21st Century Dilemmas

Can lawyers answer questions that only scientists understand?

By Benjamin D. Greenbaum

THE PERCEPTION OF SCIENCE BY THE PUBLIC AND the legal community invariably suffers from schizophrenia. Certainly no one denies the significant and pervasive impact which modern science and technology has had on our standard of living and understanding of the universe. However, the few uncharacteristic examples where technology has been a detriment have caused a certain sense of fear which, coupled with a general lack of education about the technology itself, manifests itself in distopian views that science and technology could ultimately cause our doom. While these fears are largely ungrounded, there is a legitimate fear about the degree of power which science and technology can exert. Given the exponential growth of various technologies and the ethical and legal questions generated by scientific advances, one may begin to wonder if the legal and political communities are adequately prepared to address these concerns.

A much publicized example of the clash between public welfare and technological growth was the Justice Department's antitrust case against Microsoft Corporation, the world's most successful software company. This article will not assess the guilt or innocence of Microsoft as a potential monopoly. Rather, Microsoft is a case study of how the political and legal communities attempted to conduct an inquiry into a technological issue. This article evaluates the proceedings and methodology of the Justice Department and Federal Trade Commission without focusing on whether or not Microsoft actually committed any wrongdoing. The Microsoft case illustrates the procedure or lack of procedure by which the nation's highest legal office investigated one of the nation's most powerful technological forces.

Though only a nineteen year old corporation, Microsoft occupies a unique place in the software industry. Founded by William Gates III, Microsoft won an IBM contract to build operating software for personal computers in only its sixth year of existence. In a savvy move, Microsoft then sold the technology to rival computer makers, creating multiple IBM clones. Through this maneuvering Microsoft was able to capture around ninety percent of the market. The FTC and subsequent Justice Department inquiry focused on two questionable practices. Microsoft offered substantial discounts to personal computer manufacturers who agreed to pay for a copy of MS-DOS or Windows for each computer they sell. These discounts can cut the costs of operating software, which directs the computer circuitry, by nearly two-thirds for the dealer (Microsoft 18). The per computer charge was assessed regardless of whether or not the computer being sold actually was equipped with a Microsoft operating system. Therefore, computer users who purchased a computer with a non-Microsoft operating system were paying a de facto tax to Microsoft. The second complaint was that Microsoft was giving itself an unfair advantage in the production of application software, such as word processing and graphics, by its own developers. Microsoft claims that there is "Chinese Wall" between its operating system and application software developers (Schwartz 59). Allegedly, Microsoft had hidden features in its Windows programs which would give its developers an edge over non-Microsoft programmers attempting to create Windows compatible software.

The first investigation began in 1989 and was conducted by the FTC. The investigation initially centered around a past relationship between Microsoft and IBM (Lewyn 126). This began a pattern of the investigations starting long after the damage was done. Microsoft already had an unbreakable hold on the industry; to have stopped Microsoft at this point would have been impossible. Not until April 1991 did the FTC receive the full clearance of the Justice Department to conduct a complete investigation (Lewyn 126). After hearing inflammatory information from a Microsoft rival, the FTC's Bureau of Competition recommended an injunction or disciplinary action against Microsoft. The FTC, however, after hearing testimony from Gates had two consecutive deadlock votes on what action to take. Finally, after continued inaction, the FTC handed over its files to the Justice Department in August 1993, some three years after the beginning of the inquiry (Antitrust Bl).

Finally, in July of this year the Justice Department issued a "decree" banning Microsoft from levying its per computer charges and from issuing licenses for more than a year long to companies (Guilty 63). Microsoft was selling those licenses for beyond the lifetime of a particular piece of software, thereby forcing the purchaser into buying the next line of software before it appeared on the market. This decree was also signed by European Community regulators who were investigating Microsoft.

Though this seems like a victory for the Justice Department, it is a Pyrrhic one. No penalties were enforced for the interaction between Microsoft's operating system and application software developers, which would have been logical given the Justice Department's condemnation of these practices. Of all complaints this one was the most threatening to the future of Microsoft's dominance. Microsoft already dominated the industry to such an extent that it did not need to cut out competition to keep its place at the top. The per computer charge is a major reason why Microsoft occupies its current place in the market, yet now that it is there it no longer needs the charge to maintain its market share. Most people would not change to alternative operating software since Microsoft's software is the most accessible and pervasive. Even most competitive software manipulates the ubiquitous MS-DOS and Windows operating systems. The decree, therefore, accomplishes very little other than trimming a few million dollars of Microsofts profits. Moreover, since the Justice Department decided that Microsoft's tactics were wrong, it should have made a real

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effort to alter them. Perhaps this will occur in civil suits brought against Microsoft by its competitors. The Justice Department's hesitant condemnation, coupled with Microsoft's immense financial and legal resources, may make this difficult.

Had the Justice Department wanted to free up competition for the future, it logically should have divided Microsoft into separate operation and application software units, or attempt to find some means of enforcing the current theoretical autonomy of the two branches under the Microsoft Corporation. Microsoft, along with Sega and the world's two largest cable firms, Time Warner and Telecommunications Inc., is currently venturing ambitiously into interactive multimedia (Trojan 73). Were Microsoft to create the MS-DOS-like standard for this industry, its power and value could make the Justice Department's sanctions completely insignificant. Rather than curtailing Microsoft's power, the probe may ultimately sanction Microsoft's potential future growth.

Although the Microsoft case is a particularly disturbing and infamous Government handling of technological groups, there are other problematic examples of the inherent difficulties between the scientific and legal communities. One quite difficult case is the issue of "scientific evidence". The debate, recently demonstrated in the O.J. Simpson case and the Congressional hearings on cigarettes, is over the attempt to develop an adequate legal criteria for admissibile scientific evidence. A judge, who may have little or no scientific training is forced to decide whether a scientific piece of evidence is admissible. Since he/she may lack such training, some sort of standard must be established for what constitutes adequate scientific evidence. This can be very crucial to a case. If too much latitude is given, then controversial expert witnesses, such as those who contended that smoking is good for your health, may be given credence by an unsuspecting jury ignorant of proper scientific procedure and precedent. Conversely, if a standard is too strict then certain correct theories and methods may be left out of a trial.

Until June 28, 1993, the standard for admitting evidence was the "general acceptance" of the scientific community (Mervis 22). The evidence had to be from a published study and had to have been peer reviewed. The court stated that "some well grounded theories may not have been published," while some theories may be "of too limited interest to be published" (Science 63). The dismissal of the general acceptance criteria seems reasonable. After all, what constitutes a generally accepted theory and why should popular acceptance be the main criteria for admittance? A theory which is generally accepted may be wrong. However, the reason why the criteria existed is significant and more meritorious than it first appears. The need for a theory to be published and peer reviewed took the issue of deciding

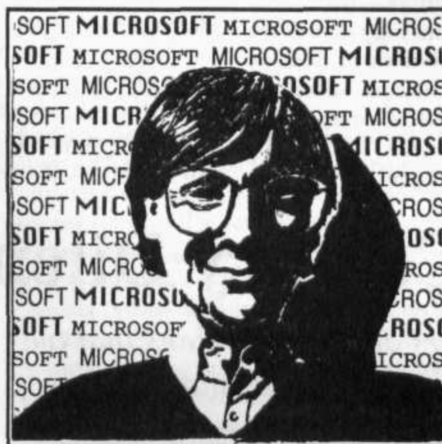

Illustration by Edit Penchina

the validity of a theory out of the hands of potentially unqualified judges and into the hands of qualified scientists. The Supreme Court in deciding the case, *Daubert v. Mcrrell Dow Pharmaceuticals,* had to devise a scheme whereby the merits of scientific evidence could be properly evaluated without general acceptance. Strangely, the Supreme Court ignored the spirit of the earlier policy and decided that federal judges could tell "whether or not the reasoning or methodology underlying the testimony is scientifically valid" (Mervis 22).

The case, like that of Microsoft, brings out many important issues on the relationship between the legal system and the courts, regardless of whether or not one agrees with the actual results of the case. The Supreme Court's decision in *Daubert* acknowledges that the older ruling on valid evidence was wrong. On this point the Court was unanimous. The case involved a drug, Bendectin, which animal research had shown to cause birth defects (Science 63). However, since no evidence had displayed human reactions the lower courts dismissed the ruling on the grounds that the testimony failed to met appropriate standards. Hence, the early grounds for validation had been shown inept and a new decision had to be rendered. A key issue is thereby brought to light. In the constantly evolving world of science, what legitimizes a theory? This question of a more philosophical nature becomes the crux of the problem, to the detriment of due process. Moreover, in any case which involves some form of scientific evidence that is subject to any amount of scrutiny, the judge is forced to rule on which of these methods are, in fact, valid, On these grounds the Supreme Court then ruled, 7-2, that judges have the **capacity to decide scientific validity.**

Obviously, this decision is problematic, perhaps even more so than the initial criteria of general acceptance. It seems that the court has gone from an ultra-conservative stance to a radical, and equally flawed stance. Clearly, the first problem is that far too much of the burden is placed on the judges. Judges are not scientists. At least something meritorious could be said of the first decision since it placed the decision of the validity in the hands of people with scientific training. The new decision is like having a panel of physicists award the Pulitzer Prize. No one doubts the intelligence of the panel, but the probability of bad judgement is high. The only way to remedy the ruling is to have any judge who may need to make such a ruling given training on scientific methodology and validity. Even so, it neglects the fact that the scientific community could already provide this service.

Perhaps one alternative would be a task force or an independent council to evaluate such questions. This would remedy many of the cases but two tasks would still remain. The first would be to establish consistency on what types of evidence is accepted or rejected. The second would be those rare instances where a theory that has little precedent or is new, but has not been rejected, is used as a key piece of trial evidence. The first problem must be solved through mandate. The second may be impossible to solve given both its nature, and the ruling. Any new scientific theory will be subject to some scrutiny. The judge, therefore, must hear both sides and make the best possible decision, but, clearly, his/her lack of scientific training may be a detriment. A more prudent judge will lend credence to scientists and not lawyers, allowing testimony of established, non-partisan scientists to be the key factor in his/her ruling.

This issue will be debated for years to

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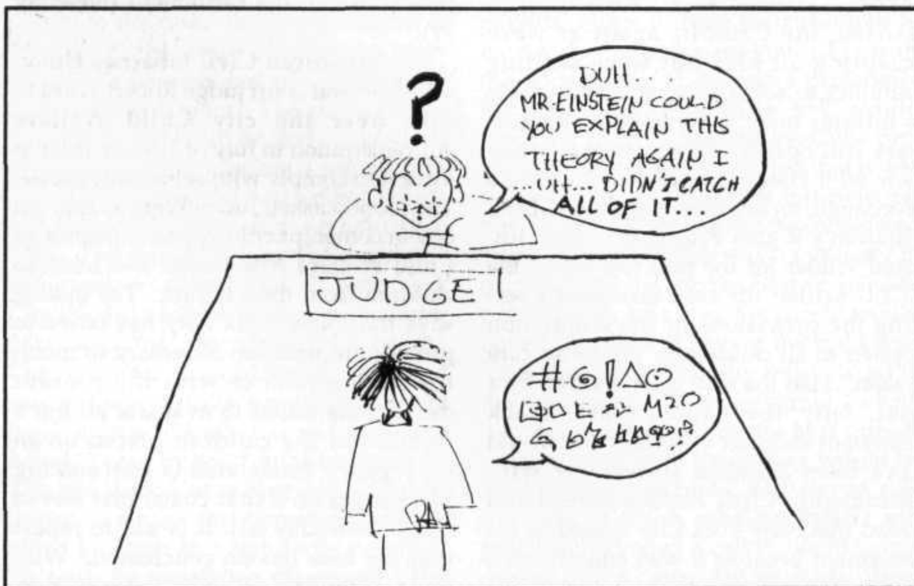
come, but, as with Microsoft, one can use the ruling as a paradigm to see the problems that occurred when science and law interacted. The rift that divides scientists from judges and lawyers seems to be, in this case, the source of our problem. A judge does not offer a decision as a scientist just as a diligent scientist researches with an eye towards the truth and not the potential legal ramifications of a discovery. In this sense, separatism is a good thing. Neither field should be compromised by having the other monitor or unduly influence it. The Supreme Court may have gone too far in its decision. While the decision looks to enforce the integrity of judges, it indirectly undermines it. A judge has the capacity to bring his/her own conceptions about theories into the courtroom when deciding on evidence. If, for example, a judge knows little about molecular biology, a crafty group of expert witnesses could persuade him/her to dismiss otherwise reliable genetic evidence. A scientist, or perhaps an extremely well rounded judge, might not have even considered dismissing the evidence.

If anything seems clear, it is that, in both examples, the Justice Department and the Supreme Court have gone about things the wrong way. Cases which involve science and technology cannot be handled like any other case. They have properties which separate them. Even if Microsoft committed any wrongdoing, the Justice department would have had to act seven or eight years ago to have made a difference. Microsoft was ahead of justice. The wall which has to be torn down is the one that the legal system has built between itself and the sciences and the one which the scientific community has sheltered itself in. Only through cooperation between the two sectors can meaningful progress be achieved. Clearly, the burden should not be the responsibility of only a judge or only the scientific community but collaboration on the part of both of them. With science and technology growing faster by the second, if the legal system does not keep up, then as with Microsoft, by the time it catches on it will be to late. The only way to avoid this is through joint efforts. This way people will experience more of the benefits faster, rather than viewing potential progress as a threat. •



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