2d 1398 (1st Cir. 1970) (holding state statute that prohibited delivery of birth control drugs and devices void because it bore no real and substantial relationship to public health, safety, morals, or general welfare), *aff'd on other grounds*, 405 U.S. 438 (1972). See also *Stanley v. Georgia*, 394 U.S. 557 (1969) (holding statute that prohibited mere private possession of obscene material in violation of First and Fourteenth Amendments).

116. See Pizzulli, *supra* note 110, at 480. See generally Rick Weiss, *Fertility, Innovation or Exploitation?*, WASH. POST, Feb. 9, 1998, at A1 (exploring the manner in which fertility clinics experiment on women, eggs and embryos). On November 5, 1998, a scientific discovery of great magnitude was announced: the primordial human cells, termed human embryonic stem cells, from which an entire individual is created, had been identified and cultivated. It is hoped eventually these cells will be used to grow tissues for human transplantation or, for that matter, to introduce new or improved genes into people. See Michael J. Shamblott et al., *Derivation of Pluripotent Stem Cells from Cultured Human Primordial Germ Cells*, 95 PROC. NAT'L ACAD. SCI. U.S. AM. 13726 (1998); James A. Thompson et al., *Embryonic Stem Cell Lines Derived from Human Blastocysts*, 282 SCIENCE 1145 (1998). See also Rick Weiss, *A Crucial Human Cell is Isolated, Multiplied: Embryonic Building Block's Therapeutic Potential Stirs Debate*, WASH. POST, Nov. 6, 1998, at A1; Rick Weiss, *For Senate, 'Stem Cell' Advances Revive an Embryonic Controversy*, WASH. POST, Dec. 2, 1998, at A2. But see Hanna Rosin, *Outside Laboratory, Moral Objections: Abortion Foes Oppose Embryo Research*, WASH. POST, Nov. 6, 1998, at A14; Rick Weiss, *Can Scientists Bypass Stem Cells' Moral Minefield?*, WASH. POST, Dec. 14, 1998, at A3.

117. See Rick Weiss, *Human Clone Research Will Be Regulated*, WASH. POST, Jan. 20, 1998, at A1. S. 368 and H.R. 922 of the 105th Congress seek a



year work moratorium.<sup>118</sup> In June, however, the National Bioethics Advisory Commission recommended federal legislation be enacted to allow a limited number of scientists to create cloned human embryos. The use of the embryos by implantation to make cloned human babies would be prohibited however.<sup>119</sup>

It has been determined that the Federal Food and Drug Administration (FDA) has the authority to regulate human cloning. Thus, any efforts undertaken to attempt research in this area must be initiated with the filing of a formal application to the FDA which would then undertake a lengthy review. Anyone failing to follow this procedure will be prosecuted.<sup>120</sup>

### *Judicial Review*

The standard of judicial review deemed appropriate for evaluating a total legislative prohibition of cloning would be determined by a primary determination of the extent to which a right to clone is incorporated in the fundamental right of procreative privacy. Thus, if sexual reproduction is recognized as a fundamental right, "the state must show a compelling interest in regulating cloning which can only be furthered by a complete ban."<sup>121</sup> Further, since interests in preserving genetic variability would—of necessity—entail selective regulation, a total ban designed to further these interests would most probably be unconstitutionally overbroad.<sup>122</sup> Yet, the Thirteenth and Fourteenth Amendments—whose undergirding values find expres-

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permanent ban of federal funding for human cloning, while H.R. 923 seeks to impose an outright ban on human cloning.

118. See *id.*; Guy Gugliotta, *United Against Human Cloning, Hill Leaders Differ on Specifics*, WASH. POST, Feb. 4, 1998, at A4.

119. See Rick Weiss, *Panel Backs Some Human Clone Work*, WASH. POST, June 4, 1997, at A1. In 1997, the California State Assembly became the first state to legislate a prohibition on cloning a human being as well as the purchase or selling of an ovum, zygote, embryo or fetus for the express purpose of cloning a human. See CAL. HEALTH & SAFETY CODE § 24185 (West 1997). A five year moratorium was placed on human experimentation in human cloning and heavy civil penalties imposed for violations thereof (\$250,000 to \$1,000,000). See *id.* at §§ 24187, 24189 (West 1997). On June 3, 1998, the Governor of Michigan approved legislation forbidding human cloning experimentation and thereby allowed Michigan to become the second state to follow California's lead. See 1998 Mich. Pub. Acts 111.

120. See Rick Weiss, *Human Clone Research Will Be Regulated*, WASH. POST, Jan. 20, 1998, at A1. See also John Schwartz, *FDA Sets Safety Framework for Cell and Tissue Therapies: Rules Would Cover Attempted Human Cloning*, WASH. POST, Mar. 1, 1997, at A3 (explaining that FDA regulatory framework on cell and tissue therapies potentially could apply to attempted human cloning).

121. Pizulli, *supra* note 110, at 498.

122. See *id.*

sion in the interests in preserving the nuclear family unit as well in protecting privacy and individual autonomy—might be asserted to justify legislative programs designed to prohibit cloning.<sup>123</sup>

It can be seen clearly from this consideration that the judiciary will have interesting challenges to meet and resolve as the moral, ethical, scientific, and medical issues of cloning are played out within a legal framework. With any luck, however, the script writers for *Guiding Light* will anticipate these complexities and resolve them well in advance of their actual development in the “real world.”

### CONCLUSIONS

For Justice Antonin Scalia, it is clear and unequivocal that the best way to attack the vexing new social issues of contemporary society is for Congress to draft the necessary laws to resolve or regulate those issues and not expect the Supreme Court to continuously reinterpret the U.S. Constitution in order to reach desired results.<sup>124</sup> Speaking before a leadership meeting of the American Medical Association, Justice Scalia observed that after Congress makes a judgment, “we do our job correctly when we apply what Congress has written as basically and honestly as possible.”<sup>125</sup> The Justice continued by stating: “If you have a very bad statute, not only should you expect a result to be a very bad result, I would argue that you should criticize the judges as being in violation of their oath if they do not produce a bad result, because it’s not supposed to be our call.”<sup>126</sup>

Chief Justice Burger held to the conviction that the law cannot be expected to “steer” the course of medical science or research but does have a duty to hold them in bounds and thereby guarantee they are kept within society’s speed limits.<sup>127</sup> But query, who sets the speed limits? Who is the driver, and who the passenger?

The dilemma for modern courts in their administration of justice is to strike a balance—guided always by the standard of reasonableness—between judicial activism (or Scalia passivity) and deliberative democracy. Unduly weighting and trusting the

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123. See *id.*

124. See ANTONIN SCALIA, A MATTER OF INTERPRETATION: FEDERAL COURTS AND THE LAW 9-14 (1997).

125. Glen Johnson, *Deciding Abortion, Suicide Issues Is Duty of Congress, Scalia Says*, WASH. POST, Mar. 10, 1998, at A7.

126. *Id.*

127. Burger, *supra* note 35, at 216.

democratic process almost assures an intellectual lethargy which gives rise ultimately to ignorance and thereby assures the validity of Judge Richard Posner's conclusion that "most people are ignorant about most matters"<sup>128</sup>—and here, most especially medical science. Waiting for legislative blueprints to map the perimeters of the New Biology is also an almost certain guarantee for egregious delays and disappointments.

Aided by newly energized policies of scientific gatekeeping, the judiciary has a high-powered vehicle to establish a tempered level of judicial activism as certified architects or engineers of the New Biology. Drawing upon the expertise of bioethical experts, utilizing the Breyer approach to the Federal Rules of Evidence in scientific cases, and re-evaluating the feasibility of implementing a Biological Science Court will provide the judiciary with a fresh opportunity to set about the business of developing and thereby interpreting a new common law of biotechnology—all achieved by using the traditional tools of legal analysis, deductive reasoning, public policy, and analogous applications of principles.

Even those who share Justice Scalia's conservative view of judicial interpretation, and thus require themselves to react only to those arguments framed by lawyers, cannot be unmindful of the fact that lawyers choose among the possible arguments that they make based upon their expectations of what will be acceptable by the particular judges before whom they practice.<sup>129</sup> It is therefore incumbent upon judges to demonstrate a spirit of open-mindedness and seek solutions to medico-legal dilemmas spawned by the unbridled development of biotechnology. Showing an open receptivity to entertain a variety of biomedical reasoning models—all in line with traditional legal analytic frameworks—will go far to signal the practicing bar that they, in turn, may advocate creative legal strategies for argumentation instead of being rebuffed by unyielding judicial deference to a legislative process sometimes totally incapacitated if not moribund.

It has been suggested that judges and legislators alike should follow the lead of physicians by learning "to tolerate uncertainty, accept ambiguity, deal with the complex and turn away from mere wonder."<sup>130</sup>

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128. RICHARD A. POSNER, *THE PROBLEMS OF JURISPRUDENCE* 112 (1990).

129. See Williams, *supra* note 51, at 40 & n.3.

130. Eric J. Cassell, *The Sorcerer's Broom: Medicine's Rampant Technology*, in *BIRTH TO DEATH: SCIENCE AND BIOETHICS* 177, 189 (David C. Thomasma & Thomasine Kushner eds., 1996).

In the final analysis, then, judges—in the words of Cardozo—should not “yield to spasmodic sentiment, to vague and unregulated benevolence.”<sup>131</sup> Rather, they should “exercise a discretion informed by tradition, methodized by analogy, disciplined by system, and subordinated to ‘the primordial necessity of order in the social life.’”<sup>132</sup> Oliver Wendell Holmes saw his first business as a judge was “to see that the game is played according to the rules” whether he liked them or not.<sup>133</sup> In the bioethical and scientific decisionmaking cases of today and tomorrow, I would suggest that the words of Cardozo and Holmes shape the direction and the mandate of judicial analysis and interpretation.

In the final analysis bioethics should be viewed as a natural response not only to socio-politico-religious-ethical medical dilemmas, but to increased knowledge and threatened rights, not as a new discovery of basic principles.<sup>134</sup> As such, bioethics does not require application of a new morality.<sup>135</sup> Morality is neither invented nor legislated. Rather, it is “discovered” by an unpacking, explication, and articulation of individual intuitions about what ought to be undertaken and what ought not be done.

When new lines of action are discovered, derived rules will then emerge that, in turn, lead to defined results presenting new conflicts with basic ethical and moral norms.<sup>136</sup> While this process of discovery evolves, it would be well to promote a new debate on human rights among members of the legal community as well as scientists, technologists, and philosophers which, in turn, would hopefully guide and shape the whole process itself.<sup>137</sup> Of necessity, the debate will focus its analysis on an examination of the extent to which the plethora of legal, medical, scientific, philosophical, and technological considerations combine within the brave new world to either challenge or complement the more traditional rights of humanity. Once considered, it will then be necessary to decide whether a redefinition or

131. BENJAMIN N. CARDOZO, *THE NATURE OF THE JUDICIAL PROCESS* 141 (1921).

132. *Id.*

133. See OLIVER WENDELL HOLMES, *Ideals and Doubts*, in *COLLECTED LEGAL PAPERS* 303, 307 (1920).

134. See K. Danner Clouser, *Bioethics*, in *CONTEMPORARY ISSUES IN BIOETHICS* 54, 62 (Tom L. Beauchamp & LeRoy Walters eds., 3d ed. 1989).

135. See *id.* See also Michael Kirby, *Bioethics*, '89: *Can Democracy Cope?*, 18 *L. MED. & HEALTH CARE* 5 (1990).

136. See generally EUGENE B. BRODY, *BIOMEDICAL TECHNOLOGY AND HUMAN RIGHTS* 1-97 (1993) (discussing health and human rights in the context of science and technology).

137. See generally Smith, *supra* note 2.

reshaping of these rights is needed as a direct consequence of a set of new contemporary values and standards emerging from the complex bioethical conundrums of the twenty-first century.<sup>138</sup> If realized, this debate will then give rise to and promote a structure for legal coherence to complex bioethical decision-making heretofore absent—all shaped and directed, as such, by an enlightened judiciary.

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138. See generally Schneider, *supra* note 6 (discussing the challenges arising from the interface between law and bioethical issues).