Court Says Lab-Made Life Can Be Patented

In a decision made by five votes to four, the U.S. Supreme Court ruled on 16 June that "a live, human-made micro-organism is patentable subject matter"—in other words, that forms of life can be patented if there is a man-made element to them.

The decision seems certain to open the way for the Patent and Trademark Office to begin processing the heap of patent applications based on recombinant DNA technology. The Patent Office has been delaying action on these applications—now numbering more than a hundred—while arguing in the courts that it did not have the power under existing law to grant patents on living things.

The Supreme Court's decision to the contrary is likely to provide a helpful boost to the fledgling genetic engineering industry. The boost is mostly psychological, however, because most companies will still rely on secrecy to protect their proprietary information. With bacteria being improved so rapidly, it is process patents, already available, that are important at present. Patenting microorganisms themselves may be more important in a decade or so when large investments are made in designing a particular bug.

The Supreme Court's ruling is significant because it resolves the long-standing issue of whether forms of life can be patented. The test case which forms the pretext for the decision is a patent application filed by General Electric as long ago as 7 June 1972. The application concerned a form of *Pseudomonas* bacterium genetically engineered to digest oil slicks, by Ananda Chakrabarty, now at the University of Illinois.

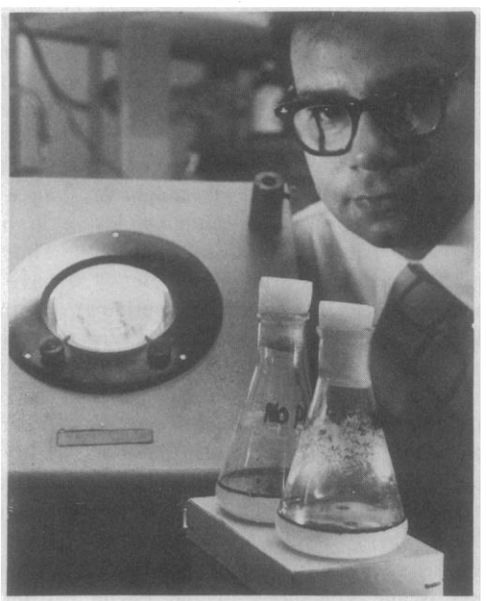
The bottom line of the Supreme Court's decision is that it does not matter whether something is living or not: Its patentability depends on whether it is a product of nature or man-made. Chakrabarty's bacterium, in the Supreme Court's view, "is the result of human ingenuity and research," and therefore is patentable. The Supreme Court's thinking therefore follows the reasoning of a lower court, the Court of Customs and Patents Appeals, which concluded after its review of the case: "In short, we think the fact that micro-organisms, as distinguished from chemical compounds, are alive, is a distinction without legal significance."

In the view of some observers, the Supreme Court has acted somewhat erratically on the issue of patenting life, without adding very much intellectual substance to the debate. The most interesting part of the fight has been that between the Patent Office and the Court of Customs and Patents Appeals, which has twice directed the Patent Office to grant patents on microorganisms (*Science*, 9 November 1979). The Supreme Court, when asked to arbitrate, at first ordered the Court of Customs and Patent appeals to reconsider its position in light of another Supreme Court patent ruling, known as Parker *v*. Flook, which concerned the patentability of methods of calculation.

The salient feature of the Flook decision was the Court's admonition to "proceed cautiously when we are asked to extend patent rights into areas wholly unforeseen by Congress." Since that was exactly the position of the Patent Office on the issue of patenting life, the Supreme Court seemed to be directing the lower court to reverse itself and decide in the Patent Office's favor.

The Court of Customs and Patent appeals, however, had other ideas, one of which may have been the recollection that only since 1966 have its decisions been subject to review by the Supreme Court, and even then through a train of somewhat accidental circumstances. "To conclude on the light Flook sheds on these cases," the appeals court dryly replied, "very simply . . . we find none."

With this judicial snub, the case returned to the Supreme Court, which this time had to bite the bullet. But instead of overruling the appeals court, as might have been expected from its earlier decision, the Supreme Court has rolled over and adopted both the appeals court's position and its reasoning. What has prompted this apparent change of mind?



Ananda Chakrabarty

One observer suggests that the court's ideas "evolved" as it became more familiar with the case. Another, more cynically, cites the turnover of law clerks since the previous term. The majority opinion, written by Chief Justice Burger, omits to explain why the court found Flook relevant in 1978 but not in 1980.

The point is taken up, however, in a terse minority opinion by Justice Brennan who, if *The Brethren* is to be believed, does not always hold his brother Burger's reasoning in high esteem. Noting the caution in Flook about extending patent rights beyond what Congress had foreseen, and the fact that Congress in 1930 and 1970 passed acts extending patent rights to plants but specifically excluding bacteria, Brennan observes in a withering footnote that "I should think the necessity for caution is that much greater when we are asked to extend patent rights into areas Congress has foreseen and considered but has not resolved." The majority's decision, in his view, "extends the patent system to cover living material even though Congress plainly has legislated in the belief that [present law] does not encompass living organisms. It is the role of Congress, not this Court, to broaden or narrow the reach of the patent laws."

Congress is expected to hold hearings on the subject and could always pass a new law.—NICHOLAS WADE

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