DOES COMPUTER STORED DATA CONSTITUTE A WRITING FOR THE PURPOSES OF THE STATUTE OF FRAUDS AND THE STATUTE OF WILLS?

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The Statute of Wills[1] and the Statute of Frauds[2] (the Statute) are venerable pieces of British legislation which have deeply affected and continue to affect American law,[3] even though the Statute of Frauds has been repealed in Britain.[4] It may come as a surprise to the reader to learn that it is the Statute of Frauds which imposes a "writing" requirement, overriding inconsistent provisions in the earlier Statute of Wills.[5] So any discussion of the historical requirements for a written will under the Statute of Wills is automatically covered when discussing the Statute of Frauds. The Statute of Frauds required certain wills, contracts, and other transactions to be in writing.[6]

Nowhere in the Statute is a writing defined. Attorneys and philosophers alike seem to agree that the word "writing" requires no definition.[7] While some critics attack the Statute as a device of injustice or even an anachronism,[8] others see it as a superb piece of legislation well suited to contract law.[9] However, no one talks about what is required to prove a writing. Certainly the original Statute does not examine the question. The elements necessary to show a sufficient writing[10] had to be developed by case law, but what actually constitutes a writing has not yet been touched. New versions

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1. 32 Henry VII C.1 (1540).
2. 29 Charles II C.3 (1677).
3. JOHN EDWARD MURRAY, MURRAY ON CONTRACTS at 60 (1974).
4. Russell Decker, *The Repeal of the Statute of Frauds in England*, 11 AMERICAN BUS. L.J. 55 (1973).
5. Statute of Frauds, § 5.
6. Statute of Frauds, §§ 4 and 17.
7. *See* Uniform International Wills Act, comments to § 3.
8. Russell Decker, *The Repeal of the Statute of Frauds in England, supra* note 4 at 60.
9. Llewellyn, *What Price Contract?—An Essay in Perspective*, 40 YALE L.J. 704, 746 (1931).
10. American Iron & Steel Manufacturing Co. v. Midland Steel Co., 101 Fed. 200 (1900). *See* Seagood v. Neale (1721) 93 E.R. 613.

of the Statute[11] are usually open ended enough to prescribe without giving any significant guidance.[12] Occasionally guidance can be gleaned from the requirement that the writing be signed,[13] but even that can prove to be illusory.

Of course there have been numerous changes in technology since 1677. The question to be considered is whether or not those technological changes can be accommodated under the present law. If they can be, there may be some fundamental and drastic changes in the media in which we represent our ideas. If they cannot be, the law will not only lag behind modern technological capabilities, it may actually be harmfully anachronistic. Therefore, it is very important to consider the conditions under which these "writing" requirements were imposed.

At common law, there were two kinds of wills, the written will and the nuncupative will.[14] In 1540, the Statute of Wills imposed the requirement that certain wills must be in writing. There was no requirement that the will be written in ink[15] or even written by the testator himself.[16] The Statute of Wills does not spell out what materials must be used to make the writing.[17] An odd assortment of unusual wills has been probated over the years,[18] and not one of

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11. U.C.C. § 1-206(1)—some writing
§ 2-201(1)—some writing
§ 8-319(a)—some writing
§ 9-203(1)(a)—signed a security agreement
Uniform Probate Code § 2-502—in writing
Uniform International Wills Act § 3(a)—in writing.

12. U.C.C. § 1-201(46)—writing includes printing, typewriting, or any other reduction to tangible form. Tangible form is not defined in the Code. Uniform International Wills Act § 3(a)—can be written . . . by hand or any other means, whatsoever.

13. U.C.C. § 1-201(39)—any symbol executed or adopted by a party with the present intention to authenticate a writing. Symbol is not defined in the Code.

Uniform International Wills Act § 4 talks about sheets and signing at the end of the will, although this does not affect validity under § 3.

14. GILBERT, THE LAW OF EXECUTIONS, at 373 (1763).

15. Loveday v. Claridge (1730), cited in Limbery v. Mason & Hyde (1735) Comyns' Rep. 451.

16. *See* GILBERT, THE LAW OF EXECUTIONS, *supra* note 14 at 375.

17. Potts v. House, 6 Ga. 324 (1849).

18. *In re* Goods of Barnes, 136 L.T. Rep. 380, 164 L.T. 328, 43 T.L.R. 71 (1926) (will written on an eggshell); 66 Sol. J. 638 (1922) (will written on a microscopically etched Navy identification disk); Note, *Wills—Writing Scratched on a Tractor Fender—Granting of Probate,* 26 CANADIAN BAR REV. 1242 (1948) (will written on a tractor fender); VIRGIL M. HARRIS, ANCIENT, CURIOUS, AND FAMOUS WILLS (1911) (wills written on a door, page 167; on a card torn from a freight car, wrapping paper, and a collar box lid, page 168); Sidney T. Miller, *Notes on Some Interesting Wills,* 12 MICH. L. REV. 467, 468 (1914) (wills written on a corn bin and a bedpost); Clark Sellers, *Strange Wills,* 28 J. CRIM. LAW & CRIMINOLOGY 106 (1937-1938) (wills written on the rung of a stepladder, matchbox, and a petticoat).

them has been objected to on the grounds the will was not a writing. Historically speaking, the ecclesiastical courts were very lax on what was admitted to probate,[19] as long as the animus testandi existed.[20] There is little doubt that the nuncupative will has not survived as well.[21] From this it appears the two classes of wills are exhaustive and mutually exclusive. If a will is nuncupative, it cannot be considered in writing, and vice versa. Perhaps calling written wills non-nuncupative wills would make their relationship easier to see to the more casual reader.

Since the material on which the will is written is unimportant, it must be considered how the writing is done. In a "normal" will, the testator writes the document himself and executes it with the appropriate formalities. The circumstances of modern life usually require that even a literate testator use the services of an attorney to draft his will,[22] which does not affect the validity of the final will. There is no requirement that the writing be in any particular language, as long as the probate court can at least have the will translated.[23] A testator need not understand the language in which the will is written, as long as it expresses his desires accurately.[24] If this were to the contrary, only lawyers would be able to make wills, since they are often considered to be the only ones who understand "legalese."[25] Some scholars have considered how far this analogy can be pushed.[26] Would the Statute of Wills be satisfied by a phonograph, a tape recording, a video recording, or a home movie? Perhaps it is not the letter of the law which should be followed, particularly when the

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19. WILLIAM ROBERTS, A TREATISE ON THE LAW OF WILLS AND CODICILS (1815).

20. *Id.* at 172. GILBERT, THE LAW OF EXECUTIONS, *supra* note 14 at 337.

21. Most states do not allow civilians to make a nuncupative will.

22. Potts v. House, 6 Ga. 324 (1849) and footnote 16.

23. *In re* Cliff's Trusts [1892] 2 Ch. 229; Uniform International Wills Act § 3(a), 8 U.L.A. 169 (Supp., 1982).

24. *In re* Arneson's Will, 128 Wis. 112, 107 N.W. 21 (1906); *In re* Gluckman's Will, 87 N.J. Eq. 638, 101 A. 295 (1917); *In re* Knutson's Estate, 144 Minn. 111, 174 N.W. 617 (1919); Uniform International Wills Act comments to § 3.

25. Note the popularity of "Plain Language" laws in the past 10 years.

26. *See* THOMAS E. ATKINSON, LAW OF WILLS, 2nd Edition, 296 (1953). While it can be argued that the Statute of Frauds is an anachronism, to reject a new technology which arguably satisfies the Statute because it conflicts with an old common law presumption which favors the heirs over testacy is excessively rigid. It is doubtful that the feudal social requirements which favored heirs are still good in light of public policy and the requirements of modern social life. Simply put, it is ludicrous to drop one anachronistic policy because it conflicts with an even more anachronistic policy. Such excessive rigidity was a major source of trouble in the common law, which eventually forced the creation of the Chancery Courts. The law will never stand still, whether it changes by evolution, revolution, or something in between.

letter itself is ambiguous. One should follow the spirit of the law to try to meet the needs which gave birth to the law in the first place.

While the examples of unusual wills are amusing, what do they mean? Why was the writing requirement imposed on a testator? Many unusual wills (and a good number of usual wills) are fakes.[27] A writing is designed to lessen the chances of fraud, forgery, or fabrication.[28] Documents can be seen, touched, and investigated to see if they are genuine. While these arguments have at least a superficial appeal, they do not hold up well under investigation. A well executed fraud will succeed because it is well done. These requirements prevent only the inept or the spur of the moment fraud. No person can expect to invent a story on the courthouse steps and get away with it in the face of these requirements. The goal is not to prevent all frauds or forgeries, but to offer at least the same level of protection from frauds and forgeries. Whenever a new technology comes along, it is difficult to reliably tell when it has been tampered with. Given a bit of time, new techniques are discovered which reliably allow the authenticity of a document made with a new technology to be determined. For instance, some companies prefer microfiche copies of checks to the original checks, since the copies cannot be altered without it being immediately obvious. Tape recording can be easily checked for tampering, as shown by the infamous 18 minute gap in one of Richard Nixon's tapes.

The considerations which gave rise to §§ 4 and 17 of the Statute of Frauds are a bit different. These two sections require certain contracts or transactions to be in writing. Law professors often like to cite the title to the Statute as if that explains everything. It says: "An act for prevention of frauds and perjuries." In many sections, the language of the Statute is obscure.[29] It is doubtful that the people of 1677 were any more corrupt than their ancestors or their descendants. Why should the times cry out for such a Statute? As admirable as the title may sound, it would be simplistic to hold it out as the sole or even a substantial motivating force behind enactment of the Statute.

Although there was once some doubt, it appears settled that the Statute was enacted on 12 April 1677.[30] It was first introduced in the

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27. Clark Sellers, *supra* note 18 at 117.
28. *See supra* note 26.
29. Douglas Stollery, *Statute of Frauds*, 14 ALBERTA L. REV. 222, 255 (1976).
30. George P. Cotigan, Jr., *The Date and Authorship of the Statute of Frauds*, 26 HARV. L. REV. 329 (1913); Crawford D. Hening, *The Original Drafts of the Statute of Frauds (29 Car. II c.3) and Their Authors*, 61 U. PA. L. REV. 283 (1913).

House of Lords on 16 February 1674,[31] with a second reading on 20 February 1675. This bill was ultimately smothered in committee.[32] The second time the bill was introduced to the Lords was on 14 April 1675,[33] with a second reading on 15 April 1675.[34] On 12 May 1675,[35] the bill was sent to the House of Commons, where it was read on 26 May 1675.[36] A prorogation of Parliament stopped any further consideration of the bill. On 14 October 1675,[37] the bill was introduced for a third time to the Lords. It was read a second time on 12 November 1675,[38] but it was again dropped due to a prorogation of Parliament. The Statute of Frauds was introduced to the Lords for a fourth time on 17 February 1676,[39] again by Lord Nottingham. It was read for a second time on 19 February 1676.[40] During the course of this time, the bill had been modified in a number of minor ways. Originally, a note had to be made at the direction of the parties. However, in subsequent drafts of the bill there was added the requirement that the note be signed by the person to be charged. The first draft would have allowed a recovery without a writing up to a certain amount (which was left blank in the draft), but in the final version no recovery was allowed without a signed writing.[41]

Events began to move more quickly for the determined Lord Nottingham. On 6 March 1676[42] the bill was reported from the committee, with amendments, and ordered engrossed. After being read to the Lords for a third time on 7 March 1676, it was sent to the Commons.[43] The Commons read the bill on 13 March 1676[44] for the first time, and on 2 April 1677[45] for the second time. On 12 April

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31. 12 H.L. Jour. 638.
32. 12 H.L. Jour. 645.
33. 12 H.L. Jour. 656.
34. 12 H.L. Jour. 659.
35. 12 H.L. Jour. 689; 9 H.C. Jour. 335.
36. 9 H.C. Jour. 345.
37. 13 H.L. Jour. 7.
38. 13 H.L. Jour. 20.
39. 13 H.L. Jour. 43.
40. 13 H.L. Jour. 45. The committee consisted of 37 temporal and 10 spiritual lords, to be assisted by Lord Chief Justice North, Justice Windham, Justice Jones and Justice Scrogs. Lord Nottingham appears to have been the original author of the Statute. Sir Lionell Jenkins helped shape the earlier drafts, particularly with regard to wills.
41. *See* Crawford D. Hening, *The Original Drafts of the Statute of Frauds (29 Car. II c.3) and Their Authors*, 61 U. PA. L. REV. 283, 303 (1913), which has a condensed version of the first and last drafts of the bill, marking additions and deletions clearly.
42. 13 H.L. Jour. 62.
43. 13 H.L. Jour. 63; 9 H.C. Jour. 394.
44. 9 H.C. Jour. 398.
45. 9 H.C. Jour. 410. Note that the Julian calendar is being used, which has the first of April as the first day of a new year. When the Gregorian calendar switched the

1677,[46] the committee of the House of Commons returned the bill to the full Commons, with several amendments. All of the amendments were passed, except the one proposing to make the bill temporary. The bill was read for a third time and passed back to the Lords on the same day.[47] Without wasting any time, the amendments were read twice, in the same day apparently, and agreed to by the Lords. The King delivered his Royal Assent in person on 16 April 1677.[48]

It is necessary to understand the circumstances in which this bill passed into law. Social order was very unsettled, since England had just gone through its Civil War, several years under Oliver Cromwell as Lord Protector, and the restoration of the monarch in the person of Charles II.[49] The legal order was also undergoing tremendous change. Trial by jury was just beginning to approximate the modern equivalent. While the writ of attaint[50] was abolished in 1670[51] the concept of granting a new trial because a jury has gone against the weight of the evidence was very new.[52] This Statute was viewed as one possible way of removing a case from a jury's consideration.[53] Juries could still render a verdict based upon personal knowledge and not the presented evidence.[54] A jury was still a bull in a china shop, with the legal establishment trying to figure out some way to bring it under control.

The laws of evidence were still in their infancy. Certainly, things were worse when the parties had not even taken turns speaking, but there was still room for improvement. Parties to the action, their spouses, and those with an interest in the litigation were not competent to be witnesses.[55] In a garden variety law suit, this effectively

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first day of the new year to January first, people who persisted in celebrating the new year on April first were called April Fools.

46. 9 H.C. Jour. 419.

47. 13 H.L. Jour. 111.

48. 13 H.L. Jour. 120.

49. Rabel, *The Statute of Frauds and Comparative Legal History*, 63 L.Q. REV. 174 (1947).

50. A process by which a false verdict could be reversed, causing the jurors to become infamous, forfeit all of their goods, be imprisoned, have their wives and children thrust out of doors, their houses razed, their trees extirpated, their meadows plowed up, and the plaintiff should be restored to everything he lost due to the unjust verdict. *See* BLACK'S LAW DICTIONARY, 5th edition, 1979, p. 116.

51. Bushell's Case, 124 Eng. Rep. 1006 (1670).

52. 6 W.S. HOLDSWORTH, A HISTORY OF ENGLISH LAW 388 (1927).

53. Douglas Stollery, *Statute of Frauds*, 14 ALBERTA LAW REV. 222 (1976).

54. 6 HOLDSWORTH, *supra* note 52; Stollery, *supra* note 53, at 223.

55. Hugh Evander Willis, *The Statute of Frauds—A Legal Anachronism*, 3 INDIANA L.J. 427, 429 (1928). *See* notes 52 and 53.

eliminated all of the witnesses. To present a case, it would often be expedient to purchase perjured testimony. Likewise, the parol evidence rule was still being formulated.[56] Finally, the substantive laws of contract were very new and had not yet been clearly delineated.

Given the great uncertainties of the time, it is obvious why judges wished to maintain control over litigation. It is doubtful that Lord Nottingham planned the Statute to be a permanent fixture in the law. The problems of the time were seen as transitional ones, requiring a temporary fix. The only reason the bill was not made temporary was that no one knew how long these problems would continue. When the situation had cleared up, the legislators no doubt intended to repeal the Act.[57] While the Parliament waited until 1954 to repeal the Statute,[58] no United States jurisdiction has yet followed suit.

The Statute does not offer any definition of a writing under §§ 4 or 17, creating the same problems as it does under § 5 for wills. Courts have allowed a single writing or even groups of writings to satisfy the Statute.[59] One court even went so far as to declare that the Statute did not specifically require a writing on paper with ink.[60] That court recognized that technology changes over time. Civilizations have used stone tablets, clay tablets, metal, papyrus, parchment, and now paper. In order to be acceptable, it must be safe and durable. The markings must be visible to the eye.[61] The material must allow multiple viewings, to allow for correcting errors in the spoken word or hazy memory and even catching perjury.[62] In all probability, Lord Nottingham had in mind the notes a reasonable merchant makes in the ordinary course of conducting his business.[63] No particular intention is required to make a sufficient writing.[64] Certainly there is no requirement the writing contain the whole of the contract.[65] All of this is consistent with the more common court

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56. *See* note 52.

57. *See* notes 55, 53, and 52.

58. Russell Decker, *supra* note 4.

59. *See generally* SAMUEL WILLISTON, A TREATISE ON THE LAW OF CONTRACTS § 568 (3rd ed. 1961).

60. Clason v. Bailey, 14 Johns. 484 (N.Y. 1817).

61. *Id.* at 491.

62. Deevy v. Porter, 11 N.J. 594, 95 A.2d 596 (1953).

63. *See* Rabel, *The Statute of Frauds and Comparative Legal History*, 63 L.Q. REV. 174, 182 (1947). *See also* Comment, *Sufficiency of the Writing and Necessity for a Signature in the Statute of Frauds of the Uniform Commercial Code*, 4 UNIV. OF S.F. L. REV. 177, 184 (1969).

64. Grant v. Auvil, 39 Wash.2d 722, 238 P.2d 393 (1951); Wozniak v. Kuszinski, 352 Mich. 431, 90 N.W.2d 456 (1958); Crabtree v. Elizabeth Arden Sales Corp., 305 N.Y. 48, 110 N.E.2d 551 (1953).

65. Santoro v. Mack, 108 Conn. 683, 145 A. 273 (1929).

pronouncements on the criteria for determining the sufficiency of a writing under the statute.[66] But a document that has been lost or destroyed is not able to fulfill any of these requirements, yet it is sufficient to satisfy the Statute.[67] It would seem that proving the contents of a writing by parol evidence would be equally fallible as proving the contents of a contract by parol, but the law did not follow that path.

A sufficient writing must be signed before the Statute will allow a contract to be enforced.[68] What constitutes a signature is very broad. Initials, a mark, code, typewriting, or a stamp have all been found acceptable, provided there is a present intention to authenticate with the "signature."[69] Conduct by the party to be charged can even be a sufficient symbol of authentication.[70] A signature on any part of the writing is sufficient, even the beginning and the margins, as well as the end.[71] It appears the "signed" requirement is interpreted even more broadly than the "writing" requirement, if such is possible.

When the telegram and the telex were introduced, courts tended to approve the use of this modern business practice without much discussion.[72] What actually constitutes a telegram or a telex seems to elude judges. Because the recipient can get a piece of paper, judges assumed the piece of paper *was* the telegram. Only one judge has recognized the fact a telegram is actually a series of electrical impulses sent from one location to another.[73] This judge reasoned policy requires some substantial and tangible evidence of the contract, more reliable in nature than the statements or recollection of witnesses. A writing could use ink or that more subtle fluid[74] known as electricity. The signature was irrebuttably presumed by the assumption the telegram was submitted in writing, not telephoned in, to the telegraph office. It was a factor that a recipient could request a written confirmation, even though it was not done. Another court

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66. Cramer v. Ballard, 315 Mich. 496, 24 N.W.2d 80 (1946); *cf.* Trossbach v Trossbach, 185 Md. 47, 42 A.2d 905 (1945) (statute protects a party from perjure evidence against him).

67. ARTHUR LINTON CORBIN, CORBIN ON CONTRACTS § 275 (1950); JOHN EDWAR MURRAY, MURRAY ON CONTRACTS § 324 (1974).

68. Statute of Frauds, §§ 4 and 17.

69. *See* SAMUEL WILLISTON, *supra* note 59; ARTHUR LINTON CORBIN, CORBIN O CONTRACTS, § 520 (1950).

70. Interstate United Corp. v. White, 388 F.2d 5 (10th Cir. 1967).

71. Lemayne v. Stanley, 3 Levinz Rep. 1 (1671). *See* 112 A.L.R. 937-48 (1938)

72. *See* WILLISTON, *supra* note 69, § 568; CORBIN, *supra* note 69, § 508.

73. Selma Savings Bank v. Webster County Bank, 182 Ky. 604, 206 S.W. 870, A.L.R. 1136 (1918).

74. The court equated electricity with ink.

used a metaphysical concept of agency[75] to make a signature valid, by a series of imputed agency assumptions because the court was having difficulty coping with the fact telegrams were telephoned to the telegraph company instead of being written out on a form in the company's office. Simply put, the new medium would not fit into the comparatively rigid compartments which the law had developed.

A telegram, like a telex, is a series of electrical impulses. An electrical impulse is a very short lived event. It cannot be played back, and it exists for only a moment. Courts were confusing the transcription of a telegram (by a person) and a telex (by a machine) with the actual event. The two are as distinct as the testimony at a trial and the transcript of a trial. Perhaps this can be explained by analogy to FRE § 803(24).[76] Any new medium should be examined to see if it is functionally equivalent to a writing (in the more conventional pencil and paper sense). Next, does this medium in general, and this particular item specifically, offer equivalent circumstantial guarantees of trustworthiness that an equivalent writing (in the conventional sense) would have? Finally, the interests of justice must be served by allowing this new medium to serve as a writing under the Statute.[77]

A new area has opened up in which to test this theory—allowing tape recordings to satisfy the Statute of Frauds. There are only two reported cases on this subject.[78] Neither one engages in a lengthy discussion on the topic, but *Ellis* does claim to be the first case of its kind, which *Swink* does not refer to. *Swink* clearly left open the question of whether or not a tape recording is a writing.[79] What the

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75. Joseph Denunzio Fruit Co. v. Crane, 79 F. Supp. 117 (S.D. Cal. 1948), *vacated*, 89 F. Supp. 962 (1950), *reinstated*, 188 F.2d 569 (9th Cir. 1951), *cert. denied*, 342 U.S. 820 (1951).

76. *See* People v. Marcus, 31 C.A. 3d 367, 370, 107 Cal. Rptr. 264, 265, 58 A.L.R.3d 594 (1973) (tape recorded conversation); State v. Rushford, 130 Vt. 504, 507, 296 A.2d 472, 474 (1972) (printed bill of indictment); Shaw v. Shaw, 264 N.W.2d 397, 398 (Minn. 1978) (tape recorded conversation); State v. Beach, 304 Minn. 302, 308, 231 N.W.2d 75, 78 (1975) (tape recorded conversation); People v. Moran, 39 C.A.3d 398, 406, 114 Cal. Rptr. 413, 418-19 (videotape of witness testimony); Spence v. Rasmussen, 190 Ore. 662, 672-73, 226 P.2d 819, 824 (1951) (photograph). *Cf.* State *ex rel.* St. Louis Public Service Co. v. McMillian, 351 S.W.2d 22, 24 (Mo. 1961) (photographs not accorded work product privilege accorded certain writings).

77. Equivalent to saying that the Statute of Frauds may not be used as an instrument of fraud.

78. Swink & Co., Inc. v. Carroll McEntree & McGinley Inc., 266 Ark. 274, 584 S.W.2d 393 (1979) (no signature); Ellis Canning Co. v. Bernstein, 348 F. Supp. 1212 (D. Colo. 1972) (constitutes a writing under the statute).

79. *Swink*, 266 Ark. at 399.

court said was that there was no signature, without explaining why it arrived at this conclusion. There, the party to be charged was unaware that a recording was being made. The defendant had no present intention to authenticate the tape because he did not even know it existed. While no mens rea is required to make a writing, a mens rea of "authentication" is required to sign one. Therefore, while a writing exists, it is not a signed writing sufficient to satisfy the Statute.

In *Ellis*, the court held the tape recording was sufficient to satisfy the Statute.[80] Both parties knew the tape was being made. While the court did consider the tape to be a writing, it did feel a bit of hesitation about finding a signature. After concluding the signature requirement serves only to identify the parties, the court concluded that the voices themselves were sufficient to identify the parties and therefore performed the same function as a signature. Perhaps it would have been preferable for the court to have found that the parties used their voices to authenticate the deal and the tape at the same time. Obviously, a party would not accept a purported tape recording of his voice if it did not sound like him. The voices were not intended merely to identify the parties, but also to authenticate what they said. In this fashion, a tape recording becomes both a writing and a signature under the Statute,[81] offering an even better circumstantial guarantee of trustworthiness than would a more conventional writing.

During the past decade, a revolution has taken place. The "Information Age" is upon us. Not only do pocket calculators abound, but useful computers exist in the home. Calculators with thousands of program steps exist, as well as the newer hand held computers. Computers have invaded not only the classroom, but the office as well. A significant number of people own a home computer. The implications of this change in access to "high powered" computers are dramatic, as dramatic as the introduction of widespread literacy to a society. As the common man can use a computer more and more, eventually he will start doing legally significant things with it (such as using it to draft a will or a contract).

What is the effect of a document stored on computer readable material? Is it even a document, in the eyes of the law? Unfortu-

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80. *Ellis*, 348 F. Supp. at 1228.

81. Actually U.C.C. § 8-319. In dicta, the judge doubted if the original statute of frauds would have allowed this interpretation. No analysis or support was given for that statement. Arguably, the U.C.C. just incorporated the pre-existing standards that the original statute of frauds imposed, in this respect at least.

nately, the question is not as simple as that. It may depend upon how the information is stored. It could be done in any one of several ways.

The method which would give the least trouble is a document stored on paper tape. As its name suggests, paper tape is made out of paper—ordinary paper, waxed paper, or a plastic which is designed to last longer than paper. It is about an inch wide and is as long as necessary to store a document. In most cases, it comes in one piece (although it could be patched together). There is a small line of sprocket holes down the length of the tape. Above these sprocket holes are three information holes. Below the sprocket holes are four information holes. This asymetric layout makes it impossible for a tape to be read inside-out. The seven information holes are punched out to represent each letter or character of the document. While there are several possible codes to use for this purpose, some are more widely used than others.[82] The advantages of such a method of storage should be immediately apparent.

The legal profession should be quite happy because this method uses paper, like the parchment of old. A court could translate the punch out code with certainty, so there should be no complications beyond using a more conventional cipher.[83] The paper tape would be secure, because no pages could be inserted, as the tape has no sheets. Letters would be difficult to modify, because paper cannot be added to a hole that has already been punched, nor can space be added or removed from the tape without it being immediately obvious. The end of a paper tape can be signed in ordinary ink by the parties or testator and witnesses. A notary can also impress his seal on the end of the paper tape. From all of this, it appears a paper tape could be accepted by the courts today without any modification or extension of existing law.

Another possible method of storage is the paper punch card, commonly referred to as "cards." Everyone who has read the legend "Do Not Fold, Spindle or Mutilate" has read it off one of these infamous cards. Schools use them for registration and the telephone company uses them for keeping track of customer payments. The average card allows for up to 80 characters to be punched on it.[84] A translation is

82. For instance, ASCII code is a favorite among small computer users.

83. *In re* Cliff's Trusts [1892] 2 Ch. 229; *In re* Arneson's Will, 128 Wis. 112, 107 N.W. 21 (1906); *In re* Gluckman's Will, 87 N.J. Eq. 638, 101 A. 295 (1917); *In re* Knutson's Estate, 144 Minn. 111, 174 N.W. 617 (1919); Uniform International Wills Act § 3 and comments. *See* RESTATEMENT OF CONTRACTS § 231, Illustration 2 (1932).

84. There are only two widely used punching codes, ∅ 29 and ∅ 26.

often put on the top line of the card. Once again, this method does not provoke anxiety, because it is on paper. It can be signed in ink, although using a raised seal would make that particular card very hard to read from the computer's viewpoint. Modification of the punches is very difficult, since old punches often have to be covered up to produce an intelligible modification. There are some drawbacks to this method. The unconnected nature of the cards makes scrambling the deck or substitution of cards very easy. A fatal problem with this method is the large amounts of space it takes to store any significant amount of data. Paper tape uses much less space than a card, which removes any incentive to use cards for anything.[85] While it is very likely cards could be used without any legal difficulty, it is unlikely they would be preferred because of their practical drawbacks.

Finally, it is possible to store documents magnetically. This can be done any number of ways, ranging from magnetic tape, magnetic cassettes, magnetic drums, magnetic disks, magnetic bubbles, magnetic core, and so on. Each one of these methods stores the data on a surface by encoding it into a series of magnetic pulses, similar to the way a tape recorder works. A magnetic cassette, usually used in home computer systems, is exactly the same as a regular cassette used for tape recording on a cassette tape recorder. An ordinary tape recorder is wired up to the home computer to use the cassette to store or replay information. Playing a magnetic cassette with information on it over a home stereo system will show how computer-stored data sounds to human ears.

Magnetic tape is usually used on bigger computers. It is a very inexpensive and reliable way to store data. Since more information is put on every inch of magnetic tape than a magnetic cassette, the sensitivity of magnetic tape must be greater to prevent information from getting lost. For this reason, magnetic tapes are about an inch wide, looking very similar to professional recording studio tape or videotape. Often this tape is stored on reels, which can hold as much as a mile of tape. A dust cover is put around the open edge of the reel to prevent dust and other things from removing any of the oxide (which is what is actually magnetized to hold the information), which would mean that some information would be lost.

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85. Except very short wills or contracts or by the hard core practical joker. The relative efficiencies of paper tape over cards increases as the length of the document increases. I assume people will choose the medium which is more compact, unless the document is so small the difference is negligible or they wish to create a hassle (i.e., paying a bill in pennies).

Magnetic drums are cylinders covered with an oxide which rotate at a very high speed. This high speed rotation permits information to be located or stored very quickly. Since the tolerances are very tight on this device, it must be kept sealed away from dust and even cigarette smoke to avoid the oxide being scraped off. This increased speed is paid for by an increased price, so that this method is not very cost effective to store significant amounts of data for any appreciable period.

Magnetic disks are the most popular and cost effective way to store data. They come in two sizes, large and small. Large disks look like long play (LP) phonograph records. They are covered, top and bottom, with an oxide. Five or six disks may even be stacked on a central spindle, with about an inch between each disk, called a disk pack. Like the magnetic drum, these disks must rotate at high speed in a dust-free environment to prevent the oxide from being scraped off. A disk pack can hold more information than a drum because there is more surface area on it, when the height of the drum and the spindle are the same. Small disks are called floppies. They consist of a single, round piece of flexible material, with an oxide on both sides, covered by a paper wrapper. Holes have been put in the wrapper so the recording and playback heads can move over the disk while it rotates within its wrapper. The speed at which the inner material rotates creates a firm and uniform surface, saving on production and material costs. Since the floppy is not used in a dust-free environment, its tolerances are less exacting. In turn, this means less data can be stored per square inch of surface area of a floppy disk.

Magnetic core is made up of a grid of very fine wires. At the junction of each set of wires is a ferrous ring. The ring is magnetized in a left or a right fashion by passing current through the two wires. Only at the point where the two wires intersect does this current become strong enough to affect the magnetic properties of a ring. While this method is very fast, primarily because it has no moving parts, it is very expensive to manufacture. Solid state equivalents, such as magnetic bubble memories, have largely replaced magnetic core. These solid state equivalents are very small (around 1½" x ½" x ¼"), very cheap to make, and have no moving parts to slow them down.

There is only one meaningful distinction, in practical terms, between any of these methods—whether or not the information will be retained when the power to the storage device is turned off. While it is possible someone may use a pocket computer to note a contract or make a will, it is not very practical unless the note or will endures after the pocket computer has been turned off. The integrity of any

particular document can be checked only if the storage device can be examined carefully—which is not often possible to do while the device is powered. Therefore, only the more permanent of these devices will be useful from a practical and legal[86] standpoint.[87]

The characteristics of this method of storage present possible problems, but they are not insurmountable. "Magnetic" ink is very much a novel idea, but within the range of permissible possibilities for a writing under the Statute.[88] Since tape recordings have been held as writings, the same material (a magnetic cassette, for instance) hooked up to a home computer should also constitute a writing, since they offer essentially the same safeguards. The fact that a longer or wider tape (a magnetic tape, for instance) is used should not constitute the sole ground for refusing the material as a writing. Why should the fact that the "paper" is round (a magnetic disk, for instance) instead of a strip constitute the sole ground for declaring this material not to be a writing? Simply put, it should be considered a writing. It is durable, more accurate than a fragile human memory, and any alterations can be detected. Aside from meeting the case law and statutory requirements, this new material has business reasons for its acceptance—it is smaller and therefore cheaper to use and store than paper. Further, it can be directly read by a computer for fast and accurate access, particularly in light of today's teleprocessing possibilities. Copies can be made quickly and easily.

The only major potential problem left is the signing requirement. Given the very broad definitions of a signing,[89] it is likely a signature can be found in the document[90] even though the document is recorded on an unorthodox material. As a practical matter, the signor may have to testify that he did place his signature on the document. This would not pose a difficult problem in contract situations. In proving a will, only the witnesses would have to testify that they saw the testator "sign" the unorthodox document. In allowing this, the courts would have to be more vigilant about the possibilities of

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86. Durability is one of the required characteristics of a writing. Clason v. Bailey, 14 Johns. 484, 491 (N.Y. 1817); Potts v. House, 6 Ga. 324, 348 (1849).

87. In the terminology of home computers, ROMs, PROMs, and EPROMs would be acceptable, but not RAMs.

88. Ellis Canning Co. v. Bernstein, 348 F. Supp. 1212 (D. Colo. 1972); *cf.* Swink & Co., Inc. v. Carrol McEntree & McGinley Inc., 584 S.W.2d 393 (Ark. 1979). *See* Selma Savings Bank v. Webster County Bank, 182 Ky. 604, 206 S.W. 870, 2 A.L.R. 1136 (1918). *See also* Lowry, *Normalization: A Revolutionary Approach*, 20 JURIMETRICS JOURNAL 140 (Winter 1979).

89. *See* U.C.C. § 1-201(39); *cf.* Uniform Probate Code § 2-502; Uniform International Wills Act § 3.

90. As long as a present intention to authenticate can be shown.

fraud, on a case-by-case basis. As with the hearsay rule, inquiries may have to be made into any circumstantial guarantees of trustworthiness which might exist.

There are great advantages, in terms of time, money, and effort in allowing computer stored data to constitute a writing. Like anything else novel, there are possibilities for abuse. But progress cannot be stopped by a prohibition, simply because there is a possibility for abuse. Courts must adopt the law to the new conditions of modern life.[91] Change will be slow and constant, or abrupt and surging, but there will always be change.

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91. *See* Lord Sands in Broomhill Motor Co. v. Assessor for Glasgow, 1927 S.L.T. 189, 199.