

“If I asked you to invite your brother’s father-in-law, your father’s brother-in-law, your brother-in-law’s father, and your father-in-law’s brother to this tea party, how many guests would there be?”

# A Conversation with Lewis Carroll

Ezra Brown  
Virginia Tech

I was sitting in our garden contemplating a healthy stand of Tiger Lilies, when a strangely familiar figure appeared and walked along with me. We had this conversation:

**Charles Lutwidge Dodgson (Lewis Carroll):** Of course they can talk. You don’t think I made that up, do you?

**Math Horizons:** Ahh, the Reverend Dodgson, I take it?

**LC:** You may take it or leave it: it’s all the same to me. Pertinacity, that’s what I say: pertinacity.

**MH:** Which means...

**LC:** ...that we should stop talking and have refreshments. Is there any tea?

**MH:** Sir, Mathematics and Literature is a theme I’d like to address...

**LC:** But you are already dressed.

**MH:** ...since the Alice books are two prime examples of...

**LC:** Yes, yes, 2 is a prime—I wasn’t born yesterday, you know.

**MH:** (loudly) ...OF MATHEMATICS FINDING ITS WAY into literature, but there don’t seem to be many others—or am I wrong?

**LC:** That’s right, you’re wrong! In fact, here is a quotation from a work by a Nobel Laureate who wrote about the moon, a pearl and a pony, and was not otherwise known for anything mathematical. Can you identify it? “He was an arithmetician, not a mathematician. None of the music, humor, or mysticism of Higher Mathematics ever entered his head.” And if you haven’t read Mr. Gardner’s penetrating concordance to my books, then you are a dunce. That book is a gem, and speaking of gems, I see that a gem of a tea is waiting on the table by your lovely pond. We can have a small tea party...which reminds me: If I asked you to invite your brother’s father-in-

law, your father’s brother-in-law, your brother-in-law’s father, and your father-in-law’s brother to this tea party, how many guests would there be?

**MH:** Hmm...didn’t this question appear in “A Tangled Tale?”

**LC:** You are well read, Young Man; in fact, it is in Knot II. Shall we let your readers figure it out for themselves?

**MH:** Good idea, and I’d like to ask you about some of your other writings.

**LC:** Of course. How else will you ever learn anything?

**MH:** Let us begin with the Pillow-Problems, which I have always enjoyed.

**LC:** Oh, those Pillow-Problems! They were composed at various times between January 1872 and March 1891, and it happened this way. Most evenings I slept like a babe, but sometimes I was not sleepy at all.

**MH:** Wakeful, you might say?

**LC:** Wakeful, I *did* say. On such evenings, I amused myself by thinking up mathematics problems with odd little twists to them, then solving them in my head. Many of these are enough to solve even with pencil and paper, but I worked every one of them out to the last detail before ever writing them down. I should say that they were never intended for experts, such as the young people who excel at your Putnam Examinations; but rather for mathematicians of average skill who, by seeing what can be done with a little practice, will find comfort and ...

**MH:** ...and confidence?

**LC:** Exactly so, Young Man: exactly so! I especially enjoyed composing the problems on chances, those problems with bags and counters. Here is one of my favorites, which you may already know:



Cartoon by John Johnson

Problem 41: My friend brings me a bag containing four counters, each of which is either black or white. He bids me draw two, both of which prove to be white. He then says, “I meant to tell you, before you began, that there was at least *one* white counter in the bag. However, you know it now, without my telling you. Draw again.” (1) What is now my chance of drawing white? (2) What would it have been, if he had not spoken? Now, many people would say that the answers are automatically the same. Are they right or wrong? There is a similar Chances problem currently in vogue that caused quite a stir a few years ago.

**MH:** The Monty Hall Problem?

**LC:** Yes, that is the one. Monty Hall hides a valuable object behind one of three doors, and nothing is behind the other two. You choose one of the doors. Mr. Hall opens a different door with nothing behind it. The question is: do you improve your chances by changing your choice? It is obvious that you should switch, but it is true that the similarity is striking: does the introduction of additional information change the answer? It depends, doesn't it?

**MH:** My personal favorite is the very last Pillow-Problem...

**LC:** Ahh, yes, the Problem in “Transcendental Probabilities”—a subject in which, as I wrote in the Introduction to the Pillow-Problems, very little had been done (at the time) by even the most enterprising of mathematical explorers! Here is the problem:

Problem 72: A bag contains two counters, as to which nothing is known except that each is either black or white. Ascertain their colors without taking them out of the bag. I provide both an answer and a detailed explanation. Of course, many readers will complain that the puzzle is paradoxical, but as I said, Is Not Life A Paradox? I should point out that there are other such puzzles expounded in excellent books by your Mr.

Gardner (especially “The Unexpected Hanging”) and your Professor Smullyan (especially “Alice in Puzzle Land”). How Quaint The Ways Of Paradox! More research, that's what I say!

**MH:** Speaking of research, tell me about your one research paper.

**LC:** Ahh, yes, “Condensation of Determinants, Being a New and Brief Method for Computing their Arithmetic Values.” Oddly enough, Young Man, there is quite a nice work on Condensation of Determinants somewhere else in this magazine, and I encourage your readers to find it and study it.

**MH:** What has been your biggest surprise?

**LC:** What a tremendously easy question you ask, Young Man. I never anticipated the extraordinary extent of *Jabberwocky's* popularity. Do you realize that it has been translated into Afrikaans, Catalan, Choctaw, Czech, Danish, Dutch, Esperanto, Estonian, French, Frisian, German, Greek, Hebrew, Italian, Japanese, Jerriais (language of the Island of Jersey), Klingon, Latin, Norwegian, Polish, Portuguese, Romanian, Russian, Slovak, Spanish, Swedish, Welsh, and Yiddish? And by the way: what is Klingon?

**MH:** It's a language spoken by ... oh, never mind.

**LC:** It was all a bit of a lark, you see. I wrote it for the amusement of my friends and family, but mainly for myself. You probably want to know where the words came from. Young Man, I simply made many of them up out of my own head. A young woman named Maud Standen wrote me and asked about the words, and here's what I said: “I am afraid I can't explain ‘vorpall blade’ for you—nor yet ‘tulgey wood’, but I did make an explanation once for ‘uffish thought’! It seemed to suggest a state of mind when the voice is gruffish, the manner roughish, and the temper huffish. Then again, as to ‘burble’, if you take the three verbs bleat, murmur, and warble,

then select the bits I have underlined, it certainly makes ‘burble’, though I am afraid I can’t distinctly remember having made it in that way.”

**MH:** Many people have noted the rather dark tone of the Alice books. Here are two novels populated with talking birds, animals, eggs, cards, chess pieces, and some very unpleasant characters. Would you settle one of the questions of the ages for us, namely, “What were your intentions when you wrote these marvelous books?”

**LC:** What? Answer *that* question for once and for all and deprive thousands of readers of the joy and pleasure of spilling barrels of ink—or perhaps electrons?—in writing their own interpretations? Absolutely not.

**MH:** Who is your favorite character in the Alice stories?

**LC:** Why, Alice, of course.

**MH:** My apologies for asking, Sir, but people have wondered about your interest in children...especially little girls, and ...

**LC:** (sighing) Yes, Young Man, I have heard it all before, and my intentions were never less than completely honorable. I was...how did that man Freud put it? Yes, an introvert. I was eccentric, perhaps the epitome of the Eccentric English College Don. But I was not a monster, and my final words on all of that echo those of the dying Newton. You know those

words. But I must leave you now, Young Man: late for class, you know.

**MH:** Class? You are in school?

**LC:** Not exactly. Having been only a mediocre mathematician in life, it seemed appropriate to learn more about the subject at a deeper level, so I am studying with two of the best teachers, Karl Weierstrass and George Pólya.

**MH:** Before you leave, do you have any words of advice or wisdom for our readers?

**LC:** Yes, it seems that young readers are not introduced to Alice and her adventures as often as in times gone by. So, here’s my advice: read the Alice books! As for wisdom, I would say, “Rejoice in your love of mathematics!”

Now, I must go.

And he disappeared...or perhaps, like the Red Queen, he ran away quickly.

Which do you think it was? ■

### Suggested Reading

Eleanor Graham, Lewis Carroll and the Writing of *Through The Looking Glass*, Introduction to *Through The Looking Glass in Alice’s Adventures in Wonderland/Through The Looking Glass*, Puffin Books: Great Britain, 1981.



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Dr. Keng Deng, Graduate Coordinator  
Department of Mathematics  
University of Louisiana at Lafayette  
Lafayette, Louisiana 70504-1010

Telephone: (337) 482-5297  
E-mail: [math@louisiana.edu](mailto:math@louisiana.edu)  
Fax: (337) 482-5346  
Web Page: <http://www.louisiana.edu/math>