

WORD WAYS: MAKING THE ALPHABET DANCE

When I was a boy, wordplay took two forms: solving puzzles created by other people, and solving puzzles proposed by Nature (for example, searching for all words having a specified property). I was attracted to both of these, but more strongly to the latter; this chapter describes the particular forms these enthusiasms took. My first game with Nature was brought to my attention by my father. What (he asked me) is the longest word that spelled the same both forwards and backwards? I rather easily found such words as ROTOR, LEVEL and MADAM, as well as the six-letter proper name HANNAH. The best I could do were the seven-letter REPAPER, REVIVER, ROTATOR and DEIFIED; my father claimed to know an eight-letter example but he had forgotten it. I also recognized the wordplay in a neon sign for Ewart's Restaurant in downtown Washington which selectively illuminated various letters to spell out the message EAT AT EWART'S.

When recovering from scarlet fever in the hospital at Camp Lee in the spring of 1946, I had much time on my hands. I observed that EERIE and QUEUE were two five-letter words with four vowels, that STRENGTH was the longest one-syllable word, and that the five vowels were present in MATE-METE-MITE-MOTE-MUTE.

On a December evening in 1949, Faith and I sat in the Managers Parlors trying to see how many sets we could discover with three words spelled differently but pronounced the same. We came up with

right, rite, write	to, too, two	sight, site, cite
sear, sere, seer	aye, eye, I	pear, pare, pair
four, for, fore	rapt, rapped, wrapped	knew, knew, gnu
air, ere, heir	rays, raze, raise	or, oar, ore
meat, mete, meet	flu, flue, flew	buy, by, bye
cent, scent, sent	soul, sole, sol	there, their, they're
due, do, dew	aisle, isle, I'll	

Later I noticed that WRIGHT could be added to the first set, and in 1970 Stefan Burr of Bell Telephone Laboratories showed me PRAYS, PREYS, PRAISE, PRASE. I liked the two-syllable examples best:

idol, idyll, idle	sensor, censor, censer	pallet, palate, palette
faro, pharaoh, farrow	carrot, carat, caret	burro, burrow, borough

At the Analytical Research Group in Princeton, Forman Acton intrigued me by asking what combination of initials had the smallest ambiguity--that is, from what set of initials could a person's full name be predicted with the greatest confidence? The answer was F.X.O'B, Francis Xavier O'Brien. After Princeton, my interest in wordplay oddities continued at a low level. I discovered that SEQUOIA was the shortest word in the English language with all five vowels (in French, OISEAU is even shorter). Another interesting discovery was the fact that Job, Polish and Tangier were three words which changed their pronunciations when the initial letters were capitalized. And the various pronunciations of the letters OUGH in bough, cough, trough, ought,

hiccough, through, though and enough fascinated me. Later I noted that OMB terminating a word could have three different pronunciations, as in bomb, comb and tomb.

The words BIBLE, ATLAS, GOOSE and THIGH are used as a mnemonic in a card trick. These four words consist of ten pairs of letters, each of which can be identified by specifying the word or words in which the pair appears. For example, G is the only letter appearing in both GOOSE and THIGH, and A the only letter appearing twice in ATLAS. I devised a corresponding mnemonic for fifteen pairs of letters in October 1964: LIVELY, RHYTHM, MUFFIN, SUPPER, SAVANT. I sent this to Martin Gardner, the Mathematical Puzzles editor of Scientific American magazine, and was gratified to receive a postcard in reply: "I knew the Bible, Atlas, Goose, Thigh set; but your Lively, Rhythm, etc. is new & very good. Many Thanks. Perhaps I can work this into one of my columns sometime."

My first word-related research project of any magnitude was the compilation of a type-collection of words containing different trigrams (three consecutive letters in a word). For several years I had idly considered the trigram EBU, believing that the only words containing it were zebu, rebus and ebullient. In 1962 or 1963 Marvin Epstein, a co-worker at Bell Telephone Laboratories, pointed out that camouflage and genuflect were the only two words in the English language with the trigram UFL.

On February 12 1964 I purchased Fletcher Pratt's *Secret and Urgent* (1942) in a second-hand bookstore on Fourth Avenue in New York. In an appendix he listed the number of times each of 2510 different trigrams had occurred in a sample of 28834 trigrams in English prose. Much intrigued, I decided to find a word illustrating each one of Pratt's rare trigrams. I started this project on February 29 1964 and with Faith's aid worked on it in the evenings for several months that spring, and again in the late fall. By December 15 we had gone once through the alphabet. In late January and early February of 1965 I typed up the dictionary which ran to 57 pages and 5840 trigrams, more than twice Pratt's number.

It was clear that my list would never be complete; by April 1966 my trigram count stood at 6064. In addition, I found commoner words for existing examples, such as figure instead of iguana for IGU, and straight for aiglet for AIG. At the end of 1965 I filled in words for the 500 or so commonest trigrams which I had previously ignored. Faith gave me many trigrams, and others helped as well: Lois with taXIIng, eYEIng, beAUIng, harveSTTime and laMPPost, Peggy with taCTFuL, Mary Lois with rUFEScent, my father with BAMboozle, and Marvin Epstein with scuLPTor and sovereiGNTy.

There were 24 trigrams listed in Pratt for which I had no word: ACF, AHY, BAJ, BLL, DLL, DRT, EBC, ECW, EDV, EWJ, EWV, EYV, GYO, HSC, KUT, NIW, NLS, NTV, PPM, PPT, SFC, SNP, WJE and WYO. Clearly he had allowed proper names such as Leahy and Wyoming, and abbreviations for Parts Per Thousand and Parts Per Million. It also looked as if he had omitted the intervening space in New Jersey. Why did EWJ appear four times and WJE but once?

In late 1965 I applied mathematics to wordplay for the first time: I became interested in the problem of estimating how many random trigrams one would have to sample in English prose before finding N different ones. I used two mathematical models, a simple one of my own, and a more complex one borrowed from the Ph.D. thesis of John W. McCloskey, whom I had interviewed for Bell Labs employment while on a recruiting trip to Michigan State University in December 1964. My model used Pratt's statistics to predict that 417 new trigrams were typically

Grin, or sob;
I'd ban a mob.

I imbedded name anagrams in doggerel verse when Ed Krauth retired in February 1970, again when Alexis Lundstrom retired in April, and finally for Jack Nadler's departure to AT&T in June:

In 46 years of Labs work
No task did ED KRAUTH ever shirk
A career yet finer
Exists in Asia Minor
For there he could aim for HEAD TURK.

Have you watched ten ice-cream sodas
Made by a busy drugstore clerk?
When Jack's processing AT&T data
We all say: this LAD CAN JERK!

As a canoeist, Ed never gets wet;
Out skiing, he's seldom upset.
With mechanical cunning
He keeps ancient cars running
And when playing violin--HARK! DUET.

Waving aloft the broken bottle,
Jack cried "I LACK JAR END!"
With such a lethal weapon
Can one a JACKAL REND?

A Telstar Fable: One MUST END AXIS ROLL by plugging the hole;
 SMALL ROUND EXITS are bad (too expensive to pad);
 By budgets I'm vexed; I SUM DOLLARS NEXT.

Much later I revived this talent. In the 1996 dedication to Dmitri Borgmann in *Making the Alphabet Dance*, I anagrammed his name four ways in a doggerel verse. When Susan married Jerry Kerns on October 16 1999, I embedded seventeen words containing the letters ECKLER-KERNS in an Epithalmial Ode, in the form of a soliloquy by Jerry the girl-watcher about Susan the statistician:

I KEN the SCENE: her NECK I SEEK.
What ELSE is SEEN? her KNEES so SLEEK (don't LEER!).
A CLERK SERENE, she KNEELS by CREEK.
Her job so KEEN? Counts ELK that REEK (don't SNEER!).

I volunteered to recite this as part of a toast at the reception, but wiser heads prevailed and more conventional toasts were offered by Jerry's and Susan's older sisters instead. My only other linguistic joke about sons-in-laws involved the observation that my daughters hadn't married any Tom, Dick and Harry, but instead (in the same order) Tom, Rick and Jerry.

In the Mathematical Games section of the December 1967 Scientific American magazine, I read that a quarterly journal devoted to recreational linguistics called Word Ways was to be launched by Greenwood Periodicals in 1968. The editor was Dmitri Borgmann, already well-known to me through his two books *Language on Vacation* (1965), a large collection of word oddities such as palindromes, reversals, transpositions, anagrams, word squares, words with curious letter patterns and so forth, and *Beyond Language* (1967), a mixed bag of 119 problems based on wordplay, geography, history and esoterica. In addition, he resurrected the obsolete word LOGOLOGY from the Oxford English Dictionary, proposing it as a synonym for wordplay, and coined the word LOGOLOGIST to describe one who studies the letter-patterns and sound-patterns of words.

Although impressed by Dmitri's exhaustive and scholarly research, my initial reaction to his work was that he was much too ready to admit obscure words or proper names as illustrative examples. Sometimes, too, I felt that his examples of logology had been stretched to the limit. For example, Problem 49 asked what common property was shared by MEDUSA, EUCLID and HERALD but by few other words. I looked in vain for some letter-property that could be deduced by logical thought, and finally had Faith check the answer. It turned out these were acronyms for pieces of electronic hardware, a finding of little logological significance.

Still, the idea of a magazine devoted to wordplay intrigued me, and I promptly sent in my \$9 subscription. Within a month or so, it dawned on me that here was an outlet for logological research. Why couldn't I write up word problems which interested me and submit them to Word Ways for publication? During most of March 1968 I worked hard on an article which I titled "Word Groups With Mathematical Structure". This article was inspired by Problem 122 in *Beyond Language* which exhibited the word set ADO BAR ORE BOY YEA BED DRY, using seven different letters repeated three times apiece, to form seven words with two interesting properties: every pair of words share exactly one letter, and each possible pair of different letters appears in exactly one word. I discovered that word sets such as this were closely related to Balanced Incomplete Block Designs used by statisticians for assigning different treatments to experimental material (I had, in fact, given a tutorial on this topic when I was in graduate school at Princeton). By not requiring that both properties be simultaneously present, I discovered many additional such word sets. The following two suffice to show the flavor of the investigation: in YEA PER YET PAY PRY TAP ARE RAT TRY PET, each possible pair of the six different letters AEPRTY appears in exactly two words, and in OGLED GRAPE POISE GRIDS PLAID SOLAR every pair of words share exactly two letters.

Problem 26 in *Beyond Language* placed OLARECIN in a circle and constructed words out of each set of four adjacent letters: ORAL REAL CARE RICE NICE COIN LION LOAN. I demonstrated that this could be achieved for many other letter sets and word lengths, up to ten six-letter words. In fact, when the word length is only one less than the number of letters around the circle, one has a special case of the word sets previously discussed. (later I learned that this had been known for over half a century, and was called a Baltimore Transdeletion). My example exhibiting ten nine-letter words: STERCOLIN RELATIONS CONTRAILS CONSERTAL CREATIONS SECTORIAL LARCENIST SECTIONAL CROTALINE CENSORIAL. Finally, I included the LIVELY MUFFIN RHYTHM SUPPER SAVANT word pattern I had sent Martin Gardner a few years earlier.

I sent this article to Dmitri Borgmann, along with a one-pager on the Francis Xavier O'Brien problem. I was gratified by his prompt reply "Both of [these articles] are eminently suitable for publication, and written in excellent English...you may expect to see your contributions in future issues of Word Ways." The article appeared in the November 1968 issue of Word Ways.

My eye was caught by the article "Dudeney's Switch Puzzle" in the first issue of Word Ways. Consider a horizontal trough which has room for exactly twelve square wooden blocks. At the position of the tenth block, this trough is intersected by a vertical trough of the same length. If the wooden blocks are placed in the vertical trough, the tenth block is again at the intersection. Suppose that a twelve-letter word is written on the blocks in the horizontal trough; how many moves does it take to transfer the word to the vertical one? (A "move" is defined as the sliding of one block any distance within the troughs, including turning the corner.) Dudeney noted that the minimum number of moves (obviously 12) was achieved by INTERPRETING. Dmitri found that if the intersection-point were shifted to the eleventh block in both troughs, the words

SENSUOUSNESS and LEVITATIVELY (his coinage) were also minimum-move. Howard Bergerson analyzed the problem for different word-lengths and switch positions, discovering that a minimum-move word must have a pattern consisting of an arbitrary letter sequence, a palindrome, the same letter sequence, and (optionally) a second palindrome. I found that the pattern of a palindrome, a letter sequence, and the same sequence repeated would also work. I introduced a notation for specifying all possibilities. For example, there were 44 switch word patterns of length 12, four of which switched on the tenth letter, satisfying Dudeney's original puzzle. Try as I might I was unable to find any other twelve-letter switch words. To assess the difficulty of the task I looked for examples of all possible shorter switch words. I found all 8 of the five-letter patterns, ROTOR ONION DEEDS BELLE AMASS CEDED CACAO LLAMA, but only 7 of the 11 six-letter patterns, or 11 of the 20 eight-letter ones. My analysis appeared as a letter to the editor in February 1969.

I was flattered when Dmitri asked me in 1968 to contribute to his third book, *Curious Crosswords*. I sent him three, one numerical and two logological, but my euphoria turned to annoyance and chagrin when none of them appeared in his book, issued in 1970. In early 1969 Dmitri tried to enlist my help to analyze the combinatorial aspects of a tie-breaker contest puzzle, involving the selection of words from a list so that a specified number of As, Bs, etc. were included. I replied that he was dealing with an allocation problem best approached using a computer. He proposed that we form a team to share the profits from solving contest puzzles, but I demurred, pointing out that I was not a computer programmer and furthermore could not "borrow" time on Bell Labs computers for frivolous investigations. For several weeks Dmitri bombarded me with letters urgently requesting improvements to his proposed solutions, but I perhaps cured him of this tactic when I telephoned him collect with a suggested solution.

I was quite surprised when a letter from Howard Bergerson in November 1968 revealed that he had replaced Dmitri as Word Ways editor; Dmitri had said nothing about this in his many letters to me. Months later, I learned from Howard that Dmitri resigned when Greenwood Periodicals refused to pay him an editorial salary of \$5000 per year. When Howard, recruited by Joseph Madachy, the editor of another Greenwood journal, agreed to be editor without salary, Dmitri angrily wrote him to say that he considered Howard's action "extremely hostile and downright treacherous" and would never hear from him again. (I later learned that Dmitri had resigned in a huff a few years earlier from the National Puzzlers' League when they didn't accept his various suggestions for change.) Apparently he was a prickly personality with an exaggerated sense of his own importance.

Howard asked me about my logological interests, and suggested possible topics for me to research and write up for Word Ways. I worked on a dictionary of word-pairs differing in a single letter (for example, VALVE and VALUE); with help from Dmitri I found Websterian examples for all 325 possible pairs. Again aided by Dmitri, I prepared an article listing uncapitalized words containing various arrangements of the vowels AEIOU, such as EUphOrIA, fAcEtIOUs, bEhAvIOUr. I first became aware of Darryl Francis, a British college student and ardent logophile, when Howard sent him my manuscript and he came up with numerous words Dmitri and I had overlooked. Eventually, after a computer search of a tape containing Webster's Second Edition, 109 of the possible 120 arrangements were found.

I indulged my lipogrammatic interest by paraphrasing the poem "Mary Had a Little Lamb", omitting in turn the letters, A,E,T,H and S, and finally eliminating half the alphabet:

Mary Had a Lipogram

Maria had a little sheep,
As pale as rime its hair,
And all the places Maria came
The sheep did tail her there.

In Maria's class it came at last,
A sheep can't enter there;
It made the children clap their hands,
A sheep in class, that's rare!

To my surprise, Howard even accepted for publication the trigram dictionary, running most of it in the August and November 1969 issues. As a result of this article I learned that Philip Cohen, a Cornell student, was embarking on a similar project but allowing almost any words, including proper names.

Faith soon became interested in my logological activity. When in April 1969 I acquired from Ed Gilbert of Bell Labs a computer-generated list of all tetragrams known to be in Webster's Second Edition, she quickly discovered that there were at least four words in Webster's with three consecutive identical letters: -OSSSH-, -ESSSH-, -ALLLE-, -CEEER-. I soon discovered headmistreSSShip and waLLLess, but the other two baffled us, and were later proven to be the hyphenated form boSS-Ship and the misspelled whencEVER. This was published in the November 1969 issue with the catchy title "On Searching For Three-L Lamas", alluding to Ogden Nash's doggerel verse.

I was amazed by the explosive growth of my interest in logological research. Howard's letters and the articles in Word Ways stimulated me to investigate new subjects almost every month. My latent interest in wordplay had been awakened, and I foresaw a long and pleasant career generating logological articles for Word Ways. To aid in my work, I purchased my first unabridged dictionary, a second-hand copy of Webster's Second Edition from a Portsmouth, Maine dealer for \$75 on July 5 1969. (A year later I bought a battered copy of Webster's First Edition at the New Vernon firemen's auction for only 50 cents!)

In early August 1969 I was dismayed to receive a letter from Howard saying that Greenwood had reluctantly decided to cease publishing Word Ways at the end of the year because of financial losses--about \$30,000 over a two-year span. This deficit could be erased only by a 50 per cent increase in the subscription price, which Greenwood felt would lose many of its readers. The real surprise came in Howard's August 29 letter:

Would you be interested in publishing and editing a journal of logology? I myself am in absolutely no position to attempt such a thing, but possibly you could put it over. Greenwood doesn't have anything to sell, so far as I can see, except the name Word Ways and the subscribers list which is between 4- and 5-hundred. You could change the name and not pay them a dime. I could send you the piles of scripts that have been sent to me. As to the subscribers list, well, I have a copy of it, which is a very lucky thing, and I would gladly send you this. Please let me know if you like this thought or consider it feasible for you. If not, I plan to ask, one by one, a number of other contributors. Someone might just do it. I ask you first at least partly because it seems to me that there is an advantage in the fact that you and your wife could reinforce each other in the undertaking. I'll hold off approaching anyone else until I hear from you.

My first reaction was--me, editor and publisher of a journal? You've got to be kidding! But the more I thought about it during the following week, the more attractive it became. The financial burden could be considerably lightened if I prepared camera-ready copy using an IBM Executive typewriter with proportional spacing, which I was on the verge of purchasing second-hand for \$240 in order to prepare the Eckler genealogy during the coming winter. A hasty conference with

Compton Press revealed that they would print 200 copies of a 64-page journal, 7 by 10 inches in size, for \$312, with additional 100s costing \$30. Second-class postage would come to 14 cents per issue. I decided that I would have to reduce the price somewhat because the journal would have a less-professional format (no right-justified lines, and a single typeface); tentatively I decided on \$6 per year. Allowing 50 extra copies for future orders, it appeared that I could break even if I had a subscription list of 250, half of Greenwood's.

I feared that if I said no that no other word-buff would attempt the task, and I would always wonder whether I had evaded a challenging and interesting opportunity. It would be a shame to see all the work in setting up the magazine, finding subscribers and authors, go to waste. More importantly, I believed strongly that the existence of *Word Ways* as a forum for the exchange of logological information was of vital importance. Without it, logologists would work in a vacuum and be far less stimulated to carry on investigations.

I wondered, of course, how much time it would take. Obviously, leisure time formerly devoted to genealogy could be diverted to logology after I had finished typing the Eckler genealogy, a task that, with effort, would be done by the end of 1969. *Word Ways* would offer a plausible excuse for resigning my National Speleological Society membership committee job, one that held little interest for me. Fortunately, the work could be conveniently divided, with Faith handling the subscriptions and mailings, and I the editorial correspondence and the typing of articles. The latter would not take too long, but I wondered whether I would be able to answer all the letters I received. Further, I wondered whether there would be enough material flowing in--would I end up writing *Word Ways* as I had written *Speleo-Themes* five years before? It was painfully evident that most of the first year of *Word Ways* had been written by Dmitri, and a significant amount of the second year by Howard.

One thing appealed to me very strongly--the concept of being at the center of an information web, of knowing the latest logological researches sooner than anyone else. More significantly, I regarded *Word Ways* as a potential psychological life preserver. In contrast to the murky ambiguities of my department head work at Bell Telephone Laboratories, I viewed the editorship as a chance to contribute directly to the advancement of knowledge and to the mental stimulation and entertainment of at least a small part of society.

I would have preferred to try my hand at editing a logological journal during my retirement, when I would have much more free time. Yet, opportunity was knocking now, not fifteen or twenty years hence, and I could not ask it to wait. At the end of a week, I said yes--and was launched into a new and higher level of activity in this absorbing pastime.

At once I had an important decision to make: should I start a new journal, perhaps called the *Journal of Recreational Logology*, using Howard's 1968 *Word Ways* subscriber list, or should I purchase the name and the current list from Greenwood? Despite Howard's advice to have as little as possible to do with Greenwood, I finally decided upon the latter as the lesser risk. I feared that Greenwood might discover that I was using their old subscriber list, and I felt that subscribers, especially libraries, would be much more likely to continue with a journal they had already elected to buy, than start afresh with a privately-issued journal of uncertain pedigree.

Before making this decision, I wrote Greenwood on September 21 asking whether it would be possible for me to insert a notice in their final *Word Ways* issue advertising a new journal. Director Christopher Price replied on September 25 that this could be arranged, but, anxious to salvage something from the wreckage, strongly urged that I purchase *Word Ways* instead. A

telephone conversation revealed that he thought \$600 a fair price for the name, cover plates and subscriber list, but not the stock of back issues. I countered with an offer of \$500 which he immediately accepted.

I naively assumed that Greenwood would fade out of my life as soon as the subscriber list and cover plates had been transferred. How wrong I was! To begin with, Greenwood was so slow in delivery (mid-January 1970) that Word Ways was much delayed in notifying subscribers of the new price. Greenwood was also very slow in forwarding Word Ways correspondence. Once they sent a package of 20 or more inquiries, checks, address changes and the like up to five months old! Sometimes they forgot to endorse checks over to Word Ways; when the checks were sent back for signature, they were never returned to me. Finally, Word Ways had to ask the affected subscribers to reissue checks to us instead. In September 1970 Greenwood decided that the 1968-69 Word Ways inventory was using up valuable warehouse space, and invited me to make an offer for it. After some dickering, I purchased 240 copies of each of the eight issues for \$350, about 18 cents apiece. Although I mailed the check on September 29 1970, it wasn't until mid-February 1971, after many letters and telephone calls, that the final box arrived.

I decided that I would raise the price of the journal to \$7, still \$2 less than Greenwood charged, in order to cover these additional expenses. It was well that I did so, for I soon learned that the vast majority of library subscribers did not deal with a publisher directly, but through a subscription agency which charged a 10 per cent middleman fee for handling their many magazine renewals. Thus, I would not receive \$7 but \$6.30 for many subscriptions. Furthermore, a later visit to Compton Press revealed the unpleasant fact that a more accurate estimate of costs was \$450 for printing 500 copies, with additional 100s for \$39 each.

Howard assured me that there would be no problem with contributions, and backed this up by sending me a number of unpublished manuscripts, the best being a set of twelve from Darryl Francis who had previously never had an article published in Word Ways. Dave Silverman, whose recently introduced Kickshaws column I much admired, wrote to offer support:

...who needs these big city Philistines, who probably couldn't care less about philomania, I beg your pardon, logophilia. All we need is an iron man to continue it under the old title or otherwise. That's why I was particularly pleased to know that you are at least considering taking on the burden of editorship. If any support from me is needed consider it an axiom that I will help to lighten the burden in any way I can ... Hell, I don't have to flatter you, old boy; you know that your contribs have been the best part of the issues in which they have appeared ... It would be lovely if we could make a success of Word Ways on our own. And I believe we can do it. Especially if you don't permit anyone to ride his hobbyhorse from issue to issue to the point of ennui ...

I was delighted to have Dave continue as Kickshaws editor, for he had a knack for selecting a variety of interesting topics and a graceful narrative style that I wished I could emulate. His one sin was that of procrastination; more than once, I had to send him an anxious letter asking where Kickshaws was as the deadline approached. I was dismayed when, in 1975, he asked for a sabbatical as Kickshaws editor. To fill the gap starting February 1976, I asked other authors to contribute a guest column until I could identify a worthy successor. One never came along, however, and eventually I decided that the guest column was a good idea worth keeping. I visited Dave in his bachelor home in West Los Angeles in February 1973. On a later trip in April 1976, I telephoned him from my hotel room in Westwood, three miles away, hinting that it would be nice to get together again. To my puzzlement, he evaded this proposal but spent four or five hours on

the phone chattering enthusiastically on a variety of logological subjects. Something was amiss, but I didn't realize that it was manic-depressive psychosis until I heard from Mary Hazard on a Los Angeles visit of Dave's suicide by gunshot in February 1978.

At the time of his death Dave left a large file of logological material which he once had intended to use in Kickshaws:

The backlog of K material I have is staggering ... If I took 3 days vac. & pulled all the phones out of their jacks, I could retire to my home office, where I can't hear the doorbell when my tape deck is playing, & get off 80 pages of unpadded K contribs ... if I add my own stuff more than 800 pages. I have boxes and legal size letter fileboxes crammed full of notes on K.

How was I to get my hands on this treasure-trove? I wrote his mother, offering a home for his logological material, but she never answered, and by discreet inquiries some years later among Dave's Los Angeles friends I learned that it had apparently been destroyed by his distraught and grief-stricken family.

I used guest Kickshaws editors for thirteen years. In 1988 I asked Dave Morice to become permanent Kickshaws editor, and he assumed this job with the February 1989 issue. He had discovered *Word Ways* in 1985 after purchasing a copy of *Word Recreations*, and was captivated by the magazine. Almost immediately he expressed interest in contributing to Kickshaws, and I tried him out as guest editor in August 1986. An illustrator, poet and editor of small literary magazines, Dave had led a somewhat hand-to-mouth existence since his graduation from St. Louis University in 1969. Much interested in promoting awareness of poetry to the layman, he conducted Poetry Marathons at public arts festivals, including such stunts as 1000 poems in twelve hours, a mile-long poem, and a poem stretching across the Delaware River. He conducted workshops which encouraged senior citizens to write poetry, and in 1981 generated *Poetry Comics*, classic poems illustrated by cartoon drawings. In 1988 he sent blank wooden nickels to a wide variety of celebrities, inviting them to create a drawing or pithy saying. Since I approached logology with the mindset of a mathematician, I felt it important to complement this with logology viewed through the eyes of a humanist. Dave was interested in all aspects of logology, and made sure that tidbits from readers were included in Kickshaws. His one fault was procrastination--Kickshaws material would usually arrive the last day or two before my deadline to send copy to the printer.

To promote reader response to *Word Ways* articles, I inaugurated the column *Colloquy* in the February 1970 issue. Any reader wishing to correct or add to an article in one issue could send in his comments up to a month before the next issue was sent to the printer, and be sure that it would appear in this column. Generally I typed *Colloquy* a day or two before copy went to Compton Press. I hoped that this rapid response would be one of the more attractive features of the new journal, in sharp contrast with the lengthy publishing delays under Greenwood (my reply to Dudeney's *Switch Word Puzzle* took a year to appear). To further promote the interchange of ideas, I introduced *Query*, a page-filler at the end of an article, asking readers if they knew the answer to an unsolved logological problem. However this never caught on, and I dropped it after writing most of the queries myself. In 1971 I introduced a column devoted to competitive word games which I called *Logomachy*. In the first column, Darryl Francis contributed a *Scrabble* problem, and Mary Hazard promoted *Correspondence Crash*. In this game, the object is to determine your opponent's five-letter target word by firing five-letter shot words at it. Each time you fire a shot word, you are informed by your opponent the number of times the shot word has

the same letter in the same position as the target word (for example, the shot word cRUeT scores three against the target word tRUSt). Logomachy ran from February 1971 to February 1973, by which time I was the Correspondence Crash champion and new games had been added such as Uncrash, where the object was to be the last person to add a word to a list that did not crash with any of the earlier words. A longer-lived feature was the Poet's Corner, begun in May 1974 and repeated whenever I had a sufficient number of logopoetic tidbits to warrant a reappearance.

Acting on a suggestion by Dmitri, I began in November 1973 to insert logological fillers at the ends of articles. Eventually these were mostly used for book reviews (I received free copies from many publishers, notably the expensive reference books of Gale Research Company) and for a Buy, Sell, Trade column where I offered second-hand copies of books I had picked up cheaply in old bookstores.

Dmitri Borgmann was easily the most important contributor of articles to Word Ways from 1970 to 1985. When I took over the magazine, I felt it was essential that Dmitri, the best-known name in logology, be a contributor once more (he had, of course, sent in nothing during Howard's term as editor). I proposed that he be an editorial collaborator with the responsibility of preparing a regular column of his own choosing, for example a survey of logological literature, but he was unwilling to tie himself down. However, he was willing to write articles.

Dmitri's articles were generated in fits and starts. He sent in seven at once, which I was able to use during the first year of my editorship. In November 1972 he sent in a flood of articles, and in July 1973 about 30 more, including a number under pseudonyms such as Merlin X. Houdini IV, Jezebel Q Xixx and Ramona Quincunx so that I could publish more at one time. In 1978 he became enamored of the problem of compiling a set of transpositions for the chemical element names, and bombarded me with letters updating his researches for several months. I then heard very little from him until the summer of 1984, when another torrent of articles arrived--so many, in fact, that I decided the only way to handle them was run an all-Dmitri issue in February 1985.

In the field of logology Dmitri was a unique phenomenon, producing well-written articles across the entire field of logology--there were no others combining his breadth of research and writing skills. He knew he was good, and did not hesitate to remind the reader of this fact. I learned that my best strategy as editor was to cater to his monumental ego by praising the quality and quantity of his submissions. As a consequence, he redoubled his efforts to produce articles for Word Ways. Most Word Ways readers seemed to like his material, though a few, such as Philip Cohen and Mary Hazard, complained about his Muhammad Ali posturings and his outrageous criteria for allowable "words".

Was it all a pose, designed to enliven logology? I thought if I could meet him face to face I could decide whether it was a put-on, but Dmitri was a very reclusive man. When I wrote him in early 1979 that I would be visiting Pacific Northwest logologists that summer, he wrote back "That excludes me--I am not a logologist". I took this as an oblique invitation to stay away, and did so. Much later, I heard of Prince Djoli Kansil's experience along the same lines: he had arranged by phone to meet Dmitri in Oak Park, Illinois at a certain hour, but when he arrived at Dmitri's house no one was there. In fact, the only Word Ways subscriber who ever met him in person was David McCord, who came to purchase Dmitri's collection of geographical reference books.

It was hard to believe that Dmitri was joking about his logological omnipotence, for most of his humor was rather ponderous. He sent in an article on the word LITE, twitting Word Ways for

using a word not sanctioned by any dictionary (even though this was what he habitually did). For several years his letters were sent under a variety of weird letterheads having nothing to do with him, and were adorned with Mad-Magazine-like gummed labels. One of his most scholarly articles, a three-part one on the Sator square and the history of palindromes, came to me under the name of David Russell Williams, a National Puzzlers' League member recently mentioned in *Word Ways*. In another letter he parodied the note on Fermat's Last Theorem: "I have found a rather marvelous collection of 600 additional such names, but this margin is too small to hold it." His most startling attempt at humor was somewhat macabre:

March 27 1978 Since today is my last day, I am making a point of getting this letter off to you before the impenetrable mists of eternity engulf me forever.

April 24 1978 I have returned from the dead--but only briefly...

May 26 1978 With certain death from radiation poisoning staring me grimly in the face, I doggedly plod on toward my approaching doom.

May 27 1978 Curious notes found in the effects of one who sacrificed his life in the cause of advancing logology.

This culminated in a notice saying "Your putative correspondent was, by order of this Court, executed on March 27 1978, at 12:00 Midnight, for the crime of murder in the first degree. As provided by Montana law, he was hung. Accordingly, you could not have received any communications from him subsequent to the specified date."

Once I attempted to refute one of Dmitri's grandiose claims in the pages of *Word Ways*, but he refused to accept the outcome. In November 1973, writing under the Jezebel Q. Xixx pseudonym, Dmitri claimed that nowhere near 1169 really good anagrams (the number cited in Howard Bergerson's book, *Palindromes and Anagrams*) had ever been created. In a letter he further asserted that he could create a dozen superb anagrams per day indefinitely, all having the quality so conspicuously absent in published examples. I invited Dmitri to submit a set of ten anagrams of such quality, and obtained ten others from recent issues of the *Enigma*, the National Puzzlers' League monthly newsletter. His were

INFERNOS non-fires TANGERINES satin-green
SEXUAL INTERCOURSE relax, ensure coitus ARGUMENTS must anger
CHRISTIANITY 'tis in charity STREET SHOES hose testers
BEHEADMENTS deathsmen be WEIRD NIGHTMARES withering dreams
MURMURING WINOS rum? rum is now gin YE SMEARS are messy

The *Enigma* ones were

MS. STEINEM smites men GLACIERED large-iced
WOMEN'S LIBERATION men rib as we toil on PRIMATE trim ape
VERSATILITY variety list DIPLOMACY mad policy
PUGILIST tip: I slug LEMONADE demon ale
REFURBISH I rub fresh ARMAGEDDON mad god near

Mixing these examples, I asked nine male Ph.D.s at Bell Labs, nine secretaries at Bell Labs, and seven female Filipinos living in the United States to rank them in order of appositeness (how well the rearranged letters captured the thought of the original). Dmitri's anagrams ranked below the *Enigma* ones, so much so that there was only a six per cent chance that a result this extreme would have occurred if the two sets of anagrams were of equal quality. Not surprisingly, Dmitri

assailed the results on the grounds that the panel was ill informed to judge anagram quality. Would he have questioned their competence had his anagrams come out on top?

I had heard rumors as early as 1979 from Howard Bergerson, who occasionally talked with Dmitri's wife, Iris, on the phone, that Dmitri was grossly overweight and suffered from some type of heart condition which had caused him to pass out. Still, I was unprepared for Kyle Corbin's phone call in early January 1986 that Dmitri had died of a heart attack on December 7 1985. I had been planning a second all-Dmitri issue for February, but quickly converted this to a memorial instead. Fortunately, I had enough articles on file, including two complete sets of Kickshaws, to plan two more all-Dmitri issues for February 1987 and February 1988, the latter date the twentieth anniversary of the founding of Word Ways. The Father of Logology was gone! A certain vibrancy was gone from logology as well.

I did not realize just how strange Dmitri really was until Faith and I visited his widow and son in Dayton, Washington in the summer of 1988, ostensibly to see whether or not she had any unpublished logological material of his. We discovered that Dmitri valued his privacy highly--most of the windows in his house were boarded up or the shades pulled down so that no one could look in. He refused to have the grass mowed because this, too, increased his seclusion. Even the glass in the doors between rooms within the house was covered with boards or drapes, so that one could not see from room to room. He carried on a long feud with a nearby church, threatening legal action because the pealing of its bells intruded on his privacy.

Iris told us that Dmitri would not permit mirrors in his home, and avoided looking in them on the rare occasions when he was outside the house because he feared the persona that he believed was staring back at him from the other side of the glass. Once, a few months before his death, he inadvertently caught sight of himself and stood transfixed, moaning "I'm old--I'm incredibly old." (He was then 57.)

Dmitri's desire for privacy extended to his work in progress. When his son Keith would ask him what he was working on, Dmitri would reply "Go away, don't bother me. You wouldn't understand." After he had exhausted the supply of typists in Dayton--27 in succession were either fired or quit--Iris did his typing.

Although Dmitri came across as having a colossal ego in his correspondence, Iris believed that in reality he had an enormous inferiority complex. He refused to learn how to drive a car because he believed himself incapable of coordinating hands and feet. Despite his training as an actuary, he was "terrified" of numbers. (I had often encountered his contempt for mathematics in our correspondence.) He was wildly jealous of anyone having a higher IQ than his (155, according to Iris).

Iris believed that Dmitri's paranoia was traceable to boyhood experiences. Born in Hitler's Germany to a Lutheran father and a Jewish mother, he was raised as a nominal Christian and came with his parents to the US in the mid-1930s. His mother, severely crippled, was subject to ridicule by neighborhood children.

Dmitri had been in poor health for a number of years, suffering from obesity and a form of angina pectoris. Yet he refused to follow his doctor's instructions or take his prescribed medication. His great passion was candy bars, which he would sneak down to the corner store to purchase; after his death Iris and Keith found boxes of empty candy wrappers in his room. (He hoarded other things as well--cases of soda, job lots of hair shampoo, and the like.) He opposed

any attempt to straighten out the household clutter, and even the routine noises of housekeeping such as a vacuum cleaner were an aggravation. After awhile, Iris abandoned any attempt at house cleaning; she intimated that his embarrassment over the deteriorated condition of the house was the real reason Dmitri had refused to see me in 1979.

Toward the end of his life Dmitri didn't come downstairs very often, and rarely shaved or dressed. He ate and slept when it suited him, working feverishly and secretively on his logological research. Keith reported that often weeks went by when he never saw his father.

A couple of hundred books from his library were stored in the living room, mostly specialized dictionaries. We were curious about the patches of duct tape placed on the spines and on the title pages of many reference books. It turned out that Dmitri had shamelessly stolen these books from libraries, the duct tape concealing the library identification. This was confirmed by David McCord who found that a number of the references he bought from Dmitri were the property of various libraries.

One of Dmitri's more curious undertakings was setting himself up as the chief guru of the Divine Immortality Church. He awarded himself a bogus doctorate in theology, had stationery printed up, and advertised in various magazines offering theological degrees and a cabalistic drawing for a substantial price. Keith estimated that perhaps 100 people signed on. Was this some sort of tax dodge? Keith believed that his father was sincerely trying to come to terms with life's great questions--yet Dmitri encouraged magazines such as *Hustler* to omit the first T from the church name in his ads!

No other Word Ways author, save perhaps Darryl Francis and Ralph Beaman in the early 1970s, Leonard Gordon in the early 1990s, and Mike Keith in the late 1990s, approached Dmitri Borgmann in breadth and fecundity. Far commoner was the author who had a single logological interest reiterated in the material he submitted: Walter Shedlofsky's anachuttlles, David Stephens' ever-longer palindromes, John Ogden's phrasal anagrams (be the case = beteaches), Kyle Corbin's Scrabble game records, Leonard Ashley's quizzes, John Candelaria's large-number nomenclature, Paul Maxim's analysis of Mallarmé for historical allusions, Bob Levinson's Jotto sets (five five-letter words containing 25 different letters), Bill Webster's stories replacing each word by a transposal (hyte nickled tumbrels = they clinked tumblers), Jerry Farrell's word games based on graph-theoretical and combinatorial models from mathematics. All these had to be metered out in small doses in Word Ways, lest I violate Dave Silverman's cautionary advice. Some authors were really off the wall: Henry Burger's privately-published *Word Tree* tried to reduce all verbs to various mixtures of some 30 basic concepts, and John Weilgart's *Language of Space* attempted much the same thing with nouns. My philosophy was to encourage new authors, even those with a single interest, in the hope that they would eventually branch out as did Jeff Grant, who was originally interested in palindromes alone.

Occasionally I found it necessary to extensively rewrite a contribution with a good idea clumsily expressed, such as Leslie Card's article on geographical place names or Murray Greenblatt's article on the sequence TO, ThE, FaiR, FlukE, ... mimicking the integers TwO, ThreE, FouR, FivE ... However, I gradually realized that the diversity of author styles was one of the charming features of Word Ways; I didn't want a homogenized publication such as Reader's Digest or Scientific American in which all articles were written in much the same style. Most authors didn't mind my editing, and some even thanked me for a job well done. Dmitri was, of course, the exception, writing such blasts as "Not acceptable. Kill the rejoinder entirely!! My texts are published unchanged or not at all!" or "Any article on the subject which chose to omit

the enclosed list--in its entirety, unaltered--would be so far removed from the spirit in which the project was undertaken that it would have to show the editor's name as its SOLE author!!!" Confronted by messages like these, most editors would have probably told Dmitri to go jump in the lake, but I obediently published the items in question, reasoning that I wanted to keep the pipeline open for future articles.

I did not have the money to spend on typographical niceties like Greenwood. The IBM Executive Typewriter served me adequately for a number of years, even though I found the task of threading a new one-time ribbon somewhat exacting. The quality of the print gradually deteriorated (small r was especially poor), so I purchased an Olivetti ET 221 electronic typewriter for \$1500 which gave me the choice of fonts on daisy-wheels (I selected Venezia) and right justification of lines. The first issue in the new format was May, 1983. When I bought my first computer from Tom Day's brother John in 1989, I should have converted to computer operation, but I resisted change and didn't make the switch until the Olivetti itself was becoming increasingly unreliable and expensive to maintain. The first computer-generated issue was August 1995; and all articles from that date onward were stored on the hard disk in my computer.

Article titles were typed on a large-type Remington used by the Security Department of Bell Labs at Whippany for the preparation of employee badges. This typewriter was eventually retired to a back room where I was its sole user. Later it was returned to the office machines pool for reassignment, but no one wanted an ancient manual typewriter anymore. I left a note on it asking that I be contacted first if they ever disposed of it. When I learned that unwanted machines were distributed free to charitable organizations, I arranged through Faith to have the Richmond Fellowship and St. Peter's Church ask for it. However, these requests were never honored. I couldn't purchase the machine because Bell Labs rules prohibited the sale of surplus equipment to employees. In 1991 a department head in the office machines area signed a slip of paper at last enabling me to carry the machine away, but it was shortly superseded by a Brother P-Touch labeler Faith gave me. This in turn was retired when I went to computer preparation.

One problem I was never entirely able to solve was that of proofreading the camera-ready copy. No matter how often I looked at it, misprints slipped through. Even after my electronic typewriter enabled me to review a line on the display screen before committing it to the typewriter, I could not get rid of all of them. Spell checkers were tedious to use because Word Ways had many words not in their dictionaries. Few people seemed bothered, although Kyle Corbin, Jeff Grant and Dmitri Borgmann usually sent me errata lists for their articles.

I continued to use Compton Press for printing until it suddenly went bankrupt in 1991. After an abortive attempt to have a small firm at the intersection of Route 46 and 287 take over, I transferred the printing to Bookmasters, a firm in Ashland Ohio which was so much cheaper than Compton that I could afford the added cost of having the finished product shipped to Morristown.

When I first took over Word Ways, I guessed that there might be ten thousand people willing to subscribe to the magazine, if they could only be told about its existence. There seemed no easy way to reach them, however. In the spring of 1970 I tried small classified ads in the Saturday Review and the Atlantic Monthly, which barely paid for themselves. A brief notice in the newly-established British magazine Games & Puzzles in 1972 was equally worthless. Would a larger ad be better? We learned that the English Journal, published monthly by the National Council of Teachers of English for high-school teachers, would run a full-page ad for \$190. In the late

summer of 1972 we took this plunge, but the result was a disaster--only three or four people subscribed.

The best publicity for Word Ways has always been mention in newspapers, magazines and books. Although the first two are ephemeral, the third can generate a small steady flow of inquiries for many years. The first mention of Word Ways, a major one, occurred in Howard Bergerson's *Palindromes and Anagrams*, published by Dover in 1973. Word Ways' address was given in the Introduction, and my collaboration with Howard on Vocabularyclept Poetry (the construction of a new poem out of the alphabetized word-list of an existing poem) was described in considerable detail in one chapter.

In the May 1972 Word Ways I reviewed Willard Espy's new book, *The Game of Words*, and sent him a copy of the issue in the hope he might subscribe. I heard nothing until a few days before Christmas when Faith received a telephone call from his wife, Louise, in New York City asking if we could send her the entire set of back issues as a Christmas present! He mined these assiduously for material for a future wordplay book, and on June 16 1973 he and his wife came out to Morristown for dinner so he could show us his manuscript. My principal criticism of it was that it was a mixture of two incompatible themes, examples of wordplay from many published sources, and reminiscences of his ancestral home in Oysterville, Washington. The latter was later excised from the book and expanded into a genealogical memoir, *Oysterville: Roads to Grandpa's Village*. I was delighted with the many references to Word Ways scattered through the manuscript, culminating with an encomium and subscription information in the August 3 entry. The book, *An Almanac of Words at Play*, was published in 1975 and sold more than 100,000 copies; over the years dozens of Word Ways subscriptions resulted from it. He followed up with *Another Almanac of Words at Play* in 1980 which didn't repeat Word Ways' address but used material from 32 different Word Ways authors on 37 different days. He always asked for permission beforehand and I was delighted to give it to him--it pleased Word Ways authors by giving them wider exposure, as well as keeping the name of the magazine before the public. In 1982 he created another spinoff, *A Children's Almanac of Words at Play*, again with Word Ways references. In 1983 he dedicated *Word Puzzles* to us:

The Ecklers let words know who is boss. That is why I dedicate this book to Faith
and Ross Eckler, editors of Word Ways, with abiding admiration

The book consisted of rhymed word puzzles based on word ladders (love-lave-late-hate) and transdeletions (a-at-tag-gate-stage-grates-stagger).

We visited the Espys twice at Oysterville, in the summers of 1979 and 1988 while on vacation trips out west, and occasionally in New York as well. The last time I saw him was in November 1998, after attending a ballet performance at City Center; by then he was largely confined to bed but could still carry on an animated conversation. He died at the age of 88 on February 20 1999, only a few months before the Almanacs were reissued in a combined volume, *The Best of An Almanac of Words at Play*, which once again gave subscription information.

Willard Espy introduced Word Ways to Gyles Brandreth, who wrote *The Joy of Lex* in 1980 and *More Joy of Lex* in 1982. He acknowledged his debt to that "endlessly instructive and entertaining journal" in both books. Much of the material in the second book was supplied by Darryl Francis. Brandreth was especially charmed by my lipogrammatic rewrite of "Mary Had a Little Lamb". a work also reprinted in Herbert Kohl's *A Book of Puzzlements* in 1981 and Tony

Augarde's *The Oxford Guide to Word Games* in 1984. All but Augarde included subscription information as well.

In January 1982 Paul Dickson, alerted by Maledicta editor Reinhold Aman, wrote to ask me for a list of synonyms for "intoxicated" in Word Ways. Dickson explained that he was assembling the world's largest collection of such synonyms, one of the chapters in his forthcoming book, *Words*. I sent him a list of six names Faith had published from *The Boozer's Diary* in the February 1979 Kickshaws: been elephants, brained, one-over-the-eight, banjaxed, miffy, newted. Later he sent me the full list of 2231 words and phrases. I believe this was eventually recognized by the Guinness Book of World Records. As for his book, Paul thoughtfully included the address of Word Ways at the end of his bibliography, and this, too, was a source of subscription inquiries.

Tom Pulliam, an occasional Word Ways contributor, joined with Gordon Carruth to compile *The Complete Word Game Dictionary* published in 1984. The Preface contained the address of Word Ways together with the flattering comment

Perhaps you are a true logophile--one whose interest in words extends well beyond the confines of any single word game. You and others like you are blessed with a quarterly publication of specialized appeal, Word Ways ... It is subscribed to, and read voraciously, by many who relish the appearance, spelling, derivation, sound, use, and peculiarities of words and word forms.

The book was earlier published in 1977 under the title *The Complete Scrabble Dictionary*. However, Selchow and Righter successfully prosecuted the publisher for wrongfully appropriating the Scrabble name, and succeeded in having the book destroyed before it was distributed. Tom Pulliam sent me one of the few surviving copies, so that this represents one of the rarest books in my collection.

In a sense Martin Gardner was the founder of Word Ways, for he suggested the idea of such a magazine to Greenwood and proposed Dmitri Borgmann as its first editor (Dmitri had earlier supplied Martin with much material for the appendix to the Dover reprint of Bombaugh's *Oddities and Curiosities of Words and Literature* published in 1961). During the years that he wrote the Mathematical Games column in Scientific American magazine, he was a staunch friend of Word Ways, endeavoring to give subscription information about us every couple of years. I can recall at least four: November 1970 (a cryptographic problem by Walter Penney), April 1974 (a Lewis Carroll whimsy), February 1977 (a discussion of OuLiPo, the French group devoted to literary writing under constraint), and February 1979 (the first verse of Poe's "The Raven" written automynorcgraphically, homoliterally, and heteroliterally). The first of these mentions resulted in a surge of 30 subscriptions. Later ones had less impact, perhaps because there were few Martin Gardner readers who had not seen the earlier one. As Faith pointed out more than once, one of the difficulties with the publicity that Martin generated for us was the fact that the wordplay being illustrated was not a central part of Word Ways. This was especially true in the case of the Lewis Carroll item, as most of the people who subscribed dropped out a year later.

In October 1984 Faith and I visited Martin Gardner in Hendersonville, North Carolina, when we were considering that area as a possible retirement locale. A friendly and unassuming man despite his towering reputation in many fields--magic, pseudo-science, philosophy, mathematical recreations--he took us out to dinner and spent a couple of days driving us around the area. (Afterwards, Faith carried on a lively correspondence with him about his religious beliefs.) In

1993 his many friends and colleagues instituted the invitation-only “Gathering for Gardner” in Atlanta, consisting of three-day meetings at which people presented papers relating to Martin’s interests and exchanged handouts. I was invited to the Second in 1995 and the Third in 1998, but did not actually attend one until the Fourth Gathering in February 2000, when I presented a paper on “Coincidences” and issued a handout challenging the others to identify 18 different constrained versions of “Mary Had a Little Lamb” (two people sent me partial solutions).

In 2006 Martin Gardner began working on a wordplay book based on material from many sources (including readers) collected over the decades, but the *Colossal Book of Word Play* was not published until four years later, shortly after his death on May 22 2010 at the age of 95. Jerry Farrell reported that the book was to be dedicated to me, and indeed it was!

To Ross Eckler, for his books on advanced wordplay and for his distinguished career as the editor of *Word Ways*, the world’s leading journal of recreational linguistics

Like Willard Espy and Martin Gardner, Richard Lederer has been a staunch friend of Word Ways. He first discovered us in 1976, while an English teacher at the prestigious St. Paul’s School in Concord New Hampshire. He soon became a regular contributor of articles, mostly related to puns or language use. Seeking wider horizons for his logological interests, in 1981 he began writing a weekly column on words for a Concord newspaper. This led to other newspapers, radio appearances, and in 1987 *Anguished English*, the first of a series of popular books on language misuse, puns, and the like. In 1997 his website said that his books had collectively sold more than one million copies.

As Rich’s fame grew, he added lecture tours to his repertoire. In 1989 he resigned from his teaching post at St. Paul’s to devote full time to recreational linguistics. I saw him in action in June 1995 when he invited me to a lecture in Maplewood. A spellbinding lecturer, he captivated his audience, who afterwards purchased copies of his books which he had brought along with him. In June 1996, we visited him at his Concord home in conjunction with a visit by Dave Morice and his son Danny. His first book devoted to letterplay was *The Word Circus*, published by Merriam-Webster in 1998. Dave Morice was the illustrator, and, to my surprise and delight, the book was dedicated to us:

To Ross and Faith Eckler, for teaching the world
the ways of words and making the alphabet dance

Scot Morris, a senior editor of *Omni* magazine who wrote a games and puzzles column for them, invited me to lunch in New York on December 10 1981 to discuss a forthcoming column, *The World’s Hardest Word Quiz*. This appeared in the February 1982 *Omni* along with subscription information, but few inquiries came in.

I wondered whether publicity showing the full breadth of Word Ways would be better for attracting subscriptions. This theory was put to the test in the May/June 1981 issue of *Games Magazine*, when editor Will Shortz devoted two pages of his Pencilwise column as “A Salute To Word Ways”:

Hidden Opposites (“shun poet” becomes open-shut)
Geographical Link-O-Grams (identify the city Los Angeles from the clue --SANG----),
Contronyms (to trim means both “to cut off” and “to embellish”)
Reversible Word Ladders (spas-seas-sews-saws-saps)

The Word Watcher's Test (what is unusual about words like dermatoglyphics?
verisimilitude? cookbook?),
Fl-Flavored Words (words beginning fl- having the meaning of "light" or "downy")
Transdeletion (anticeremonialist, nonmaterialistic, recitationalism, reclamationist,
remastication, cremationist, creationism, remication, manticore, reaction, certain,
retain, train, rant, tan, at, a)

I was very pleased with the variety of examples and waited for subscriptions to roll in from the 600,000 readers, but I was disappointed, for there was no subscription surge in the three weeks or so after the magazine appeared. The May 1986 Games Magazine featured a colorful two-page spread on "The Games Book of Word Records" for which I was paid \$600. With Will Shortz's help, I selected extreme examples of wordplay involving the largest word-square (Jeff Grant's 10-square), longest lipogram, longest isogram, longest anagram, highest-scoring Scrabble moves and games, shortest pangram, longest list of non-crashing five-letter words, and longest palindrome (David Stephens' 58795-letter "Satire: Veritas"). Again there was little response, perhaps five to ten subscriptions and a letter offering an improvement to the pan-crashing word set.

For a couple of years Games Magazine published a monthly spinoff, The Four-Star Puzzler aimed at the word puzzler. The September 1982 issue listed Word Ways subscription information along with several other magazines, and the February 1983 issue featured Faith and me in the ongoing "Who's Who in Puzzledom" series, together with an article I wrote on eight constrained versions of "Mary Had a Little Lamb".

When Will Shortz became the co-host of a Sunday morning program on National Public Radio, he occasionally proposed listener competitions of a wordplay nature. For several of these he passed along all the entries sent in by readers which I sorted out and made into Word Ways articles. The four I remember most clearly were: write a sentence using only two different consonants, write a word-unit palindrome, write a sentence with as many consecutive identical words as possible in it, and construct an apt mini-review of a movie title. I believe that he also mentioned the existence of Word Ways on these programs. In November 1993 Will Shortz was appointed Crossword Puzzle Editor of the New York Times.

For the sake of completeness I mention one other circulation-building device which Word Ways tried. In late 1973 or early 1974 I obtained a copy of the membership list of a professional society of linguists. I sent 100 names on this list Word Ways advertising flyers, and another 100 names sample back issues in excess supply in inventory, to see which method was more effective. Neither one worked well; we received only three or four subscriptions from either method.

What were the results of this long struggle for new subscribers? When we started in 1970, we had approximately 310 subscriptions, split more or less evenly between libraries and individuals. After we obtained a second-class mailing permit in 1974 we were required to report subscription information each year. The following data show a steady erosion in subscriptions after 1978:

1974-79: 359,341,375,496,513,469
1980-89: 470,445,458,443,396,401,383,422,384,373
1990-99: 347,314,319,295,263,270,270,250,260,253
2000-06: 206,187,182,165,158,150,134

In addition we sent out about five issues by first-class mail to impatient overseas subscribers.

As circulation manager Faith worried about several things. She reminded me that should Word Ways drop below 200 paid subscriptions our second-class mailing permit could be revoked, which would force us to send copies by first class mail, adding four or five dollars per year to the subscription rate (however, this never happened). She also worried about the increasing cost of a complete set of back issues of Word Ways, which by the year 2006 had grown to some \$400, a price she felt was out of the range of most people. I was worried about the gradual buildup of back issues in the basement. These were first stored in cardboard cartons on the floor, but this eventually became unwieldy to access, and about 1990 Susan's boy-friend John Hornyak built a rack to hold these boxes along the garage wall from floor to ceiling, and also along the stairs. By the year 2000 we still had all back issues in print although several had fewer than 50 copies and one was down to 17. However, the total inventory was rather overwhelming at more than 10,000 copies!

Not surprisingly, rising costs of printing and postage forced us to raise the subscription rates frequently: \$8 in 1975, \$9 in 1980, \$12 in 1982, \$14 in 1985, \$15 in 1988, \$17 in 1990, \$20 in 1995, \$25 in 1997 and \$30 in 2003. The 1997 increase was due to a 25 per cent increase in the number of pages per issue starting with August 1996, from 64 to 80. Still, the subscription increases failed to compensate for the loss of subscribers, and for the last few years of Word Ways it was necessary to subsidize it with a couple thousand dollars each year.

I soon realized that Word Ways was never likely to grow much larger than 500 subscribers as long as it occupied the niche I had originally defined for it: a forum for the exchange of ideas among those trying to advance logological knowledge. If I wished to act less like a scholarly journal and more like a mass-entertainment magazine such as the Four Star Puzzler, I could undoubtedly boost circulation, but then I would be editing Word Ways not for fun but for money. If the articles published in Word Ways did not overlap my own logological research interests, what point was there in editing it? Why chair a dialogue that didn't include my work?

Was I falling into the trap of most scholarly journals, that of becoming more specialized and less readable as time went by? My father certainly thought so, as he claimed that he could understand few of the articles any more, mine being especially obscure. I found more disquieting Tom Kurtz's note in his 1984 Christmas card "The word articles are getting obscurer and obscurer ... Maybe I'm slowing down!" (He later let his subscription lapse.)

Starting in 1980 Word Ways experimented with the publication of monographs in addition to the regular magazine. During the 1970s Word Ways published a number of palindromic poems by David Stephens, a North Carolina physician. In June 1977 he sent me a giant palindrome 5000 words long entitled "Satire: Veritas" purporting to be a sampling of manuscripts on the desk of Giles Selig Hales, the editor of an avant-garde literary journal, ready for mailing to a friend named Eton Harrison. While this palindrome, like all long ones, had little overall coherence, it did contain a great number of puns and other wordplay, and managed to introduce much typographic variety. During the next several years he added to it until it eventually totaled more than ten thousand words (more precisely, 58,795 letters). I found the palindrome much too long to consider publishing in Word Ways, and could not interest Dover Publications. In March 1980 he offered \$500 to help defray the cost of printing the palindrome. I decided to offer it as a Word Ways Monograph, soliciting advance orders on the back cover of the May 1980 issue and a classified ad in Verbatim magazine; Will Shortz mentioned it in the July/August 1980 issue of Games as well. The advance orders were so few (19) that I decided to print only 100 copies for

\$433 and set the price at \$5. I delivered 20 of these to David Stephens when Faith and I visited him in October 1980, along with the receipts for 29 copies sold through Word Ways. Over a decade or so the copies were eventually sold.

We didn't try the Monograph series again for a decade. In 1991, I used my recently-acquired computer to assemble a set of 8876 anagrams and antigrams drawn from "Anagrammasia," a collection drawn from early puzzle publications by Newton B. Lovejoy of the National Puzzlers' League in 1926, augmented by the best ones in the Enigma since that time. Each anagram occupied a single line on the page, of the format (two digits = year of later publication), as in

falsities	fit, as lies 68	Damonomad	Feb 1934
piano bench, the	beneath Chopin	Manx	Sep 1985
solitary confinement	felons cry "no mate in it"	DCVer	Jul 1931

The monograph "The New Anagrammasia" was offered at \$12.50 for advance orders and \$15 afterwards, with ten per cent of the receipts going to the National Puzzlers' League. I felt that we had a guaranteed audience in the NPL for the sale of the monograph, and in fact it did sell out in a relatively short time. The following year, 1992, we issued two more monographs in a 100-copy edition, Jeff Grant's "The Palindromicon" a collection of more than 2000 palindromic words, phrases and proper names taken from many languages, and Stephen Chism's 173-page "From A to Zotamorf", a dictionary of all known palindromic phrases. This was offered in softcover for \$18, with a limited number of copies bound by the University of Arkansas library (where he worked) and sold for \$35. When the first set sold out Stephen printed a second set of 100 himself, but we still processed the orders and received at least some of the profits. This long-distance collaboration didn't work very well, for he was dilatory in sending out books. Furthermore, the quality control of the library was not very good and many hardbound copies were returned defective. Although it was Word Ways' most profitable venture--Faith estimated we made \$1200 from it--she wasn't sorry to quit when Stephen suggested he'd had enough.

Although Word Ways' main role, in my view, was to serve as a forum for exchange of ideas among logologists, and to advance the field of logology, it had another purpose as well. For many years my dream was to write an encyclopedia of logology, summarizing what was known in this chaotic field and bringing some sort of logical order to it. Material from Word Ways was to serve as a source of ideas and examples for this work. In the shorter run, I saw Word Ways as a source of material for logology talks, word-related columns in other magazines, and anthologies ("the best of Word Ways").

In the spring of 1975 Leonard Ashley, a professor of English at the Brooklyn College branch of the City College of New York who had been regularly been contributing word quizzes to Word Ways, suggested that I might be interested in attending the annual Names Institute, a one-day regional meeting of the American Names Society held at Fairleigh Dickinson University on the first Saturday of May. Remembering my difficulties in understanding papers presented at meetings in the field of statistics, I feared that I would get nothing out of papers on linguistics, a field in which I had no academic training. On the other hand there was always the possibility that I might be able to spread the word (and sample copies) of Word Ways. So Faith and I went to the meeting on May 3 1975. I was surprised by two aspects of the meeting: attendance was so small, about 25 people in all, that nearly everyone there was either a speaker or a session moderator, and the papers, although scholarly, weren't particularly hard to understand. I found it somewhat appalling that many speakers made no attempt to give a lively talk, merely reading their paper verbatim from the lectern. Because the group was so small, people did make an attempt to be

friendly with newcomers, and we even got a couple of Word Ways nibbles. I continued to attend Names Institute meetings, at first every other year. And I gave talks:

1977: A Logologist Looks at Onomastics, Or Whatever Happened to President Smith?

1979: From Hair to Eternity: An Onomastic Tour of American Beauty Parlors and Barber Shops

1980: Superultramegalosesquipedalia (the 3640-letter name for bovine glutamate dehydrogenase)

1982: Single-Letter Surnames in the United States

1983: What's Your Nom? Pseudonyms in the National Puzzlers' League

1984: Henry to Harold to Donald to Michael: Changing Fashions in Male Names, 1870-1960

1986: Clothes Encounters: An Onomastic Tour of Boutiques and Haberdasheries

My talks were generally welcomed as leavening for some of the deadly serious ones presented on obscure onomastic topics (Faith especially detested talks on Lope de Vega, an author from Spanish literature). The 1979 talk was videotaped and made available to other regional meetings of the American Names Society, and also featured in a Newark Star-Ledger article on May 13 1979. The Names Institute was single-handedly run by Wallace McMullen, a professor in the English Department at Fairleigh Dickinson. After he resigned from this task and the meeting was transferred to New York City, I ceased attending.

I gave one other academic talk, "The Superiority of English as a Vehicle for Wordplay" at New York University on April 20 1985, as part of the 20th anniversary celebration of the American Society of Geolinguistics. I argued for English on several grounds: its extremely large stock of words, its polyglot nature, its statistical structure (not well understood, but manifested by such facts as the greater difficulty of constructing crossword puzzles in Italian), and its syntax (Petr Beckmann's view of language as an error-detecting and error-correcting code). I facetiously suggested the title "English: Best For(e)play With Words", but no doubt this was deemed too frivolous for an academic audience.

Faith and I were asked by Gloria Rosenthal to be one of the speakers at the December 7-9 1984 seminar "The Wonderful World of Words" held annually on the premises of the Mohonk House in the Shawangunk Mountains west of New Paltz, New York. Although the orientation of this seminar was more toward word-puzzle competition than logological research, much like the National Puzzlers' League, still I thought this might offer an opportunity to find additional Word Ways subscribers. (The preceding year, we had sent up a box of surplus Word Ways inventory for distribution to the participants, but without much result as far as subscriptions were concerned.) Speakers were given no honorarium other than free room and board, but this was no deterrent. The Mohonk House is, perhaps, the last of the old-time mountain-top hotels of the Catskills which flourished in the last century, an immense Victorian pile set in a stunning landscape of lakes and rocky crags. We had sampled the pleasures of its views and its network of hiking trails (mostly old carriage roads) twice before, in August 1974 and August 1979, upon the 50th and 55th wedding anniversaries of my parents. We arrived there just at sunset on Friday evening, the day after an ice storm. The flash and glitter of ice on the bare tree branches and a coating of snow on the ground made it look like fairyland.

We knew only one of the more than one hundred participants that weekend, Miriam Raphael of the National Puzzlers' League. Among the speakers, we were well acquainted with both Will Shortz and Willard Espy, and looked forward to meeting Paul Dickson, mentioned earlier as the collector of synonyms for "intoxicated" and the author of *Words*.

Since I wasn't sure what would appeal to this audience, I assembled a potpourri of talks and audience participation for Friday evening. I led off with the observation that wordplay (1) is an intellectual pursuit in which anyone armed with patience, a dictionary, and alertness to possibilities can take part, and (2) is created out of materials at hand such as restaurant menus, beauty-parlor names, and the letters of President Reagan's name. I started by challenging the audience to discover what was unusual about the word Mohonk (if the letters of the alphabet are written in a ring, its letters cluster in a narrow sector, K through O), and gave my set piece of beauty parlor nomenclature; then Faith came on stage to challenge the audience to construct a poem out of an alphabetized list of words (an overnight task which no one, apparently, tried). For the first piece de resistance: I donned a rather hot and stuffy Reagan mask, and was interviewed by Faith but constrained to answer in words using only the letters ADEGILNORSW (the letters in Ronald Wilson Reagan). I invited eighteen people onto the stage to hold the letters of his full name, and gave them instructions for rearranging themselves into various anagrams such as INSANE ANGLO WARLORD and NO, DARLINGS, NO ERA LAW. The audience seemed to enjoy it, and Gloria thanked us profusely, but few if any subscriptions to Word Ways resulted and we weren't asked back to the seminar in later years.

What about word-related columns in other magazines? I often thought that Martin Gardner had an ideal job as Mathematical Games columnist for a large-circulation magazine such as Scientific American. When he challenged readers to improve on the solution of a problem in recreational mathematics, he could count on hundreds of responses. How nice it would be if I could tap into a linguistically oriented audience of similar size! In May 1972 the British magazine Games & Puzzles was launched, and a month later Darryl Francis began to write a regular one-page column on logology for it. In February 1976 the puzzle editor of the magazine, David Wells, wrote me to say that Darryl had decided to give up his Word Row column because of work pressures, and asked if I would be willing to take his place. I pondered the offer awhile. Games & Puzzles did not have a particularly large circulation (about ten thousand, mostly in England), and I sensed that I would be at a disadvantage writing for an English audience. Furthermore, the pay was extremely nominal, only five pounds sterling per thousand-word column. However, I decided it would be very little additional work for me to adapt articles that had appeared in Word Ways, or ones which I had written for future issues, and it might be a stepping-stone to an American magazine. By moving quickly, I debuted in the May issue with a column on Russian-language Scrabble as depicted in Nabokov's novel *Invitation to a Beheading* and followed this in June and July with Q-words in which the next letter is not U, and a poem composed of the words of another poem (vocabularyclept poetry). In all, I contributed nineteen articles to a total of 22 issues through May-June 1978. By then it was clear that Games & Puzzles was in some financial difficulty, for they had earlier issued two other double-month issues. In July 1978 new owners took over and transformed it to a quarterly magazine in 1979. Apparently they regarded Word Row as expendable, for instead of a general column on recreational linguistics the editors included the occasional word puzzle in a mathematical puzzle column.

I had asked the former owners of Games & Puzzles to hold my five-pound payments until I could collect them on my next visit to England. This was originally scheduled for the summer of 1977 but the ill health and subsequent death of Faith's mother delayed it until September 1978. Upon our arrival in London I telephoned the offices of Games & Puzzles and announced I would visit them to collect my money. When I got there I found a classic case of what Lois called "creative inefficiency"--no one seemed to know how much I should be paid, and I had to reconstruct from memory the number of columns of mine they had published (only the last few issues were available at the editorial offices). Eventually we settled on 150 pounds sterling as a fair payment. They wrote me a check which I promptly cashed at a nearby bank. As they had

only two unused columns of mine on hand, I gave them five more, but none of these was ever published. Though I didn't know it at the time, this was my last contact with Games & Puzzles.

In October 1976 Martin Gardner called up Haywood Cirker, the president of Dover Publications, urging him to publish a book of Word Ways material. Cirker in turn called me and arranged for a luncheon meeting with him and two Dover editors in New York on December 6. At the luncheon he explained I would receive a fee of \$1500 instead of royalties, and agreed to give me a free hand in the selection of material. He also asked whether I could prepare a book devoted solely to word games, but I pointed out that I didn't have enough material. I didn't care much for the monetary arrangement, but on the other hand I liked Dover's reputation for keeping a book in print almost indefinitely instead of selling to a remainder house in order to gain warehouse space.

He promised to send a contract at once, which would call for delivery of copy in nine months. Why should I take that long if all that was needed was a cut-and-paste job on existing Word Ways articles? In the next ten days I planned sixteen chapters, and typed up connective material for one-and-one-half of these. By mid-January I had completed 19 chapters totaling 219 pages, far more than the 128 pages Dover had proposed. My thought was that this would give Dover a chance to pick and choose, or (I hoped) they might be so impressed with the material that they would revise their 128-page limit upward. In view of their interest in word games, I prepared one chapter summarizing paper-and-pencil word games that had appeared in Word Ways and in one of the Games & Puzzles columns.

I had little trouble getting permission from Word Ways authors to use their material, with the exception of Dmitri Borgmann. He first requested a proportionate share of the royalties, but when I pointed out this would be only \$150 if (say) ten per cent of the book was based on his work, he relented and said that it was all right to use his material without charge, up to a ten per cent maximum.

On January 21 I made a quick trip to New York to drop the completed manuscript at their Varick Street offices, only six weeks after the initial planning meeting. Perhaps, I thought, this would hasten the appearance of the book. How wrong I was! Months passed, and I heard nothing. In January 1978 I wrote Dover, inquiring about progress; they answered that "personnel changes and other problems" had delayed them, but they had hopes of getting to work on it in the next month. Again, silence. Exasperated, I wrote in November 1978, asking for the return of the manuscript if they did not plan on publishing the book. They again blamed a shortage of editorial staff, but pointed out that this had recently been corrected and I could expect to see *Word Recreations* in the fall of 1979.

At this juncture, Dover took a hard look at costs and proposed that the book not be set in type but instead photo-offset from Word Ways camera-ready copy. On March 15 I met at their office to discuss the new approach, in particular the necessary amendments to the original Word Ways articles. Robert Sietsema, the new editor assigned to my book, gave me paste-ups of the actual pages they planned to use, about 60 per cent of the material I had supplied them more than two years earlier, with the request that I supply them with the original camera-ready copy and that I type up a couple of pages of corrections. The length of the book was set at 135 pages. Noting that A. ROSS ECKLER anagrammed to SALES CORKER, he hoped that sales would be good.

A slight hitch arose in April when Cornell linguistics professor Charles Elliott had his article "Superl" accepted for publication in a Doubleday anthology series. The Doubleday publishers

threatened not to use his piece when they learned of its putative appearance in *Word Recreations*, and it looked as if Elliott would have to choose which place he wanted it to appear in. In view of the fact that “Superl” had already appeared in *Word Ways*, Doubleday’s fastidiousness was hard to understand. I think the problem was eventually resolved; at any rate, *Word Recreations* retained his work. Sietsema wrote “A substitution would weaken that chapter tremendously, to the detriment of the entire book.”

I received my 50 free copies of the finished book, plus my \$1500 payment, in February 1980. Reviews were printed in the July 1980 *Enigma* (the magazine of the National Puzzlers’ League) and the January 1981 *Four-Star Puzzler*, but not in any magazine or newspaper of wide circulation. I thought the book quite attractive in appearance, and its price of only \$2.95 seemed low enough to stimulate sales. In January 1981 Dover reported sales had been doing nicely, with 2712 copies sold the first year. However, in view of the fact that sales had declined during the last half of the year, they were unwilling to consider a sequel. By February 1982 the story was much the same. Sales were fair, enough to keep it in print awhile, and about what Dover expected for books in the intellectual recreations category.

In June 1981 I received a new opportunity to create an anthology of *Word Ways* material. Leonard Ashley, who a few years earlier had introduced me to the Names Institute at Fairleigh Dickinson, wrote that he had been made general editor of a Library of Onomastics, and was planning to publish during the first year ten to twelve reprints of onomastic classics and an equal number of new works. Could I select 320 pages of onomastic articles from *Word Ways*, supplying Irvington Press of New York with the camera-ready copy? At first I didn’t believe that *Word Ways* could produce that much onomastic-related material, but a quick survey proved that it was possible if just about everything were used. I accepted his invitation, but I didn’t get the go-ahead until the end of October. I spent November and December assembling the camera-ready versions of 105 *Word Ways* articles, plus typing Colloquy inserts to be placed at the ends. In March I signed the contract with Irvington which promised delivery of the camera-ready manuscript by June 1982 and provided royalties of 10 per cent of the net revenues on the first 2000 copies, 12 per cent of the next 2000, and 15 per cent thereafter.

As before, most *Word Ways* authors were happy to give me permission to use their material. The one exception, again, was Dmitri Borgmann, who grumped “I have nothing whatever to gain from the inclusion of eighteen of my articles in the new onomastics series; I do not feel especially charitable, and I have always disliked Professor Ashley’s essentially nonlogical contributions to *Word Ways*.” He asked for either a payment of \$10 per article, or else a copy of the anagram dictionary generated by Tom Kurtz. Checking with Tom, I discovered that the computer tape was in the possession of Stephen Waite, who by then had left Dartmouth College; Tom was unable to get in touch with him. So I ended up paying Dmitri the \$180 instead.

I delivered the completed manuscript to Irvington’s New York offices on June 21. A month earlier, I sent Ashley a photocopy of it, to which he responded “I couldn’t put it down; I read right through the MS of *Names and Games* and was delighted at its vigor and variety. I think you have a winner here, with something for everyone. Some few parts find me a little ill-prepared, too technical, but others will enjoy these as well.” Irvington Press set the hardcover price at \$39.50 which I thought rather expensive, and listed it in *Books in Print*.

I hoped that the book might appear by the end of 1982, but months and months went by with no communication from either Irvington or Leonard Ashley. At the 1984 Names Institute meeting he reported that Irvington Press was stalled on the publication of some seven or eight books in the

onomastics series, being long on promises but short on performance. He talked of terminating their contract and moving the series to a college press instead. However, it was more than a year before the Irvington manuscript was returned to me.

The new publisher, University Press of American in Lanham, Maryland, wrote me May 13 1985 to say that they had accepted my book for publication. They talked in terms of a book costing between \$7.75 and \$19.50 in paperback, depending on the number of pages, and \$10 additional in hardcover, with an initial press run of 500 to 750 copies. As long as at least 50 copies per year were sold, they would continue to reprint the book and keep copies in inventory. I was expected to provide them with camera-ready copy adhering to various typographical standards, including right justification of margins. Royalties were similar to Irvington: 5 per cent for the first 500 copies, with increments of 2.5 per cent for additional 500s up to a limit of 15 per cent for all copies beyond 2000.

I found all of this reasonable, and in fact welcomed the chance to revise the earlier book by weeding out weak articles and replacing them with material that had appeared in *Word Ways* since 1981. At once I started on this task, and completed 232 pages by mid-July of 1985. Interrupted by summer vacation and the illnesses of my parents, I didn't get back to the project until early December, when I finished up the 280 pages of main text plus 15 or 20 of introductory material.

However, University Press included one exceedingly onerous condition in its contract: before printing of the book could begin: I had to obtain a non-returnable order of 85 copies from one or more bookstores, who would be allowed a 22 per cent discount on the list price. Apparently, University Press was thinking in terms of a college bookstore which would be forced to stock a book used in a professor's course. Since I did not fit this pattern, I asked for a waiver of the requirement, but without success. I wrote Leonard Ashley, who said that other authors had similarly complained; he would see what he could do about it (nothing, it eventually turned out). I wrote Laurence Urdang, editor of *Verbatim*, who in conjunction with his magazine ran a mail-order bookstore featuring dictionaries and other word-related books. It seemed clear that this was the single most promising outlet for *Names and Games*, but Urdang was willing to order only ten copies on a non-return basis, and those only if a 50 per cent discount were offered. I finally decided that my best strategy was to have *Word Ways* order the 85 copies and offer them to its readers; in time I would be able to sell them and recoup my investment.

I delivered the camera-ready copy to University Press on January 30 1986 and signed the contract at the same time. They reluctantly agreed to the *Word Ways* purchase (they had a standing rule that the author could not purchase the 85 copies himself), and priced out the book: 225 copies in paperback at \$13.75, and 150 copies in hardcover at \$25.75. In April I forward the \$911 to them and soon received my 85 copies. These I successfully sold at \$12.95 apiece over the next several years by advertising in *Word Ways*, no doubt taking away many sales that otherwise would have directly enriched University Press. During the next 15 years I never found a used copy in an old bookstore, and only two, in hardcover, on the *bibliofind.com* website on the Internet (I was able to purchase one of these for about \$15).

These two books were essentially anthologies of *Word Ways* articles. My ultimate dream, however, was to produce an encyclopedia of logology. It was easy to put off working on this on the grounds that the subject of logology had not yet been fully explored. In October 1984 George Levenbach, a retired Bell Labs statistician who subscribed to *Word Ways*, dropped by my Murray Hill office to show me a book a Dutch friend had sent him: *Opperlandse Taal- &*

Letterkunde by “Battus”, a pseudonym for Hugo Brandt Corstius. This was a general survey of Dutch wordplay, reprinting articles that for the most part had appeared in the *NRC-Handlesblad*, the Dutch analogue of the *New York Times*. With some aid from George, I deciphered the various types of wordplay presented therein. Of course, since much letterplay is independent of language, I was frequently able to determine what was going on by looking at the examples. I eagerly searched for examples of wordplay I had overlooked in *Word Ways*, but found little. What charmed me most about that book was its organization: each chapter section began with a short discussion of a given type of wordplay followed by lists of examples or short poems and stories illustrating the principle. I decided that this was what my encyclopedia of wordplay needed--a mix of theory with examples and illustrations to leaven the narrative.

Battus’s book forced me to define what topics I wanted to cover in my encyclopedia. I created in November 1984 a table of contents, and during the final month of my Bell Labs career I spent quite a bit of time at work writing four-and-one-half chapters, including the preparation of one (Chapter 2) in camera-ready form. This I sent to Martin Gardner in February 1985, who commented “the material for your projected encyclopedia looks marvelous” and forwarded it to one of his publishers, Birkhauser, in Boston. Apparently they weren’t interested, for they never bothered to reply. It was a source of some frustration that the Netherlands, a nation of only 14 million people, could support such a book of wordplay whereas the United States, with twenty times as many people, could not.

In defining the scope of recreational linguistics, I realized that words could be regarded as collections of letters to be manipulated, as sequences of sounds, and as carriers of meaning. All three attributes were represented in *Word Ways* articles, but my personal preference was for the first--I decided that the encyclopedia should be devoted to letterplay. After some cogitation, I organized the material into seven chapters, each more or less organized around a central theme, described in the next several pages. I have emphasized those aspects of the book which I personally researched and developed, and in a few cases I have noted my researches that occurred too late for the book. Thus, I summarize not only the organization of the book, but those things which most excite me in logology.

The first chapter was organized around the challenge of writing intelligible prose with one hand tied behind one’s back--either by omitting certain letters as I had done in “Mary Had a Little Lamb” or by always including certain letters such as Mary Youngquist’s “I’m living nigh grim civic blight; I find its victims, sick with fright...” I discovered subtler versions of this game, such as texts in which every two successive words (1) had one or more letters in common, or (2) had no letters in common. Howard Bergerson devised a self-replicating acrostic in which the initial letters of a text repeated the text, as in “Midnight intombed December’s naked icebound gulf...” This chapter was home to my AEIOU collection, 120 different words containing these five vowels (and no more) in all possible orders, as well as a more open-ended collection of words in which QU was not followed by a vowel, or Q was not followed by a U. I reported on my research on polyphonic ciphers, in which the object was to assign the 26 letters of the alphabet to ten symbols (the digits 0 through 9) in such a way that one could most readily reconstruct the original text from the digital stream by replacing each pair of two successive digits with its most likely letter bigram. (For example, if A,R,M were all assigned to 0 and T,Y,L to 1, then the most likely translation of 01 is AT, though MY would also rate consideration.) Could logology be used to address problems in other fields? I determined that the probability that the initial letters of a six-line speech by Titania in “*A Midsummer Night’s Dream*” would accidentally spell out T,I,T,AN,I,A was quite small, suggesting this was a bit of wordplay deliberately inserted by Shakespeare.

The second chapter looked at the various patterns of letters formed by words--not only the well-known palindromes and tautonyms, and the switch words I encountered in 1969, but more subtle ones such as heterograms in which each letter in a word is different, and pangrams in which all the letters of the alphabet are used at least once in a set of words. I was rather proud of my discovery that the latter two concepts imperceptibly shaded into each other, for one could on the one hand look for the longest word, the longest two words, etc. without repeated letters, and on the other hand look for the fewest number of letters in a pangram set of four, five, six, ... words. If the dictionary from which these words are drawn allow a perfect pangram (no extra letters), then both series terminate with this set of words. (In the Merriam-Webster Pocket Dictionary no final convergence is possible, as the heterogram set ends with the 25-letter CHINTZ, FJORD, PLUMBS, GAWKY, VEX, and the pangram set with the single extra A in LAMB, SQUAWK, FJORD, CHINTZ, VEX, GYP.) I was also proud of the concept of the pangrammatic window--the shortest set of n consecutive letters in running text which include the full alphabet. (Finding short pangrammatic windows in literature has become easier with the advent of the computer, but the shortest one, of 65 letters, was found by hand a century ago.) I also devised the pangrammatic highway game: finding the shortest distance along an interstate highway containing permanent road signs having all the letters of the alphabet. New Jersey clearly has the advantage as it is the only state containing a J, but I was still surprised when the shortest such interval, only a quarter of a mile long, occurred on Route 287 South within Morristown (the relevant signs included Washington's Headquarters, Bridge Freezes Before Road Surface, Entering Morristown, Exit, Lafayette Avenue, and New Jersey Shakespeare Festival).

Gary Bloom, a professor in the Computer Sciences Department of the City College of New York, introduced me to the concept of the eodermdrome in early 1980. Take the different letters of a word and place them on a sheet of paper. Is it possible to trace out segments of a curve which visits the letters of the word in order, without having any segment cross another one? The coinage "eodermdrome" is the shortest possible word for which it is impossible to construct a curve with non-crossing segments. In mathematical terms one is dealing with a graph (a set of points connected by lines), and there exists a famous theorem by Kuratowski which states that all non-planar graphs (that is, ones with crossing segments) can be reduced to either $K(5)$, the complete graph on five points, or $K(3,3)$, the bipartite graph on six points, by eliminating one or more lines, as well as any points joined by only two lines. I discovered that eodermdromes are quite rare, there being approximately 75 Merriam-Webster words that reduce to the bipartite graph, four that reduce to the complete graph on five points, and only two--OVERCONSCIENTIOUSNESS and PHENOLTETRACHLOROPHTHALEIN--that reduce to both. I also discovered the shortest dictionary eodermdrome, the 13-letter METASOMATOSES. It wasn't long before I discovered king's-move words, those which could be traced out by a king's move in chess when the different letters were suitably placed on the squares of a chessboard. Words which could not be traced by a king's move turned out to be closely related to, but not identical with, eodermdromes. In the early 1990s I recast eodermdromes and king's-move words in terms of word graphs and word tiles, generating a type-collection of all possible word graphs for words of up to five letters. I also generalized king's-move words to queen's-move words. Checking words to see whether or not they were king's-move or queen's-move was a tedious trial-and-error procedure until Dan Tilque supplied me with a short computer program to find a word tile if it existed. Leonard Gordon looked at word tiles on hexagonal and triangular pavements as well as the standard square pavement of the chessboard, and even words on three-dimensional "pavements" created by letters inscribed on stacked cannon balls! I marveled at the elaborate logological structure that had been created out of Bloom's original insight. To me, this

proved that there were many undiscovered riches in the logological field. With my extensive knowledge of logology, I was in a better position than most to find them, to build on seemingly trivial tidbits.

The third chapter examined letter-fragments within words. My attention was first drawn to this branch of logology by the previously mentioned dictionary of trigrams. When Edgar Gilbert published a near-complete dictionary of bigrams in the 1969 *Word Ways*, I took this as a challenge to find examples for all 676 cases. However, I found this could be done only if one admitted place names from the *Times Index-Gazetteer* and obscure Indian names from Hodge's *Handbook of American Indians North of Mexico*. When national telephone directories became available on CD-ROM in the early 1990s, I added a few surnames from this source: ToloDXi, MolyneVX, AFXentiou. This chapter seemed the logical place to present definitive results on the famous -GRY problem of the 1970s and 1980s--various *Word Ways* authors such as George Scheetz, Murray Pearce and Harry Partridge found nearly 100 of them. More appealing to me were lists of 24 words containing all possible permutations of a tetragram, possible for AIRT and AGIN.

Generalizing compact letter-groups such as bigrams and trigrams, I considered patterns of a given letter distributed throughout a word. The classic question here was: how many of each letter of the alphabet could appear in a word? I looked for other things to do with fragments. I introduced the concept of a cadence, a set of identical letters spaced at equal intervals, such as hUmU-hUmUnUkUnUkUapuaa or EffErvEscEncE. I observed that all six orders of the three letters A, L and F appeared in ALFALFA (ALFalfa, AlFaLfa, aLFAlfa, aLfAlFa, alFALfa, alFaLfA) and generalized this to the 24 orders of I,N,R and T in TRINITROPHENYL-METHYLNITRAMINE. In theory this could be achieved with a twelve-letter word having a pattern such as abcdacbadcba, but I could find no real word satisfying the proper constraints, although names of hypothetical individuals such as ROGER O. GREGOR or ERNIE N. REINER did. There are 3276 ways that three letters can be chosen from the alphabet with repetition allowed. I suspected that most of these could be identified in words, from bAnAnA to ZyZZle; and in fact all but 17 can be recognized in a Merriam-Webster word. However, I could not place isolated results like these in a satisfactory intellectual structure.

The fourth chapter constituted the core of letterplay: the transformation of one word into another. There are two basic ways to accomplish this: by inserting a letter in a word or deleting a letter from a word to form another, or by replacing a letter in a word to form another. The latter is the older device, going back to Lewis Carroll in the form of a word ladder, but the former has the advantage of allowing one, at least in principle, to travel from any word to any other, even one of a different length. For both I introduced the concept of the word network, a structure (often too complicated to diagram on a piece of paper) of points representing the various words, and lines joining those points corresponding to words that can be transformed into each other. These networks have a number of interesting properties in their own right, such as the span. If one defines the distance between any two words in a network as the minimum number of lines one must traverse to go from one to the other, then the span is the maximum value of this distance, taken over all possible pairs of words. In brief, the span characterizes the distance between the farthest-apart pair of words (a simple example: in the *Official Scrabble Players Dictionary*, the farthest-apart pair of three-letter words is ivy-icy-ice-ace-aye-tye-the-thy-try-fry-fro.) Within a network, I looked for words a minimum number of steps apart which were maximally different--that is, which had no letters in common in the same position (a simple example: settle-settee-setter-better-batter-banter-banner.) By starting with the commonest words in English-language text and adding them one at a time, one could show how networks evolve

from many small islands to a main network with a dense center and outlying tendrils, accompanied by a cloud of smaller unconnected networks down to isolated words. I examined the detailed structure of the main network in terms of the vowel-consonant patterns of its words, noting that it is often far more difficult to go from one vowel-consonant pattern to another than it is to stay within the same vowel-consonant pattern. In particular, I showed how networks could be characterized by skeletons joining different subnetworks, each with its own vowel-consonant pattern.

In the networks described above, one can always proceed in either direction between adjoining words. In directed networks, this is no longer the case. As a simple example of a directed network, transform one word into another by removing the beginning letter and adding a new letter at the end to form another word (a simple example: nth-the-her-era-rag-age-gem-emu-mug). The structure of such a network is much more baroque. It consists of one or more cores in which any word (called an insider) can be reached from any other. Outside the core, there are starters, precursors (all words in a string connecting a starter with an insider), followers (all words in a string connecting an insider with an ender), and enders. A final variety, bypassers, form strings which join starters and enders but never access a core at all. Other directed networks consist of words which overlap less than in the above example; one particularly useful one has half-overlapping words.

The final part of the fourth chapter concerned itself with transpositions. I introduced a taxonomy of transposals, showing by example the 397 different ways one six-letter word could be transposed into another. I presented the most transposable letter-combinations for various dictionaries, including Jeff Grant's tour de force of 157 transpositions of the letters AEGINRST, stretching the definition of an acceptable "word" to its outer limits. I searched through endless telephone directories seeking real persons whose first name transposed their last. More than one half of the cases turned out to be GARY GRAY, with RONALD ARNOLD the second most common combination. After the advent of CD-ROM national telephone directories this search became much easier. I constructed a transdeletion pyramid, a set of words starting with ANTICEREMONIALIST in which I repeatedly removed one letter and rearranged the remainder to form another word, ending up with train, rant, tan, at, a. The one dubious word was RECLAMATIONIST, not found in any dictionary, but used in a 1946 Saturday Evening Post article. I pointed out that one could construct the roots and branches of any given word, the roots consisting of all possible repeated transdeletions, and the branches all possible repeated transadditions. (For example, OLYMPIC can be transadded in several different ways, including olympic-olympics-polysomic-polyoecism-compositely as well as olympic-polyemic-polyaemic-polyhaemic-myelopathic-polycythemia.)

The fifth chapter examined letterplay based on the order of the alphabet. An alphabetic sequence in a word is said to be undominated if a word can be found containing all the letters in that sequence, but no word can be found containing a longer sequence including the original one. Three cases can be distinguished: the consecutive alphabetic letters are adjacent and in alphabetic order, are only in alphabetic order, or are not necessarily in alphabetic order. (For example, in the Pocket Merriam-Webster the first few undominated words in the first case are boBCat, aneCDote, DEFt, and aFGHan, in the second case AmBusCaDE, DEFog, prizEFiGHtIng, and in the third case FEeDBACK, IIGHt-FaCED and straIGHtJacKet.) A related diversion consisted of constructing the shortest possible word list containing the alphabet in order or reverse order (for example nAB CoDE FiG HIJAcK LiMN OP QuRSh TUrVes WaXY Zip). One of the largest word-sets I ever collected consisted of 720 words, each one containing a different alphabetical ordering: ALMOST 123456, CHORUS 123465, DEPUTY 123546, ...

SPONGE 654321. Noting that a word such as ABoDE has a high degree of alphabetic invariance (four of its five letters match the A-alphabet), I generalized the concept to local invariance (for example, coOPeRaTiVeLY has 6 letters matching the M-alphabet). I devised a way to characterize the different shifts that occurred in a typical word. For example, WRETCH has four shifts: a W-alphabet for Wretch., a Q-alphabet for wReTch, a C-alphabet for wrEtcH, and a Y-alphabet for wretCh, summarized by the shifted-alphabet pattern WQCQYC. Shifted alphabet patterns can be studied just like word patterns; for example QUANTIFICATIONALLY, with no repeated letters in its shifted-alphabet pattern, is analogous to DERMATOGLYPHICS with no repeated letters. I was much intrigued by letter-shifts such as COLD which, moved three letters along the alphabet, becomes FROG. I generated a taxonomy of all possible shifts, from one to thirteen, for three-letter, four-letter and five-letter words, noting that six-letter words only lacked shifts of lengths 3, 5 and 12. Using Levine's pattern word list I found only one shift pair of length eight: WILIWILI to COROCORO. Leonard Gordon and Christopher McManus showed how letter shifts could be plotted on lines in an n-dimensional space.

The final part of the fifth chapter was devoted to letter scoring in which A=1, B=2, ... Z=26 and each word is characterized by the sum of its letter-values. I found such characterizations less interesting than purely alphabetic ones, but balanced words (those with an average value of 13.5) turned out to have interesting geometric properties. Following up on Keith Jones's 1992 Internet suggestion that the letters of the alphabet could be represented by vectors pointing from the inside cubelet of a 3x3x3 array to each of the 26 outside cubelets, I suggested that words could be geometrically represented by a sequence of such vectors, forming a segmented "worm" in three-dimensional space. For balanced words, the segments formed a closed loop, the last one returning to the center of the cubic array--in effect, a worm biting its own tail. (Tom Day suggested that these be called Ouroboros worms, in honor of a 1922 science-fiction story by E.R. Eddison.) Three-letter Ouroboros worms consisted of 30-60-90 right triangles (ANY, CUP, PAW, TOE), isosceles triangles (KEY, MEW) or equilateral triangles (BOW). Four-letter Ouroboros worms came in a wide variety of shapes, both planar and non-planar, the most interesting being TAXI which traced out two-thirds of the edges of a tetrahedron. Some, like LOVE and BEVY, had degenerate (foldback) sections in which segments traced earlier segments in reverse. The longest-known non-degenerate Ouroboros worms, having neither a foldback section nor an internal intersection, were SEMICONSPICUOUS and TRYPANORHYNCHAN. I wondered whether one could find a word corresponding to a knotted Ouroboros worm. The minimum number of segments needed for such a word was apparently nine.

The sixth chapter, on word groups, covered my favorite topic in logology. The classic work in this field consists of searches for ever-larger word squares, culminating in the collection of perhaps a thousand nine-squares devised by members of the National Puzzlers' League during the last century. (Most of these are extremely unsatisfactory, using words from obscure references.) With the advent of the computer, systematic searches for all word squares in a word list became possible, and after running his computer for several weeks Eric Albert in 1989 finally found the only one lurking in the pages of the Second Edition of the Merriam-Webster Unabridged Dictionary. I defined the support of a word square to be the size of a randomly-drawn list of n-letter words that would, on the average, yield one square. I devised a scaling formula showing that for large word squares, the support draws an increasingly- sharp line--as the number of words increases modestly, many more squares become likely. Chris Long derived a theoretical estimate of the support under idealized conditions (words formed at random from letters with English-language text probabilities). His support value was more than 60,000 for a nine-square and nearly 250,000 for a ten-square, showing the impossibility of finding the latter using dictionary sources. I discovered variations on the standard word square, for example the

transposition square in which the letters in each row and column can be rearranged to form a word. In another variation, there are 120 ways one can select sets of letters, one from each row and column of a five-by-five array; with computer aid from Mike Keith in 1999, I showed that it was possible to anagram all of these into words. As already noted, my very first Word Ways article looked at the mathematics of partially overlapping word groups. As early as 1978 I was fascinated by the problem of finding eight seven-letter words, each pair of which crashed exactly once (had the same letter in the same position, as whOse and prOud). However, it was not until 1998 that Steve Root found 62 sets, including five restricted to the Merriam-Webster Collegiate Dictionary. (The best set was probably BIOLOGY DEATHLY SLOSHED BASTARD SELVAGE FISSILE DALLIES FLAVORS.) For mutually non-crashing words somewhat longer lists can be constructed, typically 15 to 17 words long for three-letter through six-letter words from the Merriam-Webster Pocket Dictionary. I labeled the faces of the five Platonic solids in such a way that words could be read off from the faces sharing a vertex, and similarly labeled the vertices so that words could read off from the vertices sharing a face. I also found ways to introduce words onto triangular and hexagonal tilings.

The seventh and final chapter in my original plan for the encyclopedia of wordplay was a bit different from the others, concentrating on letterplay tailored to the needs of the cardinal numbers ONE, TWO, THREE ... One exercise involved alphabetizing the number-names between 1 and 999, and then rearranging them in the sequence EIGHT, EIGHT HUNDRED, EIGHT HUNDRED EIGHT, ... TWO HUNDRED TWO. Did any of the alphabetized numbers appear in their original places? It was easy to show that none did, and to extend the argument to all number-names between one and one thousand vigintillion. I discovered that if one stopped the list at other points, matches did occur; for example Jeremy Morse found that the 231-list matched at 101, 200, 205, 224 and 227. Another exercise lined up the letters in an alphabetical horse race, each one advancing according to the number of times it had cumulatively appeared in the number-names. Although T bested E for a short time (in a race of length 39 up to a race of length 83), Dan Hoey showed by computer that E then kept the lead for a long time, not being bested (by N) until 1,908,414,049,538,005,261!

Many authors became interested in self-descriptive sentences of the form “This sentence contains five words” or “This sentence contains thirty-six letters”. It was much harder to balance sentences enumerating the numbers of each alphabetic letter in them, and this problem was not generally solved until Lee Sallows constructed a special-purpose computer to do the job. (Later, it became easy to do it with a general computer program.) More austere versions were also developed by Sallows, in which one merely listed the alternatives (five f, five I, five v, five e) or even embedded these in a crossword.

But the most elaborate number-name structures, and the ones I found most charming, involved numerical convergence. It has long been known that if one replaces a number-name with the number-name of its letter-count, all names converge to four (for example, eighteen to eight to five to four). Howard Bergerson found that if one replaces a number-name with the number-name of its letter score (summing the letters with A=1, B=2, ...), then all number-names converged to the number circle 216-228-288-255-240-. I wondered how many number-names could be made self-convergent by rearranging the alphabet (for example, starting the alphabet SIX or any permutation of it would ensure that SIX converged to itself). With computer aid from Leonard Gordon, I found that 38 could be so accommodated, using the rearrangement REFSW-VG--IXYD-----T-NULOH of the alphabet. Lee Sallows generalized the problem to assign any number (not just a rearrangement of 1 through 26) to each letter, and by computer found that 74 of the number-names ZERO through NINETY-NINE could be made self-convergent. I was rather proud

of one minor discovery: By assignment of the values $1/6$, $2/6$, ... $13/6$ to the letters EFHINORSTUVWX, one could make the six number-names ONE through SIX all convergent.

In 1994 I revised and enlarged my 1986 plan for an encyclopedia of wordplay, and typed the chapters into my computer. On January 10 1995 I wrote Martin Gardner for suggestions on a publisher; he recommended St. Martin's Press, passing along my table of contents and introduction to Bob Weill, his editor there. To my surprise and delight, Weill called me on February 10, and only five days later agreed to publish the book. By February 20 he had sent me a contract providing for a \$7500 advance royalty payment, half upon my signature and half upon the delivery of the manuscript. I was to receive 10 per cent royalties on the first 5000 hardcover copies sold, and 12.5 per cent on the next 5000. In April I sent him the manuscript, and St. Martin's spent the rest of the year preparing it for publication at \$23.95, which occurred in December, a bit too late to take advantage of Christmas. I was the guest of honor at two book signings, one at the Union Square branch of Barnes & Noble on February 4, and one at the Book Shop on South Street in Morristown on January 17. The audience at the former was sparse, consisting mostly of customers in the store that day who saw the posters advertising it. Perhaps ten or fifteen came to the Book Shop, where I signed half a dozen copies plus a small stockpile for future sales.

St. Martin's had me solicit well-known authors for jacket blurbs, and I found their response most gratifying. Willard Espy wrote "Your mind will be right out there on the dance floor with those letters--whirling, leaping, two-stepping--having the time of its life." Richard Lederer commented "Master logologist Ross Eckler shows that, in the whirled world of words, the play's the thing. The author invites his readers to cavort in the playground of our language with words that clamber over jungle gyms, bounce up and down on seesaws, swing on rings, career down sliding boards, and merrily spin around on merry-go-rounds." Martin Gardner added "No one living is a greater authority on English linguistic play than Ross. *Making the Alphabet Dance* will delight, amuse, and stagger the mind of anyone fond of the endless ways that letters and words can be manipulated" However, I cherished Lee Sallows' comment the most: "I believe that Martin Gardner's quote on the dust jacket is the simple truth, and those of us who love wordplay and letter play have to count themselves very lucky that it was you who took over Word Ways rather than anybody else. In who else could we have found such a perfect balance, as well as depth, of mathematical and literary interests, I wonder? One has only to run through the list of regular contributors (myself included) to see how narrow is the normal range of pursuit. No, we have you to thank for the thriving state of the field, and *Making the Alphabet Dance* will become the standard reference work for years to come."

On the other hand, a two-page review by Douglas Hofstadter in the March 10 1996 New York Times Review of Books titled "Stunt Man" damned the book with faint praise. Hofstadter felt that 90 per cent of the material in the book could be characterized as "arbitrary sets of constraints devised with but a token regard for esthetics...maneuvering within the limits imposed by an arbitrary, ugly straitjacket and then resorting to vast data bases of unheard-of pseudowords to try to lend legitimacy to one's awkward finds, seems to be just another ingenious way to waste huge amounts of time and mental energy." (As an example of pseudowords he cited the 157 anagrams of AEGINRST.) To Hofstadter, what mattered more than "vacuous virtuosity ... [like] the spectacular yet empty pyrotechnics that permeate so many third-rate 19th century piano pieces" is a "sense of good taste and self-censorship." St. Martin's Press, apparently subscribing to the thesis that any sort of recognition by the New York Times was an undiluted benefit, was highly pleased by this review. I refrained from answering the diatribe, but was somewhat gratified to note that Soren Schoff anagrammed "Douglas Hofstadter" into "Gödel's author's daft" and many months

later I experienced a measure of schadenfreude when his next two books, *Le Ton Beau de Marot* and *Eugene Onegin*, suffered equally negative Times reviews.

Perhaps because of Hofstadter's review, sales were modest. In only one six-month royalty period did I earn any money (\$3602.95) beyond my advance. By April 30 1999, when the hardcover edition had been remaindered, 2294 hardcover copies and 1780 paperbacks had been sold. (I was told that the original printing was 9500.) By 1999, typically 30 copies of my book were being offered on the Internet secondhand book market, at prices from \$5 to \$25. I purchased 200 copies for \$635 from St. Martin's Press for future sales through Word Ways. In the summer of 2000 the paperback edition was remaindered, but I declined to acquire any from St. Martin's.

In 1998 I asked Bob Weill if he would be interested in a follow-on book, *A Word Ways Sampler*, consisting of less-technical articles. I sent him ten sample chapters but he said no, because the paperback sales of *Making the Alphabet Dance* had been disappointing. In May 2008 Chris Cole suggested I submit the chapters to Peter Gordon, the executive editor of Sterling Publishing. When Gordon agreed to look at it, I spent the next couple of months quickly creating 21 additional chapters, for a book 200 pages long. But on Aug 14 he turned me down as well.

Faith has always deplored the use of computers in logology, saying that they spoil the fun of searching for logological oddities by hand. It is true that computers trivialize formerly laborious tasks like finding long dictionary examples of pair heterograms (words containing exactly two occurrences of each letter, such as HORSESHOER or HAPPENCHANCE). I contend, however, that computers merely change the class of interesting problems to be worked on, allowing one to look at previously impossible problems.

In the early days of Word Ways, computers were principally used as tools to compile specialized word-lists. The most famous of these were the reverse dictionary based on the Merriam-Webster Second Edition which was compiled in the early 1960s by A.F. Brown of the Linguistics Department of the University of Pennsylvania under an Air Force contract, and the pattern dictionary based on the Merriam-Webster Second and Third Editions compiled by Jack Levine of the Mathematics Department of North Carolina State University in the early 1970s. (In a pattern dictionary, words with the same letter patterns, such as EXCESS and BAMBOO, are grouped together.) The Brown dictionary was available for \$40 in eight volumes from the government, but amazingly the three Levine books were free! They soon went out of print, and later were highly prized collector's items; Dmitri Borgmann sold his three volumes in 1976 for \$96. I found both references extremely valuable in researching Word Ways articles.

I personally encouraged the creation of another specialized word list, the anagram dictionary. In the 1960s Martin Gardner suggested in a Mathematical Games column in Scientific American that an anagram dictionary (one in which the letters of each word are arranged in alphabetical order and these "words" then alphabetized) would be valuable for logologists to have. In such a dictionary anagrams are brought together (for example CEORST is the alphabetical order "word" for both CORSET and ESCORT). Two varieties of this dictionary are possible, a full dictionary listing every word, and a limited dictionary listing only those words for which one or more anagrams exist. Small dictionaries of both kinds were already available, but I argued that a full dictionary based on the Merriam-Webster Second Edition would be much more useful to logologists. In 1969 I learned that the Mathematics Research Center at Murray Hill had a copy of Webster's Second on magnetic tape, and acquired a copy of this from Doug McIlroy. In July 1972 I discussed the idea of an anagram dictionary with Tom Kurtz, then Director of the Kiewit Computation Center at Dartmouth. He was intrigued, so I sent him the magnetic tape in August

via Dave Dennison. By the end of the year Tom sent me a sample printout of a few pages of anagram dictionary. We agreed it would be better to sort the words by length first, since one could then deal with smaller lists, 35,000 words or less. However, the task proved more difficult than Tom had expected, and the project languished until 1976, when his colleague Stephen Waite actually produced the dictionary (seven side inches of computer printout). Tom tantalized me with reports of long transposable words and short multi-transposable words, but didn't offer to make me a copy (at \$63) or send me his. When Faith and I visited him in 1978 I asked if he would lend me his copy for Word Ways research. Since it had been gathering dust in the corner the past two years, he readily assented, and at last I had my anagram dictionary. When Word Ways subscribers heard of its existence, they wanted copies, and I arranged for seven to be printed for \$136 apiece in 1982.

During the long gestation period for the anagram dictionary, the Mathematics Research Center independently created an anagram dictionary listing only anagrammable combinations. I obtained a copy from Dennis Ritchie in 1975, and eventually pried loose two more copies for Darryl Francis and Dmitri Borgmann, then planning to issue such a dictionary themselves (this never came to fruition). Ritchie incorporated a program that automatically pluralized nouns, added past tenses to verbs, and so on, uncovering many anagrams that Tom's straight dictionary listing had overlooked. Both anagram dictionaries helped me greatly in research.

During my editorship of Word Ways, the computer in logology evolved from a compiler of specialized word lists to an essential tool for logological research. Fortunately, computer-literate logologists also appeared, beginning with occasional Word Ways contributors like Doug McIlroy, Eric Albert, Anthony Sebastian, Frank Rubin and Stephen Root. The earliest use of a computer for other than list-compilation was probably Doug McIlroy's 1975 discovery of all possible seven-squares that could be generated from the Merriam-Webster Collegiate dictionary, and a similar unveiling of double six-squares from the Collegiate the following year. About the same time Dennis Ritchie mined from Webster's Second Edition 3330 sets of pangrams, published in Word Ways in November 1983. However, my first attempt to "seed" a logological problem with a computer expert was less than successful. In 1978 I constructed the word set HATED HORNY FITLY FAUNS WIRES WOULD in which each pair of words had exactly one letter matching in both alphabet and position. I proposed to Bernie Cosell of the National Puzzlers' League in the summer of 1984 that he use the computer to find eight seven-letter words having the same property (I had come within three letters of solving this by hand). In January 1985 he reported "Crash Groups report: no joy. Although it was certainly not for lack of trying--I think I've now consumed roughly two hundred hours of VAX CPU time on this one." He detailed how he had called in a "truly great computer-hacker," Mike Beeler, to help him reduce the search time for the six-word problem from two years of computer time to only 60 hours, but the eight-word problem still needed an unacceptable 12,000 hours. Advances in computer power eventually made it possible in 1998 to do this on a personal computer!

In 1989 Leonard Gordon arrived on the scene, the first Word Ways contributor who could at the drop of a hat write computer programs to solve specific problems that I proposed. He was shortly joined by Lee Sallows and Christopher McManus, and after Leonard dropped out of sight in 1996, he was replaced in 1998 by the equally-prolific and versatile Mike Keith. More than once, I would email Mike with a problem and receive a computer-based answer in a day or two. However, after the turn of the century Rex Gooch became the premier Word Ways expert using the computer to solve intractable word problems. He put prodigious effort into the construction of a ten-square, and was eventually rewarded with the following nonpareil:

D E S C E N D A N T	Oxford English Dictionary
E C H E N E I D A E	Webster's Second (genus name)
S H O R T C O A T S	Oxford English Dictionary, see short-coat, 1649 quote
C E R B E R U L U S	Integrat Taxon Info System, <i>Camponotus cerberulus venturensis</i>
E N T E R O M E R E	Webster's Second, see entero-
N E C R O L A T E R	Chambers, see necro-
D I O U M A B A N A	National Imagery & Mapping Agency, placename in Guinea
A D A L E T A B A T	National Imagery & Mapping Agency, placename in Turkey
N A T U R E N A M E	Oxford English Dictionary, see nature V.15, nature-name
T E S S E R A T E D	Oxford English Dictionary, see tesserate

His amazing feats in computerized word squares were ended by his untimely death from lung cancer in March of 2007.

I had neither the time nor the inclination to master the intricacies of logological programming for the computer. Perhaps if I had, I might have developed a profitable sideline to Word Ways. Jay Comras, the founder of a thriving software company operated out of his East Hanover home who had developed numerous manuals and personal computer disk programs preparing students for the SAT and ACT college examinations, wanted to extend his offerings to include a disk devoted to wordplay. Having discovered Word Ways a few years earlier in the library of the Fairfield school system where he worked, he thought that it contained much ingenious material that could be adapted for his purposes. Faith and I had a get-acquainted session with him the evening of October 19 1984. Two further meetings on January 20 and February 10 clarified my understanding of the type of wordplay he wanted, and I agreed to produce a scenario with five examples, written with sufficient detail that a competent programmer could put it into machine language. We agreed verbally to go partners on a 50-50 basis, involving perhaps a few thousand dollars of expenses for advertising. He dangled the financial plum of \$50,000 to \$100,000 in earnings if the disk had a good sale. I constructed five examples:

- 1) Matchword: a logological version of tic-tac-toe
- 2) Scrambleword: the National Puzzlers' League anaquote, in which one reassembles a message from an alphabetized set of three-letter segments (as in ELL ISH WAR = war is hell)
- 3) Crashword: a game in which the object is to be the last person to add a word to the list which doesn't crash with any of the earlier words (the game of Uncrash, featured in Word Ways Logomachy in 1973)
- 4) Guessword: guess a three-letter target word selected by the computer with as few probe words as possible, the computer telling you after each probe word whether it is alphabetically earlier or later than the target word
- 5) Twistword: find a set of six words containing three different letters in all possible orders, using as few extra letters as possible (for example, hEIR, mERIt, pIER, IRE, REIn, dRIEs uses only seven extra letters)

I turned this proposal over to him on May 2. As always, Jay was extremely enthusiastic about what I had done, and promised to get a programmer to work on it--but I never heard from him again! Perhaps he found it impossible to find a programmer, or was too busy with other projects to arrange for one; I never called him to find the reason. Had I been able to do the programming myself this collaboration might have flourished; no doubt I paid the price for a lack of technical aggressiveness.

Beginning in the 1970s I assembled a considerable collection of books related to logology and wordplay. The scope of the collection, at first limited to unabridged dictionaries and specialized wordplay dictionaries (anagram, reverse, pattern) spread to general books on wordplay, books written under literary constraint, and old puzzle material. I also subscribed to (or exchanged Word Ways for) journals such as Logophile, Verbatim, Maledicta, Cryptologia, Semagames (a Catalan journal of palindromy), Wordsworth, and The Palindromist. I found many out-of-print books in used bookstores, and my collection was substantially augmented by review copies sent me by various publishers.

The most unusual--certainly the rarest--book in my collection was undoubtedly *Gadsby*, a fifty-thousand-word novel without the letter E. It was written by Ernest Vincent Wright in the late 1930s when he was a patient in a Los Angeles Veterans Hospital, and published by the Wetzel Company in Los Angeles in 1939. When I began to look for it in used bookstores along Fourth Avenue in New York City in 1975, few dealers had heard of it and none had it in stock. In the August 8 1975 New York Times I read of a book-search service in Atlantic City rated the most successful in the country, a "super-sleuth" with a stock of 150,000 volumes and a 75 per cent success rate. I wrote them in February 1977 asking them to search for the book but they were unsuccessful.

I wondered what had happened to the unsold inventory. Boris Randolph, a Word Ways subscriber living in Los Angeles, located a sister-in-law of the publisher. I wrote her and soon heard from the publisher's daughter, Mrs. Ralph McIntosh. She said that the Wetzel Company had gone out of business long ago, and there were no unsold stock of *Gadsby* in the family's possession.

Randolph also sent me a death certificate for Ernest Wright which opened up a new line of inquiry. Since Wetzel had been a vanity press, it seemed likely that the inventory would have been turned over to Wright's estate after his death in 1939. Perhaps there was a stock of books squirreled away in someone's dusty attic. Unfortunately, the death certificate indicated that Wright was single; to find present-day descendants I would have to look for brothers or sisters. The death certificate indicated that he was born in 1871 in Boston, the son of Henry and Clara (Clarke) Wright. A check of Wright and Clarke genealogies failed to turn up any leads. I thought surely that I could locate brothers or sisters by examining the Soundex files for the 1880 Federal Census, which indexed by surname all families having one or more children under ten years of age. Alas, when I checked the Massachusetts Wrights I could not find any Henry and Clara with a son Ernest! The death certificate stated that Ernest's father was born in Belchertown, Massachusetts. A few hours examining church and cemetery records in that community in August 1978 revealed Henry Wright born in 1814 who married Christina Hawes in 1838; could he have been the grandfather?

In 1979 I learned from Boris Randolph that the Veterans Administration file on Ernest Wright was located in Denver. This revealed a bit more information: in 1939 his sister, Mrs. M. W. O'Leary, then living at 285 Tremont Street, Newton, Massachusetts, was the person to whom royalty payments for the book were to be sent after Ernest's death. Eric Albert, a Word Ways subscriber and National Puzzlers' League member in the Boston area, visited this house in March 1982. The present resident had never heard of Mrs. O'Leary, nor had a next-door neighbor who had lived there for almost 40 years. I asked a couple of Newton weekly newspapers to run a query; I don't know if they ever complied, but in any event no one came forth with information.

In March 1979 I had lunch at Bell Labs at Murray Hill with David Kahn, author of *The Codebreakers*. He related a story about the famous cryptologist William Friedman who had, it seemed, once met a man with a large collection of *Gadsby* stored in a Los Angeles warehouse. The source of the story was Friedman's son John, who then worked for Bell Labs at Murray Hill. When I talked with him about it, I learned that the man in question was a vice-president of Pacific Telephone who subsequently was transferred to Pacific Northwest Bell. But he couldn't remember the man's name! Going over the names of Pacific Telephone vice-presidents of the late 1950s and early 1960s with him, he thought the name William Straley sounded familiar. I obtained Straley's retirement address in California from the Bell System Pioneers office and wrote him about the book. Straley conceded he had talked with John Friedman about cryptology and *Gadsby*, but he knew nothing of any cache. Finally I wrote the George C. Marshall Research Foundation library in Lexington, Virginia, the repository of Friedman's papers. They owned three copies of *Gadsby* which had been obtained through Pacific Telephone. Was this the legendary cache?

In June 1978 Will Shortz mentioned to me that he had purchased a copy of *Gadsby* for \$25 at a New York Antiquarian Book Fair. Hoping to duplicate his feat, I attended one at the Sheraton Hotel in the spring of 1979 without success. I asked Will if he would be willing to part with his copy. He agreed to trade it for Levine's three-volume pattern word list. I wasn't about to part with my own set, even for *Gadsby*, but I recalled that Bill Rawlings, a Word Ways subscriber, had written me a few months earlier asking for help in disposing of his Levine set. I got in touch with Rawlings at once and arranged to purchase his set for \$54. I finally got my copy of *Gadsby* at the National Puzzlers' League convention in Stamford Connecticut in July 1979.

Another rare item in my collection are back issues of the Enigma, the National Puzzlers' League magazine. In the June 1966 issue, Oedipus (pseudonym for Charles Jacobsen) offered to sell his complete collection of some 750 back issues of the magazine, and donate 25 per cent of the money earned in this sale to the League. Apparently he was successful in locating a buyer, for a few months later the Treasurer received \$35 from him. But not a word about the identity of the buyer was given. Oedipus died four years later, shortly before anyone interested in NPL history thought to query him about it, and his family was of no help. Nor did any of the present-day old-timers of the League know where the collection had gone. I wondered if the issues had been purchased by someone active in the League around 1966 who dropped out a few years later. Looking over old membership lists, I soon identified two candidates, Uncle Rebus (Leonard Greenberg) and Wortgaukler (Craig Melchert). I found Uncle Rebus in November 1982 by the expedient of writing another NPL member of that era whom he had recruited. Wortgaukler took longer, but was tracked down in September 1984 with the aid of Blackstone who remembered that he had some connection with a former NPL member whose son lived in Vermont. Unfortunately, neither man knew anything about the missing Enigmas. In November 1984 I wrote Damac (David McCord), another League member of that era who was a book collector, but he likewise could not help. To this day the issues are still missing. I eventually acquired a complete set back to 1926 by making the high bid of \$1500 on Larry's bound collection in 1989.

Like genealogy, hiking and caving, I was defined by the field of logology. Yet it was more than just another enthusiasm. Certainly since Dmitri Borgmann's death, I was the world's foremost practitioner of this subject, and I believed that logology in general and Word Ways in particular would be the reason for which I would be longest remembered by the world at large. Even though it would never have the social or intellectual impact of a vaccine for AIDS, the reduction of the carbon dioxide buildup in the earth's atmosphere, or contact with extraterrestrial beings,

logology had stimulated the minds or at least brightened the hours of a few hundred people, and would continue in some recognizable form for many years to come.

It was hard for me to contemplate giving up Word Ways, even though I knew that ill health would eventually make this inevitable. Should I turn it over to a successor while there was still time, or rely upon my heirs to make a hasty transfer after I was incapacitated or dead? Two people, Philip Cohen and Eric Albert, volunteered many years ago, but the former became occupied with the monthly newsletter "Graffiti on the Sphinx" for the NPL, and the latter developed carpal tunnel syndrome which made it impossible for him to work long hours at a computer keyboard. For years I played the game of "Whom would I pick?" but almost always my candidates fell short; I could not identify anyone at least twenty years younger who had the breadth of interest combined with a measure of economic security.

By the turn of the century I realized that the future of Word Ways might well be on the Internet. After I gained Internet access via American Online in late 1997, Susan created a web page for me there, but few if any people ever found it. So, assisted by Chris Cole's lawyer, I purchased the domain name wordways.com in 1999, although registration mixups delayed its availability until 2000. However, I hadn't then defined what I would use the website for. Would making Word Ways freely available on line gain enough new aficionados to offset a possible loss in subscriptions? Perhaps the on-line version should be restricted to those authors who welcomed this exposure. In any event one more job requirement had been added for my successor: computer and Internet literacy.

In February 2000 I had an epiphany, realizing that Mike Keith was the most logical successor to come down the pike in a long while. I wrote him by email on March 8 2000, asking whether I could put him on the short list of future editors, and to my surprise and delight he wrote back "I would be pleased and honored...I've been interested in logology since (at least) I was 12 years old and read *Playing With Words* by Shipley...If you would be interested in starting to 'ramp up' the wordways.com Web site now, I could start working in that area at any time. I'm very familiar with HTML and the mechanics of creating Web pages (and also the issues involved in packaging the articles so that the simultaneous creation of the print and electronic versions can be as automated as possible), so I think I could contribute a lot there...Publishing on the Web opens up interesting possibilities for the use of graphics and color." During the late summer of 2000 I at last decided how to use the website. I identified approximately 100 landmark articles from old Word Ways which to me showed what logology could be, and spent considerable time typing those dated before August 1995 into the computer. These I sent via diskette to Mike, who quickly incorporated them, along with an author index of Word Ways articles from 1968 through 1997, onto the website. I also made a first pass at revising a Word Ways topical index which I had first created in the early days of the magazine, and which Chris Cole had urged me to add to the website. Now how could attention be called to this corpus to the potential wordplay enthusiast?

In July 2005 I seriously began the process of finding a successor editor. For the past year I had been bothered by arthritis in my right shoulder, incapacitating me perhaps once a month, and forcing me to contemplate my mortality. Were I suddenly to become unable to continue editing, what would become of the magazine? It might be forced to suspend publication for a year or more, just as Verbatim did when Laurence Urdang quit. Or it might never resume! An orderly transition was far more preferable—even though I hated the idea of giving up the editorship. (*Ross, essay assessor* palindromically recognized this role.)

But finding a new editor wasn't easy. I first approached Mike Keith, who begged off on the grounds that he now needed time to mentor the interests of his teenage daughter, and was also busy with many work and personal projects. "I don't think it would be right to take the helm of the magazine if, as I unfortunately think is the case, I couldn't devote 100% of my heart and soul to it. O.K., well maybe not 100% --that's never feasible, I guess—but a large fraction, at least. And I'm just not sure that's possible for me right now."

I approached Eric Albert (who had expressed willingness in 1999), Chris Cole, and Dan Tilque without success. Chris offered to subsidize Word Ways costs, and proposed Philip Cohen, who had edited a monthly analysis of NPL puzzles, Graffiti on the Sphinx, since 1983. Unsurprisingly, Philip replied that GotS was his prime interest, and confessed that he was unreliable with respect to on-time publication.

In June 2006 Anil (Charles Melton), one of Word Ways' most enthusiastic contributors, came up with an extraordinary offer. Aware that Dave Morice was unable financially to act as editor, he proposed to pay up to \$5000 per year the "excess cost over subscription monies", and to rewrite his will and bequeath to the editor of Word Ways \$50,000 (or \$200,000 if his Dallas sister predeceased him). On the strength of this, I offered Dave the editorship, but he, too, declined, on financial and health grounds: "I am not good at all in administrative duties...Currently it's difficult for me to dig up writing and drawing jobs pay the rent and my government loan that has been dogging me ever since 1972...If I were to take over Word Ways, I would be afraid that that would lead to the end of the mag, and I wouldn't want to have that stress to bear". Actually, I was somewhat relieved, for Dave had been consistently late in getting Kickshaws to me over the years.

So what now? On August 25 I offered the editorship to Jeremiah Farrell, a contributor of high-quality mathematical articles since 1992 (sometimes with his wife Karen). His work as co-organizer of the periodic Gatherings for Gardner proved that he could also handle deadline-sensitive administrative tasks, but I feared that he would refuse on the grounds that this required too much time. But to my great surprise (and considerable relief), he accepted. Jerry was the creator of the Nov 5 1996 NY Times crossword puzzle which had a clue (39 & 43 "Lead story in tomorrow's newspaper") that could be answered either with BOBDOLE ELECTED or CLINTON ELECTED! To this day Will Shortz considers this the greatest crossword puzzle he has ever seen.

Over the next few months, the wisdom of this choice became apparent, culminating in the on-time appearance of the first issue under his aegis in early February 2007. It was a Festschrift in honor of me and Faith, containing a dazzling variety of articles and puzzles based on our names and Word Ways. (The surprise would have been greater had Dave Morice not inadvertently sent me an e-mail meant for Jerry.) It seemed likely that Word Ways might endure awhile longer.

Faith maintained that I would badly miss being editor after 37 years, and to some extent this was true. However, Jerry asked me to stay on as part of an editorial board, and also asked me to contribute a regular column revisiting earlier articles (which I christened "Look Back!"). I deluged him with a cascade of short articles, even doing some new research. All this served to mitigate the pain of withdrawal.

On December 12 2010, I saw myself portrayed by an actor in front of an audience of 35 on a Jersey City stage (The Actors Shakespeare Company at New Jersey City University), the premiere performance of a week-long run there. The 90-minute one-act play, "Logomaniacs" by

Paul Fleischman, consisted of short sketches of 26 wordplay notables, one for each letter of the alphabet, from Walter Abish who wrote *Alphabetical Africa* (“Ages ago, Alex, Allen and Alva arrived at Antibes...”), to Ludwig Zamenhof, the creator of Esperanto. The play also featured Alastair Reid who collected word like sea-shells (“ounce, dice, trice, quartz, quince, sago, serpent, oxygen, nitrogen, denim”), Howard Chace who invented Anguish Languish (“Ladle Rat Rotten Hut”), Ignatius Donnelly who insisted that Francis Bacon was the author of Shakespeare’s plays, Gerges Perec who wrote both the E-less novel *La Disparation* and its E-full counterpart *Les Revenentes*, Colonel Robert McCormick who promoted spelling reform in the Chicago Tribune, and Arthur Wynne who constructed the first crossword in 1913. To smooth the narrative, Fleischman introduced related word people in adjacent letters, such as Perec followed by fellow Oulipian Queneau who created *One Hundred Thousand Billion Poems*, and Wynne followed by cryptic crossword constructor Ximenes. He followed me with Word Ways contributors Darryl Francis and Jeff Grant, but neither were represented by on-stage actors, the only two not so honored.

To economize, Fleischman employed only four actors, who rapidly changed costumes between vignettes. He had a challenging task, that of making the arcane subject of wordplay palatable to a general audience, which he solved by mounting a fast-moving production with melodramatic touches such as a circus barker cracking a whip. Names and examples illustrating particular types of wordplay were projected on a screen at the rear of the stage, and the whole was accompanied by appropriate music, from Sousa to easy listening. It must have been particularly difficult for Fleischman to choose audience-friendly examples of hardcore logology from *Making the Alphabet Dance*. He settled on Letter Shifts (*add to bee, ice to keg, fusion to layout*), augmented by Isograms (Melvin Schwarzkopf), Scrambled Alphabets designed to maximize (or minimize) the number of four-letter Pocket Dictionary words in alphabetic order (*abet, bevy, chin...*), and Special Transpositions consisting of first names converted into last names (Gary Gray, Eric Rice, Ronald Arnold). In a preliminary version of the play, he included Self-Enumerating Sentences, from the pedestrian “This sentence has five words” to Lee Sallows’s remarkable computer-generated sentence specifying the number of a’s, b’s, c’s etc. in it.

Andy Warhol once said that everyone in the future will enjoy fifteen minutes of fame. I got less than ten...but few people ever witness themselves portrayed on stage by a professional actor!