

# Letters from Errett

Mark Mandelkern

Errett Bishop began a revival of interest in constructive mathematics in 1967, with his monumental treatise *Foundations of Constructive Analysis*. He died prematurely in 1983, leaving others to continue the work. Errett was an enthusiastic supporter for the bit that I attempted, his letters and conversations were inspiring, and he was a loyal and esteemed friend. This document will glean those portions of the correspondence that relate to mathematics, it's role in society, and other topics not too far removed.



Errett Bishop

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1978 November 22, letter from La Jolla, California.

Dear Mark,

Thanks for your letter. . . . You raise a number of substantial issues.

Let me first address the matter of Markov's principle. . . . It is not a question of believing or not believing in Markov's principle. Questions of belief, as questions of truth also, are subordinate to questions of meaning. According to the usual constructive meaning of the terms, I see no possibility of proving Markov's principle.

What I do see, is the possibility of giving a new meaning to some of the standard terms (implication in particular) according to which Markov's principle will be true. The reason for attempting to do this is that there are some indications that it would enable us to obtain a deeper insight into the mathematical material. ... To me, ... constructivism is the mathematical manifestation of the ideas of Krishnamurti. ...

*It is not a question of believing or not believing in Markov's principle. Questions of belief are questions of truth also, are subordinate to questions of meaning. According to the usual meaning of the terms, I see no possibility of proving Markov's principle. What I do see, is the possibility of giving a new meaning to some of the standard terms (implication in particular) according to which Markov's principle will be true. The reason for attempting to do this is that there are some indications that it would enable us to obtain a deeper insight into the mathematical material.*

I just remembered that I forgot to say something about Markov's principle. I was wrong in saying that it follows from certain of Brouwer's ideas. I was misled into saying this by having been working in a system where it combines very congenially with some of Brouwer's ideas. ...

I have always had the deep belief, which I only realized after many conversations with Stan Tennenbaum, who I think also has this belief, that the most basic of all human purposes is *to understand*. That—understanding—is to me the basic human purpose of mathematics. ...

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1978 November, telephone conversation, recalled from notes.

Errett thinks that the theory of iterated implication is still unsatisfactory.

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1979 March 17, telephone conversation, recalled from notes.

Errett mentions two reasons for his beginning to work in constructive mathematics. One was that students in class asked questions about implication and the truth table. The other was that certain surfaces in several complex variables appeared to be constructive in principle.

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1979 October 11, letter from La Jolla.

Dear Mark,

... I have been in bad health for several months, most recently with a virus that I just can't shake off.

There are certain things that one just can't do in this society. I bring this up, because I suspect that giving students anything associated with the name of Marx to read is one of them. They will react emotionally, one way or another. ...

There was a letter in the L. A. Times recently, lamenting the triviality and unimportance of everything in the paper. ... money is all that matters to people in this country. ...

I don't know why I am being so negative in this letter, but I have a conjecture. Things *are* negative, and we spend tremendous amounts of energy trying not to admit to ourselves how negative they are. ...

Warmest regards,  
Errett

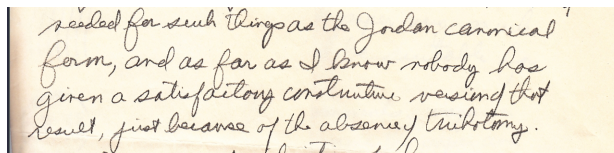
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1980 May 24, telephone conversation, recalled from notes.

Errett mentions that he is looking into Godel implication, and the numerical content of implication.

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1980 July 10, letter from La Jolla.



needed for such things as the Jordan canonical form, and as far as I know nobody has given a satisfactory constructive version of that result, just because of the absence of trichotomy.

... trichotomy is certainly needed for such things as the Jordan canonical form, and as far as I know nobody has given a satisfactory constructive version of that result, just because of the absence of trichotomy. ...

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1980 November 1, telephone conversation, recalled from notes.

Errett describes at length (nearly two hours) his dissatisfaction and worries concerning the country, the electorate, the government, big business, labor, regulations, university controls, lesson plans, etc.

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1980 November 4, letter from La Jolla.

Dear Mark,  
I like your revised version very much.  
... I would like to see it published. ...  
Good luck,  
Errett

[q.v., Constructive mathematics, *Math. Mag.* 58:272-280, 1985.]

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1983 January 14, telephone conversation, recalled from notes.

Errett mentions that he was raised in Kansas; his mother was a nurse, and his father a WWI veteran on an Army pension.

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1983 April 12, last telephone conversation.

Errett appears to be in a good frame of mind.

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