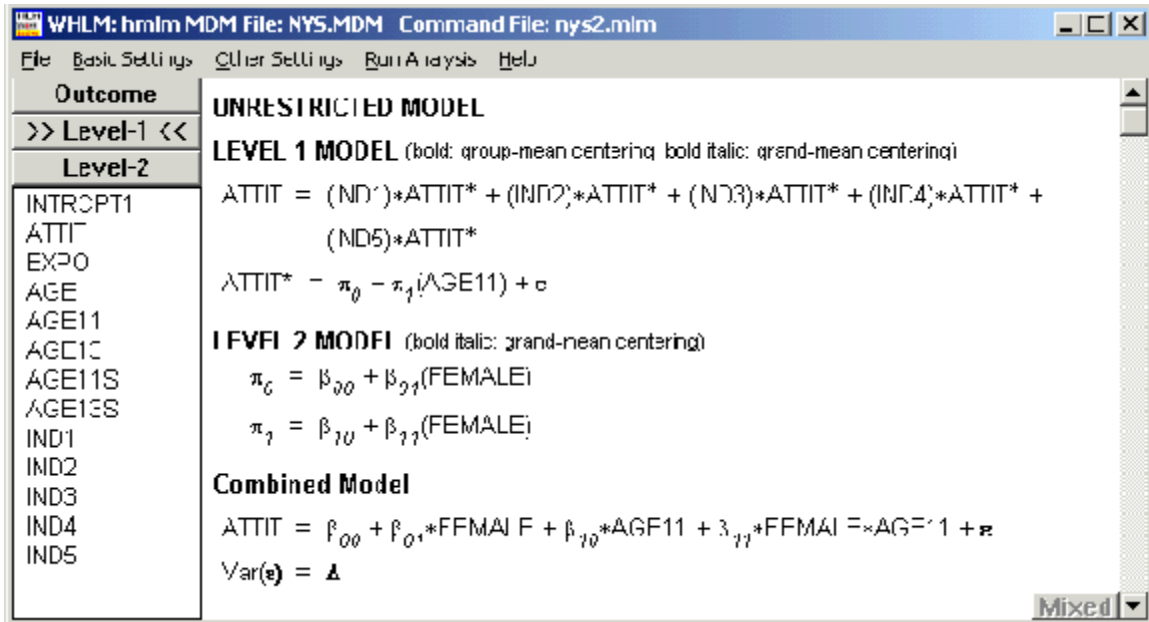
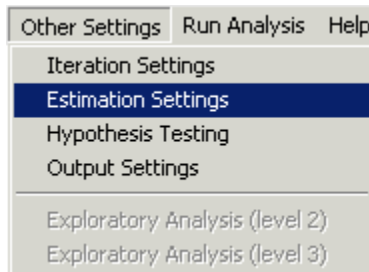


## Specify a latent variable analysis

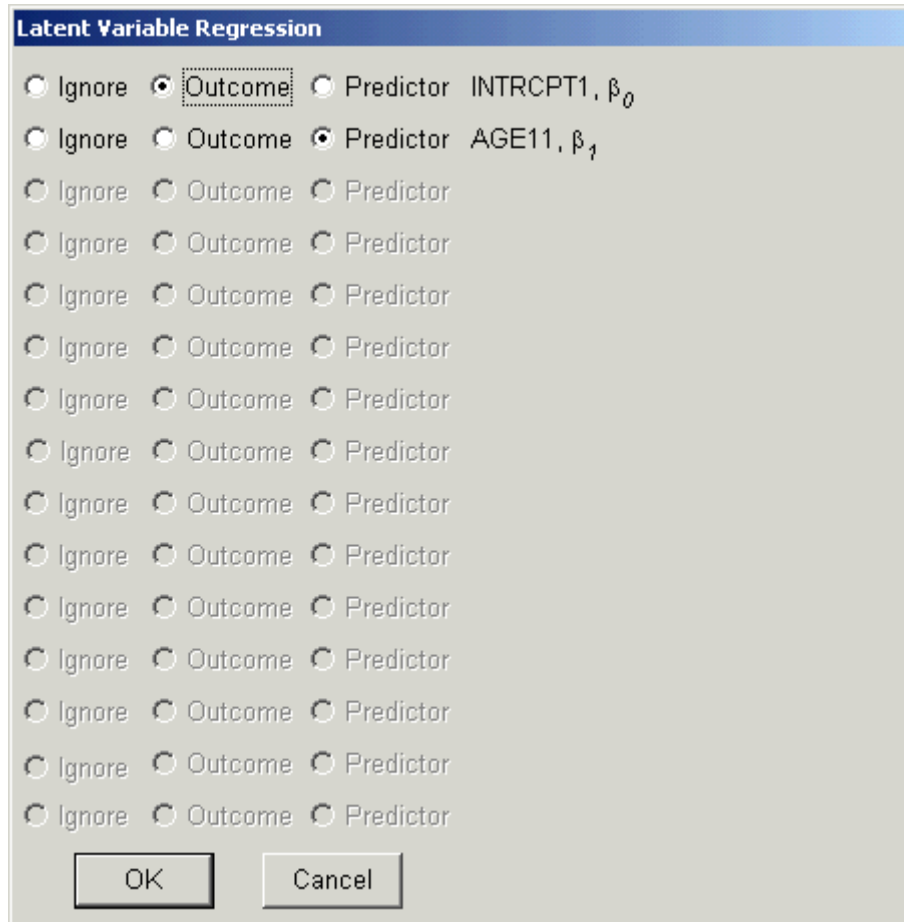
This example employs the National Youth Survey data sets discussed elsewhere in the help file. The figure below displays a linear growth model with gender as a covariate. The **latent variable analysis** option is available for HLM2, HLM3, and HMLM, but not for HCM2 or HMLM2.



After specifying the model, select the **Estimation Settings** option from the **Other Settings** menu.



Choose **Latent Variable Regression** to open the **Latent Variable Regression** dialog box:



We use  $\pi_0$ , the level of tolerance at age 11, to predict  $\pi_1$ , the linear growth rate, controlling for gender. Note that FEMALE must be in the model for both  $\pi_0$  and  $\pi_1$  to control for gender fully. Note also that  $\pi_0$  and  $\pi_1$  are latent variables, that is, they are free of measurement error, which is contained in  $e$ . Select the predictor(s) and outcome(s) by clicking the selection buttons in front of them (for our example, select INTRCPT1,  $\pi_0$ , as the predictor and AGE11,  $\pi_1$ , as the outcome).

The HMLM output will contain output pertaining to the latent variable regression analysis:

Final estimation of fixed effects:

Fixed Effect	Coefficient	Standard Error	T-ratio	P-value
-----				
For INTRCPT1, P0				
INTRCPT2, B00	0.221755	0.015961	13.894	0.000
FEMALE, B01	-0.048274	0.022926	-2.106	0.035
For AGE11 slope, P1				
INTRCPT2, B10	0.070432	0.006781	10.386	0.000
FEMALE, B11	-0.012003	0.009826	-1.222	0.222

Latent Variable Regression Results  
 The model specified (in equation format)

Specify a latent variable analysis

$$P1 = B10* + B11*(FEMALE) + B12*(P0) + r1*$$

Outcome	Predictor	Estimated Coefficient	Standard Error	T-ratio	P-value
AGE11,B1	INTRCPT2,G10*	0.024765	0.024807	0.998	0.319
	FEMALE,G11*	-0.002062	0.013058	-0.158	0.875
	B0,G12*	0.205934	0.105410	1.954	0.050

Latent Variable Regression: Comparison of Original and Adjusted Coefficients

Outcome	Predictor	Original Coefficient	Adjusted Coefficient	Difference	Standard Error of Difference
AGE11,P1	INTRCPT2	0.07043	0.02477	0.04567	0.024311
	FEMALE	-0.01200	-0.00206	-0.00994	0.006941