

Master of Recreational Mathematics — and Much More An Interview with Martin Gardner

By Don Albers

On October 21, Martin Gardner celebrated his ninetieth birthday. For 25 of his 90 years, Gardner wrote the monthly “Mathematical Games” column for *Scientific American*. His columns have inspired thousands of readers to learn more about the mathematics that he loved to explore and explain. Among his column correspondents were several distinguished mathematicians and scientists, including John Horton Conway, Persi Diaconis, Ron Graham, Douglas Hofstadter, Richard Guy, Don Knuth, Sol Golomb, and Roger Penrose.

Gardner’s columns have earned him a place of honor in the mathematical community, which has given him many awards. But he has always declined invi-

he has produced more than 60 books, most still in print; many have been bestsellers. His *Annotated Alice* has sold over a million copies, and the 15 volumes collecting his “Mathematical Games” columns have gone through several printings. All 15 volumes have been digitized and will soon be published by the MAA on a single CD entitled *Martin Gardner’s Mathematical Games*.

In his ninetieth year, he has returned to Oklahoma, where he was born. He is in good health and full of energy. We look forward to more from him as he begins his second 90 years. What follows is a small portion of an interview done at Gardner’s home in Hendersonville, NC in the fall of 1990 and spring of 1991.

a few local magicians in Tulsa, Logan Waite and Wabash Hughes, who worked for the Wabash Railroad.

DA: At what age did this occur?

MG: I was a high school student at the time. I’ve never performed magic; it’s just been a hobby. The only time I got paid for doing magic was when I was a student at The University of Chicago; I used to work at the Marshall Field’s department store during the Christmas season demonstrating Gilbert magic sets. I learned a lot from the experience. That was the first time I realized that you’re really not doing a magic trick well until you’ve done it in front of an audience



Martin and his younger brother Jim, 1920.

tations to accept awards in person, on the grounds that he is not a mathematician. “I’m strictly a journalist,” he insists. “I just write about what other people are doing in the field.” His modesty is admirable, but we insist that he is far more than a journalist.

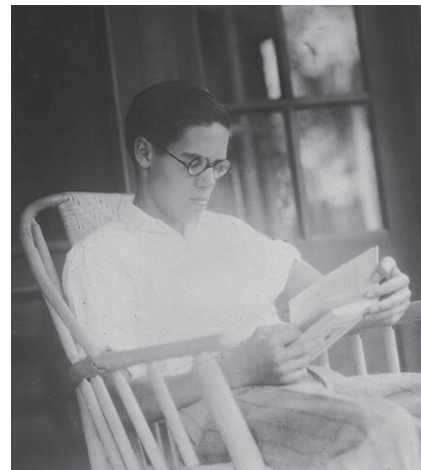
In addition to his massive contributions to mathematics, Gardner has written about magic, philosophy, literature, and pseudoscience. Over his first ninety years,



Martin at age 10, 1925.

Don Albers: As a high school student you were already writing articles for *The Sphinx*, a magazine devoted to magic. Does your interest in magic go back to your father?

Martin Gardner: Magic wasn’t a special hobby of his, but he did show me some magic tricks when I was a little boy. I learned my first tricks from him, in particular one with a knife and little pieces of paper on it. I then got acquainted with



Martin reading on his front porch at age 15, 1929

about a hundred times. Then it becomes second nature, and you know what to say.

DA: What are the elements of a successful magic trick?

MG: The most important thing is to startle people, and have them wonder how it’s done. Close-up magic that you do on a table right in front of people is very different from the stage illusions that David Copperfield does. It’s close-up magic that most intrigues me, espe-

cially when it has a mathematical flavor. I did a book on mathematical tricks that has, for example, a chapter on topological tricks. I did two massive books for the magic profession: *The Encyclopedia of Impromptu Magic* and *Martin Gardner Presents*. The first book covers tricks that don't require any special equipment. A lot of them are just jokes and gags of the type 'bet you can't do this.'

DA: Your book *Mathematics, Magic, and Mystery* has been a bestseller for many years.

MG: I waste a lot of time on magic. Dai Vernon was one of the great inventors of magic. He was a great influence on Persi Diaconis. Persi traveled with Dai for a long time. I knew Vernon very well. I knew Persi when he was a student at NYU. You probably heard the story how he got into Harvard.

DA: As I recall, he gave you some credit for writing a letter of recommendation to Fred Mosteller, the Harvard statistician.

MG: Mosteller is a magic buff. When Persi said he wanted to get into Harvard, I wrote to Fred and said that Persi can do the best bottom deal and second deal of anybody I know, and that got him into Harvard. I talked to Fred on the phone about it and he said, "Is he willing to major in statistics?" And Persi said sure he'd major in statistics if that would get him into Harvard. So he went up to Harvard, and they had a session together, maybe doing card tricks. Mosteller got him into Harvard.

DA: What did your mother do?

MG: She was a kindergarten teacher before marriage, but then became a housewife, caring for three children. Her hobby was painting, and I have a number of her paintings hanging in the house. Both of my parents lived into their nineties. I had a brother and sister, both younger, who are deceased.

I learned to read before I went to school. My mother read *The Wizard of Oz* to me when I was a little boy, and I looked over her shoulder as she read it. I learned how

to read that way. It was very embarrassing when I was in first grade, because the teacher would hold up cards that said 'cat' and 'dog' and I was always the first to call out the word. She had to tell me to shut



Gardner as a navy sailor, 1941.



Martin Gardner with the Mad Hatter in Central Park, New York City.

up, to give the other children a chance to learn how to read.

DA: As a kid, do you remember other strong interests in addition to magic?

MG: I was very good at math in high school. In fact, it and physics were the only subjects in which I got good grades. I was bored to death by the other classes. I flunked a class in Latin and had to take it over. I just don't have a good ear for languages.

DA: You got your B.A. in 1936, then worked briefly for the *Tulsa Tribune* as a reporter, and then came back to The University of Chicago to the PR office writing news releases (primarily science releases), and took a graduate course from Carnap. What else did you do until the outbreak of World War II?

MG: I had various jobs. I worked as a case worker for the Chicago Relief Administration, I had to visit 140 families regularly in what was called the Black Belt. I also had several odd jobs: waiter, soda jerk, etc. Remember, this was at the height of the Great Depression.

DA: In December of 1941, the U.S. entered World War II and you enlisted in the Navy.

MG: I ended up serving on DE 134, a destroyer escort, in the Atlantic. I was miserably seasick for about three days, and then I was never seasick again. I couldn't wait for the war to end, but later I looked back at it as a rather pleasurable time of my life. You're on a ship, you make friends with your shipmates, you got liberties now and then, and you didn't have to worry about anything.

I've had migraine headaches all my life that were fairly severe when I was in high school. When I enlisted in the Navy, I did not list my migraines because I was afraid they wouldn't take me. I feared that I might develop migraine headaches during battle situations. We were part of a so-called "killer group" of six destroyers looking for German submarines. During my four years in the Navy, I never had a migraine headache. I'm convinced that they're associated with periods of anxiety. When you're in the Navy, you don't worry about what you're going to do tomorrow, what tie to put on, etc. You just follow orders. In a way, you have a big sense of freedom. Otherwise, I have no other explanation.



Martin Gardner with his brother Jim and sister Judith.



Gardner with his wife Charlotte, and their two sons Jim, left, and Tom.



Martin and grandson Martin.

DA: At the end of the war, you promptly went back to Chicago.

MG: Yes, I went back, and I could have had my old job back in the public relations office at The University of Chicago because there was an understanding that if you enlisted in the service you could get your old job back. But the one reason I didn't go back to the PR office was that I sold a story, my first sale, to *Esquire*. The title of the story, "The Horse on the Escalator," came from a joke going around at the time about a man who entered Marshall Fields department store on a horse, and the elevator operator told him he couldn't take the horse on the elevator. And he said, "But lady, he gets sick on the escalator!" It was a shaggy dog joke about a horse. The story is about a man who collected horse jokes, and his wife didn't think any of them were funny, but she laughed heartily every time he told one to conceal the fact. So that was my first story. I decided that maybe I could make a living as a freelance writer, and I very quickly sold *Esquire* a second story, and that was the "No-Sided Professor," about topology.

DA: That had to give you a lot of confidence, helping to convince you that you could earn a living as a writer.

MG: That's right, but *Esquire* changed editors after I had sold them several stories. The new editor had a different policy, and he didn't care for the kind of stories I was writing. So I moved to New

York City, because for writers that's where all the action is. I had a friend who worked for Parents' Institute, and who was in charge of their periodicals for children. They were starting a new magazine called *Humpty Dumpty*, and were looking for activity features, where you fold the page or stick something through the page, or cut; where you destroy the page. So he hired me to do the activity features for *Humpty Dumpty*, as well as a short story for every issue and a poem of moral advice.

DA: Your work with children's magazines went up to about 1956. By 1957 you were at *Scientific American*. So there was not much of a hiatus between *Humpty Dumpty* and *Scientific American*.

MG: No, I stopped working for *Humpty Dumpty* to start "Mathematical Games" at *Scientific American*. I couldn't do both. It started with the sale in December 1956, of an article on Hexaflexagons. That was not a column, but that led to the column. When Gerry Piel, the publisher of *Scientific American*, called me and suggested the column. That was when I resigned from Parents.

DA: A lot of people are astonished that anybody could turn out one of those columns on mathematical games and recreations every single month for *Scientific American*.

MG: Perhaps they don't realize I had no other job. I'm not a professional math-

ematician who has to teach a course in mathematics, and then write. To me, it's hard to imagine how a professional mathematician would have time to even write a book. I had nothing else to do, except research for those columns, and write them up.

DA: Most people that I've ever talked to about your *Scientific American* columns know that it was your job, but they're still awed by the fact that you turned out something really sparkling every month. It's one thing to write something every month, but that doesn't mean that it's going to be inspirational or great fun to read each time.

MG: I miss doing those columns, they were a lot of fun, and I met many fascinating people while doing them. Once the column got started I began hearing from people like Sol Golomb and John Conway, who were really doing creative work that had a recreational flavor. That kept the column going. It became much more interesting after I began getting feedback from people like Conway, Ron Graham, Don Knuth, and many others.

Probably my most famous column was the one in which I introduced Conway's game of *Life*. Conway had no idea when he showed it to me that it was going to take off the way it did. He came out on a visit, and he asked me if I had a Go board. I did have one, and we played *Life* on the Go board. He had about 50 other things to talk about besides that. I thought that

Life was wonderful — a fascinating computer game. When I did the first column on *Life*, it really took off. There was even an article in *Time* magazine about it.

DA: Can you tell me a little bit more about how you actually approach writing? You previously said something about how you did your monthly columns over a long period of time. You write about many other things as well. Do you have a different style or a different mode when you write about pseudoscience?

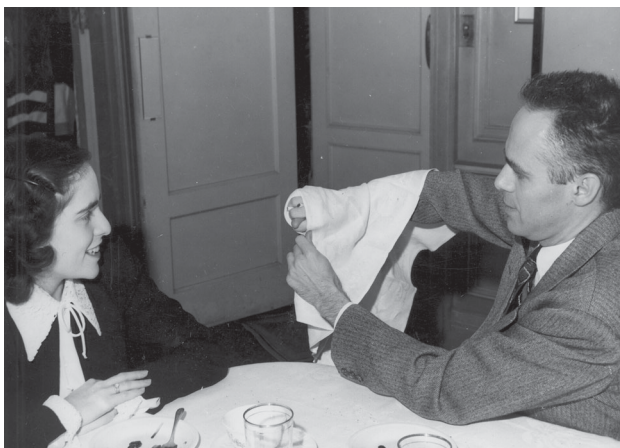
MG: I don't think so. I've never worried about style. I just write as clearly as I can, and I suppose it's improved over the years. I get interested in a topic, and I do as much research as I can on it. I have my library of working tools, so I can do a lot of research right here. I usually rough out the topic first, just list all the things that I have to say, and then I sit down and try to put it together on the typewriter. It's all kind of a sequence that is hard to explain. It comes easy for me, I enjoy writing and I don't suffer from writer's block, where I sit and wonder for an hour how I'm going to phrase the opening sentence.

DA: Which of your more than sixty books is in some sense a favorite?

MG: I think my *Whys of a Philosophical Scrivener* is my favorite because it is a detailed account of everything I believe.

DA: Let's move back to math for a minute. You've lived long enough now to see a lot of really interesting mathematical ideas hit the scene, and there are also some really beautiful ideas that were here long before you were on the scene. First, during your own lifetime, what ideas, what discoveries just kind of knocked your socks off?

MG: Well, I think the most interesting developments are mainly in mathematical



Gardner doing some table magic

Martin Gardner regrets that it is impossible for him to:

1. Evaluate:
Angle trisections
Circle squarings
Proofs of Fermat's last theorem
Proofs of the four-color theorem
Roulette systems
2. Give advice on, or supply references for, high school science or math projects.
3. Inscribe books for strangers.
4. Give lectures, or appear on radio or TV shows.
5. Attend cocktail parties.
6. Make trips to Manhattan except under extreme provocation.
7. Donate books to libraries.
8. Provide answers to old puzzles.
9. Prepare material on speculation for toy companies or advertising agencies.
10. Put the reader in touch with Dr. Matrix.

Martin Gardner's form letter, often sent as a response to requests he received from readers.

physics, and in particular the development of superstring theory. That came as a complete surprise to me. It's a beautiful theory of particles, and it may or may not be true, but it's the hottest thing in town now in particle physics. It opens up the possibility that higher dimensions are not just artifacts but actually real.

DA: You've read a lot of contemporary material, and you've read a lot by those who have been gone a long time. Are there any of those departed people that you'd like to sit down with over dinner, or sit down here in your library and chat with them?

MG: I'd love to chat with Gödel for example. He had some strange cosmological views, and I'd like to talk to him about that, about time travel into the past. I never could quite understand that. And of course he was a dedicated Platonist. He thought all of mathematics was out there, including the transfinite numbers. I'd enjoy talking to him about that. Of course I'd love to talk with Einstein and Neils Bohr. Among puzzle makers, I'd most want to talk with Henry Dudeney and Sam Loyd. I also would enjoy talking to Bertrand Russell. He's one of my heroes.

DA: Here's an equally easy question for you. Once you've departed this life, let's suppose you had an opportunity to come back in a hundred years. What questions would you most want to know the answers to that might have been developed during that time?

MG: I guess I'd be interested to know if various famous unsolved problems had been solved, such as the Goldbach Conjecture. But I don't have any great desire to come back and learn what modern mathematics is up to. You're giving me credit for being more of a mathematician than I really am. I'm strictly a journalist. I just write about what other people are doing in the field.

Thanks to Jim Gardner for supplying the photos that accompany this interview.