

Star Route 140, Redwood City, Calif.

December 2, 1968

Mr. Joshua Lederberg  
San Francisco Chronicle  
5th and Mission  
San Francisco, Calif.

Dear Mr. Lederberg:

In your article on the LSD and chromosomes issue in the Chronicle of Sunday, December 1st, you refer to the study by Cohen, Hirschhorn and Frosch, which appeared in the New England Journal of Medicine last year.

This paper has a number of methodological flaws: although the data are presented commendably completely, there are errors of inference. A re-analysis of the data yields conclusions quite opposite to those of the authors. I quote from the enclosed review of the literature to date, by Dr. Joel Fort and myself (to be published in Psychodelic Review #10)

" A group of 22 LSD users is reported to have a mean of 13.2% chromosomal breakage, compared to a mean of 3.8% in a group of 12 non-users. However, we note that of the 22 'LSD-users' not one had used only LSD; all except 3 had used amphetamines, most had used heroin and many phenothiazines (tranquillizers used to treat mental illness and to counteract LSD). We also find that the original control group contained 14 persons, two of them being eliminated from the data because they had viral infections shortly after the blood sample was taken. These two individuals had a very high rate of chromosomal breakage, and if they are ~~added~~ included in the calculations, the mean for the control group jumps to 18.4% breakage, which is higher than the 'LSD group'. Cohen et al. also give data on a group of 6 persons who had used drugs other than LSD (amphetamines, opiates, phenothiazines). The mean breakage rate of this group (not shown by the authors, but readily calculable from their data) was 12.6%. One must conclude that according to their own data, LSD users do not have a higher rate of chromosomal breaks than anyone who uses common tranquillizers, or stimulants, or who ~~uses~~ has had viral infections."

.. or who uses cyclamate

sweeteners, one may perhaps add.

The whole chromosome issue seems to be a beautiful demonstration of the operations of prejudice in science. Nobody seems to have even bothered to calculate the ~~net~~ chromosomal effects of caffeine, alcohol, or X-ray emitting TV sets that children sit in front of for hours.

I enjoy your column.

Sincerely yours

*Ralph Metzner*

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