Histogram of distances
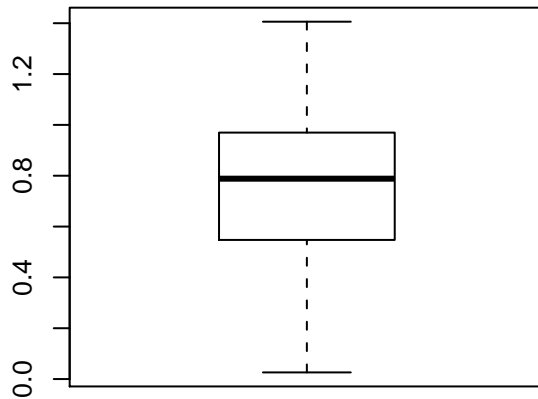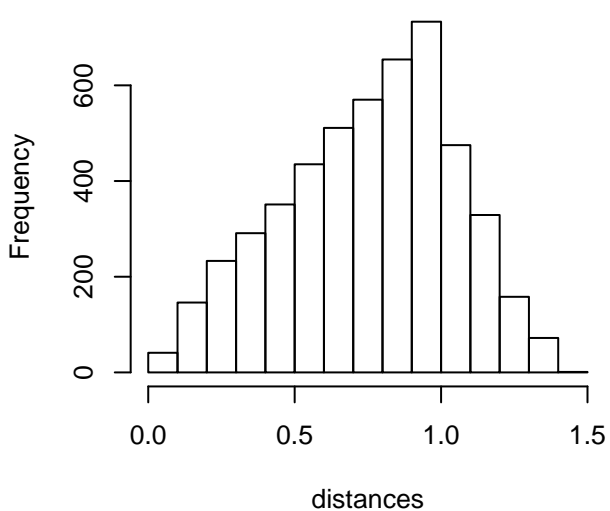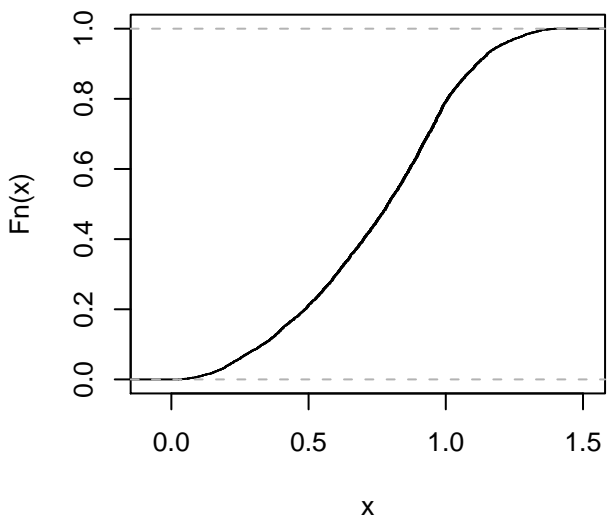
ecdf(distances)

Normal Q−Q Plot