

```
> pp <- read.delim("http://rem.ph.ucla.edu/rob/mld/data/tabdelimiteddata/pain.txt")
> pp$trt <- as.character(pp$treatment)
> pp$trt[pp$trial <= 3] <- "baseline"
> pp$trt <- factor(pp$trt, levels = c("baseline", "attend", "distract",
+   "no directions"))
> pp <- subset(pp, !is.na(pp$l2paintol))
```

Independent

```
> m <- gls(l2paintol ~ trt * cs, data = pp)
> summary(m)
```

```
      AIC      BIC    logLik
742.869 774.0815 -362.4345
```

Coefficients:

	Value	Std. Error	t-value	p-value
(Intercept)	4.506229	0.1109140	40.62815	0.0000
trtattend	0.220640	0.3542308	0.62287	0.5340
trtdistract	-0.105494	0.3542308	-0.29781	0.7661
trtno directions	-0.154954	0.3542308	-0.43744	0.6622
csdistracter	0.531053	0.1568560	3.38561	0.0008
trtattend:csdistracter	-0.608560	0.5009580	-1.21479	0.2257
trtdistract:csdistracter	0.993158	0.4905814	2.02445	0.0440
trtno directions:csdistracter	-0.651929	0.5009580	-1.30136	0.1944

Residual standard error: 1.063849

```
> K <- rbind(`attenders, attend-distract` = c(0, 1, -1, 0, 0, 0,
+   0, 0), `distracters, attend-distract` = c(0, 1, -1, 0, 0,
+   1, -1, 0))
> summary(glht(m, linfct = K))
```

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.3261	0.4758	0.685	0.7430
distracters, attend-distract == 0	-1.2756	0.4648	-2.744	0.0121 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$IND <- m
```

Random Intercept

```
> m <- lme(l2paintol ~ trt * cs, random = ~1 | id, data = pp)
> out$RI <- m
> summ(m)
```

```
      AIC      BIC    logLik
601.9478 636.6284 -290.9739
```

Random effects:

```
Formula: ~1 | id
      (Intercept) Residual
StdDev:  0.8909409 0.5858537
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.532592	0.1693017	175	26.772276	0.0000
trtattend	0.108192	0.2116055	175	0.511289	0.6098
trtdistract	0.038954	0.2116055	175	0.184088	0.8542
trtno directions	-0.108203	0.2125829	175	-0.508990	0.6114
csdistracter	0.478031	0.2393500	62	1.997206	0.0502
trtattend:csdistracter	-0.459945	0.2992544	175	-1.536971	0.1261
trtdistract:csdistracter	0.537127	0.2924447	175	1.836679	0.0680
trtno directions:csdistracter	-0.373634	0.3026533	175	-1.234529	0.2187

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.06924	0.29773	0.233	0.96618
distracters, attend-distract == 0	-0.92783	0.29089	-3.190	0.00285 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

Random Intercept and Slope

```
> m <- lme(l2paintol ~ trt * cs, random = ~trial | id, data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
602.8229 644.4396 -289.4114
```

Random effects:

```
Formula: ~trial | id
Structure: General positive-definite, Log-Cholesky parametrization
      StdDev   Corr
(Intercept) 0.9474975 (Intr)
trial        0.1662995 -0.333
Residual     0.5457108
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.534098	0.1682857	175	26.942855	0.0000
trtattend	0.106561	0.2198990	175	0.484591	0.6286
trtdistract	0.065678	0.2198990	175	0.298674	0.7655
trtno directions	-0.084617	0.2218853	175	-0.381355	0.7034
csdistracter	0.476703	0.2379037	62	2.003763	0.0495
trtattend:csdistracter	-0.407924	0.3109834	175	-1.311722	0.1913
trtdistract:csdistracter	0.516156	0.3038803	175	1.698549	0.0912
trtno directions:csdistracter	-0.354873	0.3158362	175	-1.123598	0.2627

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.04088	0.30997	0.132	0.98899
distracters, attend-distract == 0	-0.88320	0.30285	-2.916	0.00707 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$RIAS <- m
```

Auto-Regressive (1)

```
> m <- gls(l2paintol ~ trt * cs, correlation = corAR1(form = ~1 |
+   id), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
621.5629 656.2435 -300.7814
```

Correlation Structure: AR(1)

Formula: ~1 | id

Parameter estimate(s):

```
      Phi
0.7012922
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.562007	0.1619871	28.162784	0.0000
trtattend	0.087478	0.2430233	0.359956	0.7192
trtdistract	0.005249	0.2430233	0.021598	0.9828
trtno directions	-0.122086	0.2430233	-0.502365	0.6159
csdistracter	0.461905	0.2290843	2.016312	0.0449
trtattend:csdistracter	-0.371969	0.3436868	-1.082291	0.2802
trtdistract:csdistracter	0.598504	0.3361017	1.780722	0.0762
trtno directions:csdistracter	-0.254904	0.3436868	-0.741675	0.4590

Residual standard error: 1.056457

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.08223	0.33681	0.244	0.9628
distracters, attend-distract == 0	-0.88824	0.32906	-2.699	0.0138 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$AR1 <- m
```

Auto-Regressive/Moving Average

```
> m <- gls(l2paintol ~ trt * cs, correlation = corARMA(form = ~1 |
+   id, p = 1, q = 1), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
601.6487 639.7974 -289.8244
```

Correlation Structure: ARMA(1,1)

Formula: ~1 | id

Parameter estimate(s):

```
      Phi1      Theta1
0.9485012 -0.5651134
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.537419	0.1693791	26.788537	0.0000
trtattend	0.106659	0.2172800	0.490881	0.6240
trtdistract	0.044712	0.2172800	0.205779	0.8371
trtno directions	-0.096830	0.2177086	-0.444769	0.6569
csdistracter	0.474947	0.2394925	1.983138	0.0485
trtattend:csdistracter	-0.427458	0.3072795	-1.391106	0.1655
trtdistract:csdistracter	0.542689	0.3003135	1.807075	0.0720
trtno directions:csdistracter	-0.361719	0.3091835	-1.169917	0.2432

Residual standard error: 1.063039

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.06195	0.30515	0.203	0.97412
distracters, attend-distract == 0	-0.90820	0.29813	-3.046	0.00463 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$ARMA <- m
```

Moving Average

```
> m <- gls(l2paintol ~ trt * cs, correlation = corARMA(form = ~1 |
+   id, p = 0, q = 1), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
678.2943 712.9749 -329.1472
```

Correlation Structure: ARMA(0,1)

Formula: ~1 | id

Parameter estimate(s):

```
  Theta1
0.5265162
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.549150	0.1261953	36.04848	0.0000
trtattend	0.099310	0.2924226	0.33961	0.7345
trtdistract	-0.108949	0.2924226	-0.37257	0.7098
trtno directions	-0.210357	0.2928328	-0.71835	0.4732
csdistracter	0.488619	0.1784650	2.73790	0.0067
trtattend:csdistracter	-0.470832	0.4135477	-1.13852	0.2561
trtdistract:csdistracter	0.774997	0.4047567	1.91472	0.0567
trtno directions:csdistracter	-0.262483	0.4145302	-0.63321	0.5272

Residual standard error: 1.003172

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.2083	0.3978	0.523	0.8405
distracters, attend-distract == 0	-1.0376	0.3887	-2.670	0.0151 *

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)
```

```
> out$MA <- m
```

Random Intercept and Auto-regressive

```
> m <- lme(l2paintol ~ trt * cs, random = ~1 | id, correlation = corAR1(form = ~1 |
+ id), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
603.885 642.0336 -290.9425
```

Random effects:

```
Formula: ~1 | id
      (Intercept) Residual
StdDev:  0.8870981 0.5908291
```

Correlation Structure: AR(1)

```
Formula: ~1 | id
Parameter estimate(s):
      Phi
0.03065050
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.533730	0.1693012	175	26.779072	0.0000
trtattend	0.106364	0.2126513	175	0.500178	0.6176
trtdistract	0.037498	0.2126513	175	0.176335	0.8602
trtno directions	-0.109524	0.2135819	175	-0.512796	0.6087
csdistracter	0.477161	0.2393552	62	1.993525	0.0506
trtattend:csdistracter	-0.455948	0.3007334	175	-1.516121	0.1313
trtdistract:csdistracter	0.536680	0.2938931	175	1.826107	0.0695
trtno directions:csdistracter	-0.364034	0.3039437	175	-1.197701	0.2327

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.06887	0.29914	0.230	0.96685
distracters, attend-distract == 0	-0.92376	0.29226	-3.161	0.00314 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$AR1 <- m
```

Auto-Regressive and Variances by trial

```
> m <- gls(l2paintol ~ trt * cs, correlation = corAR1(form = ~1 |
+ id), weights = varIdent(form = ~1 | trial), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
625.2739 670.3586 -299.6369
```

Correlation Structure: AR(1)

Formula: ~1 | id

Parameter estimate(s):

Phi

0.7151837

Variance function:

Structure: Different standard deviations per stratum

Formula: ~1 | trial

Parameter estimates:

```
      1      2      3      4
1.000000 1.057642 1.138424 1.022605
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.574985	0.1648434	27.753518	0.0000
trtattend	0.089333	0.2365223	0.377694	0.7060
trtdistract	-0.013370	0.2365223	-0.056527	0.9550
trtno directions	-0.132937	0.2363220	-0.562524	0.5743
csdistracter	0.470107	0.2332826	2.015183	0.0450
trtattend:csdistracter	-0.388958	0.3345072	-1.162778	0.2461
trtdistract:csdistracter	0.634504	0.3272999	1.938601	0.0537
trtno directions:csdistracter	-0.278340	0.3340835	-0.833146	0.4056

Residual standard error: 1.013452

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.1027	0.3239	0.317	0.93810
distracters, attend-distract == 0	-0.9208	0.3165	-2.909	0.00723 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$AR1.byTrial <- m
```


Random Intercept and Variances by trial

```
> m <- lme(l2paintol ~ trt * cs, random = ~1 | id, weights = varIdent(form = ~1 |
+   trial), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
605.1748 650.2596 -289.5874
```

Random effects:

```
Formula: ~1 | id
(Intercept) Residual
StdDev:   0.9058526 0.511045
```

Variance function:

```
Structure: Different standard deviations per stratum
Formula: ~1 | trial
Parameter estimates:
```

```
      1      2      3      4
1.000000 1.203202 1.017359 1.334031
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.546237	0.1701519	175	26.718694	0.0000
trtattend	0.096375	0.2357705	175	0.408765	0.6832
trtdistract	0.028616	0.2357705	175	0.121372	0.9035
trtno directions	-0.124582	0.2366711	175	-0.526391	0.5993
csdistracter	0.468938	0.2406969	62	1.948252	0.0559
trtattend:csdistracter	-0.461044	0.3334304	175	-1.382730	0.1685
trtdistract:csdistracter	0.520655	0.3258105	175	1.598030	0.1118
trtno directions:csdistracter	-0.335055	0.3368963	175	-0.994536	0.3213

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.06776	0.33243	0.204	0.97391
distracters, attend-distract == 0	-0.91394	0.32479	-2.814	0.00976 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$RI.byTrial <- m
```

Unstructured correlations

```
> m <- gls(l2paintol ~ trt * cs, correlation = corSymm(form = ~1 |
+   id), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
592.8308 644.8517 -281.4154
```

Correlation Structure: General

Formula: ~1 | id

Parameter estimate(s):

```
Correlation:
 1   2   3
2 0.696
3 0.798 0.695
4 0.490 0.641 0.695
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.518058	0.1678343	26.919745	0.0000
trtattend	0.145248	0.2217329	0.655059	0.5131
trtdistract	0.118634	0.2217329	0.535029	0.5931
trtno directions	0.008210	0.2177856	0.037695	0.9700
csdistracter	0.497776	0.2373408	2.097305	0.0370
trtattend:csdistracter	-0.312978	0.3135771	-0.998089	0.3193
trtdistract:csdistracter	0.591110	0.3066308	1.927758	0.0551
trtno directions:csdistracter	-0.537441	0.3092574	-1.737844	0.0835

Residual standard error: 1.046563

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.02661	0.30786	0.086	0.99525
distracters, attend-distract == 0	-0.87747	0.30078	-2.917	0.00705 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$UNCOR <- m
```

Unstructured covariance

```
> m <- gls(l2paintol ~ trt * cs, correlation = corSymm(form = ~1 |
+ id), weights = varIdent(form = ~1 | trial), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
594.7405 657.1656 -279.3703
```

Correlation Structure: General

Formula: ~1 | id

Parameter estimate(s):

Correlation:

```
  1    2    3
2 0.704
3 0.819 0.710
4 0.543 0.666 0.730
```

Variance function:

Structure: Different standard deviations per stratum

Formula: ~1 | trial

Parameter estimates:

```
      1      2      3      4
1.000000 1.056913 1.150326 1.042491
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.546097	0.1680102	27.058459	0.0000
trtattend	0.140723	0.2142552	0.656801	0.5119
trtdistract	0.094822	0.2142552	0.442566	0.6585
trtno directions	-0.008907	0.2097664	-0.042462	0.9662
csdistracter	0.532060	0.2377770	2.237642	0.0262
trtattend:csdistracter	-0.338429	0.3030151	-1.116872	0.2652
trtdistract:csdistracter	0.609580	0.2964444	2.056306	0.0408
trtno directions:csdistracter	-0.549190	0.2981543	-1.841967	0.0667

Residual standard error: 1.004510

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.0459	0.2944	0.156	0.98465
distracters, attend-distract == 0	-0.9021	0.2876	-3.137	0.00342 **

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$UN <- m
```

	df	AIC	BIC	logLik	LRT.IND	p.IND	LRT.UN
RI	10	601.9478	636.6284	-290.9739	142.92111	0.000000e+00	23.207325
ARMA	11	601.6487	639.7974	-289.8244	145.22024	0.000000e+00	20.908199
AR1	11	603.8850	642.0336	-290.9425	142.98401	0.000000e+00	23.144431
RIAS	12	602.8229	644.4396	-289.4114	146.04606	0.000000e+00	20.082379
UNCOR	15	592.8308	644.8517	-281.4154	162.03816	0.000000e+00	4.090276
RI.byTrial	13	605.1748	650.2596	-289.5874	145.69412	0.000000e+00	20.434318
UN	18	594.7405	657.1656	-279.3703	166.12844	0.000000e+00	NA
AR1.byTrial	13	625.2739	670.3586	-299.6369	125.59510	0.000000e+00	40.533335
MA	10	678.2943	712.9749	-329.1472	66.57465	3.330669e-16	99.553784
IND	9	742.8690	774.0815	-362.4345	NA	NA	166.128437
		p.UN					
RI		0.00311					
ARMA		0.00391					
AR1		0.00161					
RIAS		0.00268					
UNCOR		0.25188					
RI.byTrial		0.00104					
UN		NA					
AR1.byTrial		0.00000					
MA		0.00000					
IND		0.00000					

Independent, Variances by coping style

```
> m <- gls(l2paintol ~ trt * cs, data = pp, weights = varIdent(form = ~1 |
+ cs))
> summ(m)
```

```
      AIC      BIC    logLik
735.7422 770.4228 -357.8711
```

Variance function:

Structure: Different standard deviations per stratum

Formula: ~1 | cs

Parameter estimates:

```
  attender distracter
1.000000  1.322361
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.506229	0.0945568	47.65630	0.0000
trtattend	0.220640	0.3019903	0.73062	0.4657
trtdistract	-0.105494	0.3019903	-0.34933	0.7272
trtno directions	-0.154954	0.3019903	-0.51311	0.6084
csdistracter	0.531053	0.1567660	3.38755	0.0008
trtattend:csdistracter	-0.608560	0.5006704	-1.21549	0.2254
trtdistract:csdistracter	0.993158	0.4874368	2.03751	0.0427
trtno directions:csdistracter	-0.651929	0.5006704	-1.30211	0.1941

Residual standard error: 0.9069574

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.3261	0.4056	0.804	0.6652
distracters, attend-distract == 0	-1.2756	0.5240	-2.434	0.0296 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$IND <- m
```

Random Intercept and Variances by coping style

```
> m <- lme(l2paintol ~ trt * cs, random = ~1 | id, data = pp, weights = varIdent(form = ~1 |
+ cs))
> summ(m)
```

```
      AIC      BIC    logLik
588.6248 626.7735 -283.3124
```

Random effects:

```
Formula: ~1 | id
(Intercept) Residual
StdDev:    0.883682 0.4543573
```

Variance function:

```
Structure: Different standard deviations per stratum
Formula: ~1 | cs
Parameter estimates:
attender distracter
1.000000 1.528182
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.535480	0.1634994	175	27.740042	0.0000
trtattend	0.103527	0.1647527	175	0.628376	0.5306
trtdistract	0.047512	0.1647527	175	0.288387	0.7734
trtno directions	-0.104679	0.1655698	175	-0.632237	0.5281
csdistracter	0.477077	0.2376800	62	2.007224	0.0491
trtattend:csdistracter	-0.456097	0.2992470	175	-1.524148	0.1293
trtdistract:csdistracter	0.545536	0.2897488	175	1.882788	0.0614
trtno directions:csdistracter	-0.396611	0.3031412	175	-1.308336	0.1925

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.05601	0.23224	0.241	0.9637
distracters, attend-distract == 0	-0.94562	0.34276	-2.759	0.0116 *

```
---
Signif. codes:  0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)
```

```
> out$RI.byCS <- m
```

Random Intercept and Variances by coping style

```
> m <- lme(l2paintol ~ trt * cs, random = ~1 | id, data = pp, weights = varIdent(form = ~1 |
+       cs))
> summ(m)
```

```
      AIC      BIC    logLik
588.6248 626.7735 -283.3124
```

Random effects:

```
Formula: ~1 | id
      (Intercept) Residual
StdDev:    0.883682 0.4543573
```

Variance function:

```
Structure: Different standard deviations per stratum
Formula: ~1 | cs
Parameter estimates:
  attender distracter
  1.000000   1.528182
```

Fixed effects: l2paintol ~ trt * cs

	Value	Std.Error	DF	t-value	p-value
(Intercept)	4.535480	0.1634994	175	27.740042	0.0000
trtattend	0.103527	0.1647527	175	0.628376	0.5306
trtdistract	0.047512	0.1647527	175	0.288387	0.7734
trtno directions	-0.104679	0.1655698	175	-0.632237	0.5281
csdistracter	0.477077	0.2376800	62	2.007224	0.0491
trtattend:csdistracter	-0.456097	0.2992470	175	-1.524148	0.1293
trtdistract:csdistracter	0.545536	0.2897488	175	1.882788	0.0614
trtno directions:csdistracter	-0.396611	0.3031412	175	-1.308336	0.1925

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.05601	0.23224	0.241	0.9637
distracters, attend-distract == 0	-0.94562	0.34276	-2.759	0.0116 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$RI.byCS <- m
```

Auto-Regressive and Variances by coping style

```
> m <- gls(l2paintol ~ trt * cs, correlation = corAR1(form = ~1 |
+ id), weights = varIdent(form = ~1 | cs), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
606.7901 644.9388 -292.3951
```

Correlation Structure: AR(1)

Formula: ~1 | id

Parameter estimate(s):

Phi

0.7182306

Variance function:

Structure: Different standard deviations per stratum

Formula: ~1 | cs

Parameter estimates:

attender distracter

1.000000 1.466270

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.563731	0.1324452	34.45751	0.0000
trtattend	0.085123	0.1921606	0.44298	0.6582
trtdistract	0.008785	0.1921606	0.04572	0.9636
trtno directions	-0.120431	0.1921606	-0.62672	0.5314
csdistracter	0.459768	0.2350649	1.95592	0.0516
trtattend:csdistracter	-0.367323	0.3410483	-1.07704	0.2826
trtdistract:csdistracter	0.587904	0.3307099	1.77770	0.0767
trtno directions:csdistracter	-0.246382	0.3410483	-0.72243	0.4707

Residual standard error: 0.856699

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.07634	0.26658	0.286	0.9492
distracters, attend-distract == 0	-0.87889	0.38189	-2.301	0.0423 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1
(Adjusted p values reported -- single-step method)

```
> out$AR1.byCS <- m
```


Unstructured and Variances by coping style

```
> m <- gls(l2paintol ~ trt * cs, correlation = corSymm(form = ~1 |
+ id), weights = varIdent(form = ~1 | cs * trial), data = pp)
> summ(m)
```

```
      AIC      BIC    logLik
584.9119 661.2092 -270.4560
```

Correlation Structure: General

Formula: ~1 | id

Parameter estimate(s):

Correlation:

```
  1    2    3
2 0.745
3 0.837 0.735
4 0.558 0.678 0.718
```

Variance function:

Structure: Different standard deviations per stratum

Formula: ~1 | cs * trial

Parameter estimates:

```
  attendee*1  attendee*2  attendee*3  attendee*4  distracter*1  distracter*2
      1.000000      1.117589      1.047188      1.025378      1.465935      1.485292
distracter*3  distracter*4
      1.734388      1.470678
```

Coefficients:

	Value	Std.Error	t-value	p-value
(Intercept)	4.560636	0.1411723	32.30545	0.0000
trtattend	0.135800	0.1758469	0.77226	0.4407
trtdistract	0.098887	0.1758469	0.56234	0.5744
trtno directions	-0.003330	0.1710491	-0.01947	0.9845
csdistracter	0.524465	0.2454057	2.13713	0.0336
trtattend:csdistracter	-0.339415	0.3094581	-1.09681	0.2738
trtdistract:csdistracter	0.625577	0.3004577	2.08208	0.0384
trtno directions:csdistracter	-0.595744	0.3011551	-1.97820	0.0491

Residual standard error: 0.827433

A couple pairwise comparisons...

	Estimate	Std. Error	z value	Pr(> z)
attenders, attend-distract == 0	0.03691	0.24229	0.152	0.9853
distracters, attend-distract == 0	-0.92808	0.33953	-2.733	0.0125 *

Signif. codes: 0 '***' 0.001 '**' 0.01 '*' 0.05 '.' 0.1 ' ' 1

(Adjusted p values reported -- single-step method)

```
> out$UN <- m
```

With coping style

	df	AIC	BIC	logLik	LRT.IND	p.IND	LRT.UN	p.UN
RI.byCS	11	588.6248	626.7735	-283.3124	149.1174	0	25.71288	0.00716
AR1.byCS	11	606.7901	644.9388	-292.3951	130.9521	0	43.87823	0.00001
UN	22	584.9119	661.2092	-270.4560	174.8303	0	NA	NA
IND	10	735.7422	770.4228	-357.8711	NA	NA	174.83031	0.00000