Let and be the turning angle and step length for observation i from individual j.

In our model, we focus on the logit of the turning angle. More specifically, we assume that and that arises from:

Similarly, we focus on the log of step length. We assume that arises from:

For priors, we assume that:

In relation to , we assume that

#-----------------------------------------------

FCD’s

* For

This implies that:

* For : the FCD will be very similar to that shown above for
* For

This implies that:

* For : the FCD will be very similar to that shown above for
* For

For an existing group:

For a new group, we can integrate out and . More specifically, we assume that:

* For

This implies that