

Pushing the edge of the envelope of CHC theory and the WJ III measurement model



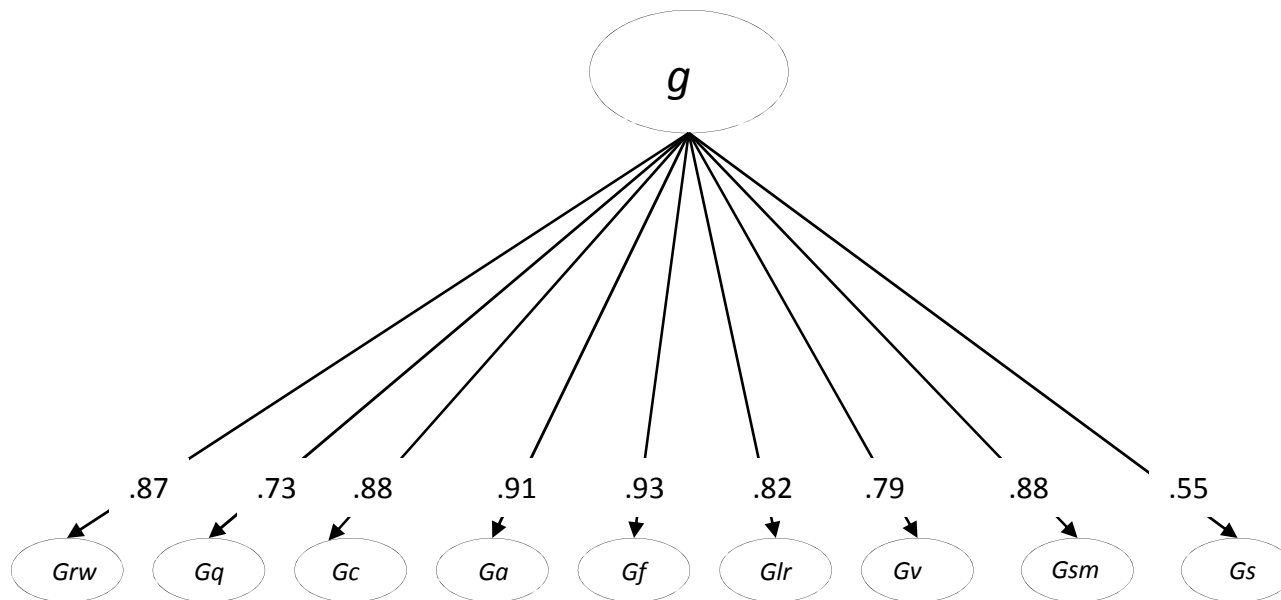
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Woodcock-Muñoz Foundation

All analyses based on WJ III 6-adult norm sample subjects as described in WJ III Technical Manual
(McGrew & Woodcock, 2001)

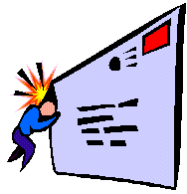


Starting point

Ages 6-adult CFA Broad CHC Model in WJ III Technical Manual
(McGrew & Woodcock, 2001)



First order measurement model omitted for readability purposes



Beyond CHC/WJ III analysis strategy and notes

SEM was used in an exploratory "model generation" approach (as per K. G. Jöreskog)

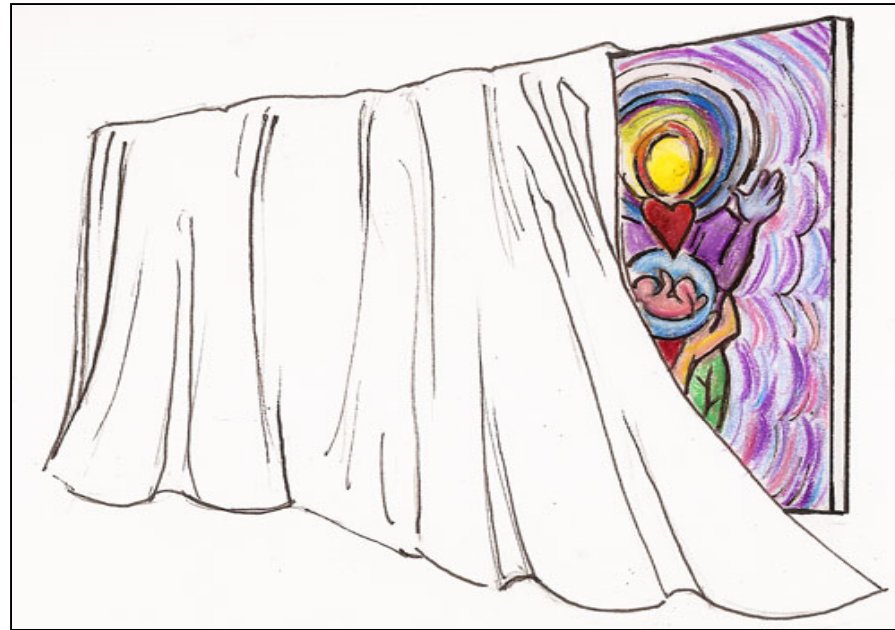
The validated CHC structure of the published WJ III was "torn down" and new structural models specified based on what I (Kevin McGrew) had learned and observed during a large variety of statistical analysis of the WJ III norm data since 2001.

Theoretical considerations (Berlin BIS model; dual-processing cognitive models; etc.) also served as guides during exploratory model specification.

Important caution: The final models demonstrated near identical model fit statistics (e.g., some equivalent models). Also, the large amount of exploratory model specification employed has the potential to capitalize on "random chance factors"- thus rendering statistical model evaluation comparisons useless.

The goal of these analyses were to "push the edge of the envelope" of the WJ three data via SEM-based model generation procedures. The law of parsimony was deliberately discarded.

Cross validation of proposed final models in independent samples is needed.



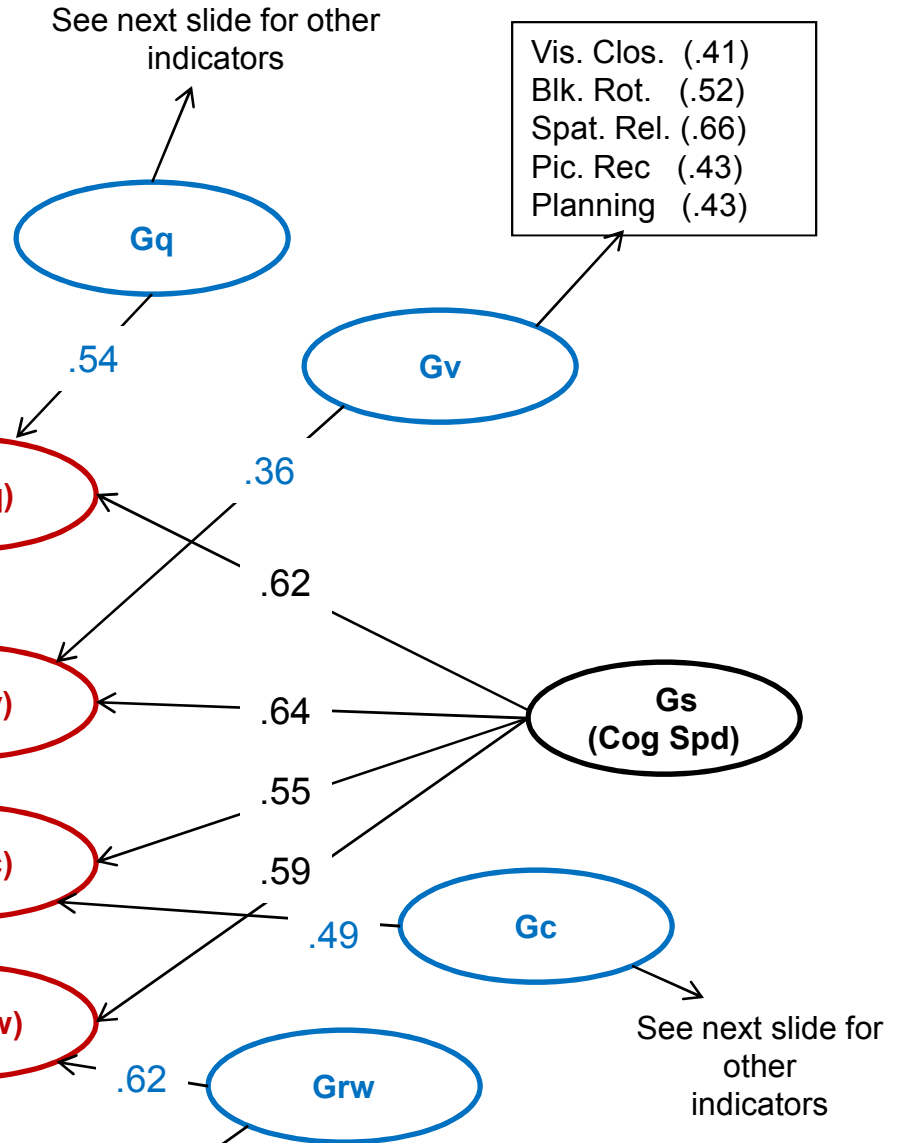
Unveiling of final model generation solutions in WJ III norm data



The following three slides present
the new alternative WJ III CHC
measurement models that resulted
from this CFA model-generation
research

Alternative Models: WJ III
Measurement model for speed factors

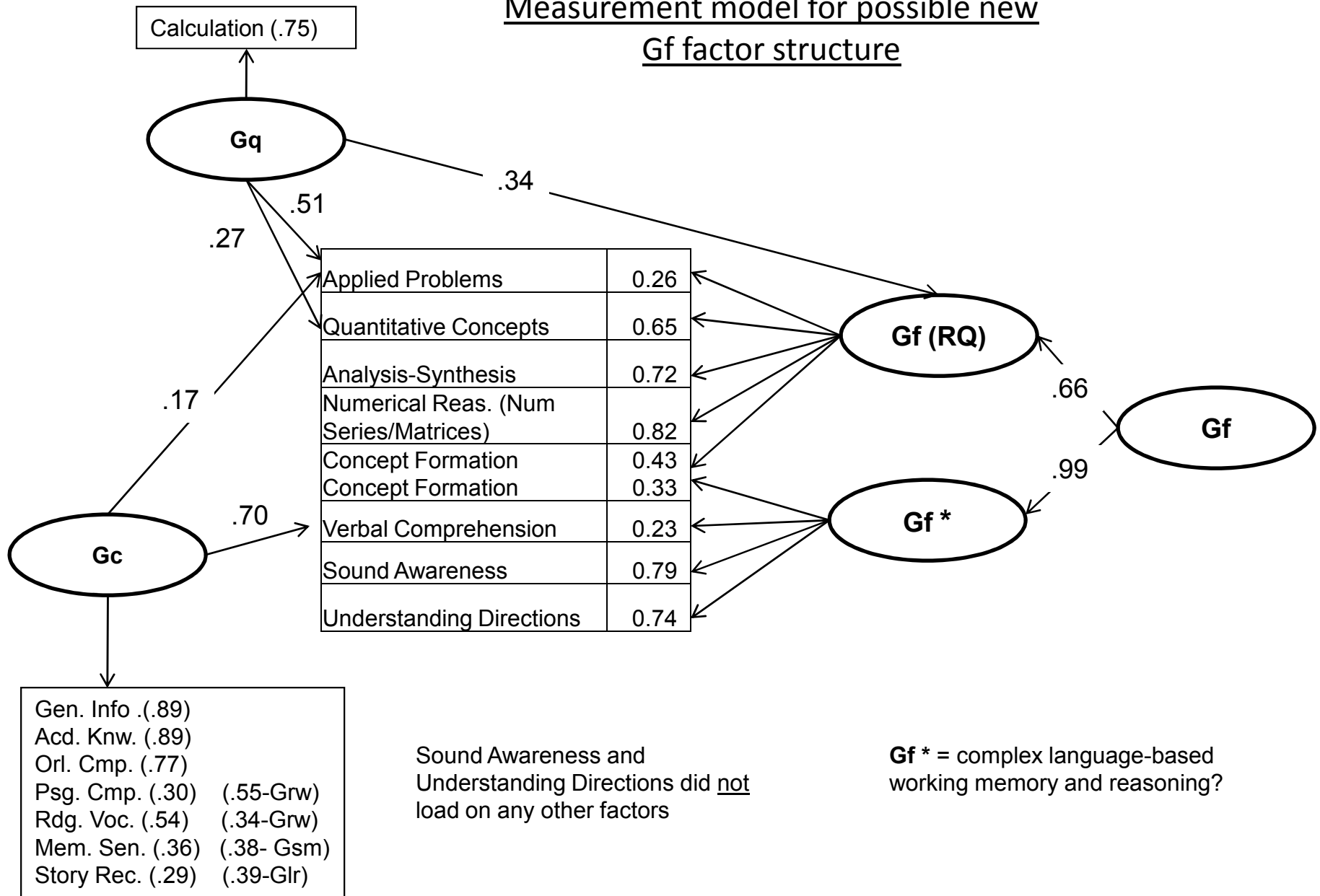
Calculation	0.14
Numbers Reversed	0.19
Math Fluency	0.87
Visual Matching	0.37
Visual Matching	0.54
Cross Out	0.69
Pair Cancellation	0.70
Decision Speed	0.59
Decision Speed	0.18
Retrieval Fluency	0.72
Rapid Picture Naming	0.63
Writing Fluency	0.77
Reading Fluency	0.82



Wrd. Atk.	(.78)	Edit.	(.78)
Psg. Cmp.*	(.55)	Wrt. Smp,	(.76)
Rdg. Voc.*	(.34)	Spelling	(.86)
LWrdID	(.89)		

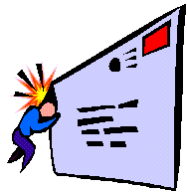
* Dual loading on Gc on next slide

Alternative Models: WJ III
Measurement model for possible new
Gf factor structure

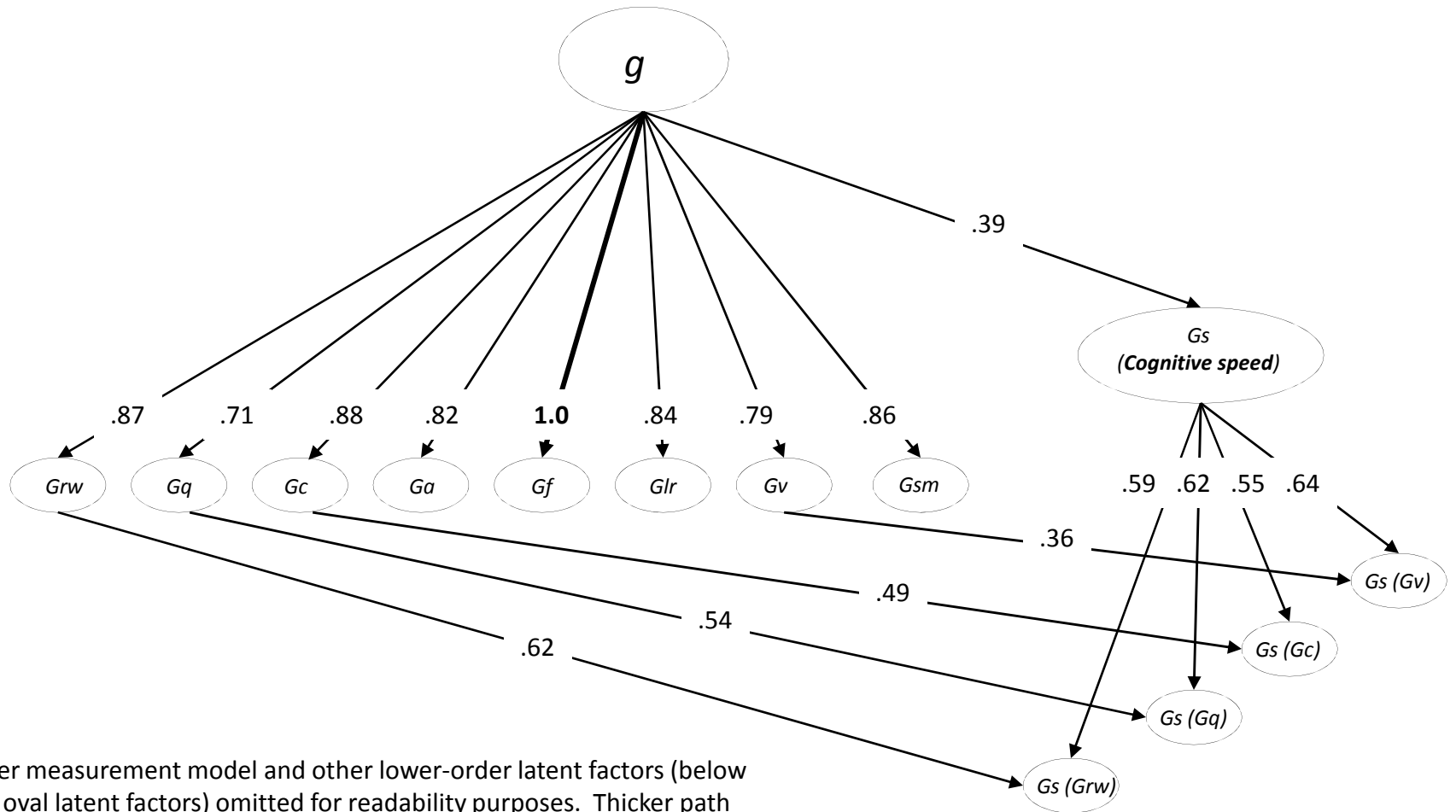


Glr and Gsm measurement models were similar to those originally reported

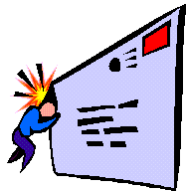
MEMNAMZ	<---	Glr	0.65
STRYRECZ	<---	Glr	0.39
VALZ	<---	Glr	0.79
DRNAMZ	<---	Glr	0.60
DRVALZ	<---	Glr	0.73
DRSTRYZ	<---	Glr	0.53
MEMSEnz	<---	Gsm	0.38
MEMWRDZ	<---	Gsm	0.65
AWKMEMZ	<---	Gsm	0.74
NUMREVZ	<---	Gsm	0.58



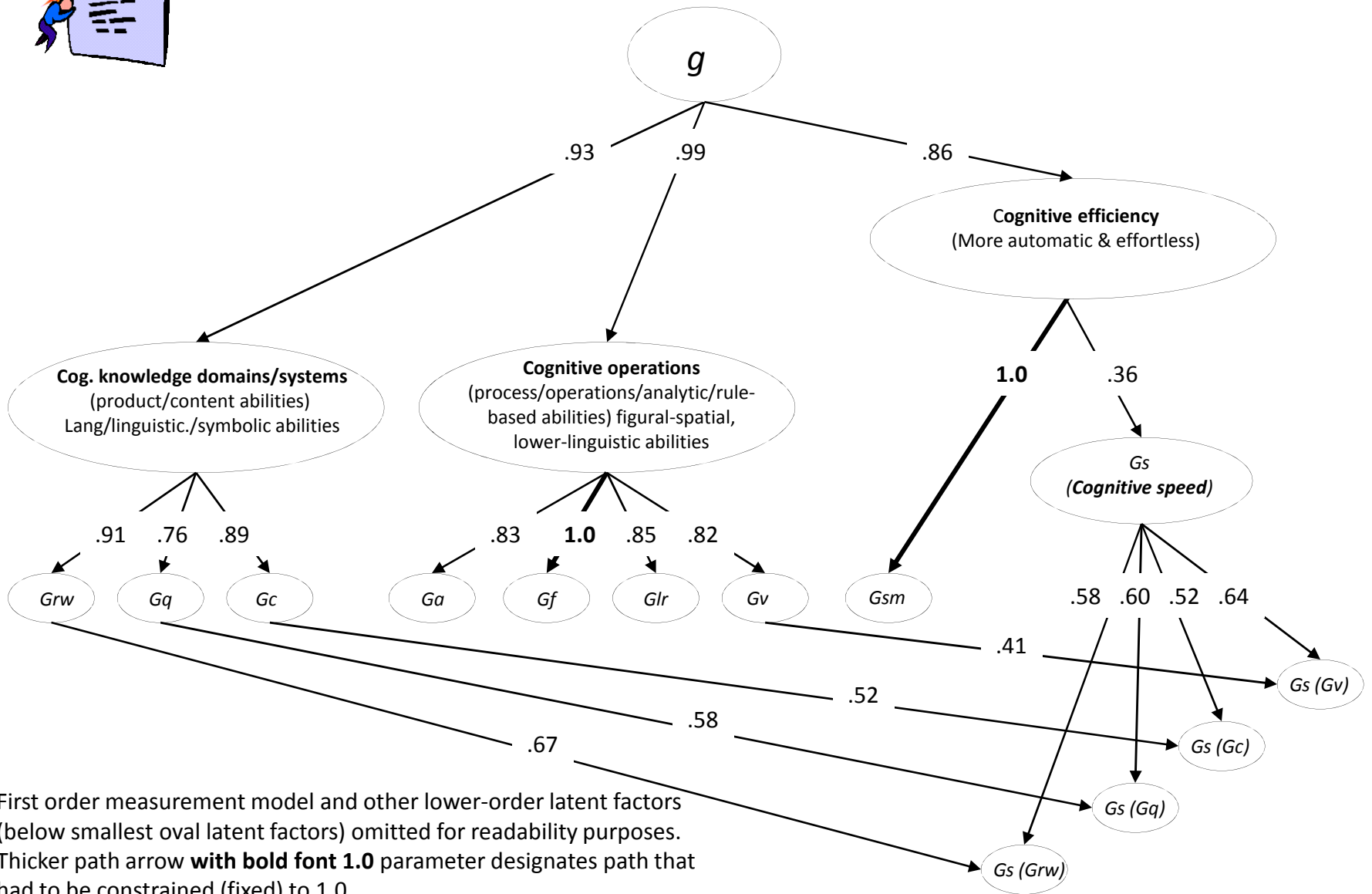
Alternative Model 1



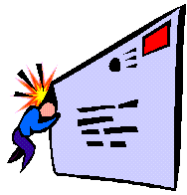
First order measurement model and other lower-order latent factors (below smallest oval latent factors) omitted for readability purposes. Thicker path arrow **with bold font 1.0** parameter designates path that had to be constrained (fixed) to 1.0



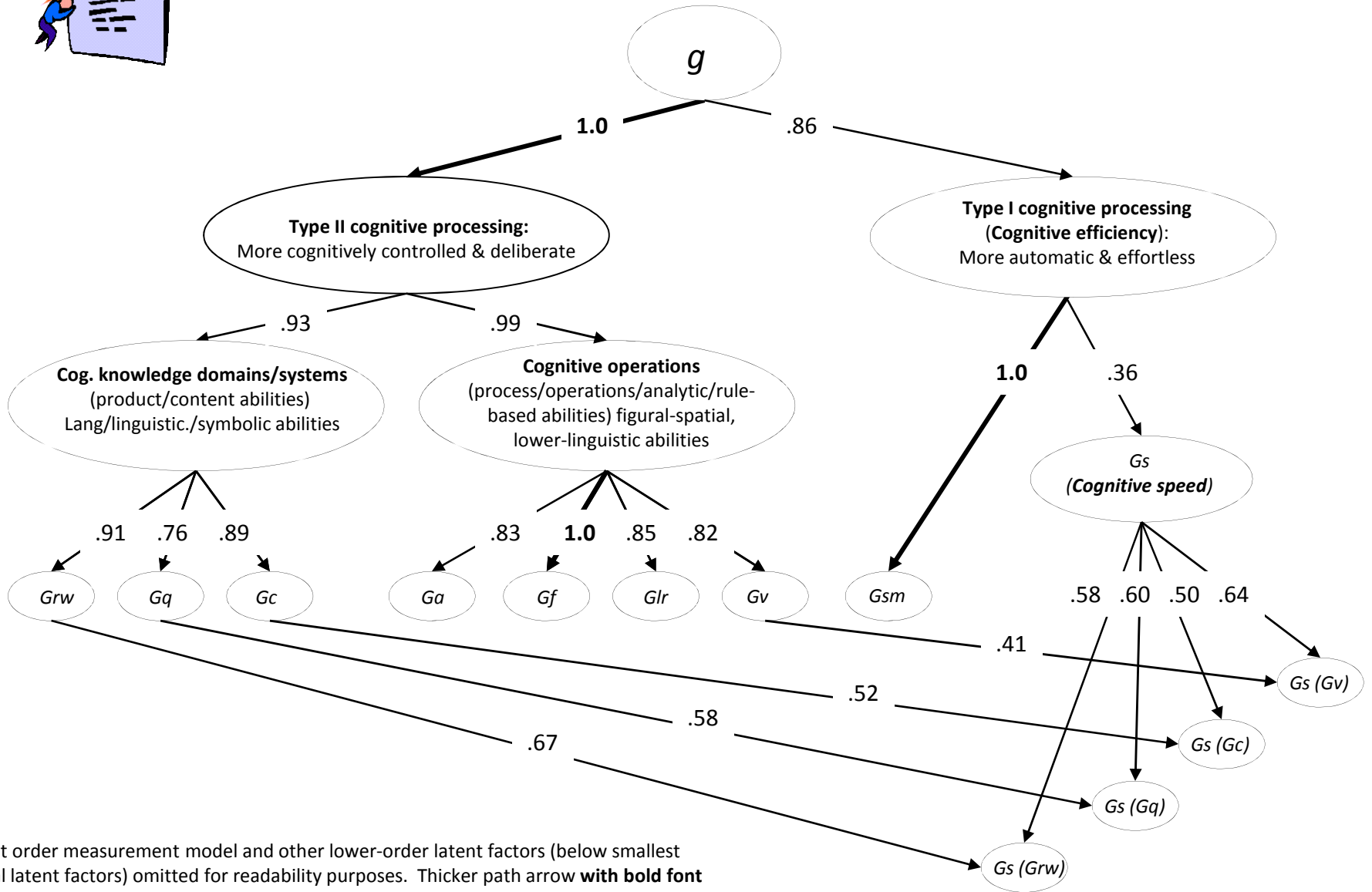
Alternative Model 2



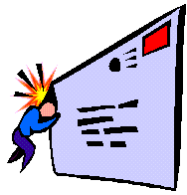
First order measurement model and other lower-order latent factors (below smallest oval latent factors) omitted for readability purposes. Thicker path arrow **with bold font 1.0** parameter designates path that had to be constrained (fixed) to 1.0



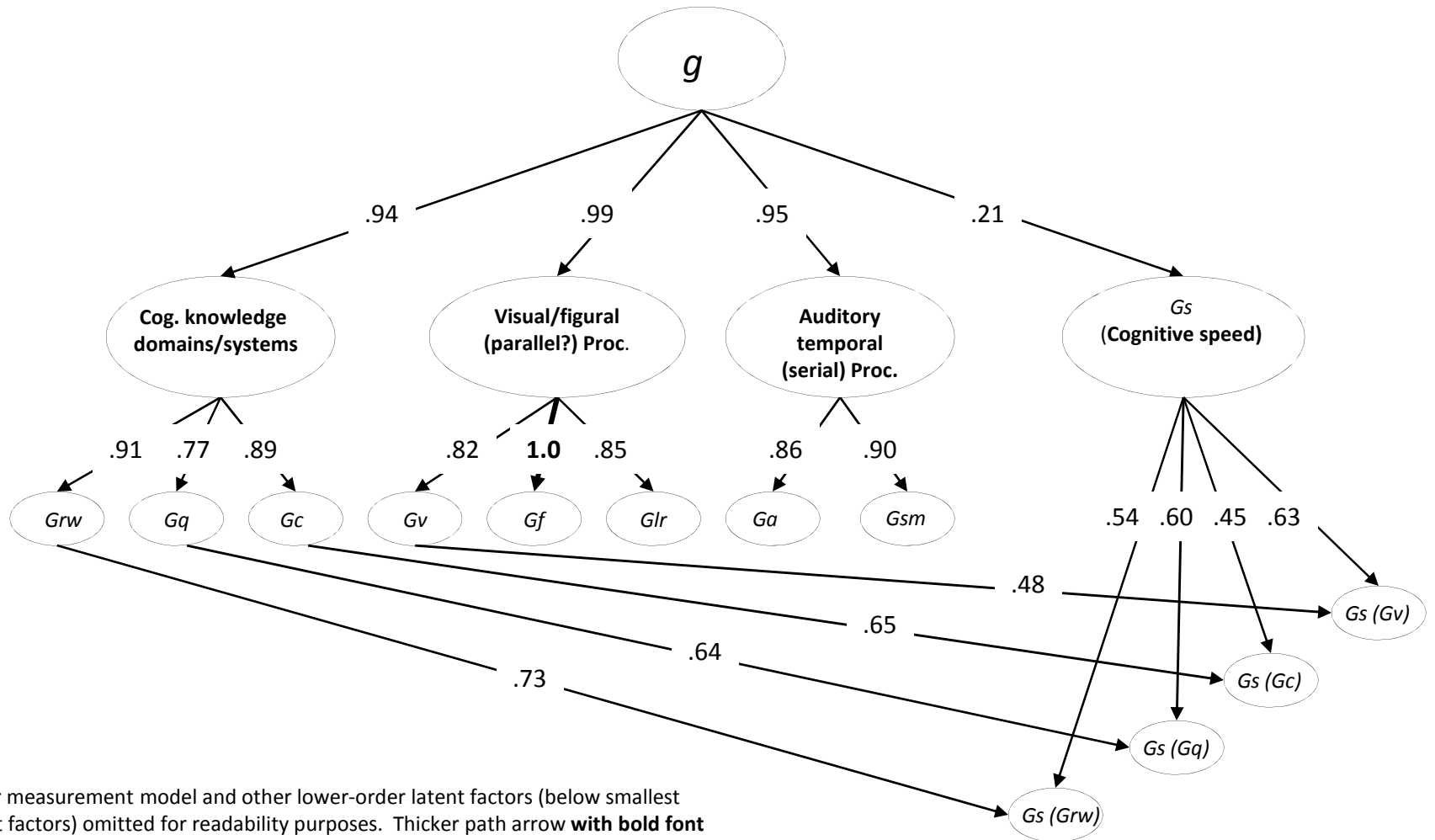
Alternative Model 2b



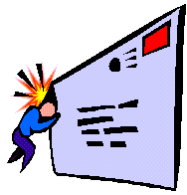
First order measurement model and other lower-order latent factors (below smallest oval latent factors) omitted for readability purposes. Thicker path arrow **with bold font 1.0** parameter designates path that had to be constrained (fixed) to 1.0



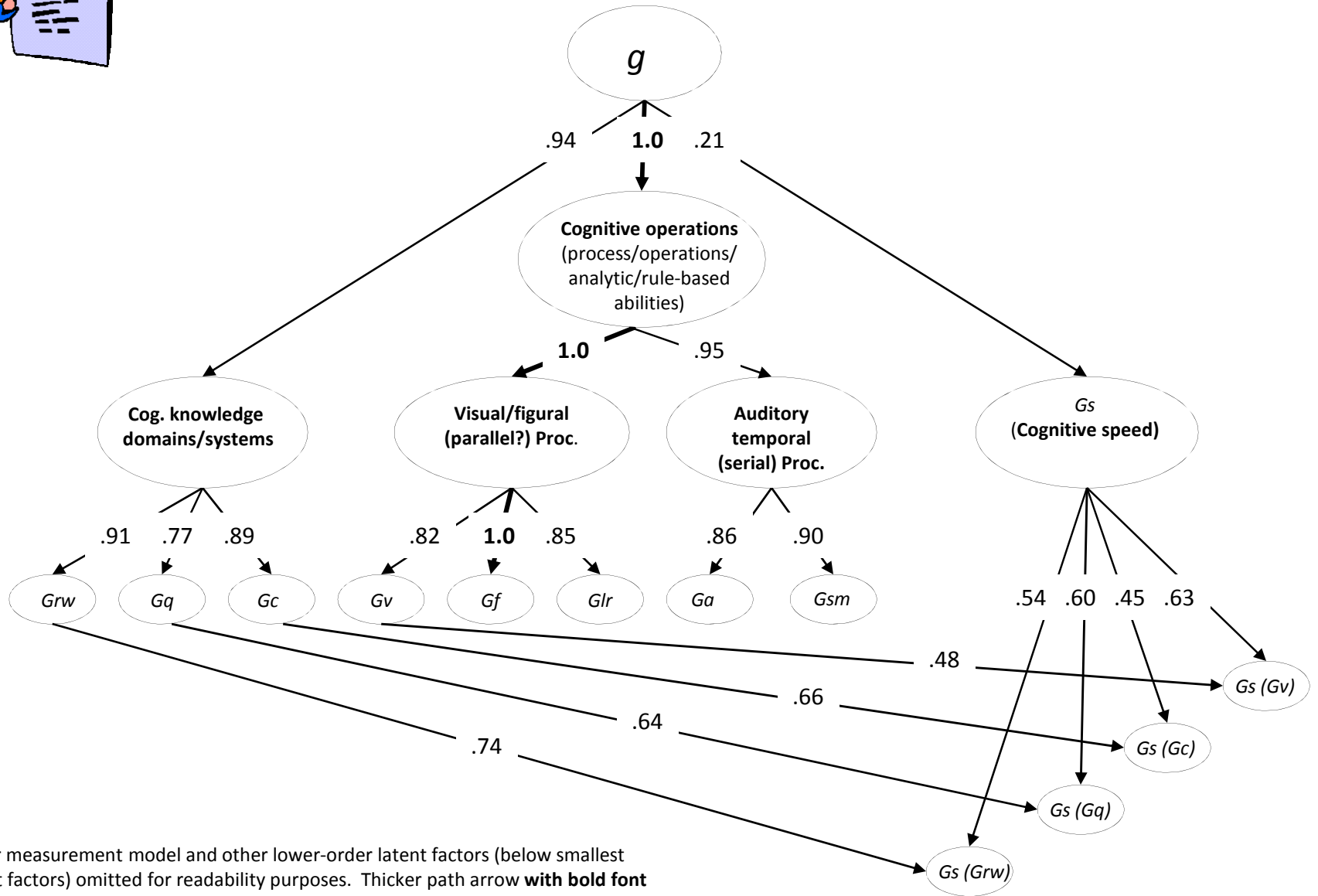
Alternative Model 3



First order measurement model and other lower-order latent factors (below smallest oval latent factors) omitted for readability purposes. Thicker path arrow **with bold font 1.0** parameter designates path that had to be constrained (fixed) to 1.0



Alternative Model 3b



First order measurement model and other lower-order latent factors (below smallest oval latent factors) omitted for readability purposes. Thicker path arrow **with bold font 1.0** parameter designates path that had to be constrained (fixed) to 1.0