Say that there are only 3 groups:

where B is the overall number of bins.

When you take log, this is going to become:

When we are comparing different configurations of activity centers, will remain unchanged and therefore will cancel out in the MH ratio. Therefore, we have that:

It is complicated to calculate this quantity because we often get log(0). Define:

Say that we are in the context of MH and that we have old and new sets of q’s. I am going to calculate:

Where

This works because the MH ratio is given by: