Parallel process (dual/joint process) growth mixture modeling (GMM) can be carried out with each process having its own categorical latent variable (latent class variable) or the two processes sharing one categorical latent variable. The choice depends on the substantive theory and comparison of model fit as judged by BIC.

As a first step, each process should be analyzed separately by GMM. In the next step, the parallel process analysis would typically use one categorical latent variable for each process, say c1 and c2, and correlate them by using Parameterization = Loglinear with the Model statement:

```
%Overall%

c1 WITH c2;
```

This parameterization is discussed on pages 559-560 in the Version 8 User's Guide. With say 2 classes for both c1 and c2, this results in 4 classes for which logits and probabilities will be reported. These probabilities show how strongly c1 and c2 are or are not related. If they are strongly related, a single latent class variable for the two processes might get a better BIC. The separate/marginal probabilities for c1 and c2 are also reported.

In line with User's Guide example 7.14, a model statement is given for c1 and c2 separately to specify which parameters vary with which classes. Assuming that the two processes have continuous outcomes y1-y4 and x1-x2, the Model command for the parallel process GMM is as follows.

```
MODEL:

        %OVERALL%

        c1 WITH c2;

   i1 s1 | y1@0 y2@1 y3@2 y4@3;

   i2 s2 | x1@0 x2@1 x3@2 x4@3;

MODEL c1:

        %c1#1%

        [i1 s1];

        %c1#2%

        [i1 s1];

MODEL c2:

        %c2#1%

        [i2 s2];
```

%c2#2%

[i2 s2];

OUTPUT: TECH1 TECH8;

The two categorical latent variables can also be regressed on covariates and distal outcomes can also be included as a function of the latent class variables and covariates.