

A History of Vector Analysis

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Introduction

Permit me to begin by telling you a little about the history of the book¹ on which this talk² is based. It will help you understand why I am so delighted to be presenting this talk.

On the very day thirty-five years ago when my *History of Vector Analysis* was published, a good friend with the very best intentions helped me put the book in perspective by innocently asking: "Who was Vector?" That question might well have been translated into another: "Why would any sane person be interested in writing such a book?" Moreover, a few months later, one of my students recounted that while standing in the corridor of the Notre Dame Library, he overheard a person expressing utter astonishment and was staring at the title of a book on display in one of the cases. The person was pointing at my book, and asking with amazement: "Who would write a book about that?" It is interesting that the person who asked "Who was Vector?" was trained in the humanities, whereas the person in the library was a graduate student in physics. My student talked to the person in the library, informing him he knew the author and that I appeared to be reasonably sane. These two events may suggest why my next book was a book on the history of ideas of extraterrestrial intelligent life.

My *History of Vector Analysis* did not fare very well with the two people just mentioned, nor did it until now lead to any invitations to speak. The humanities departments at Notre Dame assumed that my subject was too technical, the science and math departments must have assumed that it was not technical enough. In any case, never in the thirty-five intervening years did I ever have occasion to talk on my topic. My response when recently asked to talk about the subject was partly delight—I had always wanted to do this—but also some hesitation—this was a topic I researched nearly forty years ago! But it has turned out to be fun.

Publishing the book has also proved interesting. Although it is not for everyone, the hardbound printing of about 1200 copies gradually nearly sold out, based partly on a number of very favorable reviews. It is rare that academic books sell that many copies. As it was about to go out of print, I hit on the idea of asking Dover whether they would want to take it over. This resulted in its re-publication in 1985 with a new preface updating the bibliography; by that time, there had appeared a few dozen papers and books shedding new light on various aspects of the subject. In the early 1990s, a curious development occurred. Nearly twenty-five years after the book had been published, a research center in Paris (La Maison des Sciences de l'Homme) announced a prize competition for a study on the history of complex and hypercomplex numbers). As you can imagine, I was quite pleased to submit my book. Some months later I was notified that I was being awarded a Jean Scott Prize, which included a check for \$4000. At this point, Dover decided to do a new printing of the book, which includes an announcement of the prize. In any case, the book has now been continuously in print for 35 years and has led to all sorts of interesting letters and exchanges.

¹This talk is based on the following book: Michael J. Crowe, *A History of Vector Analysis: The Evolution of the Idea of a Vectorial System* (Notre Dame, Indiana: University of Notre Dame Press, 1967); paperback edition with a new preface (New York: Dover, 1985); another edition with new introductory material (New York: Dover, 1994). Quotations not fully referenced in this paper are fully referenced in that volume.

²Warm thanks to Professor Richard Davitt of the Department of Mathematics at the University of Louisville for his very helpful comments on drafts of this presentation.

A History Of Vector Analysis

Augustus Herman Gill



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