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**SCIENCE—COMPUTERS—The Use of Data Processing
in Legal Research**

In 1960, at the American Bar Association Annual Meeting in Washington, D.C., representatives of the University of Pittsburgh Health Law Center conducted a demonstration of the use of an electronic computer in searching statutory materials.¹ For purposes

1. Harty, *Use of the Computer in Statutory Research and the Legislative Process*, in A.B.A., *COMPUTERS & THE LAW* 48 (1966).

of the search, each statutory section had been numbered consecutively and programmed into the computer which contained an alphabetical list of every word in the statutes (with the exception of articles) and their location. To locate material on a given topic, the searcher requested the machine to list the location of key words or combinations of words which he believed were present in the relevant materials to be searched. For example, if a searcher wanted a comprehensive list of all statutory references to illegitimate children, he would feed into the computer words such as "child" or "natural child," or combinations such as "child out of wedlock." Such a request would cause the computer to identify the exact location in the statutes of each appearance of the particular word sought.² The obvious advantages of this method of searching are the time-saving elimination of manual indexing and searching and the thoroughness of the search.

Statutes were the first area of the law to be adapted to computer research since the precision of their language made a search system based on a full text relatively feasible. However, the adaptability of the computer to case law is also being tested. For this purpose, the American Bar Foundation's IBM Project of Legal Research Methods and Materials is currently experimenting with a word concordance or frequency pattern system based on a statistical theory.³ All of the words of the selected cases which are to comprise the library are placed on magnetic tape or punch cards. Each different word is assigned an individual reference on a grid which contains the words of a specific case. The number of times each word is repeated in a specific case is noted and thus each case is reduced to stock piles of repeated words. The searcher's question is then stated in similar fashion on a separate grid. The computer compares the question grid with the separate case grids which comprise the library and retrieves only those citations which have word clusters or concordance patterns statistically similar to those found in the question.⁴

The Air Force Finance Center's Project LITE (Legal Information Through Electronics) is currently utilizing a computer to search the Comptroller General's decisions for cases dealing with the legal aspects of Air Force payments for services and materials.⁵ Like the University of Pittsburgh system, the Air Force utilizes the full text as the basis for the search, thereby eliminating the use of existing manually-prepared subject matter indices. It is interesting to note

2. *Id.* at 48-51.

3. Wilson, *Case Law Searching by Machine*, in A.B.A., *COMPUTERS & THE LAW* 55, 56 (1966).

4. La Budde, *Computers in Law Practice: Revolution in Research*, 25 *GAVEL* 6, 9 (1964).

5. See Davis, *LITE: Legal Information Through Electronics*, 65 *MODERN USES OF LOGIC IN LAW* 138 (1965).

that in 92.5 per cent of 215 sample searches conducted in 1964, the computer retrieved an equal or greater amount of relevant material than was retrieved by manual search.⁶ As of the fall of 1965, the United States Code, all published decisions of the Comptroller General, and all of the Armed Services Procurement Regulations were on tape; the unpublished Comptroller General's decisions and materials on international law are being added.⁷ It was estimated that by June of 1966, 40 million words of text would be available for searching.⁸

In addition to these projects, the Southwest Legal Foundation's Project OGRE (Oil and Gas Reports Electronic) is experimenting with a keyword approach to retrieving case law regarding gas and oil decisions⁹ and the Denver Law School is working to develop a system which will search decisions of the Department of Interior pertaining to the leasing of government lands.¹⁰

A few limited computer-assisted programs are currently in operation. By utilizing the system it developed in connection with statutory searching, the University of Pittsburgh now provides the Allegheny Bar with a service for computer-assisted searching of abstracts of Pennsylvania Supreme Court decisions.¹¹ The Wisconsin Data Retrieval Corporation of America provides computer-assisted citator service for that state's appellate cases.¹² And in New York, Western Union and Law Research Services, Inc. have developed a file of legal citations which are comprehensive for a few law categories.¹³ These citations are stored on Western Union's computer facilities and at present they encompass decisions from eleven states with thirty more to be added shortly. Customers of the service receive a thesaurus containing law descriptors and their corresponding ten-digit numbers. The relevant numbers are dialed into a Telex machine in the customer's office and relayed to the computer which sends the relevant citations back to the customer. At the present

6. *Ibid.*

7. *Ibid.*

8. *Ibid.*

9. Wilson, *supra* note 3, at 56-57.

10. See *id.* at 58. Other projects have been or are presently being conducted. See Eldridge & Dennis, *The Computer as a Tool for Legal Research*, 28 LAW & CONTEMP. PROB. 78, 85 (1963) (a report on the Point of Law method developed by Robert Morgan of Oklahoma State University); Melton & Bensing, *Searching Legal Literature Electronically: Results of a Test Program*, 45 MINN. L. REV. 229 (1960) (a report on the Western Reserve University project); Stiles, *The Association Factor in Information Retrieval*, 8 J. ASS'N FOR COMPUTING MACH. 271 (1961) (an explanation of a process developed by John C. Lyons of George Washington University).

11. Address by Professor Layman Allen, Proceedings of the 1965 Congress of the International Federation for Documentation, Washington, D.C., Oct. 10-15, 1965 (copy on file with the *Michigan Law Review*).

12. *Ibid.*

13. *Ibid.*

time, however, no law firm is relying on the system as its sole means of research. That it is a completely reliable system is still to be demonstrated.

Electronic data processing is used to a limited extent by the Interstate Commerce Commission¹⁴ and the Patent Office,¹⁵ but the most sophisticated governmental system presently in use is the RIRA (Reports and Information Retrieval Activity) of the Internal Revenue Service.¹⁶ The necessity of consistent and uniform treatment of taxpayers requires coordinating the efforts of 360 attorneys in 34 field offices and 300 attorneys in Washington.¹⁷ When a case is assigned to an attorney, he classifies the issues by extracting from the case all of the legal concepts or descriptions, records the information on punch cards, and sends them to the RIRA office along with a written abstract of the case.¹⁸ Monthly print-out lists are sent to all the local field offices and the attorney can check the issue list for similar cases in other districts. He may then procure any abstracts, documents, or decisions that are relevant to his particular case. The RIRA is expected to result in many economies, insofar as it eliminates unnecessary duplication of effort, and to assure more consistent treatment of taxpayers by providing more comprehensive and timely decision-making information.¹⁹

With one apparent exception, the courts have not utilized the present advantages of the computer beyond the gathering and analyzing of facts. The only references to computers in court decisions have been in congressional re-districting²⁰ and in big antitrust

14. The Interstate Commerce Commission is currently developing a system to assist in proper handling of rate proposals and commerce matters and in preparation for filing protests and petitions. See Fahl, *Data Processing Application in Collective Rate-making*, 32 ICC PRAC. J. 572 (1965).

15. Freed, *Pushbutton Research: Automation in the Law Library*, 24 SHINGLE 11, 13 (1961); Freed, *A Lawyer's Guide Through the Computer Maze*, 6 PRAC. LAW. 15, 44 (1960). The Patent Office, which uses a computer to search old patents, has had great success in certain fields. The computer search is more accurate and faster than human search and prevents the issuance of some invalid patents. Computer searching may be a great help in avoiding litigation and patents may become less vulnerable to attack.

16. Hertzog, *How the Chief Counsel's Office Uses ADP in Litigation of Cases*, 24 J. TAXATION 309 (1966). The Internal Revenue Service handles approximately 26,000 civil and 1,200 criminal cases a year.

17. *Ibid.*

18. *Ibid.*

19. Link, *RIRA—Legal Information System in the Internal Revenue Service*, 43 TAXES 231, 240 (1965).

20. *E.g.*, *Butterworth v. Dempsey*, 237 F. Supp. 302, 313 (D. Conn. 1965) (A special master, who was appointed to draw up a reapportionment plan, was ordered to consider the feasibility of utilizing a computer to minimize partisanship); *Sincock v. Roman*, 233 F. Supp. 615, 619 (D. Del. 1964) (A civic organization presented to the court a reapportionment plan prepared by a computer). For general application of computers to redistricting see Weaver, *Legislative Redistricting*, in A.B.A., *COMPUTERS & THE LAW* 75 (1966); Weaver & Hess, *A Procedure for Nonpartisan Districting: Development of Computer Techniques*, 73 YALE L.J. 288 (1963).

cases.²¹ The one exception is *First National Bank of Birmingham v. United States*,²² wherein the court was asked to determine whether the proceeds of a life insurance policy, paid to the decedent's three business partners pursuant to an agreement whereby upon the death of one the proceeds from the policy would be used by the remaining three to purchase decedent's stock in the company, was taxable as part of decedent's gross estate. Under section 2042 of the Internal Revenue Code of 1954, the decedent's gross estate includes proceeds received from such policies if, at his death, the decedent possessed any "incident of ownership in the policy." In construing the buy-out agreement, the Commissioner of Internal Revenue and the district court determined that the decedent was not bound to name his three business associates as beneficiaries. Consequently, the proceeds were deemed to be a part of his gross estate. In reviewing the case, the court of appeals felt that the taxpayer might be pressing an attack upon the so-called Tompkins-Mitchell principle of estate taxation.²³ In order to determine whether it should re-evaluate established tax law or merely apply local contract law, the court thought that it would be relevant to know if the present case were merely a test case or if other similar cases were pending. A check through the RIRA of the Internal Revenue Service revealed that no similar cases were pending before the Service, the Tax Court, or the district courts. Thus assured that it was dealing with an isolated case, the court thought that a re-assessment of the Tompkins-Mitchell principle was not necessary and that it could decide the case on the basis of an interpretation of the buy-out agreement under applicable Alabama law.²⁴

At first blush, it seems somewhat inequitable that the degree of consideration that a court gives to a petitioner's argument is de-

21. *E.g.*, *Chicago Retail Grocers v. Great Atl. & Pac. Tea Co.*, 21 F.R.D. 498, 505 (N.D. Ill. 1957). This was a price discrimination case in which the crucial issue was the drawing power of a magazine. A survey was taken and the results tabulated by IBM. The case took only seventeen months from the date of filing to the time the decision was rendered, which was remarkable since there were twenty-two plaintiffs and five defendants.

22. 358 F.2d 625 (5th Cir. 1966).

23. *Estate of Mitchell*, 37 B.T.A. 1 (1938), held that proceeds of life insurance paid to the estate were taxable as part of the gross estate even though the estate was obligated to apply such proceeds according to the terms of a contract. *Estate of Tompkins*, 13 T.C. 1054 (1949), held that such proceeds were taxable as part of decedent's gross estate where he reserved the right to change the beneficiary. The question for determination in *First Nat'l Bank*, then, was whether the decedent, by the terms of the agreement entered into with his business associates, had forfeited any right to change the beneficiaries in his insurance policy. If he did forfeit this right the proceeds should not be taxable as part of his gross estate.

24. The Court of Appeals *reversed* the lower court, holding that under Alabama law the agreements were to be interpreted according to the intent of the parties. The court found that the decedent was bound not to change the beneficiaries and that the three business associates were bound to use the proceeds to purchase decedent's stock in the company. *First Nat'l Bank v. United States*, 358 F.2d 625, 630 (5th Cir. 1966).

pendent upon whether other parties are also litigating the same issue. However, since a court has only so much time to allocate among a great many cases, and judges do, and should, give more consideration to the cases they believe are more significant, the ingenuity of the court in *First National Bank* can be appreciated. Surely, the number of pending cases dealing with a particular issue is indicative of the question's importance. However, at the time of the decision in *First National Bank*, there were thousands of cases pending and a search for similar cases would have been impossible without the use of a computer system.²⁵ The Fifth Circuit's use of the computer was therefore highly imaginative and indicates the definite utility of the computer in the court room. Other courts could conceivably use a computer in similar circumstances so as to expedite the disposition both of motion practice and of the cases themselves.²⁶

Thus far, no completely satisfactory system has been developed for searching the case law. Most of the current experimentation is concerned with developing different methods of digesting.²⁷ However, the obstacles to perfecting a digesting system of the traditional *West* variety are formidable. They include the inability to establish a universally applicable series of legal terms, concepts, and topic classifications; the inability to agree upon a single authoritative interpretation of each decision; and the inability to determine the essential facts of each case.²⁸ These problems, however, may be avoided by use of a language-normalization technique which requires that all statements be arranged in certain standardized form and thus eliminates the necessity of having to determine exactly what each case stands for.²⁹ Because of the large number of projects and the diverse methods of experimentation being employed, and because of the increasing pressures to develop a satisfactory system, it should not be too long before the legal profession will have at least a simple assemblage of relevant authorities in a narrowly circumscribed field. Such an accomplishment would certainly be a step in the right direction, for although it would not amount to "push-button" research, it would alleviate the attorney's research tasks to some extent. Of course, the computer is not going to replace the attorney or the judge; the lawyer will still have to analyze and the judge will still

25. 25 J. TAXATION 37 (1966).

26. A few courts have already utilized computers to alleviate court congestion and facilitate their own administrative practices. See Ellenbogen, *Automation in the Courts*, 50 A.B.A.J. 655 (1964); Spangenberg & Neumann, *Data Processing: A Modern Tool To Help Improve Judicial Administration*, 50 MASS. L.Q. 31 (1965).

27. Hoffman, *Lawtimation in Legal Research*, 62M MODERN USES OF LOGIC IN LAW 16, 25 (1963).

28. Freed, *Machine Data Processing Systems for the Trial Lawyer*, 6 PRAC. LAW. 73, 74 (1960).

29. Allen, *Beyond Document Retrieval Toward Information Retrieval*, 47 MINN. L. REV. 713 (1963).

have to decide.³⁰ However, it should be noted that although mechanization is primarily considered an aid in the locating of material, it is possible that *some* of what the lawyer does by way of analysis can be done automatically if appropriate information is properly put into the computer.³¹

Few would argue with the premise that computers would be a useful tool in legal research. Several years ago it was estimated that there were 2.2 million reported cases (this figure was increasing at a rate of 25,000 per year), 77,000 key numbers, and 2 million entries in descriptive word indices.³² Because of the sheer mass of material, non-computer searching methods cannot be completely successful and the element of chance must necessarily play an increasingly significant role in the locating of relevant information. Though few, if any, of the professions can boast of a digesting system as comprehensive as the key number system developed by West Publishing Company, even it is becoming inadequate due to the great quantity and variety of subjects with which it must deal. Furthermore, the benefit derived from the system depends upon the ability and insight of both the person who compiles the digest and the person who searches it.³³ The most frustrating situation is when a lawyer realizes that there is a gap in his knowledge but is unable to determine what it is that he does not know. The search through *West's* for the unknown is time consuming and a lawyer can never be sure that he has uncovered all of the relevant data.³⁴ What is needed is a system whose basic techniques for storing, identifying, and retrieving permit a wide variety of searching methods including the identification of specific fact situations, basic legal concepts, and analogy of reasoning.³⁵ Conceivably, an indexing system which is not subject to the limitations of the present systems can be developed utilizing the computer. Moreover, data processing would eliminate some of the inequities which arise in the legal system because of disparities in the facilities of counsel and the size and financial positions of litigants. By thus eliminating some of the non-judicial factors which enter into a decision, a more uniform and systematic development of the law may be occasioned.³⁶

30. Freed, *A Lawyer's Guide Through the Computer Maze*, 6 *PRACT. LAW.* 15, 24 (1960).

31. A language-normalization approach is one method which arranges materials in such a fashion as to be susceptible to some computer analysis. Allen, *supra* note 29, at 767. See generally *id.*

32. Dickerson, *The Electronic Searching of Law*, 47 *A.B.A.J.* 902 (1961).

33. Loevinger, *Jurimetrics: Science and Prediction in the Field of Law*, 46 *MINN. L. REV.* 255, 272 (1961).

34. Eldridge & Dennis, *The Computer as a Tool for Legal Research*, *supra* note 10, at 85.

35. *Id.* at 81.

36. Brown, *Electronic Brains and the Legal Mind: Computing the Data Computer's Collision with Law*, 71 *YALE L.J.* 239, 246 (1961).

Aside from the technical problems involved in the initial programming of a system, there do not appear to be any countervailing disadvantages to the use of data processing. Although the cost of data processing equipment may be prohibitive for even some of the larger firms, arrangements could be made whereby individual practitioners would be able to utilize computers in their work. Computer research systems could be set up by independent companies as a business enterprise or by the larger bar associations as a service for the profession at large.³⁷ Within a geographical area, the demand for such a system should be sufficiently great that the cost to any one individual or firm would not be exorbitant.

The vast resources which have been stored in legal libraries are becoming unwieldy and much of the knowledge that has been accumulated is not being tapped merely because it cannot be easily and readily retrieved. One possible solution to some of these problems may be the electronic computer, for it will save precious time in the routine searches necessary to uncover from the myriad the few works which deserve the lawyer's contemplation and analysis. For too long, the legal profession has been lethargic in this field and science and business have passed it by. However, since 1960, the profession has made great strides forward and it may soon reap the benefits of the electronic revolution which is currently taking place.

37. Freed, *Legal Research With Computer Help*, 34 PA. B.A.Q. 489, 497 (1963); Freed, *Machine Data Processing Systems for the Trial Lawyer*, 6 PRAC. LAW. 73 (1960).