

Appendix A

Task Instructions and Administration Conditions

This appendix provides the full wording of the writing task instructions, details on administration conditions, and specific task topics.

Instructions for Writing Tasks

Before you begin, please read the following guidelines carefully. These instructions will help ensure that everyone completes the writing tasks under the same conditions.

1. Task Schedule:

- You will complete four different writing tasks over several weeks.
- Each task will be completed in class under the supervision of your instructor.

2. Writing Format:

- You will type your response using a word processor provided in class.
- Handwritten responses are not allowed.

3. Time Limits:

- **Each writing task has a specific time limit:**
 - Descriptive Task: 35 minutes
 - Narrative Task: 40 minutes
 - Expository Task: 45 minutes
 - Argumentative Task: 50 minutes

4. Use of Resources:

- You are not allowed to use dictionaries, the internet, or any other external reference materials.
- You must rely only on your own knowledge and writing skills.

5. Task Instructions:

- At the start of each session, you will receive a written prompt explaining what you need to write about.
- The instructions will be clear and complete, and no further clarification will be provided during the task.

6. Submission:

- Once you finish, submit your essay through the course site immediately.

Please do your best on each task and write as clearly and thoughtfully as possible.

Writing Task Instructions

Descriptive Task

Instruction: *Provide a vivid description of your experience with any cultural differences when you were communicating with other people from different cultures. How did you approach your intercultural differences and get them resolved?*

Length Requirement: *At least 300 words. There is no upper limit; you can write as many words as you like.*

Narrative Task

Instruction: *Select a specific, memorable cultural event from your own culture and tell a story about how this event has affected your life.*

Length Requirement: *At least 300 words. There is no upper limit; you can write as many words as you like.*

Expository Task

Instruction: *University students around the world rely on computers and the Internet for learning, submitting assignments, and finding jobs. While this makes education more efficient, it*

also affects students differently based on their cultural and economic backgrounds. In a well-organized essay, explain the benefits and challenges of relying on technology in education. Consider how culture influences students' access to and experience with digital learning. Use examples to support your ideas.

Length Requirement: *At least 300 words. There is no upper limit; you can write as many words as you like.*

Argumentative Task

Instruction: *Computers and the Internet have transformed education, making learning faster, more efficient, and more accessible. Supporters argue that technology improves research, reduces waste, and enhances collaboration, while critics point out issues like cheating, digital dependence, and unequal access. In many cultures, access to technology varies, affecting how students experience education.*

In a well-structured essay, take a clear position on this issue: Does the use of computers and the Internet improve the quality of education for all students, or does it create more problems than benefits, especially across different cultures? Support your argument with specific examples and consider how cultural and economic differences impact students' access to and use of technology in education.

Length Requirement: *At least 300 words. There is no upper limit; you can write as many words as you like.*

These standardized instructions and administration procedures ensured consistency across tasks and allowed for a controlled examination of lexical sophistication in L2 writing.

A. Linguistic examples for all measures

1. Lexical Frequency (COCA_Academic_Frequency_AW)

Higher-frequency items (higher values):

- *people, important, problem, education*

Lower-frequency items (lower values):

- *implementation, sustainability, inequality, infrastructure*

Higher values indicate reliance on more commonly occurring words in the reference corpus, whereas lower values reflect the use of less frequent, often more specialized or abstract vocabulary.

2. Lexical Range (COCA_Academic_Range_AW)

High-range items (widely distributed across texts):

- *people, system, education*

Low-range items (more context-specific):

- *tuition, scholarship, rural schools*

High-range words occur across a wide variety of contexts, while low-range items tend to be more restricted to specific topics or discourse domains.

3. Bigram Frequency (COCA_Academic_Bigram_Frequency)

High-frequency bigrams:

- *in the, more than, because of*

Lower-frequency bigrams:

- *address inequality, enhance learning, cultural barriers*

Higher values reflect reliance on highly frequent word combinations, while lower values indicate the use of less common or more content-specific lexical pairings.

4. Bigram Range (COCA_Academic_Bigram_Range)

High-range bigrams (widely distributed):

- *in the, on the, there are*

Low-range bigrams (topic-dependent):

- *online platforms, urban schools, family traditions*

High-range bigrams are broadly distributed across texts, whereas low-range bigrams tend to occur in more specific contexts.

E. Trigram Frequency (COCA_Academic_Trigram_Frequency)

High-frequency trigrams:

- *one of the, as a result, in order to*

Lower-frequency trigrams:

- *improve the quality, students from rural, play an important*

Higher values reflect reliance on more common multiword sequences, often associated with general discourse structuring, whereas lower values indicate less frequent or more context-specific sequences.

5. Trigram Range (COCA_Academic_Trigram_Range)

High-range trigrams (widely distributed discourse frames):

- *on the other hand, as a result, one of the*

Low-range trigrams (topic-specific):

- *students in villages, my hometown experience, learning in my country*

High-range trigrams typically function as conventional discourse-organizing expressions, while low-range trigrams are more closely tied to specific topics or personal experiences.

6. Psycholinguistic Measures

Familiarity (MRC_Familiarity_AW)

High familiarity:

- *home, friend, school*

Low familiarity:

- *regulation, implementation, allocation*

Higher values reflect words that are subjectively more familiar to language users, while lower values indicate less commonly encountered or more formal vocabulary.

Imageability (MRC_Imageability_AW)

High imageability:

- *bus, rain, house, garden*

Low imageability:

- *freedom, responsibility, impact, policy*

Higher values correspond to words that can be easily visualized, whereas lower values reflect more abstract concepts.

Meaningfulness (MRC_Meaningfulness_AW)

High meaningfulness:

- *family, teacher, food*

Low meaningfulness:

- *factor, issue, aspect*

Higher values indicate words with richer associative connections, while lower values reflect more general or weakly associated concepts.

7. Semantic Measures

Polysemy (Polysemy_CW)

High-polysemy words:

- *light, run, set*

Low-polysemy words:

- *calculator, oxygen, microscope*

Higher values reflect words with multiple related meanings, while lower values indicate more semantically specific items.

Hypernymy (Nouns)

High hypernymy (general nouns):

- *thing, tool, object*

Low hypernymy (specific nouns):

- *laptop, microscope, textbook*

Hypernymy (Verbs)

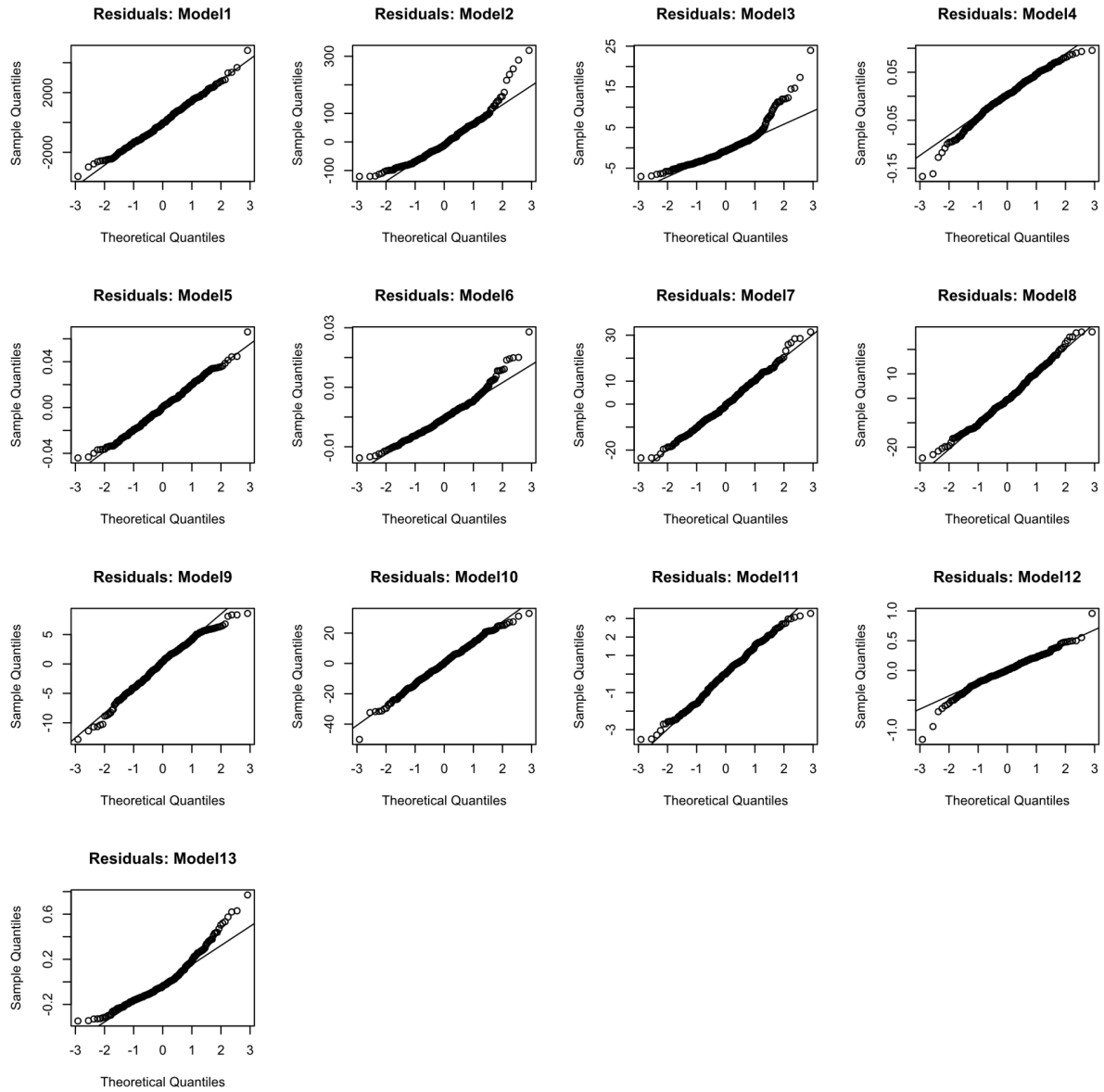
High hypernymy (general verbs):

- *do, make, go*

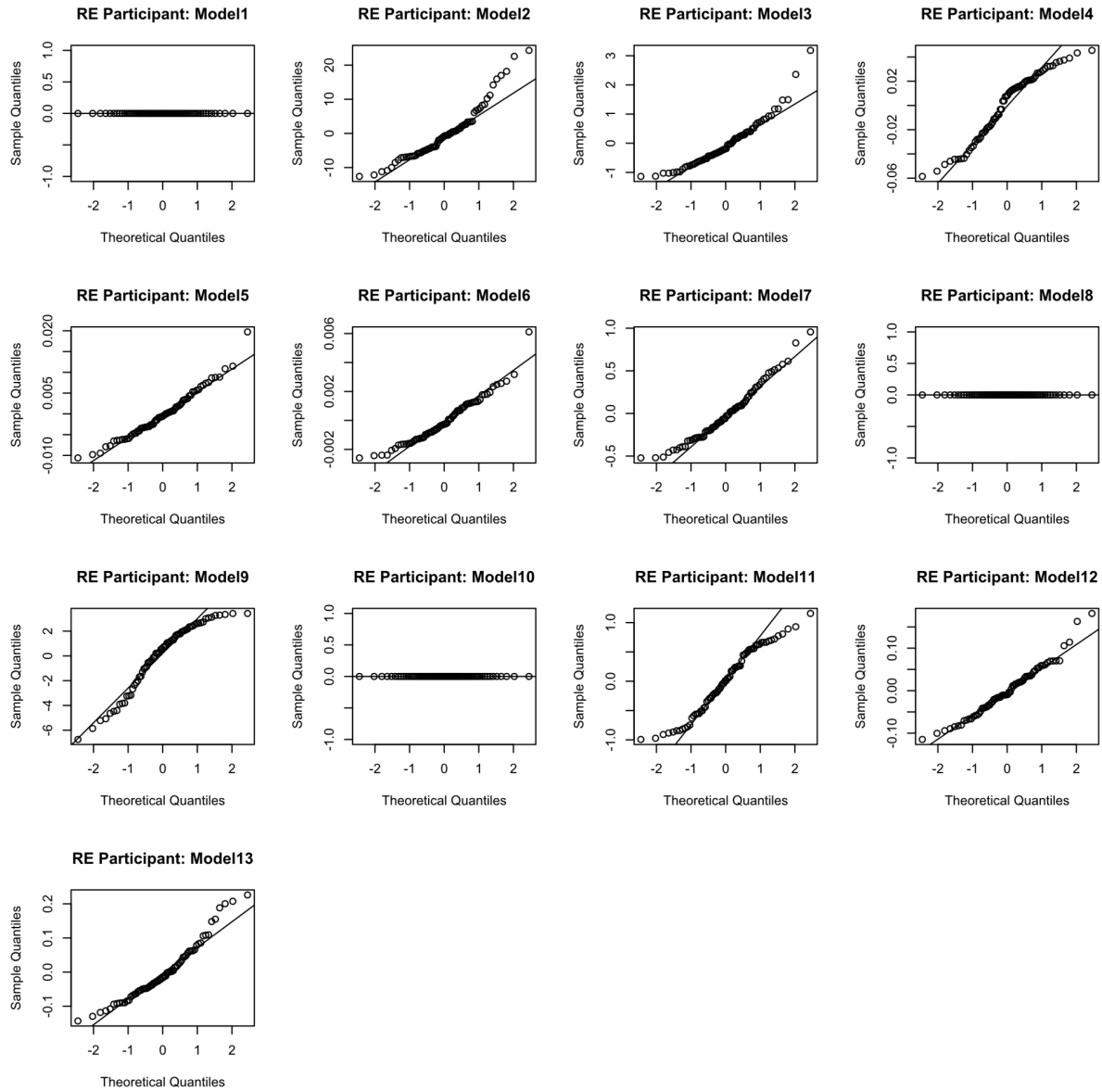
Low hypernymy (specific verbs):

- *analyze, construct, negotiate*

B - Q-Q plots for the normality of the residuals of all models



C - Q-Q plots for the normality of the random effects



D. The results of mixed-effects models

COCA_Academic_Frequency_AW

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [
lmerModLmerTest]

Formula:

COCA_Academic_Frequency_AW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 4824.5

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.5979	-0.7041	-0.0266	0.6758	3.4707

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	0	0
Residual		1933897	1391

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	8184.15	203.57	278.00
Task	87.16	74.33	278.00

	t value	Pr(> t)
(Intercept)	40.203	<2e-16 ***
Task	1.173	0.242

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)					
Task	-0.913				
Task1 - Task2	1796.98	191	207	9.393	<.0001
Task1 - Task3	919.62	191	207	4.807	<.0001
Task1 - Task4	1.91	191	207	0.010	1.0000
Task2 - Task3	-877.37	191	207	-4.586	<.0001
Task2 - Task4	-1795.07	191	207	-9.383	<.0001
Task3 - Task4	-917.71	191	207	-4.797	<.0001

(1)	
(Intercept)	8184.152
	(203.570)
Task	87.164
	(74.333)
SD (Intercept Participant)	0.000
SD (Observations)	1390.646
Num.Obs.	280
R2 Marg.	0.005
AIC	4832.5
BIC	4847.0
RMSE	1385.67

COCA_Academic_Bigram_Frequency –

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [

lmerModLmerTest]

Formula:

COCA_Academic_Bigram_Frequency ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 3192.6

Scaled residuals:

Min	1Q	Median	3Q	Max
-1.6793	-0.6801	-0.1472	0.5767	4.4593

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	316.8	17.8
Residual		5168.9	71.9

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	157.650	10.737	274.494
Task	10.366	3.843	209.000

	t value	Pr(> t)
(Intercept)	14.683	< 2e-16 ***
Task	2.697	0.00756 **

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)
Task -0.895

(1)	
(Intercept)	157.650
	(10.737)
Task	10.366
	(3.843)
SD (Intercept Participant)	17.800
SD (Observations)	71.895
Num.Obs.	280
R2 Marg.	0.024
R2 Cond.	0.080
AIC	3200.6
BIC	3215.1
ICC	0.1
RMSE	69.87

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [
lmerModLmerTest]

Formula:

COCA_Academic_Trigram_Frequency ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 1660.3

Scaled residuals:

Min	1Q	Median	3Q	Max
-1.5633	-0.6306	-0.1760	0.3404	5.3358

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	2.18	1.476
Residual		20.16	4.490

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	7.6076	0.6806	277.0342
Task	0.6500	0.2400	209.0000

	t value	Pr(> t)
(Intercept)	11.179	< 2e-16 ***
Task	2.708	0.00732 **

Signif. codes:

0	'***'	0.001	'**'	0.01	'*'	0.05	'.'
0.1	' '	1					

Correlation of Fixed Effects:

(Intr)

Task -0.882

	(1)
(Intercept)	7.608
Task	(0.681) 0.650 (0.240)
SD (Intercept Participant)	1.476

	(1)
SD (Observations)	4.490
Num.Obs.	280
R2 Marg.	0.023
R2 Cond.	0.118
AIC	1668.3
BIC	1682.8
ICC	0.1
RMSE	4.30

COCA_Academic_Range_AW

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [
lmerModLmerTest]

Formula:

COCA_Academic_Range_AW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: -790.8

Scaled residuals:

Min	1Q	Median	3Q	Max
-3.3345	-0.4959	0.0638	0.6445	1.9064

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	0.001184	0.03441
Residual		0.002512	0.05012

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	5.569e-01	8.411e-03	2.588e+02
Task	1.002e-02	2.679e-03	2.090e+02
	t value	Pr(> t)	
(Intercept)	66.219	< 2e-16	***
Task	3.742	0.000236	***

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)

Task -0.796

	(1)
(Intercept)	0.557 (0.008)
Task	0.010 (0.003)
SD (Intercept Participant)	0.034
SD (Observations)	0.050
Num.Obs.	280
R2 Marg.	0.033
R2 Cond.	0.343
AIC	-782.8
BIC	-768.2
ICC	0.3
RMSE	0.05

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-0.04170	0.00819	207	-5.093	<.0001
Task1 - Task3	-0.02874	0.00819	207	-3.510	0.0031
Task1 - Task4	-0.03774	0.00819	207	-4.609	<.0001
Task2 - Task3	0.01297	0.00819	207	1.584	0.3901
Task2 - Task4	0.00397	0.00819	207	0.484	0.9625
Task3 - Task4	-0.00900	0.00819	207	-1.099	0.6903

COCA Academic Bigram Range

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [

lmerModLmerTest]

Formula:

COCA_Academic_Bigram_Range ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: -1329.2

Scaled residuals:

Min	1Q	Median	3Q	Max
-2.1718	-0.6684	0.0238	0.5830	3.2578

Random effects:

Groups	Name	Variance
Participant	(Intercept)	7.595e-05
Residual		4.106e-04
Std.Dev.		
0.008715		
0.020264		

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	1.119e-01	3.144e-03	2.779e+02
Task	4.000e-03	1.083e-03	2.090e+02
	t value	Pr(> t)	
(Intercept)	35.588	< 2e-16	***
Task	3.693	0.000283	***

Signif. codes:

0	'***'	0.001	'**'	0.01	'*'	0.05	'.'
0.1	' '						1

Correlation of Fixed Effects:

(Intr)
Task -0.861

	(1)
(Intercept)	0.112
	(0.003)
Task	0.004
	(0.001)
SD (Intercept Participant)	0.009

	(1)
SD (Observations)	0.020
Num.Obs.	280
R2 Marg.	0.040
R2 Cond.	0.190
AIC	-1321.2
BIC	-1306.6
ICC	0.2
RMSE	0.02

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-0.00325	0.00344	207	-0.945	0.7807
Task1 - Task3	-0.00781	0.00344	207	-2.270	0.1085
Task1 - Task4	-0.01181	0.00344	207	-3.433	0.0040
Task2 - Task3	-0.00456	0.00344	207	-1.325	0.5480
Task2 - Task4	-0.00856	0.00344	207	-2.488	0.0648
Task3 - Task4	-0.00400	0.00344	207	-1.163	0.6510

COCA_Academic_Trigram_Range

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [
lmerModLmerTest]

Formula:

COCA_Academic_Trigram_Range ~ Task + (1 | Participant)
Data: data

REML criterion at convergence: -1932.5

Scaled residuals:

Min	1Q	Median	3Q	Max
-1.9832	-0.6507	-0.0637	0.5189	4.1270

Random effects:

Groups	Name	Variance
Participant	(Intercept)	6.901e-06
Residual		4.804e-05
Std.Dev.		

0.002627
 0.006931
 Number of obs: 280, groups:
 Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	1.835e-02	1.062e-03	2.779e+02
Task	1.467e-03	3.705e-04	2.090e+02
	t value	Pr(> t)	
(Intercept)	17.274	< 2e-16	***
Task	3.959	0.000103	***

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
 0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)
 Task -0.872

(1)	
(Intercept)	0.018
	(0.001)
Task	0.001
	(0.000)
SD (Intercept Participant)	0.003
SD (Observations)	0.007
Num.Obs.	280
R2 Marg.	0.047
R2 Cond.	0.167
AIC	-1924.5
BIC	-1910.0
ICC	0.1
RMSE	0.01

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-1.04e-03	0.00117	207	-0.888	0.8110
Task1 - Task3	-3.86e-03	0.00117	207	-3.293	0.0064
Task1 - Task4	-3.95e-03	0.00117	207	-3.370	0.0049
Task2 - Task3	-2.82e-03	0.00117	207	-2.405	0.0794
Task2 - Task4	-2.91e-03	0.00117	207	-2.482	0.0658
Task3 - Task4	-9.03e-05	0.00117	207	-0.077	0.9998

MRC_Concreteness_AW

Linear mixed model fit by REML. t-tests
 use Satterthwaite's method [
 lmerModLmerTest]
 Formula:
 MRC_Concreteness_AW ~ Task + (1 | Participant)
 Data: data

REML criterion at convergence: 2102.5

Scaled residuals:

Min	1Q	Median	3Q
-2.26963	-0.63715	-0.02241	0.67642
Max			
3.04565			

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	1.761	1.327
Residual		106.476	10.319

Number of obs: 280, groups:
 Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	294.1490	1.5188	270.3940
Task	1.3942	0.5516	209.0000
	t value	Pr(> t)	
(Intercept)	193.671	<2e-16	***
Task	2.528	0.0122	*

Signif. codes:

0	'***'	0.001	'**'	0.01	'*'	0.05	'.'
0.1	' '	1					

Correlation of Fixed Effects:
 (Intr)
 Task -0.908

(1)	
(Intercept)	294.149 (1.519)
Task	1.394 (0.552)
SD (Intercept Participant)	1.327
SD (Observations)	10.319
Num.Obs.	280
R2 Marg.	0.022
R2 Cond.	0.038
AIC	2110.5
BIC	2125.1
ICC	0.0
RMSE	10.20

MRC_Imageability_AW

Linear mixed model fit by REML. t-tests
 use Satterthwaite's method [
 lmerModLmerTest]

Formula:

MRC_Imageability_AW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 2091

Scaled residuals:

Min	1Q	Median	3Q
-2.39548	-0.70662	-0.05488	0.65621
Max			
2.66715			

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	0.0	0.00
Residual		103.8	10.19

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	316.9418	1.4914	278.0000
Task	1.5863	0.5446	278.0000

	t value	Pr(> t)
(Intercept)	212.511	< 2e-16 ***
Task	2.913	0.00387 **

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05 '.'
0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)

Task -0.913

optimizer (nloptwrap) convergence code: 0 (OK)

boundary (singular) fit: see help('issingular')

	(1)
(Intercept)	316.942
	(1.491)
Task	1.586
	(0.545)
SD (Intercept Participant)	0.000
SD (Observations)	10.188
Num.Obs.	280
R2 Marg.	0.030
AIC	2099.0
BIC	2113.6
RMSE	10.15

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-11.744	1.57	207	-7.495	<.0001
Task1 - Task3	-7.152	1.57	207	-4.564	0.0001
Task1 - Task4	-6.818	1.57	207	-4.351	0.0001
Task2 - Task3	4.592	1.57	207	2.931	0.0195
Task2 - Task4	4.926	1.57	207	3.144	0.0103
Task3 - Task4	0.333	1.57	207	0.213	0.9966

MRC_Familiarity_AW

Linear mixed model fit by REML. t-tests
use Satterthwaite's method [
lmerModLmerTest]

Formula:

MRC_Familiarity_AW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 1710.3

Scaled residuals:

Min	1Q	Median	3Q
-2.87262	-0.61815	0.08559	0.65287
Max			
1.92180			

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	10.38	3.222
Residual		19.95	4.467

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	589.0413	0.7589	253.8994
Task	1.4235	0.2388	209.0000
	t value	Pr(> t)	
(Intercept)	776.183	< 2e-16	***
Task	5.962	1.05e-08	***

Signif. codes:

0	'***'	0.001	'**'	0.01	'*'	0.05	'.'
0.1	' '	1					

Correlation of Fixed Effects:
 (Intr)
 Task -0.787

	(1)
(Intercept)	589.041
	(0.759)
Task	1.423
	(0.239)
SD (Intercept Participant)	3.222
SD (Observations)	4.467
Num.Obs.	280
R2 Marg.	0.077
R2 Cond.	0.393
AIC	1718.3
BIC	1732.8
ICC	0.3
RMSE	4.06

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-5.482	0.697	207	-7.865	<.0001
Task1 - Task3	-4.577	0.697	207	-6.567	<.0001
Task1 - Task4	-5.047	0.697	207	-7.240	<.0001
Task2 - Task3	0.905	0.697	207	1.298	0.5653
Task2 - Task4	0.435	0.697	207	0.625	0.9240
Task3 - Task4	-0.469	0.697	207	-0.673	0.9071

MRC_Meaningfulness_AW

Linear mixed model fit by REML. t-tests

use Satterthwaite's method [
 lmerModLmerTest]

Formula:

MRC_Meaningfulness_AW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 2254.5

Scaled residuals:

Min	1Q	Median	3Q	Max
-3.6660	-0.6592	0.0113	0.6898	2.4121

Random effects:

Groups	Name	Variance	Std.Dev.
Participant	(Intercept)	0.0	0.00
Residual		186.9	13.67

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error	df
(Intercept)	338.2094	2.0013	278.0000
Task	2.1561	0.7308	278.0000
	t value	Pr(> t)	
(Intercept)	168.997	< 2e-16	***
Task	2.951	0.00344	**

Signif. codes:

0	'***'	0.001	'**'	0.01	'*'	0.05	'.'
0.1	'		'				1

Correlation of Fixed Effects:

(Intr)
Task -0.913

optimizer (nloptwrap) convergence code: 0 (OK)
boundary (singular) fit: see help('issingular')

	(1)
(Intercept)	338.209
	(2.001)
Task	2.156
	(0.731)
SD (Intercept Participant)	0.000
SD (Observations)	13.671
Num.Obs.	280
R2 Marg.	0.030

	(1)
AIC	2262.5
BIC	2277.1
RMSE	13.62

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-24.368	1.72	207	-14.159	<.0001
Task1 - Task3	-10.952	1.72	207	-6.363	<.0001
Task1 - Task4	-11.659	1.72	207	-6.774	<.0001
Task2 - Task3	13.416	1.72	207	7.795	<.0001
Task2 - Task4	12.709	1.72	207	7.384	<.0001
Task3 - Task4	-0.707	1.72	207	-0.411	0.9765

Polysemy_CW

Linear mixed model fit by REML.

t-tests use Satterthwaite's method

[lmerModLmerTest]

Formula:

Polysemy_CW ~ Task + (1 | Participant)

Data: data

REML criterion at convergence:

1079.3

Scaled residuals:

Min	1Q	Median	3Q
-2.34091	-0.69359	0.00646	0.60891
Max			
2.17162			

Random effects:

Groups	Name	Variance
Participant	(Intercept)	0.6185
Residual		2.2710
Std.Dev.		

0.7865
 1.5070
 Number of obs: 280, groups:
 Participant, 70

Fixed effects:

	Estimate	Std. Error
(Intercept)	7.47136	0.23979
Task	0.38622	0.08055

	df	t value
(Intercept)	274.81187	31.158
Task	209.00000	4.795

	Pr(> t)
(Intercept)	< 2e-16 ***
Task	3.09e-06 ***

Signif. codes:

0 '***' 0.001 '**' 0.01 '*' 0.05
 '.' 0.1 ' ' 1

Correlation of Fixed Effects:

(Intr)
 Task -0.840

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	-2.24	0.207	207	-10.820	<.0001

(1)	
(Intercept)	7.471 (0.240)
Task	0.386 (0.081)
SD (Intercept Participant)	0.786
SD (Observations)	1.507
Num.Obs.	280
R2 Marg.	0.061
R2 Cond.	0.262
AIC	1087.3
BIC	1101.8

(1)	
ICC	0.2
RMSE	1.40

Task1 - Task3	-0.71	0.207	207	-3.437	0.0039
Task1 - Task4	-1.80	0.207	207	-8.691	<.0001
Task2 - Task3	1.53	0.207	207	7.383	<.0001
Task2 - Task4	0.44	0.207	207	2.129	0.1474
Task3 - Task4	-1.09	0.207	207	-5.254	<.0001

Hypernymy Nouns

Linear mixed model fit by REML.

t-tests use Satterthwaite's method

[lmerModLmerTest]

Formula:

Hypernymy_Nouns ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: 85.1

Scaled residuals:

Min	1Q	Median	3Q
-4.4441	-0.5116	0.0283	0.6349
Max			
3.6705			

Random effects:

Groups	Name	Variance
Participant	(Intercept)	0.009782
Residual		0.068182
Std.Dev.		
0.09891		
0.26112		

Number of obs: 280, groups:
Participant, 70

Fixed effects:

```

              Estimate Std. Error
(Intercept)  6.40956    0.04001
Task         0.04243    0.01396
              df t value
(Intercept) 277.88505  160.20
Task        209.00000    3.04
              Pr(>|t|)
(Intercept) < 2e-16 ***
Task        0.00267 **
---
Signif. codes:
  0 '***' 0.001 '**' 0.01 '*' 0.05
  '.' 0.1 ' ' 1

```

Correlation of Fixed Effects:

(Intr)	
Task	-0.872

(1)	
(Intercept)	6.410
	(0.040)
Task	0.042
	(0.014)
SD (Intercept Participant)	0.099
SD (Observations)	0.261
Num.Obs.	280
R2 Marg.	0.028
R2 Cond.	0.150
AIC	93.1
BIC	107.7
ICC	0.1

(1)	
RMSE	0.25

contrast	estimate	SE	df	t.ratio	p.value
Task1 - Task2	0.1303	0.041	207	3.176	0.0093
Task1 - Task3	-0.1409	0.041	207	-3.435	0.0040
Task1 - Task4	-0.0511	0.041	207	-1.245	0.5990
Task2 - Task3	-0.2711	0.041	207	-6.611	<.0001
Task2 - Task4	-0.1813	0.041	207	-4.421	0.0001
Task3 - Task4	0.0898	0.041	207	2.190	0.1294

Hypernymy_Verbs

Linear mixed model fit by REML.

t-tests use Satterthwaite's method

[lmerModLmerTest]

Formula:

Hypernymy_Verbs ~ Task + (1 | Participant)

Data: data

REML criterion at convergence: -19.3

Scaled residuals:

Min	1Q	Median	3Q
-1.6681	-0.6313	-0.1796	0.4695
Max			
3.7080			

Random effects:

Groups	Name	Variance
Participant	(Intercept)	0.01283
Residual		0.04315
Std.Dev.		
0.1133		
0.2077		

Number of obs: 280, groups:

Participant, 70

Fixed effects:

	Estimate	Std. Error
(Intercept)	1.81796	0.03328
Task	-0.02201	0.01110

```

              df t value
(Intercept) 273.35520 54.620
Task        209.00000 -1.982
              Pr(>|t|)
(Intercept) <2e-16 ***
Task        0.0488 *
---
Signif. codes:
  0 '***' 0.001 '**' 0.01 '*' 0.05
  '.' 0.1 ' ' 1

```

Correlation of Fixed Effects:

```

(Intr)
Task -0.834

```

(1)	
(Intercept)	1.818
	(0.033)
Task	-0.022
	(0.011)
SD (Intercept Participant)	0.113
SD (Observations)	0.208
Num.Obs.	280
R2 Marg.	0.011
R2 Cond.	0.237
AIC	-11.3
BIC	3.2
ICC	0.2
RMSE	0.19

```

contrast      estimate      SE  df t.ratio p.value
Task1 - Task2    0.1435 0.0341 207    4.207 0.0002
Task1 - Task3    0.0693 0.0341 207    2.032 0.1795
Task1 - Task4    0.0981 0.0341 207    2.876 0.0229
Task2 - Task3   -0.0742 0.0341 207   -2.175 0.1337
Task2 - Task4   -0.0454 0.0341 207   -1.331 0.5440
Task3 - Task4    0.0288 0.0341 207    0.844 0.8336

```