

July 15, 1991

David Neubauer, M.D.  
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Dear Dr. Neubauer,

It was kind of you to send the reprints and citations on chaos theory and EEG. The reprints arrived fortuitously when I had a visiting scientist/electroencephalographer from Genoa, Dr. Walter Sannita, who has been interested in the theory as another way to analyze EEG signals.

I assume the concept is of interest as a novel way to reduce EEG signals to numeric form for further study (as in pharmaco-EEG, for example) and as a basis for understanding the origins of the EEG. After reading these reprints, I am reminded of the search for other techniques to reduce EEG signals to numeric form: Drohocki integrator, pattern analysis, shape analysis, period analysis, power spectral density are some methods that we have used. After some extensive (and expensive) computer comparisons of three of these methods, we realized that each method is based on a massaging of the original numeric digital signals as presented by the amplifiers, and therefore, one system must be related to every other system; and that they can only be compared on the basis of efficiency, not on 'meaning'.

I cannot contribute thoughts to whether chaos theory is useful for an understanding of the origins of the EEG.

Again, my thanks and my best wishes for success in your studies.

Sincerely yours,

Max Fink, M.D.  
Professor of Psychiatry