1. **Describe how the posterior predictive distribution is created for mixture models**

This involves drawing samples from each component distribution in the mixture model based on their respective probabilities (weights) and then combining these samples to obtain the posterior predictive distribution.

2. **Describe how the posterior predictive distribution is created in general**

   1. **Draw a sample from the posterior density of θ, i.e., make a random draw from $f(\theta|x)$.**

   2. **Then, pretend, for a moment, that this is the exactly correct value, and draw an random value from $f(z|\theta)$.**

   3. **Repeat steps 1 and 2 many times, typically 1000 or more. Since a different value of θ is used each time, we automatically restore the uncertainty missing when we plug in just a single value, such as x**

3. **Have glance through this and then describe how, if you were doing a regression of on but had some missing values, you could perform a Bayesian analysis without throwing away the rows with missing values in**

   • **Hint: latent variables indicating the subpopulation are competely missing values that we simply treat as paramters to be inferred though posterior analysis... the same sort of thing can be done with missing values in data that need to be imputed... we should just be careful about the MCAR assumption...**

1.Identify missing value; 2. Introduce Latent Variables; 3. Augment the Model; 4. Define Priors; 5. Perform Bayesian Inference; 6. Imputation and Prediction