16th April, 1956.

Dear Dr. Vandenberg,

I have your interesting letter on identical and fraternal twins, and of course the variance ratio is the thing to use for testing significance. It also provides a measure of the relative importance of hereditary influences. The question you raise, whether all these variables are independently controlled by heredity, is difficult largely because of difficulty of definition. It is to be expected that there will be ordinarily some hundreds of gene differences even between fraternal twins. Of course many of these differences affect more than one of your measurements, and all must be expected to affect some of them. I am sure you have not the material for estimating the mean main features of the estimation. I should prefer Hotelling's principal components to Thurstone's technique, but I imagine neither would be manageable or fruitful. For practise I suppose you will need linear compounds of variates derived from the different tests, and using a reasonable number it is not difficult to build up the most efficient discriminant function which would thereafter be easy to use. However you may be after something different.

Sincerely yours,