October 16, 1941

Dear Hardy,

Thanks for your letter about Mahalanobis, with which I very much agree in principle and in practice. There was just a chance that you knew Mahalanobis. He was at Cambridge I think about the same time as myself, though I never knew him then. We certainly have six supporters promised, so I will only apply to you in an emergency.

In case it interests you, here is a very odd numerical fact, for which also you possibly may see the reason. Any nine numbers have 72 differences, positive or negative, so that if 73 objects are arranged in a ring, it is just possible that 9 could be chosen so that every possible interval occurs only once. What seems to me curious is that a solution is provided by the powers of 2 on modulus 73, there being 9 of these, since $2^9 - 1 = 7.73$.

In a trifling sort of way the same is true of the three powers of 2 mod. 7 in choosing 3 members out of a ring of 7.

Perhaps there is a luminous theory behind all this, but I can now scarcely imagine what led me to try the ~~paths~~ powers of 2 in searching for the 9 positions in a ring of 73.

Yours sincerely,