Online Appendix to accompany:
Predictions of individual change recovered with latent class or random coefficient growth models. (Sterba, S.K. & Bauer, D.J.)

Online Appendix Contents:

Online Appendix Part 1.

Generating parameters for Studies 1 and 2

Table A.

A.1 Parameters for the Study 1 '1-predictor' generating LCGM
(simulated after Nagin & Tremblay (2005a))

Level 1 fixed effects:	Class-specific growth coefficients			
	Low	Mod-decreasing	High-decreasing	Chronic
Intercept	.030	1.105	2.513	3.390
Time	0	-.098	.233	0
Time*Time	0	-.002	-.049	0

Level 2 fixed effects:	Multinomial coefficients for regression of class on predictors			
	Low*	Mod-decreasing	High-decreasing	Chronic
Intercept	0	.105	-1.683	-5.004
Risk	0	.566	1.010	1.342

Variance components:	
Sigma-squared	1.000

Notes: * = reference class.

A.2. Conditional probabilities of class membership for the 1-predictor LCGM generating model, simulated after Nagin and Tremblay (2005a)

	Conditional probabilities of class membership			
# of Risks	Low	Mod-decreasing	High-decreasing	Chronic
1	.286	.560	.146	.007
3	.089	.538	.340	.033
5	.018	.347	.533	.102
7	.003	.163	.609	.225

Table B. Parameters for the Study 1 '1-predictor' generating RCGM

Fixed effects:	
Intercept	.774
Time	-.052
Time*Time	-.004
Risk	.260
Time*Risk	.027
Time*Time*Risk	-.005

Variance components:	
Tau_00	1.012
Tau_01	-.043
Tau_11	.004
Sigma-squared	1.043

Table C.

C.1 Parameters for the Study 1 '2-interacting-predictors' generating LCGM

Level 1 fixed effects:	Class-specific growth coefficients			
	Low	Mod-decreasing	High-decreasing	Chronic
Intercept	.030	1.105	2.513	3.390
Time	0	-.098	.233	0
Time*Time	0	-.002	-.049	0

Level 2 fixed effects:	Multinomial coefficients for regression of class on predictors			
	Low*	Mod-decreasing	High-decreasing	Chronic
Intercept	0	.105	-1.683	-5.004
Risk	0	.566	1.010	1.342
Allele	0	-.848	-.755	-.550
Risk*Allele	0	-.512	-.731	-.820

Variance components:	
Sigma-squared	1.000

Notes: * = reference class.

C.2 Conditional probabilities of class membership for the '2-interacting-predictors' LCGM generating model

		Conditional probabilities of class membership			
Allele	# of Risks	Low	Mod-decreasing	High-decreasing	Chronic
0	1	.286	.560	.146	.007
0	3	.089	.538	.340	.033
0	5	.018	.347	.533	.101
0	7	.003	.163	.609	.225
1	1	.616	.309	.071	.004
1	3	.562	.315	.113	.010
1	5	.493	.308	.173	.026
1	7	.407	.283	.249	.061

Table D. Parameters for the Study 1 '2-interacting-predictors' generating RCGM

Fixed effects:	
Intercept	.769
Time	-.052
Time*Time	-.004
Risk	.262
Time*Risk	.027
Time*Time*Risk	-.005
Allele	-.325
Time*Allele	.030
Time*Time*Allele	.002
Risk*Allele	-.178
Time*Risk*Allele	-.021
Time*Time*Risk*Allele	.003

Variance components:	
Tau_00	1.003
Tau_01	-.047
Tau_11	.004
Sigma-squared	1.036

Table E.

E.1 Parameters for the Study 2 'higher-order nonlinear interactions/ highly nonmonotonic growth trajectories' generating LCGM

Level 1 parameters:	Class-specific growth coefficients					
	Low	Early-desist	Middle-desist	Late-desist	Med-chronic	High-chronic
Intercept	.030	1.559	10.322	4.910	13.355	17.013
Time	0	-5.238	-7.928	5.493	-1.601	-13.909
Time*Time	0	1.572	-2.031	.263	-1.470	.780
Time*Time*Time	0	.587	1.584	-.799	.826	2.376

Level 2 parameters:	Multinomial coefficients for regression of class on predictors					
	Low*	Early-desist	Middle-desist	Late-desist	Med-chronic	High-chronic
Intercept	0	1.211	1.039	0.949	-0.422	-1.011
Risk	0	.708	.886	.980	1.627	1.758
Allele	0	-3.064	-5.749	-7.841	-4.860	-4.271
Risk*Allele	0	-.550	.467	.972	.325	.193

Variance components:	
Sigma-squared	20.00

Notes: * = reference class. Partially simulated after Bushway et al., (2003).

E.2 Conditional probabilities of class membership for the higher order-nonlinear interactions/ nonmonotonic growth trajectories LCGM generating model

		Conditional probabilities of class membership					
Allele	# of Risks	Low	Early-desist	Middle-desist	Late-desist	Med-chronic	High-chronic
0	1	.348	.309	.186	.142	.011	.005
0	3	.084	.306	.263	.243	.067	.038
0	5	.011	.166	.204	.227	.227	.166
0	7	.001	.046	.080	.108	.392	.374
1	1	.895	.104	.001	.000	.000	.000
1	3	.844	.135	.009	.001	.005	.005
1	5	.481	.105	.076	.031	.153	.153
1	7	.026	.008	.062	.082	.411	.411

Notes. As mentioned in the text, this risk predictor was centered, but its original metric is presented here for ease of comparability with other models

Table F. Parameters for the Study 2 'predictors with factor-specific effects not in concert with factor correlations' generating RCGM

Fixed effects:	
Intercept	4.195
time	.134
time*time	-.011
sex	.540
emotion	-.07
age	-.08
cognition	-.02
sex*time	.35
emotion*****time	.15
age*time	-.075
cognition*time	.02

Variance components:	
Tau_00	.363
Tau_11	.09
Tau_22	.02
Tau_10	.08
Tau_20	-.025
Tau_21	-.03
Sigma-squared	1.543

Notes. Partially simulated after Bollen and Curran (2006).

Online Appendix Part II.

Average model-implied (solid) versus true (dashed) predicted trajectories at *N*=250 and 1000 for Studies 1 and 2

Notes. For Figures A-E, the lowest (green) predicted trajectory shown=1 risks, and higher predicted trajectories correspond with more risks; highest (royal blue) trajectory shown=7 risks.

Figure A. Study 1 Predicted trajectories for the 1-predictor generating LCGM

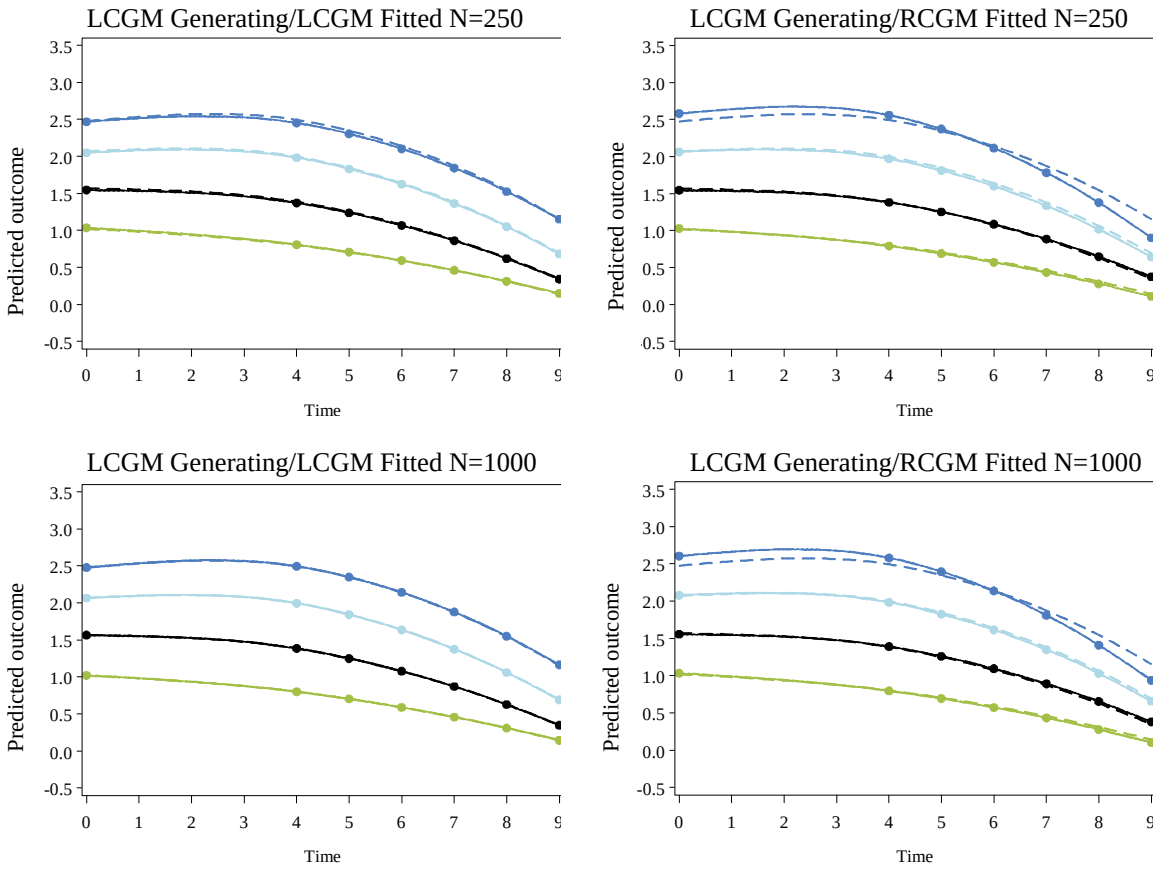


Figure B. Study 1 Predicted trajectories for 1-predictor generating RCGM

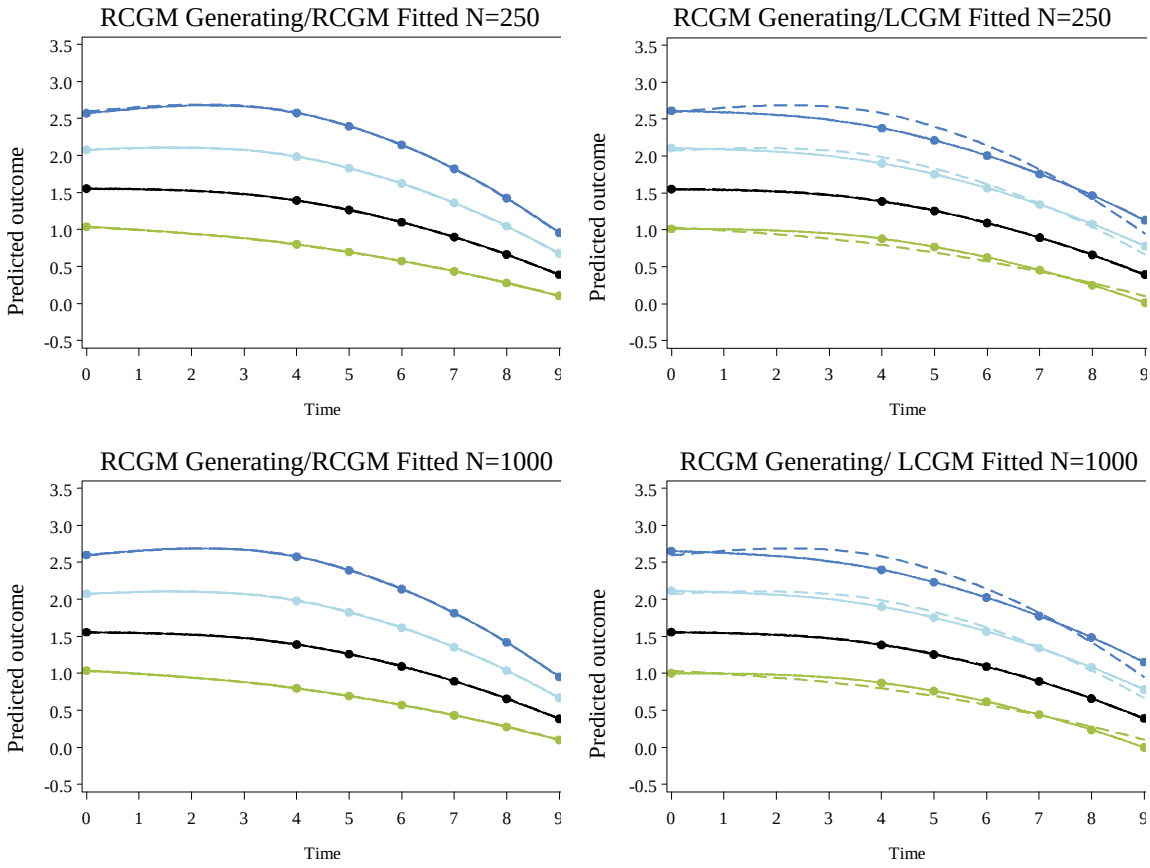


Figure C. Study 1 Predicted trajectories for the 2-interacting-predictor generating LCGM

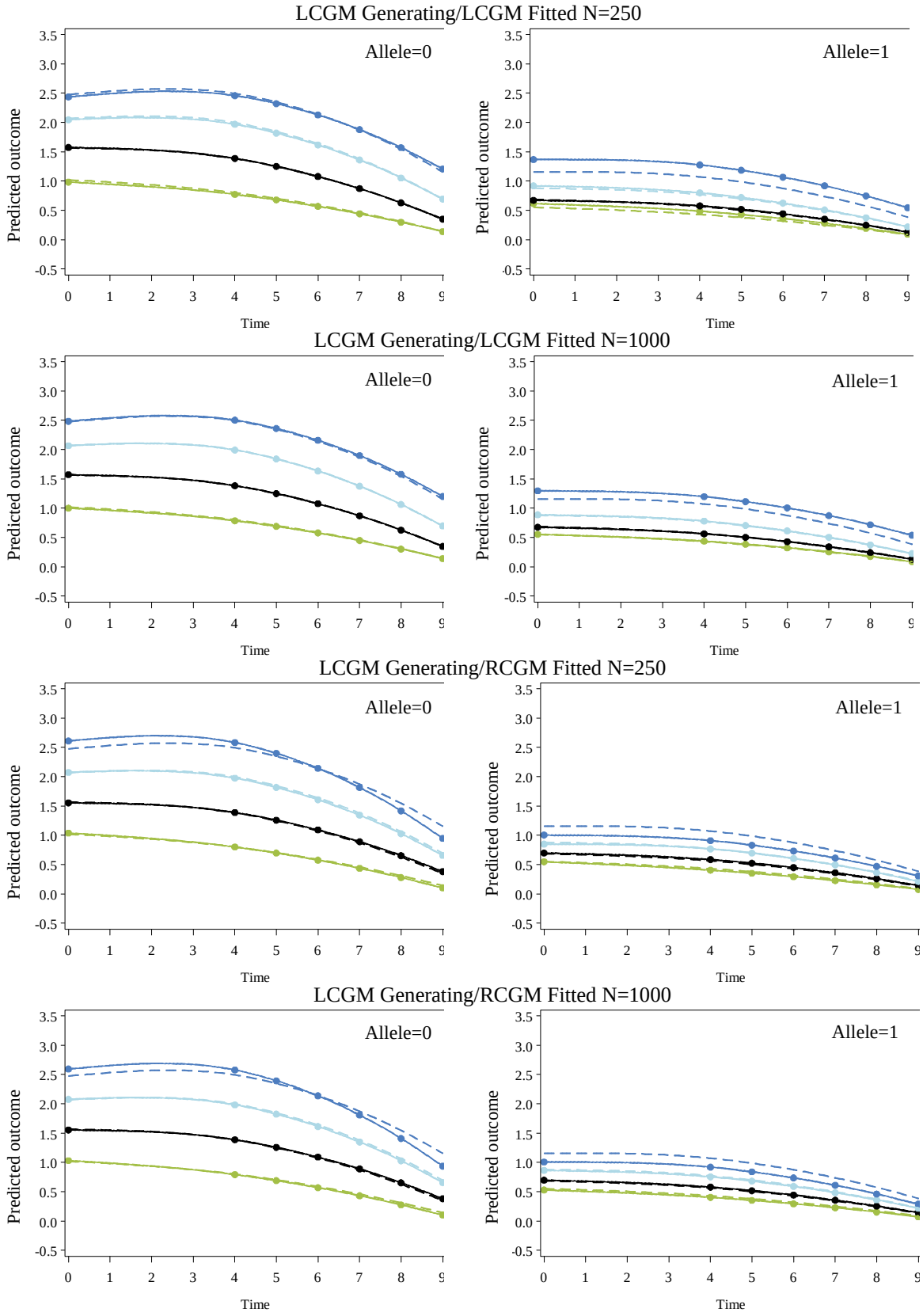


Figure D. Study 1 Predicted trajectories for the 2-interacting-predictor generating RCGM

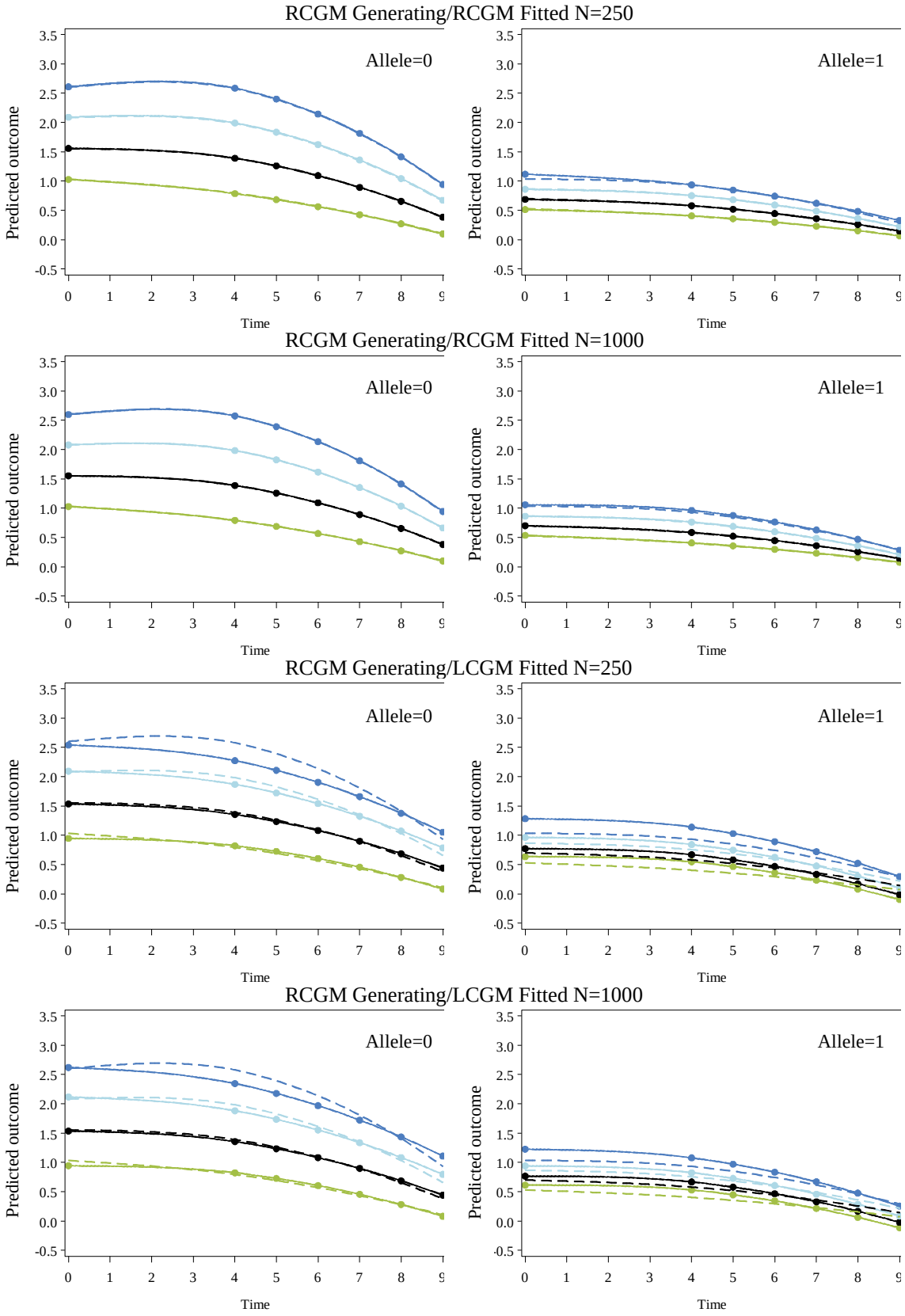


Figure E. Study 2 Generalizability checks: Predicted trajectories for LCGM generating condition with implied higher order-nonlinear interactions, highly nonmonotonic growth trajectories

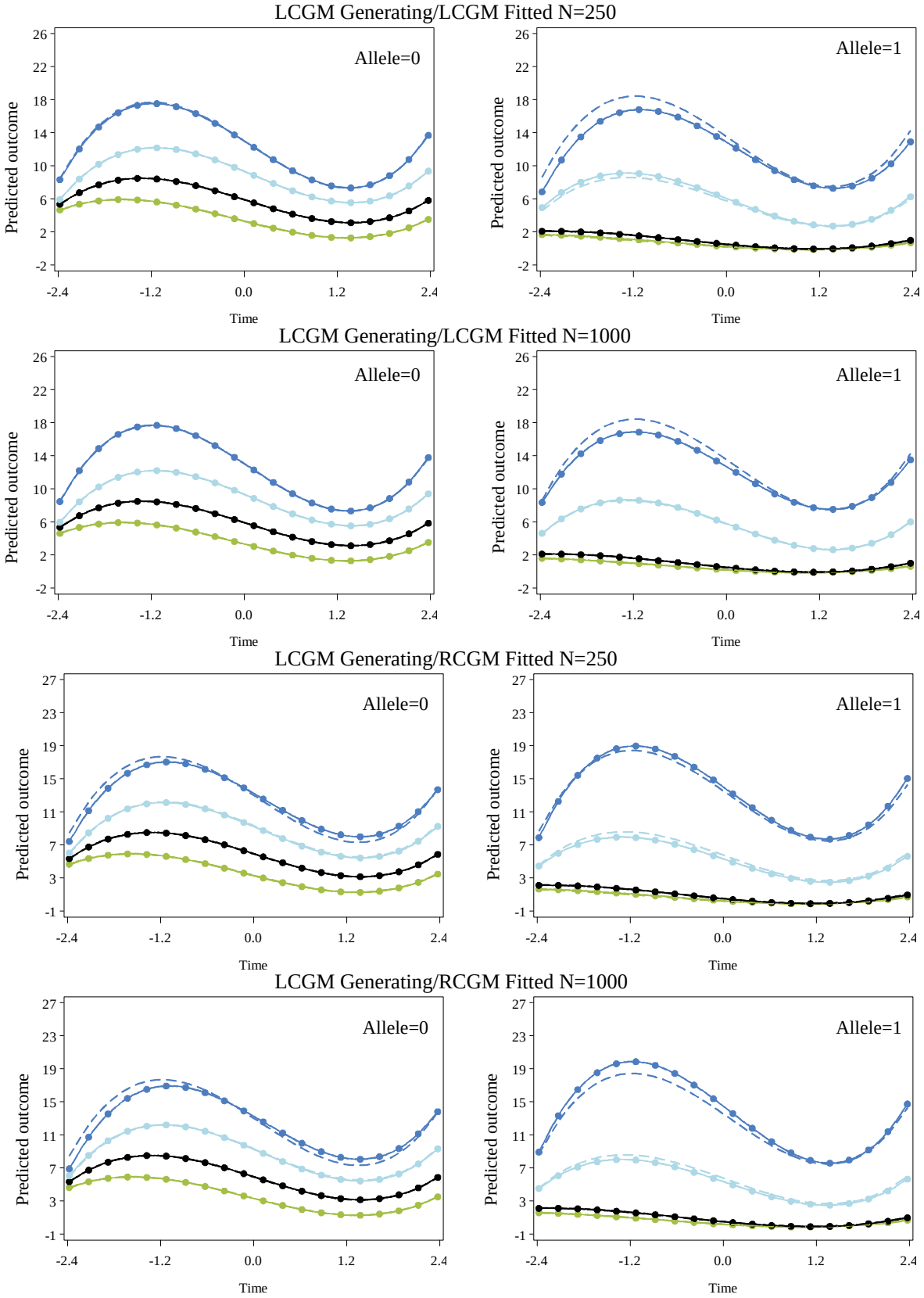
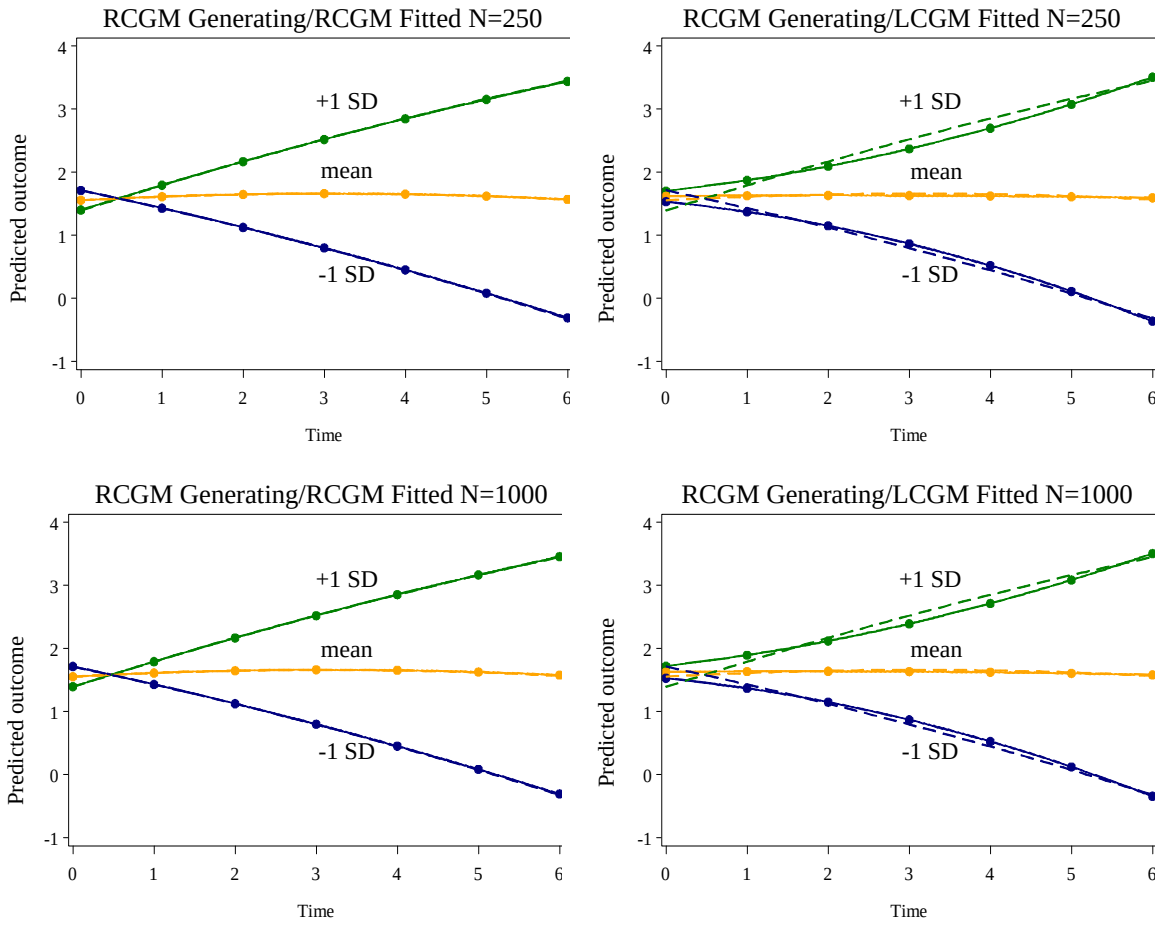


Figure F. Study 2 Generalizability checks: Predicted trajectories for RCGM generating condition where predictors have factor-specific effects not in concert with factor correlations



Online Appendix Part III.
Sampling variance for selected Study 1 and 2 generating and fitted models at *N*=250, 500, 1000

Figure G. Sampling variance for Study 1 '2-interacting predictor' LCGM at *N*=250, 500, 1000

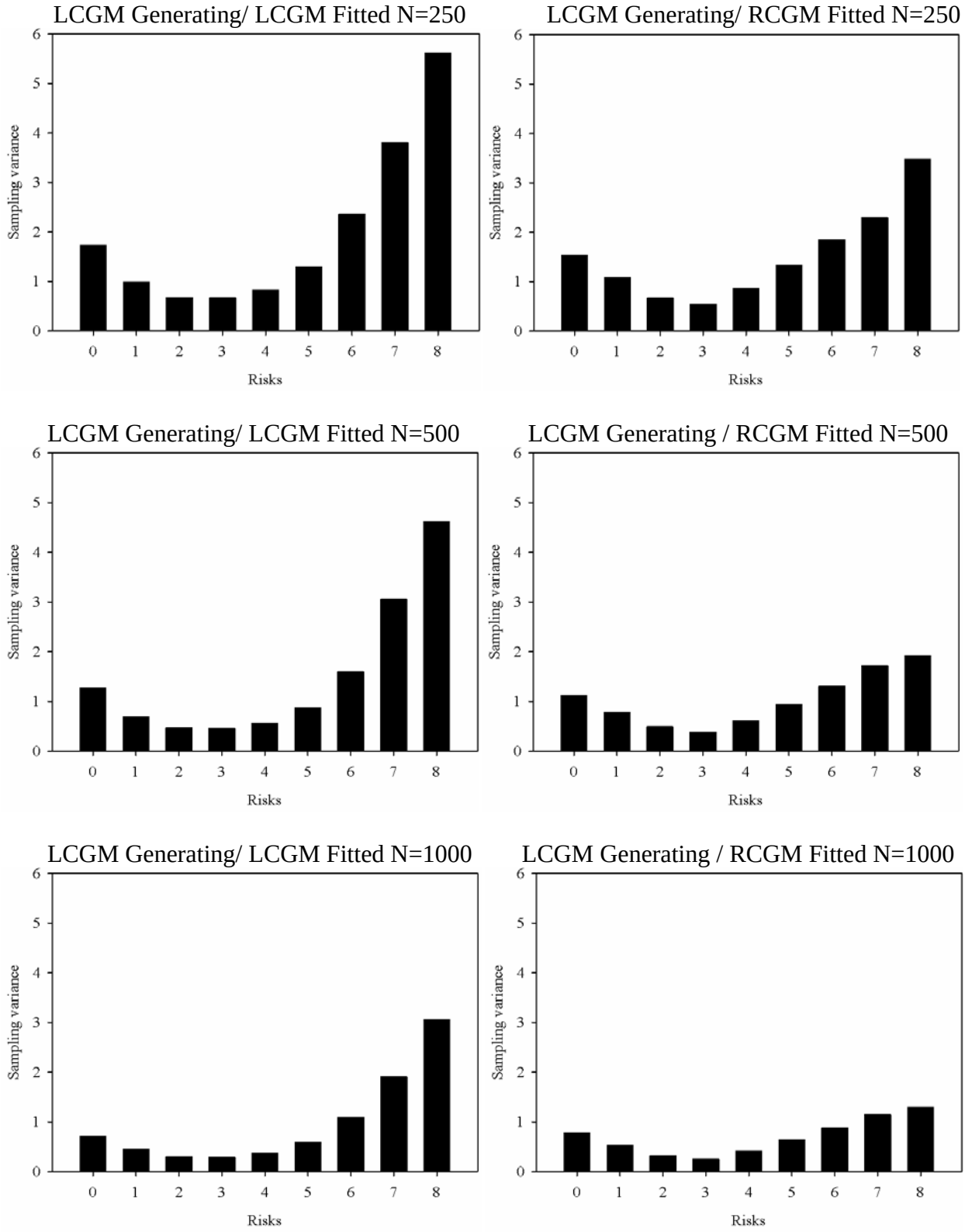


Figure H. Sampling variance for Study 2 'implied higher order-nonlinear interactions, highly nonmonotonic growth trajectories' LCGM at *N*=250, 500, 1000