

September 6, 1963

Dr. Melvin Lax  
34 Ashwood Road  
New Providence, New Jersey

Dear Mel:

We were very pleased to receive your card from Sweden. The mathematicians seem to get together all over the world just as the psychopharmacologists. The past year has been a busy one, but within the last few months, I have had a number of programs established. It should not be too long before I can see my way clear to traveling again.

The children are fine and are well established in school. Our biggest difficulty is that Martha has to spend much of her time transporting the children. Despite this, she is enrolling at Washington University and will try to get her Masters in education in two years.

I am writing today because I have a specific mathematical problem. You may recall that I have been interested in measuring brain wave patterns. The first laboratory I established at this Institute was for such recording and with the help of the Washington University Computer Center, have set up a local IBM 1710-1620 system. I am now able to convert the analog signals and to carry out a number of analyses. The first program that was written was for a "period analysis". This program gives us the mean frequency, the % time of specified frequencies and the mean amplitude for epochs of any size. At present, we are working with 1, 2 1/2, and 5 second epochs.

In discussing the analysis of such data with various statisticians, we were recommended to a statistic described in 1941 by Bon Newmann (Annals Math. Statistics, 1941 12: 153, 367). The statistic is the mean square successive difference. In looking through the volume, I found other articles by Young. I wonder if you could help me in the following way? What is the present status of this technique? Do you know of any applications which have been described? Is there any general text that describes the limits of this measure?

It was good to chat with you during your recent visit. I do hope I will have a chance to bring the family East some time this fall and should like to call you then. My best regards to Judy.

Sincerely yours,

Max Fink, M. D.  
Director

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