

## BAYLEY'S CLAIMS ABOUT "ALICE"

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Melanie Bayley, a doctoral candidate in Victorian literature, has recently authored two articles (References 1 and 2) claiming that Lewis Carroll's "Alice in Wonderland" was Charles Dodgson's attempt to satirize the "new mathematics" of his day. We disagree completely with her thesis. Some of Bayley's specifics:

- (1) The episode from "Alice" of "Pig and Pepper" according to Bayley "parodies the principle of continuity, a bizarre concept from projective geometry which was introduced in the mid-19<sup>th</sup> century from France. . . . This principle involves the idea that one shape can bend and stretch into another. . . a circle is the same as an ellipse or a parabola (the curve of the Cheshire cat's grin)."
- (2) Alice's exchange with the Caterpillar, says Bayley "parodies the first purely symbolic system of algebra, proposed in the mid-19<sup>th</sup> century by Augustus DeMorgan, a London math professor."
- (3) The Mad Tea Party claims Bayley "should be read t-party with t being the mathematical symbol for time" and "Dodgson has the Hatter, the Hare and the Dormouse stuck going round and round the tea table to reflect the way in which Hamilton used what he called quaternions."

The vast Carrollian scholarship still continues. Martin Gardner had added a new More Annotated Alice (Reference 3) in 1990 to his popular and highly acclaimed earlier editions and John Fisher, a BBC TV producer and magician, edited a collection of Carrollian mathematics, puzzles and games gleaned from the diaries and letters of Dodgson in 1973 (Reference 4). Fisher wrote there what we consider a telling Afterword: "This volume has been an attempt to bring forward some of the magic and fun of Lewis Carroll (that has been) smothered by the spate of serious criticism and analysis of the author and his work that has gushed forth in recent years. Academics, often earnestly seizing upon the Alice books as a coat-hanger for their own fantasies, have variously interpreted Carroll's representation of Alice Liddell as pastoral swain and phallic symbol, as Jungian anima and the first acid-head in children's literature; have laid bare the books themselves as allegories of philosophical systems and Darwinian evolution, of the Oxford Movement and Victorian toilet training."

Several months ago we decided to let two old friends, both expert on "Alice" to weigh in on Bayley's thesis. Exact copies of their replies follow.

### References:

- (1) Bayley, Melanie. "Alice's Adventures in Algebra: Wonderland solved, *New Scientist* (16, Dec. 2009)
- (2) \_\_\_\_\_ . "Algebra in Wonderland, *New York Times*, March 7, 2010.
- (3) Gardner, Martin. More Annotated Alice, 1990, Random House.
- (4) Fisher, John. The Magic of Lewis Carroll, 1973, Bramhall House.

## REPLIES TO MELANIE BAYLEY

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3/17/10

Dear Jerry:

I agree that Bayley's piece about the ~~Alice~~ <sup>Alice</sup> movie was filled with dubious assertions. Her strangest remark was that the parabola is topologically the same as a circle. Now it's true that a parabola is an ellipse with its foci an infinite distance apart, so if we consider the parabola a closed curve at infinity, it ~~becomes~~ <sup>is</sup> a closed curve, but I doubt if many mathematicians would ~~consider~~ <sup>think</sup> it topologically equivalent to a closed curve!

Yes, I get the Sunday NY Times so I saw its coverage of the Alice film. ~~Take in~~ <sup>in</sup> its review of the film, two weeks ago, ~~quoted~~ <sup>TIME</sup> from my Annotated Alice! It's hard to believe, but this book, first published 50 years ago, is selling now better than ever before!

I won't get to see the film until it goes on a DVD, I doubt if I will like it.

All best,

Martin

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May 10, 2010

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Dear Jerry,

I've read the Alice articles you sent me. While I have no doubt that Dodgson was always writing somewhat allegorically, the allusions were usually to the people who formed his world at Oxford, rather than to the "modern" mathematics (and mathematicians) of the second half of the 19<sup>th</sup> century. I am totally unconvinced that Dodgson was specifically satirizing the Symbolic Logic of George Boole and Augustus De Morgan, or the Projective Geometry of Poncelet, or the Quaternions of Wm. Rowan Hamilton. This hypothesis seems to me the result of someone reading a brief history of the mathematics of the period (E.T. Bell's *Men of Mathematics* would suffice) and then trying to force an interpretation of scenes in Alice onto this superficial picture of the contemporary mathematics in the British Isles. In contrast, Jonathan Swift's satires in *Gulliver's Travels* (especially the third voyage), or Ibsen's spoof of Norwegian "language reformers" in Act 3 of *Peer Gynt*, are much more explicit and clear-cut.

The one scene in the Alice books that I've always suspected might have reflected Dodgson's reaction to a mathematical issue of the day occurs in *Through the Looking Glass*, in Alice's dialogue with Humpty Dumpty, where H.D. espouses the "formalist" view that one is free to define words any way one wishes, even if these words already had widely accepted meanings. (If Dodgson was hostile to Modern Algebra, he could have objected to his contemporaries giving new and strictly mathematical meanings to such everyday words as *group*, *ring* and *field*.) Whether this was Dodgson's actual intent I find impossible to ascertain with any degree of certainty.

I am looking to see if I retained a copy of my letter to Martin Gardner with my numerous observations supplementing the final edition of the Annotated Alice. (I did find my copy of the book.) Don't hold up any issues of WORD WAYS while I search.

Best regards,



Solomon W. Golomb