

*Diamond v. Chakrabarty*: Gauging Congress'  
Response to Dynamic Statutory Interpretation  
by the Supreme Court

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## INTRODUCTION

In June of 1980, the Supreme Court held in *Diamond v. Chakrabarty*, by a 5 to 4 majority, that living organisms could be patented.<sup>1</sup> Although the Court suggested that the holding was required by the text of the federal patent subject matter statute, in reality neither statutory text nor legal precedent directly addressed the issue. In fact, given the pioneering nature of the patent application at issue, a holding against patentability in the case would have been both easier to justify and significantly less controversial than the Court's actual holding. Far from simply applying clear law to facts, the Court in *Chakrabarty* adopted an aggressive method of interpretation in order to update a statute in conformity with changing technology. Although several Congressional debates about *Chakrabarty* have occurred in the nearly quarter-century since the decision, *Chakrabarty* was never overridden by Congress.

In this article, I consider the *Chakrabarty* decision and Congress' response to it in light of several contemporary views on statutory interpretation. I conclude that in science and technology-related cases in which delay could significantly hamper the advancement of the field, the Supreme Court should interpret federal statutes dynamically in response to a changing social context, but should also attempt to conform its interpretations to legislative preferences in order to avoid a legislative override.

This approach has been proposed and discussed in several articles by Professor William Eskridge. Eskridge has endorsed a theory of "dynamic statutory interpretation," but has also posited that the Supreme Court often attempts to avoid legislative override by attempting to mirror legislative preferences.<sup>2</sup> Eskridge suggests that such behavior by the Court is in many cases normatively desirable.<sup>3</sup> Several writers have produced important alternatives to Eskridge's model. Professor John Manning, an adherent of the textualist approach, argues that judges should

focus only on the plain text of a statute, ignoring contemporary legislative preferences as well as any information about the enacting legislature's intent that might be gleaned from legislative history.<sup>4</sup> Professor Einer Elhauge, by contrast, endorses dynamic statutory interpretation, but in a more limited form than Eskridge. Elhauge would permit such interpretation only when the Court is confident that an interpretive preference could be *enacted* by the current legislature, not simply when the legislature would *not override* the interpretation, as Eskridge suggests.<sup>5</sup>

Putting aside questions as to how the Court actually behaves, I argue that at least in the narrow realm of technological development, Eskridge's approach is the superior one. I suggest that in cases such as *Chakrabarty*, in which the statutory text is itself ambiguous and the enacting legislature could not have conceived of the contemporary context, Manning's theory provides insufficient guidance. I also argue that for the same class of cases, Elhauge's approach excessively restricts the Court's ability to advance the law by acting more quickly than Congress, which might otherwise take years to address an issue due to political wrangling or procedural roadblocks. This point is particularly significant in the patent field, where the rapid pace of technological and scientific change requires frequent statutory changes.

The strength of the approach I outline depends, however, on the responsiveness of Congress; if Congress is unable to override Supreme Court statutory interpretations of which it disapproves, then my approach would permit an unelected Court to enact its personal policy preferences into law. Analysis of this issue is problematic due to the complexity of the legislative process, which makes it difficult to interpret both legislative *action*, such as the initiation of hearings or a floor discussion, and legislative *inaction*, which might imply lack of interest in an issue, but might also stem from interest group pressure or even simple inertia. Based on an analysis of the congressional response to *Chakrabarty* and on the research of Professor Eskridge,

this article concludes, however, that in the patent law context, the approach described above is feasible and appropriate, providing the proper balance between significant interests in technological progress and important concerns about countermajoritarianism.

In light of these conclusions, the Supreme Court's holding in *Chakrabarty* was the correct one. Part I of this article describes the *Chakrabarty* decision and the relevant legal precedent, demonstrating that despite the conservative tone of the opinion, the Court's holding was a clear assertion of authority to use expansive statutory interpretation in order to update statutes in light of changing social circumstances. Part II details the slight Congressional response immediately following the decision and the more significant response following the Board of Patent Appeals' broad interpretation of the decision in 1987. Part III explains Professor Eskridge's theories of statutory interpretation and considers two important alternatives to his approach. It also describes his findings, in light of questions posed in this article, as to Congress' ability to respond to Supreme Court holdings. The article concludes that due to the importance of speed in many cases related to scientific advancement, the Supreme Court should be free to interpret statutes dynamically in such cases, while consciously attempting to avoid legislative override.

## **PART I: THE COURT DECISION AND ITS AFTERMATH**

### **1.1: *The Supreme Court Decision***

In 1972, a microbiologist working at General Electric (GE) named Ananda Chakrabarty filed a patent application based on his development of a bacterium capable of breaking down certain components of crude oil, an innovation that he suggested could be useful in cleaning up oil spills.<sup>6</sup> Chakrabarty had developed the bacterium by transferring four plasmids (small circular DNA molecules), each with the ability to break down particular components of oil, into a

*Pseudomonas* bacterium, which prior to the transfer was incapable of degrading oil.<sup>7</sup> He claimed patent rights on both the method of producing the bacterium and on the bacterium itself.<sup>8</sup>

The Supreme Court approved both patent rights. It characterized the issue in the case as a “narrow one of statutory interpretation,”<sup>9</sup> requiring the Court to construe 35 U.S.C. § 101, the federal statute that defines patentable subject matter. That statute provides:

Whoever invests or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.

The Court focused on whether Chakrabarty’s bacterium constituted “manufacture” or “composition of matter” within the meaning of the statute, and noted that “[i]n choosing such expansive terms...modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.”<sup>10</sup> The Court considered whether Chakrabarty’s organism failed the “product of nature” test, a well-established doctrine that prohibited the patenting of newly discovered but unaltered natural products. In *American Fruit Growers v. Brogdex* in 1931, the Supreme Court had reinforced this doctrine, holding that an orange, the rind of which had been treated with borax, could not be patented, because “addition of borax to the rind of natural fruit does not produce from the raw material an article for use which possesses a new or distinctive form, quality or property.”<sup>11</sup> The *Chakrabarty* Court rejected the view that Charkabarty’s organism was simply a product of nature, however, stating that his claim was “not to a hitherto unknown natural phenomenon, but to a non-naturally occurring manufacture or composition of matter – a product of human ingenuity....”<sup>12</sup>

The government argued that Congress had not intended living things to be included within the scope of §101. It claimed that the enactment of the 1930 Plant Patent Act, which provided for patent protection for certain asexually reproduced plants, and the enactment of the

1970 Plant Variety Protection Act, which provided the same protection for certain sexually reproduced plants but specifically excluded bacteria, clearly indicated that Congress believed § 101 not to encompass living things – if § 101 had encompassed living things, the government argued, neither the 1930 nor the 1970 Act would have been necessary.<sup>13</sup>

The Court dismissed this argument. It stated that plants were thought by Congress to fall outside of the scope of § 101 not because they were alive, but rather because they were considered “products of nature,” which were non-patentable, and because they were considered not amenable to the “written description” requirement of patent law under 35 U.S.C. § 112.<sup>14</sup> The first Patent Act addressed these concerns, the Court said, and the second Act was simply passed to include sexually reproducing plants, whose utility for identical reproduction was not recognized in 1930, but had become clear by 1970.<sup>15</sup>

The Court’s opinion in *Chakrabarty* thus appears to be a straightforward application of statutory interpretation techniques, seemingly uncontroversial. The more radical character of the Court’s decision in *Chakrabarty* begins to emerge, however, through a consideration of the central disagreement between the majority and the dissent in the case.

This disagreement centered on the government’s claim that living things should not be considered patentable subject matter unless Congress indicated explicitly that such patent protection was authorized. Congress, the government argued in its brief, “is best able to resolve the complex social, economic, and scientific questions frequently involved in [decisions extending the scope of patent law], and, if an extension is to be made, to tailor the statute to achieve precisely the desired ends.”<sup>16</sup> This claim appeared to be on strong ground, particularly because only two years earlier, the Court in *Parker v. Flook* had stated explicitly that “we must

proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress,”<sup>17</sup> and had quoted from a 1972 opinion in *Deepsouth Packing* by Justice White:

[W]e should not expand patent rights by overruling or modifying our prior cases construing the patent statutes, unless the argument for expansion of privilege is based on more than mere inference from ambiguous statutory language. We would require a clear and certain signal from Congress before approving the position of a litigant who, as respondent here, argues that the beachhead of privilege is wider, and the area of public use narrower, than courts had previously thought.<sup>18</sup>

In *Chakrabarty*, however, the Court was not amenable to such a claim. Although it was clearly the Congress’s role to define patentable subject matter, the Court stated, it was entirely within the province of the judiciary to interpret Congress’s intention once in written form, and there was no ambiguity in §101 as to the patentability of living organisms.<sup>19</sup> The fact that the subject matter provision in § 101 did not explicitly include living organisms was unimportant, because “[b]road general language is not necessarily ambiguous when congressional objectives require broad terms.”<sup>20</sup> Unlike in *Flook*, the Court was untroubled by the possibility that Congress had not foreseen a particular extension of patentable subject matter, and declared the government’s narrow understanding of §101 to be in tension with the very purposes of patent law: “the inventions most benefiting mankind are those that ‘push back the frontiers of chemistry, physics, and the like’ .... Congress employed broad general language in drafting § 101 precisely because such inventions are often unforeseeable.”<sup>21</sup>

The Court portrayed its holding as a restrained one, meant to avoid treading on the province of Congress. In response to claims in both the government’s brief and an amicus brief that the patenting of living organisms posed significant ethical, social, and political concerns,<sup>22</sup> the Court declared that the judiciary was without power to consider such issues:

The briefs present a gruesome parade of horrors. ... [But] we are without competence to entertain these arguments .... The choice we are urged to make is

a matter of high policy for resolution within the legislative process after the kind of investigation, examination, and study that legislative bodies can provide and courts cannot. That process involves the balancing of competing values and interests, which in our democratic system is the business of elected representatives. Whatever their validity, the contentions now pressed on us should be addressed to the political branches of the Government, the Congress and the Executive, and not to the courts.<sup>23</sup>

In light of its dicta in *Flook*, statutory language that was far from clear, and the controversial nature of the issue in the case, the Court's tone of modest restraint was curious, as Judge Brennan in dissent was quick to point out. Precisely because of the legislative nature of the issues involved, the dissent argued, "we must be careful to extend patent protection no further than Congress has provided."<sup>24</sup> The dissent disagreed with the majority's construction of the plant patent acts, arguing that they indicated a congressional understanding that living things were not patentable, or at least "are signs of legislative attention to the problems of patenting living organisms" without an "affirmative indication of congressional intent that bacteria be patentable."<sup>25</sup> Even if there were no indication on the issue from Congress, however, "the courts should leave to Congress the decisions whether and how far to extend the patent privilege into areas where the common understanding has been that patents are not available,"<sup>26</sup> the dissent argued.

Thus, the dispute between the majority and dissent in *Chakrabarty* was not simply about whether § 101 was meant by Congress to include living organisms; more significantly, it concerned the proper roles of the Court and of Congress in advancing the law. The majority's opinion suggested that even if Congress had *not* intended § 101 to include living organisms, the statute's ambiguity allowed the Court to accommodate changing technology by interpreting it that way, after which Congress could consider the relevant social issues and overturn the court's ruling if necessary. In the dissent's view, however, the ambiguity of the statute precluded an

expansion of the law; the Court's proper role was necessarily a conservative one. The dissent felt that only Congress, in its representative capacity and after careful consideration of the complicated issues involved, could act to adapt the law to changing times.

Of course, the majority did not explicitly enunciate a progressive vision, instead portraying its decision as one mandated by the existing law. As described below, however, this conservative presentation of the decision is belied by the relevant precedent and lower court opinions in the case. In fact, the Court was basically unfettered in deciding the issue – at the very least, the precedent was ambiguous, and the Court could easily have taken the more conservative path of holding for the government, allowing Congress to include living organisms within patent protection if it chose to do so. Instead, the Court in *Chakrabarty* positioned itself as an active player in the advancement of science through the law, pushing the borders of patent law to the extent that the statutory language would allow, and leaving Congress to override its decision if it felt that the Court had interpreted the statute incorrectly.

### ***1.2: Legal Precedent and Lower Court Opinions***

Before the late 1970s, neither the patent office nor the courts had taken any clear position as to the patentability of living organisms. As the Patent Commissioner noted in his brief in *Chakrabarty*, however, “it was the general understanding ... that legislation was needed if patent protection was to be extended to microorganisms,” and various commentators and organizations, including the Patent, Trademark, and Copyright Law Section of the American Bar Association, had favored legislation to expand patent protection to microorganisms, suggesting that such protection did not already exist.<sup>27</sup>

While some live matter – such as eggs, yeast, plant seeds, and bacterial spores – had been patented,<sup>28</sup> patent applications on microorganisms were uniformly rejected, and certain

courts' dicta hinted that they might be *per se* unpatentable.<sup>29</sup> In most cases that raised the issue of patentability of living organisms, however, courts generally avoided addressing the issue directly and instead dismissed the applications on other grounds.<sup>30</sup> In 1948 in *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, for example, the Supreme Court considered a patent application for a substance capable of fixing nitrogen in legumes that was made up of six strains of bacteria.<sup>31</sup> Previous attempts at combining bacterial strains for this purpose had failed due to the inhibitive effects of each strain on the others, but the *Funk Brothers* applicant had developed a particular combination of bacteria to avoid this problem.<sup>32</sup> The Court did not consider the issue of whether bacteria were unpatentable *per se*, holding instead that because “[e]ach of the species of root-nodule bacteria contained in the package infects the same group of leguminous plants which it always infected,” the invention was a product of nature and thus unpatentable.<sup>33</sup> Similarly, in the 1975 *In re Merat* decision, the CCPA faced a patent application for a process of producing “dwarf” hens, which could be mated with “normal” roosters to produce “normal” heavy meat fowl (using less chicken feed than normally required).<sup>34</sup> The application included a patent claim on the chickens produced by the method themselves.<sup>35</sup> The court found the patent specification requirements of 35 U.S.C. § 112 unsatisfied in the case, thus avoiding any consideration of the implications of permitting a patent on a chicken.<sup>36</sup>

Two cases squarely raising the issue of whether living organisms could be patented made their way through the federal courts at approximately the same time. In 1974, the Upjohn Research Laboratory filed an application for a patent on the microorganism *Streptomyces vellosus*, developed to produce the antibiotic lincomycin, in the name of Upjohn scientist Malcolm E. Bergy.<sup>37</sup> Patent applications on both the Bergy and Chakrabarty organisms were rejected by the Patent and Trademark Office (PTO), and the rejections were affirmed on appeal

by the Board of Appeals of the PTO (Board).<sup>38</sup> The two cases eventually arrived at the Court of Customs and Patent Appeals (CCPA), which at the time was the highest patent court below the Supreme Court.<sup>39</sup>

In Chakrabarty's case, the patent examiner who initially considered the patent application permitted the process patent but rejected the application for a patent on the bacterium itself, stating that the patent was disallowed first, as a "product of nature" and second, because living things are not patentable under § 101.<sup>40</sup> On appeal, the Board reversed the examiner on the first holding, finding that the bacterium in the application was not naturally occurring and thus not a "product of nature."<sup>41</sup> The Board upheld the second stated ground for decision, however, finding that Congress did not intend to include living organisms within the scope of § 101.<sup>42</sup>

The Upjohn microorganism patent application was also rejected by the patent examiner, in that case on the sole ground that it was unpatentable as a "product of nature."<sup>43</sup> The Board seemed to disregard the examiner's rationale for rejection, however, and again based its own rejection of the application on the fact that the microorganism was living and thus unpatentable under § 101.<sup>44</sup> It stated that it had "extensively researched prior court decisions for guidance" as to whether living things could be patented, but "other than possibly non-controlling dicta," could not find any case on point.<sup>45</sup> It went on to find, however, that "only those categories of subject matter specifically enumerated in the statute are patentable and a living organism does not fall within the scope of any of those categories listed," and that allowing bacteria to be patented might lead to the patenting of much more complicated forms of life.<sup>46</sup>

The Upjohn patent appeal was the first to reach the CCPA, which reversed in a 3-2 decision.<sup>47</sup> The court began by flatly rejecting the suggestion that the microorganism was a product of nature, finding the evidence "incontrovertible" that the microorganism was not found

in nature.<sup>48</sup> As for the issue of whether living things could be patented, the court labeled it a question of first impression, and briefly reviewed potentially relevant precedent.<sup>49</sup>

The court first considered *In re Mancy*, a 1974 case in which it had addressed the patentability of a method of producing an antibiotic by aerobically cultivating a strain of *Streptomyces birfurcus*.<sup>50</sup> In that case, the court overruled a finding of obviousness<sup>51</sup> by the lower court and compared it to a 1973 case, *In re Kuehl*,<sup>52</sup> in which the non-obviousness requirement had been deemed satisfied.<sup>53</sup> In rejecting any significant differences between the two cases, the *Mancy* court admitted that in *Kuehl*,

the novel zeolite used as a catalyst in the claimed hydrocarbon cracking processes was itself the subject of allowed claims in the application. Here appellants not only have no allowed claim to the novel strain of *Streptomyces* used in their process but would, we presume (without deciding), be unable to obtain such a claim because the strain, while new in the sense that it is not shown by any art of record, is, as we understand it, a ‘product of nature.’<sup>54</sup>

This dictum had in the past been interpreted as indicating that living things were not patentable, since it suggested that the appellants would not have been permitted to claim a patent on the microorganism at issue. The CCPA rejected this reading, however, stating that “we now make it explicit that the thought underlying our presumption that Mancy could not have obtained a claim to the strain of microorganism he had described was simply that it lacked novelty,” and in any case “our dictum was ill-considered.”<sup>55</sup>

The CCPA also addressed dictum in *Guaranty Trust Co. of New York v. Union Solvents Corp.*, 1931 case from the district court of Delaware.<sup>56</sup> In that case, which involved a patent application for a fermentation process using bacteria, the court stated:

Lastly, the defendant contends that the invention of the Weizmann patent is unpatentable since it is for the life process of a living organism. Were the patent for bacteria per se, a different situation would be presented. As before stated, the patent is not for bacteria per se. It is for a fermentation process employing

bacteria discovered by Weizmann under conditions set forth in the specification and claims.<sup>57</sup>

Again, this statement had been interpreted to indicate that living things were unpatentable, because the court in *Guaranty Trust* distinguished between permissible patenting of a process and impermissible patenting of the living organism itself. The CCPA rejected the relevance of this dictum out of hand, however, testily declaring it “a trite observation of minimal magnitude as precedent, dealing with a non-issue on which no opinion was expressed.”<sup>58</sup> Finding the proffered precedent on the unpatentability of living organisms unconvincing, the Court concluded that “the fact that microorganisms, as distinguished from chemical compounds, are alive is a distinction without legal significance and that disposes of the board's ground of rejection and the sole reason for refusal of a patent argued by the solicitor.”<sup>59</sup>

In Chakrabarty's appeal to the CCPA, the Court referred back to its reasoning in *Bergy* and reversed, in another 3-2 decision.<sup>60</sup> In a strongly worded concurrence, Chief Judge Markey added that § 101 “is not ambiguous. No Congressional intent to limit patents to dead inventions lurks in the lacuna of the statute, and there is no grave or compelling circumstance requiring us to find it there.”<sup>61</sup>

In 1979, the Supreme Court granted the Commissioner of Patent and Trademark's petition for certiorari in both *Bergy* and *Chakrabarty*, then vacated both judgments and remanded “for further consideration in light of *Parker v. Flook*.”<sup>62</sup> *Flook*, which had recently been decided, involved a patent application on a method for updating alarm limits (which are settings for temperature, pressure, and other variables and signal abnormal conditions) during catalytic conversion, in which the only new feature compared to previous methods was a particular mathematical formula.<sup>63</sup> The *Flook* Court held that the method was not patentable because mathematical formulas may not be patented.<sup>64</sup> Beyond the warning, quoted above, that “we must

proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress,”<sup>65</sup> and the related statement from Justice White’s opinion in *Deepsouth Packing*,<sup>66</sup> the relevance of the Court’s decision in *Flook* to the facts of *Chakrabarty* and *Bergy* remain unclear. It is thus likely that the Court was referring the CCPA to these cautionary notes that urged a conservative reading of §101 in vacating and remanding the *Chakrabarty* and *Bergy* decisions.

On remand, the CCPA wrote a joint decision for both cases, affirming its previous rulings.<sup>67</sup> The court reviewed the facts and holding of *Flook* in detail, and despite the implication of the Supreme Court’s remand, found the case to be irrelevant, concluding, “[t]he only thing we see in common in these appeals and in *Flook* is that they all involve § 101.”<sup>68</sup> The CCPA rejected the claim that the Court’s remand was based on *Flook*’s cautionary language, stating:

We are not faced with a litigant urging upon us a construction of § 101 which is at odds with established precedent. Rather, we deal with a case of first impression. Not having been asked to make a change in existing law or to overrule or modify any case or to expand any right given by Congress, we need in this case no signal from that body.<sup>69</sup>

After reviewing the reasons for its previous holdings and further explicating those rationales, the CCPA found both GE’s and Upjohn’s organisms to be patentable.<sup>70</sup> The patent office again appealed the ruling and the Supreme Court granted certiorari,<sup>71</sup> but the Upjohn lawyers withdrew their application for a product patent on their antibiotic-producing microorganism before the Court heard oral argument.<sup>72</sup> Thus, the *Bergy* appeal was dismissed by the Supreme Court as moot in 1980,<sup>73</sup> and the Court announced its holding only as to *Chakrabarty*’s claim, affirming the ruling of the CCPA.<sup>74</sup>

The legal precedent and the lower court opinions in *Chakrabarty* provide a revealing glimpse of the legal case for patentability of living organisms at the time of the decision, and demonstrate the inaccuracy of the Court’s portrayal of its holding as one clearly mandated by

law. Before the *Chakrabarty* case, no court had stated that living organisms were patentable, and conventional wisdom within the bar as well as somewhat ambiguous court dicta suggested the opposite. The Supreme Court had only two years earlier in *Flook* cautioned against expanding the boundaries of patent law without clear congressional authorization, and the Court's remand of the *Bergy* and *Chakrabarty* cases in 1979 with a direction to consider *Flook* suggests that the Court was considering just such a problem in those cases. The Court in *Chakrabarty* was faced with an issue of first impression, ambiguous statutory language, and an at least arguable claim (based on the two Plant Acts) that Congress did not intend living things to be patentable. The Court could have easily crafted an opinion holding against *Chakrabarty*, thus avoiding the significant controversy – which certainly must have been anticipated by the Court – that followed the decision. The Supreme Court's opinion in *Chakrabarty* was therefore far from a basic exercise in statutory interpretation; it was a conscious assertion of Court authority to advance the law with changing times.

### 1.3: *The Public Response*

The controversial nature of the Court's holding in *Chakrabarty* is confirmed by the media reports and legal press about the decision, which describe a flurry of public praise and criticism of the Court following *Chakrabarty*. These accounts also indicate a public recognition that both the majority and dissenting opinions in *Chakrabarty* contained a call for a Congressional response. Media reports of the time suggest an expectation that such a legislative response might soon be forthcoming.

In a June 17, 1980 article reporting the decision, Linda Greenhouse of the *New York Times* wrote that “the opinion was hailed and denounced in the sweeping language that has characterized much of the debate since the Court agreed last October to decide the issue,” and

quoted the People's Business Commission, a non-profit organization that had filed an amicus brief in the case, as stating that "[t]he Brave New World that Aldous Huxley warned of is now here."<sup>75</sup> The article also quoted Genentech, Inc., a genetic engineering company that had also filed an amicus brief, proclaiming that "[t]he Court has assured this country's technological future."<sup>76</sup> The same day, the *Washington Post* reported that the decision was "one of the most controversial of the past decade."<sup>77</sup>

Media reports following the opinion noted the bold nature of the Court's holding. In a 1984 article about the Supreme Court's most recent opinions related to new technology, Fred Barbash of the *Washington Post* wrote of the assertiveness of the *Chakrabarty* Court's vision of its role with respect to Congress. The article described the decision as a sign of the Court's new willingness to meet the demands of science by expanding legal protection, even absent a specific Congressional mandate:

Slowly and reluctantly, the justices are beginning to confront novel legal questions arising from the rush of high technology. And their most recent opinions indicate that they have no intention of standing in the way of this rush without explicit instructions from Congress. It is not the place of the federal judiciary to put the brakes on these developments, the court is saying, whether confronted with demands that it save the entertainment industry, as in the Sony case, or the world, as in [*Chakrabarty*].<sup>78</sup>

In articles both favorable to and opposed to the Court's ruling in *Chakrabarty*, press and legal writers recognized the importance of Congress's next move in determining the decision's ultimate legacy. In the *Christian Science Monitor*, Robert Cowen wrote shortly after *Chakrabarty* that the holding left the real decision as to the patentability of living organisms to "society as a whole," via the mouthpiece of Congress:<sup>79</sup>

In ruling that a "man-made" microbe is patentable, the US Supreme Court has resolved a narrow legal question and issued an awesome challenge. The people of the United States, through their elected representatives and legislative bodies, must decide the extent to which they believe humans should seek to

manipulate organic life at its fundamental level and under what restraints this should be done. The courts cannot make that decision for them.<sup>80</sup>

In a case note on the decision, the Harvard Law Review praised the Court's willingness to take an assertive stand in broadening the law to accommodate new technologies, but noted that Congress had much work to do in the wake of the decision:

Whether microorganisms should be patentable is a policy judgment that must be considered in light of the efficacy and purpose of the patent system itself. Because even the important patent issues arising in connection with microbiological research are ancillary to far broader scientific, social, and ethical issues, they should await comprehensive congressional review of microbiological and genetic research.<sup>81</sup>

Media reports of the time expressed the general sense that *Chakrabarty* “[left] open more questions than it answer[ed],” and that the Court's decision was simply a first step in an area that Congress would ultimately mold through detailed legislation.<sup>82</sup>

#### 1.4: *After Chakrabarty*

At the time of the Supreme Court's decision in *Chakrabarty*, 114 patents applications involving new life forms were pending in the PTO, and new applications were coming in every day.<sup>83</sup> Following the decision, the PTO began to grant applications on microorganisms such as *Chakrabarty*'s, although these grants were delayed for several months due to processing difficulties.<sup>84</sup> It remained unclear whether animals could be patented, however, and the PTO stated no position on this matter for several years.

The issue was finally resolved in 1987, when *Ex Parte Allen* came before the Board.<sup>85</sup> The case involved a patent application for polyploid oysters (oysters with three sets of chromosomes rather than two), which were sterile and grew to be larger than ordinary oysters, an appealing trait for commercial use.<sup>86</sup> The patent examiner rejected the application because the oysters were living organisms, citing *In re Merat*,<sup>87</sup> and the Board reversed this finding, stating

that *Diamond v. Chakrabarty* had held decisively that living organisms were patentable.<sup>88</sup> In broad language, the Board declared that “the issue, in our view, in determining whether the claimed subject matter is patentable under § 101 is simply whether the subject matter is made by man.”<sup>89</sup>

The Board’s decision in *Ex Parte Allen* forced the PTO to change its policy, and soon after the holding, in April 1987, it released an announcement stating explicitly that multi-cellular organisms, including animals, were now patentable subject matter.<sup>90</sup> In the announcement, the PTO noted that humans were excluded from this policy based on a Constitutional prohibition – presumably under the Thirteenth Amendment’s slavery provision.<sup>91</sup> The announcement appeared in the Official Gazette of the Patent Office:

The Patent and Trademark Office now considers non-naturally occurring non- human multi-cellular living organisms, including animals, to be patentable subject matter within the scope of 35 U.S.C. § 101 . . . . A claim directed to or including within its scope a human being will not be considered to be patentable subject matter within 35 U.S.C. § 101. The grant of a limited, but exclusive property right in a human being is prohibited by the Constitution.<sup>92</sup>

Based on the new policy, the United States became the first country in the world to permit the patenting of animals.<sup>93</sup> Unsurprisingly, the change was met with severe disapproval by some groups, and a coalition of animal rights and public policy groups formed almost immediately to block the change.<sup>94</sup>

On April 12, 1988, the first patent on a living multi-cellular organism was issued to Harvard University for the “Harvard mouse,” a mouse genetically engineered to develop a type of cancer useful as a model for human breast cancer.<sup>95</sup> Several law suits challenging the action were filed, including *Animal Legal Defense Fund v. Quigg*,<sup>96</sup> a suit by animal husbandry groups, animal rights groups, and farmers claiming that the Commissioner of Patents and Trademarks

had failed to comply with various requirements of the Administrative Procedure Act in promulgating the new animal patent policy. The Federal Circuit dismissed the suit for lack of standing.<sup>97</sup>

After granting a patent on the Harvard mouse, the PTO did not approve any further animal patents for nearly five years.<sup>98</sup> The agency did not offer an explanation for this unofficial moratorium, but as a *New York Times* reporter put it, the agency “apparently got cold feet” in response to the controversy surrounding the Harvard mouse.<sup>99</sup> In 1992, the PTO resumed issuance of such patents, authorizing three patents on mice that, like the Harvard mouse, were genetically engineered to provide models for human disease.<sup>100</sup> Scores of animal patent approvals followed.<sup>101</sup> The rush of animal patenting in the early 1990’s raised the public profile of the issue, and Congress, which had first paid surprisingly little attention to *Chakrabarty*, began to take notice.

## **PART II: THE CONGRESSIONAL RESPONSE**

As described in Part I, the public expected that after the *Chakrabarty* decision, Congress would evaluate the permissibility of patenting living organisms. Both the majority and dissent in the case suggested that Congress should consider the issue; the majority declared that the policy repercussions of its decision were “a matter of high policy for resolution within the legislative process after the kind of investigation, examination, and study that legislative bodies can provide and courts cannot,”<sup>102</sup> and the dissent argued that “the courts should leave to Congress the decisions whether and how far to extend the patent privilege.”<sup>103</sup> Media reports of the time noted the possibility of a congressional response, and commentators suggested that the *Chakrabarty* Court had “issued an awesome challenge” to the legislature.<sup>104</sup>

The obvious question, then, is whether Congress *did* respond, and if so, what form did the response take? In this section, I give detailed consideration to the congressional action (or lack thereof) related to the patentability of living organisms that followed the *Chakrabarty* decision.

### 2.1: *In the Wake of Chakrabarty*

A week after the *Chakrabarty* decision, a meeting sponsored in part by the House Committee on Science and Technology was organized in Washington to discuss the significance of the decision.<sup>105</sup> Patent lawyers, scientists, and congressmen all voiced their views at the meeting. Representative George Brown, a Democrat from California and the chairman of the House Science, Research, and Technology Subcommittee, cautioned that many members of the public had “genuine and deeply felt” apprehensions about the type of research *Chakrabarty* would encourage.<sup>106</sup> Jonathan King, a professor of biology at the Massachusetts Institute of Technology, argued that Congress should pass legislation explicitly prohibiting the patenting of living organisms.<sup>107</sup> Representative Robert Drinan, a Democrat from Massachusetts, disagreed, arguing that Congress should wait and learn more about the technology before it acted, adding “[w]e make enough mistakes on matters we think we understand.”<sup>108</sup>

While the courts and many pundits seem to have expected a legislative evaluation of *Chakrabarty* to follow the decision, congressional observers suggested that Congress was unlikely to act in the near future. A week after the decision, *U.S. News & World Report* noted that although the *Chakrabarty* Court “left the door open for Congress to amend the laws and set regulatory policy on the new research technology ... congressional sources indicate that no changes in the law to upset the Supreme Court ruling are imminent.”<sup>109</sup> Similarly, *Chemical Week* reported that while “[t]he high court left open the door to some form of ban on patents for

living organisms ... Congressional observers ... consider remote any move by Congress to change the patent law in this direction.”<sup>110</sup>

These predictions proved to be accurate – no noteworthy reports, debates, or legislation related to *Chakrabarty* emerged from Congress in the first seven years following the decision. This lack of congressional interest was notable considering the public controversy surrounding the decision and the reference to important policy implications of the holding in the amicus briefs and majority and dissenting opinions in the case. Despite this apparent need for legislative attention, it was only after the Board interpreted *Chakrabarty* to permit animal patenting in *Ex Parte Allen* that significant legislative interest in the decision emerged.

## ***2.2: After Ex Parte Allen***

Just as *Chakrabarty* had, *Ex Parte Allen* and the PTO’s subsequent announcement that it would approve animal patents let loose a storm of protest. Religious leaders and animal-welfare groups argued that patenting animals was unethical and would damage humanity’s relationship with nature, while farmers’ organizations worried that patents for superior breeds of animals resulting from genetic engineering would be owned and controlled by a few large companies.<sup>111</sup> As a result, several congressmen adopted the *Chakrabarty* issues as a central political cause .

### **2.2.1: An Early Bill and the House Subcommittee Hearings**

In May of 1987, just one month after the Board ’ decision in *Ex Parte Allen* and almost a year before the patenting of the Harvard mouse, Senator Mark Hatfield, a Republican from Oregon, proposed an amendment to a supplementary appropriations bill, prohibiting the use of appropriated funds for the patenting of genetically modified animals.<sup>112</sup> The amendment, which would in essence prevent the PTO from considering or granting patent applications for animals until 1988, was adopted by the Senate without debate.<sup>113</sup> Perhaps hoping that compromise would

ease political tensions, the PTO voluntarily agreed not to patent any animals through fiscal year 1987 before the amendment could be considered in the House of Representatives.<sup>114</sup>

While the appropriations amendment was still pending in June, Representative Robert Kastenmeier, a Democrat from Wisconsin, initiated a set of hearings on the subject through the House Subcommittee on Courts, Civil Liberties, and the Administration of Justice (CCLAJ) within the Committee on the Judiciary. Kastenmeier announced that the purpose of the hearings, which were entitled “Patents and the Constitution: Transgenic Animals,” was “to assess the myriad of questions which arise from decisions to issue patents to genetically altered plants and animals,”<sup>115</sup> including “moral and philosophical questions.”<sup>116</sup> The hearings spanned four days and produced a 931-page record.<sup>117</sup> Over thirty witnesses, including patent lawyers, law and biology professors, religious leaders, bioethics experts, anti-genetic engineering activists, biotechnology company representatives, and farmers’ advocates gave testimony at the hearings, and discussed both legal and policy considerations relevant to the patenting of animals.<sup>118</sup>

At the hearings, Kastenmeier expressed a lack of confidence in both the Supreme Court’s decision in *Chakrabarty* and the Board of Appeal’s holding in *Allen*, as well as in the Patent and Trademark Commissioner’s ability to interpret §101 appropriately. He explicitly questioned the authority of the *Chakrabarty* decision, finding it “troubling” that “we tend to interpret [*Chakrabarty*] as the law of the land,” despite the fact that “[i]t was not only a five to four decision, but two members of the majority are not even on the Court now.” Thus, “even though it remains the law, [the *Chakrabarty* ] view is not shared by everybody,” Kastenmeier stated.<sup>119</sup> In response to a witness who hoped that Congress would overturn *Chakrabarty*, however, Kastenmeier was not supportive, stating clearly, “[a]s far as microorganisms is [sic] concerned, that is already a lost cause.... I do not think that *Chakrabarty* will be repealed judicially or

otherwise.”<sup>120</sup> Kastenmeier suggested that Congress could have properly evaluated and perhaps reacted to the ruling in *Chakrabarty* if it had responded earlier, and that if Congress did not review the implications of the PTO announcement immediately, that opportunity might pass in the same way:

[W]hen it was a question of microorganisms in the *Chakrabarty* case, people sort of shrugged their shoulders. But as it has now ascended to mammals and vertebrates, more people are concerned about implications, and if somebody does not look at it now ... then it may be too late.

At least I would want to feel that we made a conscious decision in 1987... that we have not allowed policies to eventuate which we cannot cope with later on.... Speak now or forever hold your peace, so to speak; that is the position we are in.<sup>121</sup>

One of Kastenmeier’s primary concerns appeared to be patenting of human beings; although the PTO had announced its position that humans were unpatentable under the Constitution, Kastenmeier suggested that a future administration could change that view unless Congress enacted a ban on patenting of human beings into law.<sup>122</sup>

Other speakers at the hearing argued both for and against congressional legislation on animal patents. Dr. Tegtmayer, the Assistant Commissioner for Patents at the PTO, stated that while she commended the Chairman of the Subcommittee for holding the hearing, and believed that animal patentability “is a good area to have a dialogue in,” the PTO position “at the present time is that we do not see any particular need to address this issue with legislation.”<sup>123</sup> Reid Adler, a patent attorney who argued for an expansive interpretation of § 101, disagreed, claiming that the PTO Commissioner was overly conservative, and had “a poor track record in supporting novel, frontier technologies.” He claimed that the Commissioner had refused to apply *Chakrabarty* appropriately until the Board forced it to, and recommended that “Congress require annual reports from the PTO on the Commissioner’s administrative determinations under §101 of any types of subject matter that are excluded from patentability.”<sup>124</sup> At the same time, other

witnesses argued vehemently that Congress should restrict the Patent Office’s ability to expand the category of patentable subject matter.<sup>125</sup>

The 1987 House Subcommittee hearings did not produce one clear policy proposal, but they provided a wealth of information about the competing claims and values involved in the animal patent controversy, and demonstrated that Congress was willing to carefully address the policy issues surrounding *Chakrabarty*. In a sense, the hearings had bolstered the position of the *Chakrabarty* majority; they appeared to be precisely the type of “investigation, examination, and study” that the *Chakrabarty* majority had left to Congress, suggesting that the legislature was uniquely capable in that role.<sup>126</sup>

In the seven years following the hearings, ten bills prohibiting or regulating animal patenting were proposed in the House or Senate, but none passed, and most never emerged from committee. New proposals ceased to emerge not long after the PTO resumed approving animal patent applications in 1992, and the issue seemed dead until quite recently, when the human cloning controversy revived the *Chakrabarty* issue, this time in relation to patenting of human beings. Although the proposed bills (described below) differed from one another in several respects, the comments of the Representatives and Senators supporting them were quite strikingly similar. Most suggested that Congress had disregarded its obligation to make law in the area related to *Chakrabarty*, and many specifically denounced both the Supreme Court and the PTO for inappropriately co-opting the legislative role.

#### 2.2.2: Proposals in the late 1980s

In August of 1987, Representative Charles Rose, a Democrat from North Carolina, proposed a bill to impose a two-year moratorium on the patenting of “animals altered through genetic engineering technology.”<sup>127</sup> The CCLAJ Subcommittee rejected this legislation the

following year.<sup>128</sup> In February of 1988, Senator Hatfield proposed an almost identical moratorium bill.<sup>129</sup> Presenting the bill in the Senate, Hatfield contrasted the executive role of the Patent Office with the legislative role of the Congress:.

[T]he Patent Office itself admits that it does not take ethical or moral considerations into account when assessing an application for a patent. It is, I believe, the responsibility of Congress to fully consider what kind of technological creativity we wish to encourage through the patenting process, and I believe the giant leap to animal patenting provides us with the specific example we need to conduct such a debate.<sup>130</sup>

In Hatfield's view, Congress should consider "the ethical implications of the creation, and exclusive rights to, an animal never before existing in nature."<sup>131</sup> He cautioned that he did not wish to halt genetic engineering, "a revolutionary science that may produce results nothing short of miraculous," but only to provide time for Congress to fulfill its duty by carefully considering the issues involved.<sup>132</sup> Hatfield's bill was referred to the Senate Subcommittee on Patents, Copyrights and Trademarks, where it failed.<sup>133</sup>

In June of 1988, three months after the patenting of the Harvard mouse, Representative Kastenmeier introduced a bill proposing a different response to the PTO's animal patenting announcement. Most relevantly, the bill did not prohibit patenting of animals, but declared that human beings were not patentable subject matter and, to protect farmers' interests, that a farmer would not be guilty of patent infringement based on reproducing, using, or selling patented transgenic farm animals (but prohibited the selling of germ cells, semen, or embryos of such animals).<sup>134</sup> On the floor of the House, Kastenmeier stated that the bill represented the conclusion of the extensive hearings held by the CCLAJ Subcommittee and run by him in 1987, and that it provided a better solution than the various moratorium bills suggested by his colleagues.<sup>135</sup> Kastenmeier argued that no moratorium bill was likely to pass in Congress, and that regardless, a moratorium "does not answer the fundamental questions."<sup>136</sup> Representative

Carlos Moorhead, a Republican from California who also spoke in favor of the bill, argued that based on the information provided by the hearings, there was no evidence that research involving transgenic animals was dangerous or unethical, but that if at some point such research did become dangerous, “Congress has the ability to monitor research and development in this area and as soon as we detect abuse we can move in and remedy the situation.”<sup>137</sup> Thus Moorhead, like Hatfield and Kastenmeier, believed that Congress had an obligation to actively monitor the *Chakrabarty* issue. Another Congressman who rose to speak in favor of the bill, Representative Hamilton Fish of New York, a Republican, suggested that the public did not want a ban on patenting of genetically engineered animals, noting that a Public Perception Survey had found that “83 percent [of those polled] favor using genetically engineered organisms on a small scale for medical research” and “42 percent favored use on a large scale basis.”<sup>138</sup>

Kastenmeier’s bill passed in the House in September of 1988 and was referred to the Senate Judiciary Committee, but the Senate never considered the measure.<sup>139</sup> Kastenmeier introduced the bill again in 1989,<sup>140</sup> stating “[i]t is my hope that given the extensive work done on this issue by the House that the Senate will turn to [it] early this Congress.”<sup>141</sup> The bill was referred to the House Subcommittee on Courts, Intellectual Property, and the Administration of Justice in March of 1989, and the Subcommittee held hearings on the subject in September, but the bill never emerged from the Subcommittee.<sup>142</sup>

At about the same time, Representative Benjamin Cardin, a Democrat from Maryland, proposed another bill imposing a 2-year moratorium on the granting of animal patents, with a new exception for “animals the commercialization of which is subject to a Federal regulatory review and approval process.”<sup>143</sup> Cardin, like Senator Hatfield a year earlier, emphasized the

distinct roles of the PTO and Congress, and suggested that Congress had derogated from its obligation to decide significant policy issues:

It is the Congress' duty, not PTO's, to determine whether living organisms, like plants and animals, are patentable. Congress saw the need for this type of active involvement [in enacting the plant patent acts]. With regard to the patenting of animals, however, it was the PTO, not Congress, that decided in 1987 that nonhuman animals constituted patentable subject matter. The PTO stepped in to fill the void. But it is time for Congress to become more involved in the debate.<sup>144</sup>

Cardin's declaration that it is "Congress' duty" to decide whether living organisms are patentable implied a subtle criticism of the Supreme Court's holding in *Chakrabarty*, which in essence decided this question without congressional input. This implied rebuke was emphasized by Cardin's proposal of a comprehensive review of the patent laws: "I believe we have reached the point at which we must examine whether our patent system is keeping up with technology," he stated.<sup>145</sup> In proposing to adapt the patent laws to changing technology, Cardin suggested that the Supreme Court's attempt to do just that in *Chakrabarty* was an imposition on Congress's proper jurisdiction. Cardin's moratorium bill, like those that had preceded it, failed to emerge from House subcommittee.<sup>146</sup>

Three months later, in February of 1990, Senator Hatfield proposed another moratorium bill in the Senate, this time for a five-year span,<sup>147</sup> declaring, "the patenting of animals blurs the distinction between man's work and God's work."<sup>148</sup> Like Cardin, Hatfield emphasized the obligation of Congress to make policy determinations, and his rebuke of the Supreme Court and the Patent Office was strongly worded. He argued that traditionally, living things were appropriately not considered to be patentable under the law because they were "in the public ownership."<sup>149</sup> Unfortunately, the Supreme Court had reversed that position in *Chakrabarty*, despite a plea by the dissent (which was in the right, Hatfield implied) to leave such issues to the

Congress.<sup>150</sup> The patent office had then made things worse by “unilaterally extending the holding in *Chakrabarty*” to permit animal patenting.<sup>151</sup> In Hatfield’s view, this “represents a vast, unique and deeply troubling usurpation of Congressional authority ... [and] denies the public the traditional legislative process for the protection of their rights.”<sup>152</sup> Thus, Hatfield declared blatantly that the courts and the PTO had encroached upon congressional authority: “My legislation to rescind this patent office decision simply maintains the status quo, by returning major patenting decisions to the correct and traditional forum, Congress.”<sup>153</sup> Like his earlier proposal, Hatfield’s bill failed in committee.<sup>154</sup>

Just as those congressmen in favor of a moratorium on animal patenting persisted in proposing a new bill each year, Representative Kastenmeier continued to argue in favor of his alternative proposal allowing the patenting of living organisms. In September of 1990, Kastenmeier reintroduced his bill in almost identical form (except that the prohibition on sale by farmers of farm animal germ cells, sperm, eggs, and embryos was eliminated), as part of the larger Patent Competitiveness and Technological Innovation Act of 1990.<sup>155</sup> The bill was referred to the House Judiciary Committee, which produced a report in October.<sup>156</sup> The report stated that the bill would provide support for the basic holding in *Ex Parte Allen*, but made clear that the Committee viewed the PTO’s actions as inappropriately co-opting the legislative role:

[The bill,] by statutorily clarifying that transgenic animals are patentable and that transgenic human beings are not presumes that the patent and trademark office did usurp Congressional prerogatives, but agrees with the substance of the PTO decision as to patentability of transgenic animals. ...<sup>157</sup>

Although the Commissioner had announced his position that human beings could not be patented under the U.S. Constitution, the report stated that a statutory clarification on the subject was necessary because “the Commissioner is totally without authority to resolve constitutional issues,”<sup>158</sup> and his statement “does not even detail the precise grounds for the position”; thus it

“must be read as raising the issue, and not resolving it.”<sup>159</sup> The report echoed Hatfield’s and Cardin’s explicit criticisms of the PTO and more subtle criticisms of the Supreme Court, stating that the Patent Office “unilaterally and bureaucratically” decided to allow patenting of animals by “bootstrapping from the rather highly contested decision in the *Chakrabarty* case.”<sup>160</sup> If the human patents issue would be subject to the same type of “administrative caprice” by the PTO as was the animal patents issue, the report declared, congressional action was clearly necessary.<sup>161</sup> The report also pointedly noted its agreement with the *Chakrabarty* dissent’s view that “[t]he courts should leave to Congress the decisions whether and how far to extend the patent privilege into areas where the common understanding has been that patents are not available.”<sup>162</sup> The new version of Kastenmeier’s bill did not advance beyond the publishing of the report, and like its predecessor, failed in committee.<sup>163</sup>

### 2.2.3: The Last Gasp for Animal Patenting Legislation

In the early 1990s, three more bills were introduced in Congress proposing a moratorium on animal patenting. Senator Hatfield in 1991 and Representative Cardin in 1992 introduced identical five-year moratorium bills in the Senate and House, and in 1993, Senator Hatfield introduced a final two-year moratorium bill in the Senate which, in addition to an animal patenting moratorium, included a moratorium on patenting of “human tissues, fluids, cells, [and] genes or gene sequences.”<sup>164</sup> All of the bills failed in committee, and since 1993, no new bills on animal patenting have been proposed. The lack of new bills was perhaps in part due to the fact that the Patent Office lifted its voluntary moratorium on the issuing of animal patents in 1992 – in 1991, there were more than 140 patents on animals pending in the Patent Office,<sup>165</sup> and as these patents began to be granted, it is likely that the fight became much harder to win.

In their comments introducing their legislation, Hatfield and Cardin repeated well-worn themes, arguing that “Congress must act now if it is ever going to have the opportunity to examine the effects genetically engineered animals will have upon our environment.”<sup>166</sup> In introducing his 1993 bill, Hatfield again criticized Congress’ inaction, and suggested that the PTO’s cessation of its unofficial moratorium on animal patents a year earlier was the direct result of this passivity: “In my view, [the PTO ended the moratorium] because they can realistically wait no longer for ethical guidance from Congress.”<sup>167</sup> Both Cardin and Hatfield also drew attention to lobbying activity surrounding the bills. After introducing his 1992 bill, Representative Cardin included in the record a list of fifteen animal rights and farming groups that supported his legislation.<sup>168</sup> Senator Hatfield criticized the intense lobbying efforts of groups opposed to his 1993 legislation, claiming that the Association of Biotechnology Companies and the Industrial Biotechnology Association had used “highly questionable tactics” in lobbying against his bill.<sup>169</sup> None of these appeals seemed to work – neither congressman’s legislation progressed beyond committee.

### ***2.3: The Current Human Patentability Debate***

In the late 1990’s, Congress appeared to lose interest in the implications of patenting living organisms, but the issue of human patentability has recently reappeared as part of the larger human cloning controversy. In June 2002, Senator Sam Brownback, a Republican from Kansas, proposed legislation prohibiting the patenting of “human organisms.”<sup>170</sup> This bill was distinct from another bill proposed by Brownback specifically to ban human cloning, but debate on the patent bill was nonetheless dominated by discussions about the problems with cloning human embryos. In the Senate floor debate, Brownback declared that Congress must be wary of those “who are contending that the young human at various stages – an embryo – is not a person,

therefore is patentable; that a person can be patented because it is a piece of property.”<sup>171</sup>

Brownback argued that he was proposing the bill “to make it clear to the Patent Office, [to] the people of America, the people around the world, that you can’t patent a person at any stage or age of its development and growth.”<sup>172</sup> He later added: “We all know this debate is really about the future of humanity.”<sup>173</sup>

Senator Hatch, a Republican from Utah, accused Brownback of planting a “red herring” by shifting the debate about the permissibility of human cloning to a bill on patenting,<sup>174</sup> a charge that did not seem far-fetched in view of Brownback’s focus on the ethics of human cloning itself rather than on patents during his floor speeches. “I am greatly concerned,” Hatch stated, “that in filing this particular amendment, our opponents in this debate are resorting to tactics that will not result in the careful consideration that this important issue merits.”<sup>175</sup> Hatch also suggested that the amendment was unnecessary, since the PTO already had a policy prohibiting patenting of humans. (Interestingly, the Patent Office had announced that it no longer based this policy on Thirteenth Amendment grounds, but rather on the fact that it had not received guidance from Congress or the courts on the issue.<sup>176</sup>) Hatch added that the patent issue should most properly be examined by the Judiciary Committee, and that “[w]e need to know what, if any, tensions exist between the Brownback Amendment and the Supreme Court’s holding in the famous *Chakrabarty* decision.”<sup>177</sup> Brownback conceded that the Patent Office prohibited human patenting, but argued that the PTO policy was being challenged in court, and declared, “[w]hat I am providing by this amendment is clarity by the legislative body.”<sup>178</sup> After significant debate on the issue, Brownback’s amendment never reached a vote in the Senate.<sup>179</sup>

In July of 2003, Representative David Weldon, a Republican from Florida, proposed an amendment to a House appropriations bill prohibiting funding for the issuing of patents on

claims “directed to or encompassing a human organism.”<sup>180</sup> In comments about the amendment, Weldon has insisted that it is simply a restatement of the Patent Office’s position against patenting of human beings, rather than, as some lobbying organizations have claimed, an attempt to broaden the scope of the policy to prohibit patents on stem cell lines or procedures for creating human embryos.<sup>181</sup> The House of Representatives approved Weldon’s amendment in the month that it was proposed,<sup>182</sup> but the bill never proceeded further.

#### ***2.4: The Congressional Perspective on Chakrabarty***

Congressional discussion of *Chakrabarty* in the nearly quarter of a century since the holding has had a consistently negative tone, with a focus on the perceived aggressiveness of the Court. Congress never overturned the decision, however, nor did it significantly modify it. Congress evinced a curious lack of interest immediately after the decision, which was followed by attempts by a small number of Congressmen at modifying the holding in the wake of the Board of Patent Appeals’ expansive interpretation of it. These Congressmen generally viewed *Chakrabarty* as a dangerous usurpation of the congressional role, and forcefully asserted Congress’ duty to legislate in the area, particularly where necessary to prevent other branches from filling the void. Ultimately, these efforts to pass legislation on the issue failed. As described below, this failure could have been due to a variety of factors, and does not necessarily indicate that Congress as a whole was indifferent to the issue or approved of the decision. The next section considers the significance of the congressional response to *Chakrabarty* in light of contemporary academic scholarship.

### **PART III: DYNAMIC STATUTORY INTERPRETATION AND THE INTERACTION BETWEEN CONGRESS AND THE COURT**

The Supreme Court acted aggressively in *Chakrabarty*, interpreting § 101 broadly, with little support from statutory language or legislative history. The Court justified this foray into an

area with potentially complex policy implications by suggesting that if Congress disapproved of the Court's decision or wanted to alter it in some way, it could respond appropriately. Congress did not respond until seven years later, when *Chakrabarty* was interpreted by the Patent Office to apply to animals. Even then, each legislative bill proposed in Congress to modify or overturn the holding failed to pass

This history sheds some light on the relationship between the Supreme Court and Congress, but its import is not entirely clear. Did Congress respond to *Chakrabarty* as the Court expected or hoped it to? Was Congress's inability to pass a bill modifying or overruling the *Chakrabarty* decision an indication that the Court's interpretation of § 101 was "correct" in some sense? Recent academic literature concerning statutory interpretation and the interactions between the Supreme Court and Congress helps answer these questions.

### 3.1: *Dynamic Statutory Interpretation with an Eye to Congress*

The Supreme Court's approach to statutory interpretation in *Chakrabarty* is consistent with a method proposed by Professor William Eskridge in his 1987 article, *Dynamic Statutory Interpretation*,<sup>183</sup> and expanded in his 1991 article, *Overriding Supreme Court Statutory Interpretation Decisions* [hereinafter "*Overriding*"].<sup>184</sup>

In *Dynamic Statutory Interpretation*, Eskridge criticizes the "originalist" model of statutory interpretation, and urges courts to update interpretations of statutes in conformity with social changes. According to Eskridge, the originalist approach, which focuses on the original intent of the drafters of the statute, fails because the legislature cannot consider every issue that may come up in relation to the statute, and "[a]s society changes, adapts to the statute, and generates new variations of the problem which gave rise to the statute, the unanticipated gaps and ambiguities proliferate."<sup>185</sup> These gaps lead originalist judges to produce out-of-date and

counter-productive statutory interpretations that do not do justice to the legislature's interests in enacting the statute, Eskridge claims.<sup>186</sup> Only through dynamic statutory interpretation can the judiciary properly advance the legislature's vision and "contribute to the legitimacy of our government as a whole."<sup>187</sup>

Eskridge envisions a continuum of cases. On one end of the continuum are cases that involve a recently drafted statute, a detailed statutory text, and a historical context indicating that the legislature deliberated on the relevant issue and decided it – for these cases, Eskridge says, the language of the text should control the result, because a textual reading is likely to accurately reflect both current social understandings and original legislative interests.<sup>188</sup> On the other end of the continuum are cases involving an old statute with general or ambiguous language, a societal or legal context greatly transformed since the statute's drafting, and little indication that the original drafters considered the relevant interpretive question – in those cases, Eskridge claims, the judge should update the statute in accordance with the changed societal context, giving little heed to the original intentions of the drafters.<sup>189</sup> Eskridge argues that the further a case falls along this continuum, the freer a judge should feel to interpret the statute aggressively and use the "evolutive" context of the case to adapt the statute to a contemporary setting.<sup>190</sup>

*Chakrabarty* presents a case on the far end of Eskridge's continuum. The statute in question, 35 U.S.C. § 101, was passed in 1952, almost thirty years before *Chakrabarty*, and its language was taken almost verbatim from a statute passed in 1793.<sup>191</sup> The wording of §101 is very general, and the language is ambiguous as to the permissibility of patenting living organisms. There is no indication that either the 1952 or 1793 Congress had considered the issue of patenting life forms. Most importantly, the social context had changed significantly in the ten years prior to the *Chakrabarty* decision: the development of recombinant DNA technology and

the increasingly clear potential of genetic engineering had raised the stakes enormously on the issue of patenting living organisms. Congress in 1952 could not have anticipated the issue that was in essence decided by the *Chakrabarty* Court: whether patent incentives should be used to encourage the development of the genetic engineering field. Thus, under Eskridge's view, the *Chakrabarty* Court should have felt no compulsion to stay true to either the statutory text of §101 or the drafting Congress' original legislative intent.

In *Overriding*, Eskridge describes an exhaustive study he performed of Congressional responses to statutory interpretation by the Supreme Court (discussed in more detail below), and expands on his theory of statutory interpretation based on his findings. Eskridge describes a "sequential game" model of interaction between the institutions that create, interpret, and enforce statutes:

The model posits that a dynamic game exists between the Court, the relevant congressional committees, Congress, and the President. In this game, ultimate statutory policy is set through a sequential process by which each player – including the Court – tries to impose its policy preferences. The game is a dynamic one because each player is responsive to the preferences of other players *and* because the preferences of the players change as information is generated and distributed in the game.<sup>192</sup>

As part of this game, Eskridge suggests that the Supreme Court prefers not to be overridden by Congress, and thus intentionally interprets statutes as the current Congress would interpret them where it knows that Congress would otherwise override its judgments.<sup>193</sup> Under this theory, the Court's decisions should closely mirror the current legislature's preferences, except in the marginal area in which Congress cannot or is unwilling to overturn a Court holding. Eskridge posits that this behavior is at least a partial explanation for the relative dearth of Congressional overrides of Supreme Court decisions.<sup>194</sup> Because the Court is careful to interpret statutes so as not to be overridden by Congress, Congress tends to override Court interpretations only where

Congressional preferences have changed over time, where the Court misinterpreted Congressional preferences, or where the Court actually invited a Congressional override for institutional reasons.<sup>195</sup>

In Eskridge's view, this empirically observable behavior by the Court is often normatively valuable – he suggests that such a strategy eliminates the need for Congress to constantly revisit and update statutes, thus improving legislative efficiency and advancing the legislature's goals.<sup>196</sup> Eskridge also claims, however, that an interpretive approach based strongly on current legislative intent may be *too* majoritarian at times, ignoring the preferences of underprivileged groups that lack political representation.<sup>197</sup> Eskridge argues that the Court should sometimes adopt a deliberately countermajoritarian, normative approach, acting as the “conscience of the nation's pluralism by bringing attention to interests that go unrepresented in Washington and values that are overlooked.”<sup>198</sup>

### 3.2: *Eskridge and the Chakrabarty Holding*

The Supreme Court's opinion in *Chakrabarty* conforms with the approach to statutory interpretation described by Eskridge in *Dynamic Statutory Interpretation*. Although it is less clear whether the Court explicitly attempted to avoid an override from Congress as described by Eskridge in *Overriding*, the Court's opinion and the response of Congress to the decision is consistent with this model.

In dismissing the relevance of the cautionary language in *Flook*, the Court in *Chakrabarty* declared that it was the judiciary's role to interpret statutes in conformity with changing technology, particularly in the area of patent law:

*Flook* did not announce a new principle that inventions in areas not contemplated by Congress when the patent laws were enacted are unpatentable per se. To read that concept into *Flook* would frustrate the purposes of the patent law. This Court frequently has observed that a statute is not to be confined to the ‘particular

application[s] . . . contemplated by the legislators.’ . . . This is especially true in the field of patent law.<sup>199</sup>

This language fits comfortably within the dynamic statutory interpretation model. The *Chakrabarty* Court suggested that since advancing technologies continuously alter the legal scope and significance of patent law, courts must be free to modify their interpretations of relevant statutes to remain consistent with the contemporary context. Just as Eskridge suggests, the Court considered “not only what the legislation mean[t] abstractly . . . but also what it ought to mean in terms of the needs and goals of our present day society.”<sup>200</sup>

Of course, the Court in *Chakrabarty* did not explicitly adopt an aggressive interpretive posture. Its statements that “Congress plainly contemplated that the patent laws would be given wide scope”<sup>201</sup> and that “Congress employed broad general language in drafting § 101 precisely because such inventions are often unforeseeable”<sup>202</sup> suggest that the holding was based on simple statutory interpretation – if Congress deliberately drafted §101 expansively with the hope that the Court would adapt the statute to unforeseen technologies, the Court’s authorization of *Chakrabarty*’s patent could be considered entirely consistent with the text.

While this view has some merit, it cannot, however, transform the *Chakrabarty* holding into a conservative exercise in basic statutory interpretation. The Court’s interpretation of §101 as evincing a Congressional intention to allow expansion of the patent laws far beyond what was foreseen at the time was itself an assertive choice, conducive to the dynamic interpretive approach and not in any sense required by the text of the §101. This point is evident in light of both legal precedent on the issue and the Court’s own previous statements, as described in Part I. Just two years earlier in *Flook*, the Court had rejected the view that section §101 permitted the Court to expand the scope of patent law whenever new technologies demanded it, noting that “we must proceed cautiously when we are asked to extend patent rights into areas wholly

unforeseen by Congress.”<sup>203</sup> The Court in *Flook* stated explicitly that expansion of the patent privilege must be “based on more than mere inference from ambiguous statutory language,” and that a “clear and certain signal from Congress” would be required before approving a broader scope to patent protection than previously described by the courts.<sup>204</sup> The statutory language was clearly ambiguous as to the permissibility of patenting life, no “clear and certain signal” had emerged from Congress, and although legal precedent on the issue was not entirely clear-cut, courts had never permitted patents on living organisms in the past. Under the Court’s own formula in *Flook*, then, the appropriate response would have been to reject Chakrabarty’s application and allow Congress to address the issue. Instead, the Court reversed its position in *Flook* and permitted an unprecedented, highly controversial expansion of the patent privilege. This decision can be explained only as a quite pragmatic adoption of a dynamic interpretive approach.

Whether the Supreme Court considered the possibility of a Congressional override in coming to its decision in *Chakrabarty*, as Eskridge’s argument in *Overriding* would suggest, is impossible to say – such behavior can be researched only through large scale studies, as Eskridge has done. Interestingly, despite all of the activity in Congress in opposition to the *Chakrabarty* holding over more than a decade, the decision has never been overridden by the legislature. This result is at least consistent with Eskridge’s thesis.

### 3.3: *Criticisms of Eskridge’s Approach*

Statutory interpretation has enjoyed significant academic attention in recent years, and a number of theorists have proposed important alternatives to Eskridge’s approach. The *Chakrabarty* case provides an intriguing lens through which to consider some of these alternatives.

### 3.3.1: Manning and Textualism

Professor John Manning, a leading adherent of the textualist doctrine, suggests that to properly fulfill their roles as faithful agents of the legislature, judges should enforce only the plain meaning of a statute as written, even if this occasionally requires allowing absurd results.<sup>205</sup> Manning argues against the use of legislative history or any other extra-statutory tool that might illuminate what Congress “really intended” as to a particular issue, suggesting that “the legislative process is simply too complex and too opaque to permit judges to get inside Congress's ‘mind.’”<sup>206</sup> Any concept of genuine collective legislative intent distinct from that expressed in the statutory text is meaningless, Manning claims.<sup>207</sup> Manning also argues that the use of legislative history allows Congress to unconstitutionally delegate its legislative power to the courts; textualism prevents such delegation, he suggests, by requiring Congress to fully elucidate the meaning of a statute in the text of the statute itself.<sup>208</sup>

One could argue that *Chakrabarty* was actually decided under the textualist rubric. Since §101 states that the inventor or discoverer of “any new and useful process, machine, manufacture, or composition of matter ... may obtain a patent therefore,” and provides no exception for living organisms, the *Chakrabarty* bacterium would seem to fit easily within the plain text of the statute. As discussed above, the Supreme Court described its holding in the case as an uncontroversial exercise of basic statutory interpretation. But if *Chakrabarty* was a passive textualist decision, why was the holding considered by the media to be an “awesome challenge” to Congress, and why did several members of Congress describe the decision on the house floor as an unwarranted judicial usurpation of legislative prerogatives?

The problem is that the legal precedent and conventional wisdom that had developed since the enactment of §101 strongly suggested that living organisms were unpatentable. Where

a solid legal position on an issue has built up over many decades and is supported by conventional wisdom within society, as in *Chakrabarty*, the Court's holding in contravention of that position, even if consistent with the plain meaning of a statute, cannot reasonably be considered faithful to the spirit of textualist methodology. As Eskridge has noted, textualism "lacks a satisfactory theory of precedent"<sup>209</sup>; in this sense, the doctrine seems descriptively incomplete. *Chakrabarty* was thus much more a dynamic than a textualist decision, and the Court took an active role in fostering scientific progress in the face of technology evolving too rapidly for Congress to keep up.

On a broader level, textualism is unhelpful in resolving the central dilemma raised by cases such as *Chakrabarty*. The question of whether to consider legislative history to determine the enacting legislature's collective "intent," the main focus for Manning, is largely irrelevant in *Chakrabarty*, because there is no enacting legislative "intent" that could possibly be elucidated in that case. The enacting Congresses in 1793 and 1952 could not have foreseen or understood the issues raised in *Chakrabarty*, and trying to uncover their views on patenting of living organisms would therefore be pointless. The real question in the *Chakrabarty* context is how to proceed when social circumstances have changed so drastically since the enactment of a statute that both the actual text of a statute and extra-textual indicators as to Congress' intentions are close to useless in deciding a contemporary controversy. As to this problem, Manning's theory is not helpful.

### 3.3.2: Elhauge and Preference-Estimating

Professor Einer Elhauge points out this problem with the textualist approach in his article, *Preference-Estimating Statutory Default Rules* [hereinafter "*Preference-Estimating*"].<sup>210</sup> Elhauge argues that statutory interpretation involves two distinct concerns: (1) "How should courts divine

a statute's meaning?", and (2) "How should courts decide what to do when they cannot divine a statute's meaning?"<sup>211</sup> The first problem is the focus of textualism and several other theories of statutory interpretation, while the second problem has been largely neglected within academia, Elhauge argues. It is this second problem that makes the *Chakrabarty* case difficult.

While Elhauge, like Eskridge, rejects the basic premises of textualism, he disagrees in important ways with Eskridge's model, and suggests a third alternative for statutory interpretation. In *Preference-Estimating*, Elhauge suggests that where statutory ambiguity and changed circumstances leave a statute's meaning as to a particular issue unclear, judges should not resort to policy judgments but should instead act as "honest agents for the political branches."<sup>212</sup> While this might seem difficult in the absence of any evidence of the enacting legislature's actual intentions, Elhauge suggests that it can be achieved through the use of "preference-estimating default rules" in statutory interpretation – rules that would generally minimize political dissatisfaction with the interpretive result.<sup>213</sup> Elhauge's suggestion for a central default rule places his approach squarely between the theories of Eskridge and Manning:

I conclude that where there is ambiguity in statutory meaning, the enacting government's preferences would overall be maximized by a general default rule that dynamically tracks the *enactable preferences of the current government* – where those preferences can be determined with relative reliability – rather than statically sticking with the enacting government's preferences.<sup>214</sup>

Elhauge suggests that although his model focuses on the preferences of the current legislature, it is in fact faithful to the preferences of the *enacting* legislature. The enacting legislature, he argues, would prefer to have power over all existing statutes during its time in office, including those enacted by previous legislatures, rather than having power only over those statutes it actually enacted, even if such power were to extend into the distant future.<sup>215</sup>

Elhauge is careful to distinguish his theory from theories such as Eskridge's, which encourage judges to update old statutes along with changing values and preferences in society at large. In Elhauge's view, a judge may update a statute through statutory interpretation only where the change could *actually be enacted into law by the current legislature*, taking into account all of the political and procedural barriers involved in such an enterprise.<sup>216</sup> Imposing such a limitation on dynamic statutory interpretation by a court, Elhauge argues, allows judges to act as agents "for the political forces that can command enough political agreement to enact statutes," while not allowing judges to "take sides where political gridlock exists."<sup>217</sup> Such a system is helpful to the legislature, Elhauge suggests, in those situations where an enactable preference might not become law due to the simple costs of legislating, or might take more time to be enacted than the legislature would prefer:

[T]he whole point of using preference-estimating default rules is to minimize political dissatisfaction for issues too minor to provoke legislative action, or in the interim before the legislature acts, and to free the political process from the needless burden of making enactments it would probably make if time and political energy were not scarce.<sup>218</sup>

For a preference to be considered currently enactable so as to justify dynamic statutory interpretation by a court, it must be "memorialized in some relatively well-defined official political action, Elhauge states."<sup>219</sup> He suggests that where the current legislature amends or enacts a statute without altering an interpretation of a statute that has been brought to its attention, there is a good chance that the interpretation is enactable.<sup>220</sup> He also argues that subsequent legislative history may in some cases provide a good indication that a preference is currently enactable.<sup>221</sup>

Under Elhauge's paradigm, the Court's holding in *Chakrabarty* was incorrect. Since §101 was ambiguous as to the permissibility of patenting of living organisms and the social

context had changed greatly since enactment of the statute, Elhauge would focus on whether a law allowing patenting of living organisms would be currently enactable by the legislature. The answer in this case is almost certain: Congress in 1980 could not have enacted such a law. This is aptly demonstrated by the astonished reaction of both the press and the legislature to the Court's holding, as discussed above. This fact would probably have been clear to the Court at the time as well, based on the controversy that surrounded genetic engineering. Certainly, Elhauge's requirement that the preference for allowing organism patenting be "memorialized in some relatively well-defined official political action" was not satisfied.

It is important to distinguish Elhauge's view from Eskridge's – while Elhauge argues against dynamic statutory interpretation unless a political preference is *actually enactable by the current legislature*, Eskridge suggests that dynamic statutory interpretation is generally permissible at least as to political preferences *that will not be overridden by the legislature*.<sup>222</sup> This division is critical, since dynamic statutory interpretation by the Court is likely to have the most significant effect precisely in those holdings permitted by Eskridge but forbidden by Elhauge – where the issue is not quite controversial enough for the legislature to reverse the court, but not politically harmless enough for the legislature itself to enact the preference into law, at least at the present time. *Chakrabarty* falls within this category.

I suggest that, in cases with implications for scientific and technological progress, Eskridge's more permissive approach is the superior one. Such science and technology-related cases are generally characterized by important time constraints – a court's decision to update a statute ten years before the legislature would have achieved the change (this was arguably the situation in *Chakrabarty*) can critically impact the pace of scientific innovation. In this context, Elhauge's requirement that the court wait until the change could be enacted by the legislature

itself is inadequate, leaving the court almost as passive as a textualist approach would. A few months might be saved under this model, but likely little more. Elhauge's model does not take advantage of the particular trait that makes courts such valuable partners to the legislature: the ability to make change quickly

Both Eskridge and Elhauge present their theories as empirically correct *and* normatively preferable – both claim that the Court does and should act in the way they describe. I take no position as to the empirical question, but suggest that at least in the scientific arena, the Court *should* behave as Eskridge suggests.<sup>223</sup>

Elhauge's objections to endorsing dynamic statutory interpretation wherever congressional override is unlikely are significant. He argues that although some judicial judgment is always required in the realm of statutory interpretation, allowing judges to judicially impose unenactable preferences undermines the country's democratic institutions.<sup>224</sup> Elhauge suggests that this type of statutory interpretation might in fact be constitutionally problematic, since it would permit the development of law outside the bounds of bicameralism and presentment.<sup>225</sup>

Elhauge himself admits,<sup>226</sup> however, that deciding which political preferences are actually enactable is itself a difficult and imprecise enterprise, allowing room for judges to draw the fine lines and consider the policy issues that Elhauge would like them to ignore. Assuming, then, that judicial discretion is ultimately unavoidable, the complete legislative supremacy championed by Elhauge seems an impracticable goal, not significantly more likely to occur under his approach than under Eskridge's. Elhauge's approach would undeniably lead to some higher degree of fealty to legislative preferences than Eskridge's, but I suggest that because of the significant judicial discretion inherent in both models, the difference would be marginal and

too insignificant to sacrifice the valuable efficiency goals promoted by Eskridge's approach, at least where time-sensitive scientific innovation is involved. Eskridge's strategy would sufficiently guarantee legislative supremacy and would set a more optimal balance between society's interests in preventing judicial policy-making and its interests in keeping the law up to date with technological progress.

### 3.4: *The Ability of Congress to Respond to Supreme Court Statutory Holdings*

Of course, the view delineated above depends for its power on the proposition that Congress is generally vigilant in reviewing judicial interpretations of its statutes, at least by the Supreme Court. If Congress does not generally pay attention to Supreme Court interpretations and override those with which it disagrees, Eskridge's theory would allow the Court to impose its own legal preferences on society with no restriction, in which case Elhauge's method presents a better way to protect democratic institutions. As discussed in the next section, Professor Eskridge has contributed greatly to elucidating this important issue.

In *Overriding*, Eskridge argues that despite conventional wisdom suggesting that Congress is ignorant of Supreme Court interpretations of federal statutes, Congress and congressional committees are actually "aware of the Court's statutory decisions, devote significant efforts towards analyzing their policy implications, and override those decisions with a frequency heretofore unreported."<sup>227</sup>

To test his theory, Eskridge performed a thorough empirical study on Supreme Court federal statutory decisions overridden, or at least considered and discussed, by Congress between 1967 and 1991.<sup>228</sup> Eskridge found that Congress considers and deliberates over a large proportion of Supreme Court statutory decisions, and overrides a small though not insignificant number of these: between 1975 and 1990, for example, each Congress overrode an average of

approximately twelve Supreme Court statutory decisions, and almost half of the Court's statutory decisions per year since 1975 had been or were soon to be the focus of congressional hearings in 1991, at the time Eskridge published the article.<sup>229</sup> Based on this data, Eskridge concludes that "the Supreme Court's statutory decisions are accessible to Congress," and that "key staff members become aware of any significant Supreme Court decision affecting issues within their committee's jurisdiction."<sup>230</sup> Eskridge also notes that when Congress decides to override a Court decision, it usually does so quickly – of the Supreme Court cases that were overridden, almost half were overridden within two years of the decision, two-thirds within five years, and three quarters within ten years.<sup>231</sup>

Eskridge also considered the nature of Supreme Court statutory decisions that were most and least likely to be overridden by Congress. He found that cases dealing with criminal law, antitrust, civil rights, and bankruptcy were overridden at the highest rates.<sup>232</sup> Patent law cases (grouped together with copyright and trademark cases) were overridden at an intermediate rate as compared to other types of cases.<sup>233</sup> Perhaps unsurprisingly, Eskridge found that the more fragmented or ideologically divided the Court had been in its holding, the more likely Congress was to overturn the decision: most of the holdings overridden by Congress were decided by a 4-4, 5-4, or 6-3 Court, and three-fifths were ideologically divided in some way, usually with Justices Brennan and Marshall on one side and Justice Rehnquist on the other.<sup>234</sup> (It is interesting to note that although *Chakrabarty* was a 5-4 decision, it did not divide neatly along traditional ideological lines – conservative justices Burger and Rehnquist were in the majority with Justices Stewart, Blackmun, and Stevens, and liberal justices Marshall and Brennan were joined by more centrist justices White and Powell.)

Eskridge also considered who the “losing” groups were in the court cases that were most likely to be overridden by Congress. His findings indicate that federal, state, and local governments are significantly more likely to convince Congress to override an adverse Supreme Court decision than any other group, while religious groups, the poor, veterans, non-citizens, racial minorities, criminal defendants, the disabled, and women are among the groups least likely to achieve a congressional override.<sup>235</sup>

Congress is generally unable or unwilling to pass legislation where powerful interest groups are aligned on both sides of an issue. In the twenty-four years between 1967 and 1991, Eskridge says, there were “only a handful of overrides in which Congress acted against the strong opposition of an important interest group, and the overrides in those cases required a Herculean effort.”<sup>236</sup> Eskridge notes an interesting corollary to this phenomenon: in the arena of Supreme Court statutory interpretation, the most controversial instances of judicial policymaking are generally least likely to be overridden by Congress, because in such cases there are generally “strong interest group alignments on both sides of the issues, leaving the Court's decisions firmly intact.”<sup>237</sup> For this reason, he observes, “the Court’s most dramatic policymaking decisions have remained untouched by Congress.”<sup>238</sup>

Eskridge notes that such a phenomenon, if responsible for the relatively small number of congressional overrides of Supreme Court statutory interpretations, would be troubling, as it would confirm the fear that the judiciary is writing its policy preferences permanently into law.<sup>239</sup> He suggests, however, that the real explanation for this scarcity of congressional overrides may be that, as discussed above, the Court tends to interpret statutes as it believes the current Congress would interpret them, so as to intentionally avoid a congressional override.<sup>240</sup>

Thus, Eskridge's data generally support the view that Congress is vigilant in reviewing Supreme Court interpretations of federal statutes. His findings as to the power of interest groups are significant, however, and suggest that in updating old statutes while avoiding Congressional overrides, the Court should be cognizant of those cases in which interest group gridlock leaves Congress unable rather than unwilling to override a Court decision. This context provide a particularly strong argument for Elhauge, since a Court willing to act in the absence of Congressional override in such cases would likely subvert the intentions of Congress, while a Court willing to create changes only if they could be enacted by the current legislature would not. The Court should thus avoid aggressive interpretation in such cases.<sup>241</sup> With this caveat, however, Eskridge's findings suggest that the model described above would not be characterized by judicial policymaking run amok, but would instead usefully balance majoritarian interests and efficient development of the law.

On the other hand, legislative inaction (the only signal that would be available under the approach described above) is generally considered an unreliable indicator of legislative preferences, as Eskridge himself has noted. In his 1988 article, *Interpreting Legislative Inaction*, Eskridge discusses whether courts interpreting statutes should consider Congress' failure to overrule a particular judicial interpretation as indicating that Congress approves of the interpretation. Eskridge states explicitly, "I believe that legislative inaction usually tells us very little about actual legislative intent," and notes the many complexities of the legislative process that make interpretation of legislative inaction an often fruitless enterprise.<sup>242</sup> First, Eskridge says, "it is very hard to aggregate preferences in such a large collection of people."<sup>243</sup> Second, because of the limited legislative agenda in Congress, "it is far more likely that something will not happen (inaction) than that it will (action)," due largely to inertia.<sup>244</sup> Even where a bill has

substantial support, Eskridge notes, severe procedural roadblocks may be erected by opponents of the legislation.<sup>245</sup>

Again, these difficulties in interpreting legislative inaction argue in favor of Elhauge's model, since under that approach, only affirmative action by Congress can provide a sufficient signal to permit dynamic statutory interpretation by the Court. But despite the problems with interpreting legislative action, I suggest that the general vigilance of Congress in reviewing Supreme Court interpretations provides a sufficient safeguard that legislative preferences will not be thwarted under the model I describe. Although Elhauge's view provides some additional safeguard against judicial policymaking, the difference is not great, both because Congress generally does respond to Court opinions with which it strongly disagrees, as Eskridge demonstrates, and because either theory would provide significant room for judicial discretion. The critical importance of efficient advancement of the law in relation to scientific knowledge ultimately weighs in favor of Eskridge's approach, at least in the technological arena. The *Chakrabarty* case itself provides an excellent example of the Supreme Court's ability to dynamically advance the law while showing sufficient respect to majoritarian demands.

### ***3.5: The Congressional Response to Chakrabarty***

At least two clear stages characterized the congressional reaction to *Chakrabarty* – the initial lack of response between 1980 and 1987, and the later debates in the House and Senate following the Board's decision in *Ex Parte Allen* in 1987. These stages are considered separately below.

#### **3.4.1: 1980 to 1987: No Word from Congress**

The lack of interest in the *Chakrabarty* decision evinced by Congress between 1980 and 1987 is quite significant in light of Eskridge's findings. In the period between the 96th and 100th

Congresses (1979-1988), Congress scrutinized a total of 262 Supreme Court statutory decisions, and overrode 62 such decisions.<sup>246</sup> Eskridge did not calculate a precise ratio of scrutinized to unscrutinized Supreme Court decisions during this period, but he did find, for example, that between the 1977 and 1983 Supreme Court terms, the House and Senate Judiciary Committees scrutinized an average of 39 percent of all the Supreme Court's statutory interpretation cases that were within their jurisdiction.<sup>247</sup> Congress' complete lack of response to *Chakrabarty* thus suggests that it "approved of," or at least did not disagree with, the holding – that the Court in at least some sense enacted the legislature's preferences into law.

The objection that congressional inaction is difficult to interpret does not appear particularly significant in relation to the 1980-87 congressional reaction to *Chakrabarty*. The fact that Congress actively considered *Chakrabarty* after the 1987 *Allen* decision suggests that such an investigation could have occurred immediately following the holding had there been sufficient interest, and that Congress' silence at the time indicated some level of acquiescence to the decision, rather than a procedural or interest-group-created roadblock. In addition, Eskridge's description of how legislation can fall through procedural cracks seems to apply more strongly to cases in which the legislature considers an issue and then fails to follow through, as Congress did after 1987 – in that case, the procedural or political reasons for the failure could be manifold. Where Congress shows absolutely no interest in an issue, however, these explanations seem implausible, particularly in light of Eskridge's convincing evidence that Congress regularly deliberated upon large numbers of Supreme Court decisions during the period of the *Chakrabarty* decision.

It is notable that while a long congressional silence followed the *Chakrabarty* decision,

Congress began to deliberate over the holding almost immediately following the *In re Allen* decision, which interpreted *Chakrabarty* to permit animal patenting. Perhaps this pattern indicates that Congress originally believed *Chakrabarty* did not apply to animals, and was unconcerned by the holding for that reason. Under this understanding, Congress' original passivity in the face of the *Chakrabarty* decision was due to a simple misunderstanding of the holding's significance, and thus sheds little light on whether the decision was in any sense consistent with legislative preferences. To answer this question, it is necessary to consider the legislative activity that followed the *Allen* decision, when the expansiveness of the *Chakrabarty* holding had become quite clear.

#### 3.4.2: 1987 to the Present: A String of Failed Proposals

The significance of the multitude of failed congressional bills that followed *Ex Parte Allen* is difficult to determine, in part because of the problems with interpreting legislative inaction described above – many factors, including inertia and the high volume of material considered by Congress, may have led to the failure of the bills. Several points are, however, notable.

First, the Court's suggestion in *Chakrabarty* that the policy issues involved in the case should be considered by Congress rather than the Court, through the process of "balancing of competing values and interests, which in our democratic system is the business of elected representatives,"<sup>248</sup> was arguably realized in the form of Representative Kastenmeier's 1987 hearings in the House Subcommittee on Science, Research, and Technology. As described above, those hearings included statements by representatives of nearly every group with a stake in the issue, and the legal, ethical, scientific, political, and economic implications of the decision were all considered by the committee. In this sense, the Court appropriately relied on Congress

to consider the policy issues in *Chakrabarty*. This is not an insignificant point. As Eskridge points out, congressional committees play a crucial role in gathering information, deliberating, and making recommendations to the larger legislative body.<sup>249</sup> Most critically, Eskridge says, congressional committees “serve as devices to screen out the vast majority of policy proposals submitted to Congress.”<sup>250</sup> Thus, where a congressional committee considers in depth a policy concern explicitly referred to it by the courts, it could be argued that a crucial step in the democratic process is functioning properly.

Of course, such a process would not alleviate the countermajoritarian concerns related to aggressive Supreme Court statutory interpretations in certain cases. As Eskridge notes, on certain issues that are particularly controversial or on which powerful interest groups are evenly divided, Congress may be unable to act, leaving the Court’s interpretation intact due to political complications rather than actual legislative approval.<sup>251</sup> Is *Chakrabarty* such a case? It is clear that certain interest groups were heavily involved in the issue. Nine organizations filed amicus briefs in *Chakrabarty*.<sup>252</sup> Congressmen debating the issue on the House and Senate floors referred to lobbying activity several times, most significantly from biotechnology companies arguing against modification of the *Chakrabarty* holding (Senator Hatfield accused some biotech companies of “highly questionable tactics”<sup>253</sup>), but also from animal rights groups, farming groups, and others in favor of reform.<sup>254</sup> Ananda Chakrabarty himself remembers that *Chakrabarty* “was greeted with joy and a sense of relief by the biotech industry and academic researchers [but] was viewed with disdain and frustration by many public interest and religious groups.”<sup>255</sup> The issue has become even more polarized today, due to the added controversy over human cloning. There is thus certainly a possibility that congressional inaction on the issue has been due to an interest group-created impasse.

On the other hand, the presence of interest groups should not in itself imply that Congress was forced into an impasse on *Chakrabarty*. The evidence indicates that the interest group pressure on Congress as to *Chakrabarty* was not evenly divided (at least perhaps until the most recent cloning developments). Only two of the nine amicus curiae in the case argued in favor of the government,<sup>256</sup> and the discussion of interest group pressure in Congress points to forceful lobbying by biotech companies in favor of the decision, but not to significant pressure from anti *Chakrabarty* groups. While the losing party in the case was formally the federal government (which, according to Eskridge, generally has significant success in persuading Congress to override a Supreme Court decision), there is no evidence that the federal government lobbied against the decision in Congress, and the real losing parties in the case were likely those presenting normative challenges to the decision, who probably did not have major lobbying capabilities.<sup>257</sup> Thus, it seems unlikely, based on Eskridge's data, that Congress' inaction on *Chakrabarty* was due to an interest group impasse.

## CONCLUSION

Ultimately, it is almost impossible to definitively determine whether the Court's decision in *Chakrabarty* was consistent with congressional preferences or not. When the legislature does not override the Court's statutory interpretation, is it because the Court correctly gauged legislative preferences, or because those preferences were stymied in the legislature? It is often impossible to tell. But under the model described above – under which the Court interprets statutes dynamically, but is limited by an intention of avoiding Congressional override – no such determination is necessary. It is precisely this lesser need for legislative authorization that distinguishes Eskridge's from Elhauge's approach – while Elhauge demands written evidence that Congress itself would be willing to enact the Court's interpretation into law, Eskridge is

satisfied with the guarantee that Congress will override an interpretation to which it is sufficiently opposed. Eskridge's Court is a much more aggressive player in the "sequential game," acting as an active partner to Congress.

Had the Supreme Court decided *Chakrabarty* differently, would Congress have amended § 101 to allow the patenting of living organisms? Congress' inaction in the face of *Chakrabarty* suggests that it would have. Mr. Chakrabarty himself believes that Congress would have allowed patenting of living organisms, but not immediately: "Congress is not known to take quick action on anything that's controversial .... Thus my hunch is that Congress would have taken 10 years to pass legislation on the patentability of life forms and only under intense pressure from the biotech lobby."<sup>258</sup>

If Chakrabarty is correct that Congress would have waited 10 years before permitting animal patenting, the *Chakrabarty* holding likely had critical importance in keeping up the pace of advancements in genetic engineering in the United States. As the current debate on human cloning and patentability in Congress demonstrates, the impact of the *Chakrabarty* holding continues to be extraordinarily broad 25 years after the decision. *Chakrabarty* opened the door to innovations such as the Harvard mouse and other transgenic animals like it, which have provided extraordinary insight into human disease. The decision has also encouraged production of the many varieties of patented transgenic plants that are pest-resistant, nutrient-rich, and might someday ameliorate malnutrition in third-world countries.

Of course, it is impossible to know precisely what Congress would have done in the absence of *Chakrabarty* – this is the dilemma with which Eskridge's approach leaves us. But in the area of patent law, where the rapid pace of technological progress suggests both that Congress cannot amend statutes at a sufficiently fast rate and that legal delays can cause severe

consequences to scientific progress, this is a cost that brings with it many benefits. There is no sign that the pace of scientific innovation is slowing, and the Court can and should have the same impact on other areas of technology that it has had on the progress of genetic engineering.<sup>259</sup>

Congress is an inherently slow institution, and as science and technology evolve at an increasingly rapid rate and patent law continues to play a central role in encouraging further innovation, the Court must be empowered to update patent doctrine through the aggressive interpretation of statutes.

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<sup>1</sup> *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

<sup>2</sup> See William N. Eskridge, *Dynamic Statutory Interpretation*, 135 U. Pa. L. Rev. 1479 (1987) [hereinafter Eskridge *Dynamic Statutory Interpretation*]; Eskridge, *Overriding Supreme Court Statutory Interpretation Decisions*, 101 Yale L.J. 331 (1991) [hereinafter Eskridge, *Overriding*].

<sup>3</sup> Eskridge, *Overriding*, *supra* note 2, at 405.

<sup>4</sup> See, e.g., John Manning, *Textualism as a Nondelegation Doctrine*, 97 Col. L. Rev. 673 (1997).

<sup>5</sup> Einer Elhauge, *Preference-Estimating Statutory Default Rules*, 102 Col. L. Rev. 2027 (2002).

<sup>6</sup> *Chakrabarty*, 447 U.S. at 305.

<sup>7</sup> *Id.* at 305 n.1.

<sup>8</sup> *Id.* at 305-6.

<sup>9</sup> *Id.* at 307.

<sup>10</sup> *Id.* at 308.

<sup>11</sup> *American Fruit Growers v. Brogdex Co.*, 283 U.S. 1, 11 (1931).

<sup>12</sup> *Chakrabarty*, 447 U.S. at 309.

<sup>13</sup> *Id.* at 310-11.

<sup>14</sup> *Id.* at 311-12.

<sup>15</sup> *Id.* at 312-13.

<sup>16</sup> Brief for the Petitioner at 9, 1980 WL 339757 (No. 79-136).

<sup>17</sup> *Parker v. Flook*, 437 U.S. 584, 596 (1978).

<sup>18</sup> *Id.* (quoting *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972)).

<sup>19</sup> *Chakrabarty*, 447 U.S. at 315.

<sup>20</sup> *Id.*

<sup>21</sup> *Id.* at 316 (quoting *Great A. & P. Tea Co. v. Supermarket Corp.*, 340 U.S. 147, 154 (Douglas, J., concurring)).

<sup>22</sup> Brief for the Petitioner at 17-21; Brief on behalf of the Peoples Business Commission as Amicus Curiae at 6-31, 1979 WL 200005 (No. 79-136).

<sup>23</sup> *Chakrabarty*, 447 U.S. at 316-17.

<sup>24</sup> *Id.* at 319.

<sup>25</sup> *Id.* at 319 n.2.

<sup>26</sup> *Id.* at 319.

<sup>27</sup> Brief for the Petitioner at 13.

<sup>28</sup> Karen G. Krueger, Note, *Building a Better Bacterium: Genetic Engineering and the Patent Law after Diamond v. Chakrabarty*, 81 Colum. L. Rev. 159, 160 (1981).

<sup>29</sup> *Id.* at 160; see also dicta in *Guaranty Trust Co. v. Union Solvents Corp.*, 54 F.2d 400, 410 (D. Del. 1931); and *In re Mancy*, 499 F.2d 1289, 1294 (C.C.P.A. 1974). The relevant dicta in these cases will be discussed below.

<sup>30</sup> See Krueger, *supra* note 24, at 160-61.

<sup>31</sup> *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 128-30 (1948).

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

<sup>33</sup> *Id.* at 131.

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<sup>34</sup> *In re Merat*, 519 F.2d 1390, 1391 (C.C.P.A. 1975).  
<sup>35</sup> *Id.* at 1393.  
<sup>36</sup> *Id.* at 1394.  
<sup>37</sup> *In the Matter of the Application of Malcolm E. Bergy, John H. Coats, and Yedpal S. Malik*, 563 F.2d 1031, 1032 (C.C.P.A. 1977) (“Bergy I”); Ananda M. Chakrabarty, *Diamond v. Chakrabarty: A Historical Perspective*, in *Principles of Patent Law: Cases and Materials*, 758-63 (Donald Chisum, ed., Foundation Press 2001).  
<sup>38</sup> Chakrabarty, *supra* note 33, at 760.  
<sup>39</sup> *Id.*  
<sup>40</sup> *In Re Chakrabarty*, 571 F.2d 40, 42 (C.C.P.A. 1978) (“Chakrabarty I”).  
<sup>41</sup> *Id.*  
<sup>42</sup> *Id.*  
<sup>43</sup> *Bergy I*, 563 F.2d at 1032-33.  
<sup>44</sup> *Id.* at 1033. Note that the Board opinions in the Bergy and Chakrabarty cases included large portions of repeated material.  
<sup>45</sup> *Id.*  
<sup>46</sup> *Id.* at 1034.  
<sup>47</sup> *Bergy I*, 563 F.2d 1031.  
<sup>48</sup> *Id.* at 1035.  
<sup>49</sup> *Id.* at 1035-37.  
<sup>50</sup> *In re Mancy*, 499 F.2d 1289, 1290 (CCPA 1974)  
<sup>51</sup> This holding was based in 35 U.S.C. §103, under which a patent application should be denied if “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.”  
<sup>52</sup> 475 F.2d 658 (CCPA 1973).  
<sup>53</sup> *In re Mancy*, 499 F.2d at 1292.  
<sup>54</sup> *Id.* at 1294.  
<sup>55</sup> *Bergy I*, 563 F.2d at 1036.  
<sup>56</sup> *Guaranty Trust Co. of New York v. Union Solvents Corporation*, 54 F.2d 400 (D.Del. 1931).  
<sup>57</sup> *Id.* at 410.  
<sup>58</sup> *Bergy I*, 563 F.2d at 1036.  
<sup>59</sup> *Id.* at 1038.  
<sup>60</sup> *Chakrabarty I*, 571 F.2d 40.  
<sup>61</sup> *Id.* at 44.  
<sup>62</sup> *Parker v. Bergy*, 438 U.S. 902 (1978).  
<sup>63</sup> *Parker v. Flook*, 437 U.S. 584, 585 (1978).  
<sup>64</sup> *Id.* at 594.  
<sup>65</sup> *Id.* at 596.  
<sup>66</sup> *Id.*  
<sup>67</sup> *In re Bergy*, 596 F.2d 952 (C.C.P.A. 1979) (“Bergy II”).  
<sup>68</sup> *Id.* at 964.  
<sup>69</sup> *Id.* at 966-67.  
<sup>70</sup> *Id.* at 987.  
<sup>71</sup> *Diamond v. Bergy*, 444 U.S. 924 (1979).  
<sup>72</sup> See Chakrabarty, *supra* note 33, at 760.  
<sup>73</sup> *Diamond v. Chakrabarty*, 444 U.S. 1028 (1980).  
<sup>74</sup> *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).  
<sup>75</sup> Linda Greenhouse, *Science May Patent New Forms of Life, Justices Rule, 5 to 4: Dispute on Bacteria: Decision Assists Industry in Bioengineering in a Variety of Projects*, N.Y. Times, June 17, 1980, at A1.  
<sup>76</sup> *Id.*  
<sup>77</sup> Fred Barbash, *Laboratory Life Forms Patentable; Court's 5-4 Ruling Permits Patenting of Life Forms; High Court Rules, 5-4, Genetic Work Protected by Law*, Wash. Post, June 17, 1980, at A1.  
<sup>78</sup> Fred Barbash, *Supreme Court Chooses Not to Stem the Tide of High Technology*, Wash. Post, January 22, 1984, at A5.  
<sup>79</sup> Robert C. Cowen, *Gene-Splicing: Court Tosses Issue to Public*, Christian Science Monitor, June 18, 1980, at 1.

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- <sup>80</sup> *Id.*
- <sup>81</sup> Case Note, *Patentability of Living Microorganisms: Diamond v. Chakrabarty*, 94 Harv. L. Rev. 261, 269 (1980).
- <sup>82</sup> *Genetic Patents: Less Than Meets the Eye*, Business Week, June 30, 1980, at 48.
- <sup>83</sup> *New Life Forms: A Clear Road Ahead?*, U.S. News & World Report, June 30, 1980, at 34.
- <sup>84</sup> Stacy V. Jones, *Patents Delays on Life-Form Protection*, N.Y. Times, June 21, 1980, §1, at 30.
- <sup>85</sup> *Ex parte Allen*, 2 U.S.P.Q.2d 1425 (Bd.Pat.App & Inter. 1987).
- <sup>86</sup> *Id.* at \*1; Edmund J. Sease, *From Microbes, to Corn Seeds, to Oysters, to Mice: Patentability of New Life Forms*, 38 Drake L. Rev. 551, 562 (1988-89).
- <sup>87</sup> *Ex Parte Allen*, 2 U.S.P.Q.2d at \*2.
- <sup>88</sup> *Id.*
- <sup>89</sup> *Id.* Note that the Board ultimately rejected the oyster patent application on other grounds. *Id.* at \*3-6.
- <sup>90</sup> Animals – Patentability, 1077 Official Gazette 24 (April 21, 1987).
- <sup>91</sup> *Id.*
- <sup>92</sup> *Id.*
- <sup>93</sup> Keith Schneider, *New Animal Forms will be Patented*, N.Y. Times, April 17, 1987, at A1.
- <sup>94</sup> *Id.*
- <sup>95</sup> Malcolm Gladwell, *Mouse Patent May Bolster Research Efforts; New Genetic Techniques Could Reduce Drug Costs*, Wash. Post, April 13, 1988, at F1.
- <sup>96</sup> *Animal Legal Defense Fund v. Quigg*, 932 F.2d 920 (Fed.Cir. 1991); *See also Suit Seeks to Halt Patenting of Genetically Bred Animals*, Los Angeles Times, July 29, 1988, §1, at 22.
- <sup>97</sup> *Quigg*, 932 F.2d at 939.
- <sup>98</sup> Edmund L. Andrews, *U.S. Resumes Granting Patents on Genetically Altered Animals*, N.Y. Times, February 3, 1993, at A1.
- <sup>99</sup> *Id.*
- <sup>100</sup> *Id.*
- <sup>101</sup> Eliot Marshall, *A Deluge of Patents Creates Legal Hassles for Research*, Science, April 14, 2000, vol. 287, at 255.
- <sup>102</sup> *Chakrabarty*, 447 U.S. at 317.
- <sup>103</sup> *Id.* at 319.
- <sup>104</sup> Cowen, *supra* note 75.
- <sup>105</sup> *Fresh Debate Over the Life-form Ruling*, Chemical Week, August 6, 1980, at 47.
- <sup>106</sup> *Id.*
- <sup>107</sup> *Id.*
- <sup>108</sup> *Id.*
- <sup>109</sup> *New Life Forms: A Clear Road Ahead?*, U.S. News & World Report, June 30, 1980, at 34.
- <sup>110</sup> *Patent Ruling Won't Shift Gene R.&D goals*, Chemical Week, June 25, 1980, at 57.
- <sup>111</sup> *See Philip J. Hilts, The Business of Manipulating Life; U.S. Decision on Genetic Engineering Prompts Debate on Ethics, Fears of Monopoly*, Wash. Post, August 21, 1987, at A21.
- <sup>112</sup> S.Amdt. 245, 100th Cong. (1987), amended Supplemental Appropriations Act, Pub. L. No. 100-71, 101 Stat. 391 (1987).
- <sup>113</sup> *Patents and the Constitution: Transgenic Animals*, 100<sup>th</sup> Cong. 2 (1987) [hereinafter *Patents and the Constitution*].
- <sup>114</sup> *See* 136 Cong. Rec. S1610 (February 26, 1990) (statement of Sen. Hatfield) (“The [appropriations bill] amendment was passed in the Senate and the PTO agreed not to patent any animals through fiscal year 1987”).
- <sup>115</sup> *Patents and the Constitution*, *supra* note 109, at 1.
- <sup>116</sup> *Id.* at 2.
- <sup>117</sup> *Patents and the Constitution*, *supra* note 109.
- <sup>118</sup> *Id.*
- <sup>119</sup> *Id.* at 23.
- <sup>120</sup> *Id.* at 492-93.
- <sup>121</sup> *Id.* at 198.
- <sup>122</sup> *Id.* at 25.
- <sup>123</sup> *Id.* at 31.
- <sup>124</sup> *Id.* at 164.
- <sup>125</sup> *See, e.g., id.* at 484-94 (testimony of Jeremy Rifkin, President of the Foundation for Economic Trends).

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- <sup>126</sup> *Chakrabarty*, 447 U.S. at 317.
- <sup>127</sup> H.R. 3119, 100th Cong. (1987).
- <sup>128</sup> Marianne Lavelle, *Just Whose Life Is It, Anyway? Genetic Patents*, National Law Journal, August 15, 1988, at 3.
- <sup>129</sup> S.2111, 100th Cong. (1988).
- <sup>130</sup> 143 Cong. Rec. S1620 (Feb. 15, 1988).
- <sup>131</sup> *Id.*
- <sup>132</sup> *Id.*
- <sup>133</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).
- <sup>134</sup> H.R. 4970, 100th Cong. (1988).
- <sup>135</sup> 134 Cong. Rec. H7436 (Sept. 13, 1988).
- <sup>136</sup> *Id.*
- <sup>137</sup> *Id.*
- <sup>138</sup> *Id.*
- <sup>139</sup> See 135 Cong. Rec. H830 (1989) (statement of Rep. Kastenmeier).
- <sup>140</sup> H.R. 1556, 101st Cong. (1989).
- <sup>141</sup> 135 Cong. Rec. H830 (Mar. 22, 1989).
- <sup>142</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).
- <sup>143</sup> H.R. 3247, 101st Cong. (1989).
- <sup>144</sup> 135 Cong. Rec. E3008 (Sept. 12, 1989).
- <sup>145</sup> *Id.*
- <sup>146</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).
- <sup>147</sup> S.2169 (1990).
- <sup>148</sup> 136 Cong. Rec. S1610 (Feb. 26, 1990).
- <sup>149</sup> *Id.*
- <sup>150</sup> *Id.*
- <sup>151</sup> *Id.*
- <sup>152</sup> *Id.*
- <sup>153</sup> *Id.*
- <sup>154</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).
- <sup>155</sup> H.R. 5598, 101st Cong. (1990).
- <sup>156</sup> H.R. Rep. No. 101-960 (1990).
- <sup>157</sup> *Id.*
- <sup>158</sup> *Id.*
- <sup>159</sup> *Id.*
- <sup>160</sup> *Id.*
- <sup>161</sup> *Id.*
- <sup>162</sup> *Id.*
- <sup>163</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).
- <sup>164</sup> H.R. 4989, 102nd Cong. (1991); S.1291, 102nd Cong. (1992); S.387, 103d Cong. (1993).
- <sup>165</sup> 138 Cong. Rec. E1117 (Apr. 28, 1992).
- <sup>166</sup> 137 Cong. Rec. S 7817 (Jun. 11, 1991).
- <sup>167</sup> 139 Cong. Rec. S1789 (Feb. 18, 1993).
- <sup>168</sup> 138 Cong. Rec. E1117 (Apr. 28, 1992).
- <sup>169</sup> 139 Cong. Rec. S1789 (Feb. 18, 1993).
- <sup>170</sup> S.Amdt.3843, 107th Cong. (2002), amended S.2600, Terrorism Risk Insurance Act of 2002, 107th Cong. (2002).
- <sup>171</sup> 148 Cong Rec S 5514 (June 13, 2002).
- <sup>172</sup> *Id.*
- <sup>173</sup> *Id.*
- <sup>174</sup> *Id.*
- <sup>175</sup> *Id.*
- <sup>176</sup> Andrew Pollack, *Debate on Human Cloning Turns to Patents*, N.Y. Times, May 17, 2002, at A14.
- <sup>177</sup> 148 Cong Rec S 5514 (June 13, 2002).
- <sup>178</sup> 148 Cong Rec S 5514 (June 13, 2002).
- <sup>179</sup> See Bill Summary & Status, at <<http://thomas.loc.gov/bss/d108query.html>> (last visited April 16, 2004).

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<sup>180</sup> H.Amdt.286, 108<sup>th</sup> Cong. (2003), amends H.R. 2799, Departments of Commerce, Justice, and State, the Judiciary, and Related Agencies Appropriations Act, 2004, 108<sup>th</sup> Cong. (2003).

<sup>181</sup> 149 Cong Rec E2234 (Nov. 5, 2003).

<sup>182</sup> *Id.*

<sup>183</sup> Eskridge, *Dynamic Statutory Interpretation*, *supra* note 2.

<sup>184</sup> Eskridge, *Overriding*, *supra* note 2.

<sup>185</sup> Eskridge, *Dynamic Statutory Interpretation*, *supra* note 2, at 1481.

<sup>186</sup> *Id.* at 1480.

<sup>187</sup> *Id.* at 1533.

<sup>188</sup> *Id.* at 1496.

<sup>189</sup> *Id.*

<sup>190</sup> *Id.*

<sup>191</sup> Act of Feb. 21, 1793, § 1, 1 Stat. 319. As the Court itself noted, the 1952 version differed from the original from 1793 only in the replacement of the term “art” with “process,” a change which should not have affected the deliberations in *Chakrabarty*. *Chakrabarty*, 447 U.S. at 309.

<sup>192</sup> Eskridge, *Overriding*, *supra* note 2, at 334.

<sup>193</sup> *Id.* at 378.

<sup>194</sup> *Id.* at 377-79.

<sup>195</sup> *Id.* at 387-89.

<sup>196</sup> *Id.* at 405.

<sup>197</sup> *Id.* at 411.

<sup>198</sup> *Id.* at 413 (internal quotation marks omitted).

<sup>199</sup> *Chakrabarty*, 447 U.S. at 315-16 (citations omitted).

<sup>200</sup> Eskridge, *Dynamic Statutory Interpretation*, *supra* note 2, at 1480 (quoting Arthur Phelps, *Factors Influencing Judges in Interpreting Statutes*, 3 Vand. L. Rev. 456, 469 (1950)).

<sup>201</sup> *Chakrabarty*, 447 U.S. at 308.

<sup>202</sup> *Id.* at 316.

<sup>203</sup> *Parker v. Flook*, 437 U.S. 584, 596 (1978).

<sup>204</sup> *Id.* (quoting *Deepsouth Packing Co. v. Laitram Corp.*, 406 U.S. 518, 531 (1972)).

<sup>205</sup> See, e.g., John Manning, *The Absurdity Doctrine*, 116 Harv. L. Rev. 2387 (2003).

<sup>206</sup> *Id.* at 2391.

<sup>207</sup> *Id.* at 2406.

<sup>208</sup> John Manning, *Textualism as a Nondelegation Doctrine*, 97 Col. L. Rev. 673 (1997).

<sup>209</sup> Eskridge, *The New Textualism*, 37 UCLA L Rev 621, 682 (1990).

<sup>210</sup> Einer Elhauge, *Preference-Estimating Statutory Default Rules*, 102 Col. L. Rev. 2027 (2002) [hereinafter “*Preference-Estimating*”].

<sup>211</sup> *Id.* at 2029.

<sup>212</sup> *Id.* at 2030.

<sup>213</sup> *Id.* at 2034, 2036.

<sup>214</sup> *Id.* at 2084 (emphasis added).

<sup>215</sup> *Id.* at 2084-85.

<sup>216</sup> *Id.* at 2106.

<sup>217</sup> *Id.*

<sup>218</sup> *Id.* at 2120.

<sup>219</sup> *Id.* at 2107.

<sup>220</sup> *Id.* at 2112-13.

<sup>221</sup> *Id.* at 2115-17.

<sup>222</sup> Eskridge argues for permitting dynamic interpretation even beyond this limitation in some cases, but that discussion is not relevant here.

<sup>223</sup> As mentioned above, Eskridge also argues that the Court should have even more flexibility in cases where minority interests are at stake, but I do not adopt that position here.

<sup>224</sup> Elhauge, *Preference-Estimating*, *supra* note 210, at 2106-07.

<sup>225</sup> *Id.*

<sup>226</sup> *Id.* at 2065.

<sup>227</sup> Eskridge, *Overriding* *supra* note 2, at 334.

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- <sup>228</sup> *Id.* at 338.
- <sup>229</sup> *Id.* at 335. The *Chakrabarty* decision is noted in the article as a case for which House committee hearings were held, but no bill was passed. *Id.* at 442 (Appendix II, “Supreme Court Decisions Scrutinized In House & Senate Judiciary Committee Hearings (1979 - 1988)”).
- <sup>230</sup> *Id.* at 343.
- <sup>231</sup> *Id.* at 345.
- <sup>232</sup> *Id.*
- <sup>233</sup> *Id.* at 344.
- <sup>234</sup> *Id.* at 346-47.
- <sup>235</sup> *Id.* at 348.
- <sup>236</sup> *Id.* at 367.
- <sup>237</sup> *Id.* at 377.
- <sup>238</sup> *Id.* at 366. Eskridge cites as examples: “affirmative action in employment, the home video and audio recording of copyrighted works, the application of criminal racketeering laws to garden variety commercial disputes, and contribution in antitrust cases.” He refers specifically to the Supreme Court cases *Sony Corp. of America v. Universal City Studios, Inc.*, 464 U.S. 417 (1984) (recording); *Sedima, S.P.R.L. v. Imrex Co., Inc.*, 473 U.S. 479 (1985) (racketeering laws); and *Texas Industries, Inc. v. Radcliff Materials, Inc.*, 451 U.S. 630 (1981) (contribution in antitrust cases). *Id.* at 366, n.102, 103, & 104.
- <sup>239</sup> Eskridge, *Overriding*, *supra* note 2, at 377-78.
- <sup>240</sup> *Id.* at 378.
- <sup>241</sup> Of course, this requires a certain level of self-regulation by the Court. This factor does not, however, distinguish the theory from Elhauge’s, which requires the Court to determine what the current Congress would be able to enact, leaving significant discretion to the Justices.
- <sup>242</sup> Eskridge, *Interpreting Legislative Inaction*, 87 Mich. L. Rev. 67, 108 (1988).
- <sup>243</sup> *Id.* at 98.
- <sup>244</sup> *Id.* at 98-99.
- <sup>245</sup> *Id.* at 99.
- <sup>246</sup> Eskridge, *Overriding*, *supra* note 2, at 342.
- <sup>247</sup> *Id.*
- <sup>248</sup> *Chakrabarty*, 447 U.S. at 317.
- <sup>249</sup> Eskridge, *Overriding*, *supra* note 2, at 368.
- <sup>250</sup> *Id.* at 370.
- <sup>251</sup> *Id.* at 366-67.
- <sup>252</sup> The amicus briefs filed in *Chakrabarty* were: Brief on Behalf of the Pharmaceutical Manufacturers Association, Amicus Curiae, 1980 WL 339771 (for *Chakrabarty*); Brief on Behalf of the American Patent Law Association, Inc., 1980 WL 339772 (for *Chakrabarty*); Brief of Dr. George Pieczenik, 1980 WL 339773 (for the government); Brief on Behalf of Genentech, Inc., 1980 WL 339766 (for *Chakrabarty*); Brief on Behalf of the New York Patent Law Association, Inc., 1980 WL 339769 (for *Chakrabarty*); Brief of the Regents of the University of California, 1980 WL 339770 (for *Chakrabarty*); Brief of: Dr. Leroy E. Hood, Dr. Thomas P. Maniatis, Dr. David S. Eisenberg, The American Society Of Biological Chemists, The Association Of American Medical Colleges, The California Institute of Technology, The American Council On Education, 1980 WL 339764 (for *Chakrabarty*, but urging the Court to remand for consideration of the product of nature doctrine); Brief on Behalf of the Peoples Business Commission, 1979 WL 200005 (for the government); Brief on Behalf of the American Society for Microbiology, 1979 WL 200007 (for *Chakrabarty*).
- <sup>253</sup> 139 Cong. Rec. S1789 (Feb. 18, 1993).
- <sup>254</sup> *Id.*; 138 Cong. Rec. E1117 (Apr. 28, 1992).
- <sup>255</sup> E-mail from Dr. Ananda Chakrabarty to Anna Lumelsky (Jan. 24, 2004).
- <sup>256</sup> See list of amicus briefs, *supra* note 249.
- <sup>257</sup> One could argue that these groups are underrepresented minorities that the Court should have been particularly concerned with under Eskridge’s view. To the extent that the groups are identified by a particular idea (such as that patenting living organisms can be dangerous) rather than a particular characteristic, however, it would not make sense for the Court to give them special protection, as the validity of such an idea is precisely what was at stake in both the court case and the congressional debates. To the extent that the groups *are* identified by a particular characteristic (probably religious affiliation), the facts of *Chakrabarty* do not involve the kind of persecution of or disadvantage to the group that would presumably call for special interest by the Court under Eskridge’s model.

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<sup>258</sup> E-mail from Dr. Ananda Chakrabarty to Anna Lumelsky (Jan. 24, 2004).

<sup>259</sup> It should be noted that some commentators do not believe that *Chakrabarty* encouraged increased scientific innovation. In particular, some critics argue that the unprecedented expansion of patent rights in biotechnology that followed the *Chakrabarty* decision has led to an unwillingness among researchers to share data and has impeded widespread genetic testing that could further progress in medical research. *See, e.g.*, Tom Abate, *Do Gene Patents Wrap Research in Red Tape?*, S.F. Chronicle, March 25, 2002, at E1 (discussing the argument that patenting of gene sequences has been detrimental to scientific progress); Justin Gillis, *Gene Research Success Spurs Profit Debate*, Wash. Post., December 30, 2000, at A01 (same).