

# Laugh and Learn with John

**777 Mathematical Conversation Starters.** By John dePillis, *Mathematical Association of America, Washington, DC, 2002, 344 pages, \$37.95 (paperback).*

What have we here? John dePillis has put together a marvelous anthology of 777 clips (designated [1],[2], . . . ,[777]), for the most part about mathematics and mathematicians in the form of poems, limericks, paradoxes, puns, parodies, proofs, satires, biographical and historical snippets, moralistic, philosophical and didactic principles.

## BOOK REVIEW

By Philip J. Davis

It is a honey of a book. It is *polytopic*: my coinage for “appropriate for many locations.” It will keep well on your night table, on top of the keyboard of your PC as you have a brown bag lunch, in your backpack as you fly to a conference in Laramie, Wyoming, and—dare I say it?—in your bathroom.

It is *polytelic*: my coinage for “serves many functions and purposes.” It can be used to amuse. It can teach you morals, as well as philosophy of science and of mathematics. It is an excel-

lent Xmas present for graduate students to give their thesis advisers (or vice versa). It is a gold mine for quips for after-dinner speeches. College presidents should consult it before making their decennial site visits to their math departments.

*777 Mathematical Conversation Starters* could relieve mathematical melancholy better than Prozac. It even poses unsolved mathematical problems that, with high probability, neither you nor the science reporters for *The New York Times* have heard about. Example: Did you know that at least one of the two numbers  $e + \pi$  and  $e \times \pi$  must be transcendental, and that as yet no one knows which it is [741]? This will immediately make you ponder why certain hard problems are notorious while others are not.

DePillis has quoted a hundred or so (I haven’t counted them) authors, running from Abel to Zermelo, including yours truly. To this superior trove of quotes, de Pillis has added his own comments, discoveries, stories, ironies, proofs, mini-lectures and sermonettes—all clearly marked as his.

If this were not enough to bring me to say “my cup of pleasure runneth over,” our author, who is a *polymath* (dictionary’s definition: a person of great or varied learning), a person who is simultaneously a mathematician, an engineer, a professor at UC Riverside, a licensed flier, and a professional artist, has amplified the quotes with more than a hundred of his own cartoons. The beautifully drawn, satirical cartoons are funny quite independently of their punch lines. His book is truly *polygraphic*, meaning, in my Humpty Dumpty sense, that his art drives home more of the truth than is possible with words alone.

I know a quotation from Samuel Johnson that I pull out on appropriate occasions:

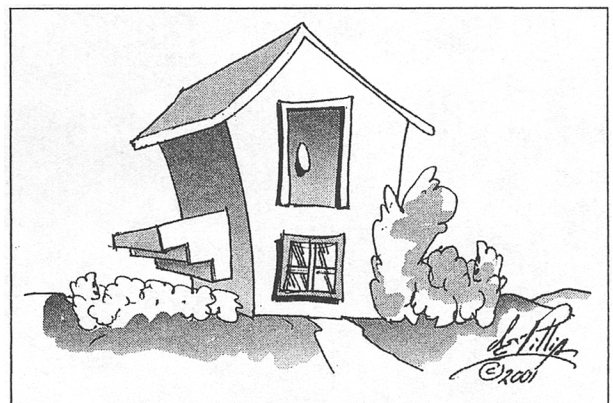
“I love anecdotes . . . (but) if a man is to wait till he weaves anecdotes into a system, we may be long in getting them, and get but few, in comparison of what we might get.”—In Boswell’s *A Tour of the Hebrides*.

In opposition to a Johnsonian chaos, de Pillis has arranged his items by subject, numbered, cross-referenced, doubly indexed, and provided them with a user’s guide up front that is much more friendly than the one you get when you buy your new PC.

In [727], you will learn what Henry Kissinger considers the advantage of fame. In [90] you will discover how Thomas Kuhn reacted when one reader pointed out that he’d used the word “paradigm”—that currently omnipresent word made famous by Kuhn—in 22 different senses. In [278], Richard Hamming tells us whether the distinction between Riemann and Lebesgue integration affects the flight of an airplane.

Does mathematics have anything to do with common sense? Check out [136] to learn what Edward Kasner’s opinion is. Check out [320] if you want to know what Morris Kline thought of logic. Would you like a poor man’s version of the Banach–Tarski paradox for your class in real variables? You’ll find it in [55]. You may be shocked to read in [311] that mathematical illiteracy strikes eight out of five people. I love Segall’s Law [127], to the effect that more is less: “A man with one watch knows what time it is; a man with two watches is never sure.”

In [189], de Pillis points out that the famous Ockham’s Razor was around before Ockham: The *Encyclopedia Bri-tannica* says that “the principle of Ockham’s Razor was, in fact, invoked before Ockham by Durand de Saint-Pourçain (1270–1334), a French Dominican theologian and philosopher of ‘dubious orthodoxy.’” So much, then, for ascriptions like “Birkhoff’s theorem” on



*It is virtually impossible to get anything exactly right.*  
—Carl de Boer, University of Wisconsin

doubly stochastic matrices, which was scooped some years before by Koenigs.

Do you hate puns? Then suffer [235]:

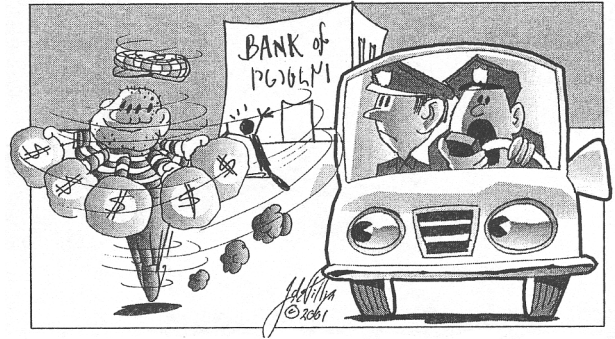
Q: "What do you find in a geometric junkyard?"

A: "A rectangle." (Groans!)

I'd like to offer an oldie for what I hope will be de Pillis's forthcoming enlarged and improved edition (or as we classicists like to say, his "erweiterte und verbesserte Ausgabe"). It comes to me from Charles Strauss:

Q: What is purple and commutes?

A: An abelian grape.



"It's the Heisenberg Bandit, Chief. All I can tell you is he's going at 2500 rpm, but I can't tell you exactly where he is!"

Fun is certainly fun, but there are many things contained among the 777 that deserve serious mulling over. Consider [735], a clip from Alfred North Whitehead's *An Introduction to Mathematics*:

"It is a profoundly erroneous truism, repeated by all copy-books and by eminent people when they are making speeches, that we should cultivate the habit of thinking of what we are doing. The precise opposite is the case. Civilization advances by extending the number of important operations which we can perform without thinking about them."

Niels Bohr said that "An ordinary truth is one whose opposite is false; a great truth is one whose opposite is also true." As much as I admire Whitehead, I take umbrage at the above paragraph. I happen to think that what Whitehead has written here is a great truth—that its opposite is also true.

I will sign off with [561]. I'd never heard it before and it really broke me up: "Heisenberg was here . . . perhaps."

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