

## Supplemental Analyses for

### The Effect of Concrete Wording on Truth Judgements: A Preregistered Replication and Extension of Hansen & Wänke (2010)

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**Supplement 1:** Reports ANOVAs comparable to the analysis used in the original Hansen and Wänke (2010) study (adding country as a factor). ANOVAs are reported for both original and revised sets, and both excluding and including known statements. All ANOVAs are 2 (concreteness of statements: concrete vs. abstract) x 2 (actual truth: true vs. false) x 2 (statement set: set A vs. set B) x 2 (country: UK vs. USA) mixed design with the first two factors varied within participants, and the last two factors varied between participants.

**Supplement 2:** Reports paired, one-sided t-tests comparing average responses to concrete and abstract statements but retaining all items (i.e., without excluding known statements). T-tests are reported for both the original and revised sets of items.

**Supplement 3:** Reports paired t-tests comparing average responses to new and replaced items.

**Supplement 1**

**Experiment 1a**

Table S1.1

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, original 52 statements, excluding known items.*

**Within Subjects Effects**

	Sum of Squares	df	Mean Square	F	p
concreteness	0.190	1	0.190	1.626	0.203
concreteness * set	0.046	1	0.046	0.393	0.531
concreteness * country	0.026	1	0.026	0.224	0.637
concreteness * set * country	0.426	1	0.426	3.636	0.058
Residual	28.337	242	0.117		
truth_value	5.280	1	5.280	50.118	< .001
truth_value * set	0.368	1	0.368	3.489	0.063
truth_value * country	0.187	1	0.187	1.771	0.185
truth_value * set * country	0.187	1	0.187	1.775	0.184
Residual	25.493	242	0.105		
concreteness * truth_value	0.048	1	0.048	0.533	0.466
concreteness * truth_value * set	0.682	1	0.682	7.596	0.006
concreteness * truth_value * country	0.064	1	0.064	0.709	0.401
concreteness * truth_value * set * country	0.335	1	0.335	3.731	0.055
Residual	21.733	242	0.090		

*Note.* Type III Sum of Squares

**Between Subjects Effects**

	Sum of Squares	df	Mean Square	F	p
set	1.739	1	1.739	3.229	0.074
country	1.241	1	1.241	2.304	0.130
set * country	0.003	1	0.003	0.005	0.945
Residual	130.320	242	0.539		

*Note.* Type III Sum of Squares

Table S1.2

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, revised 52 statements, excluding known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.314	1	0.314	2.996	0.085
concreteness * set	0.702	1	0.702	6.690	0.010
concreteness * country	0.045	1	0.045	0.427	0.514
concreteness * set * country	0.121	1	0.121	1.150	0.285
Residual	25.393	242	0.105		
truth_value	7.615	1	7.615	60.487	< .001
truth_value * set	0.426	1	0.426	3.382	0.067
truth_value * country	2.944	1	2.944	23.384	< .001
truth_value * set * country	0.095	1	0.095	0.753	0.386
Residual	30.467	242	0.126		
concreteness * truth_value	0.082	1	0.082	0.807	0.370
concreteness * truth_value * set	0.848	1	0.848	8.361	0.004
concreteness * truth_value * country	0.217	1	0.217	2.139	0.145
concreteness * truth_value * set * country	0.643	1	0.643	6.342	0.012
Residual	24.534	242	0.101		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	1.007	1	1.007	1.935	0.165
country	1.388	1	1.388	2.667	0.104
set * country	0.031	1	0.031	0.060	0.806
Residual	125.940	242	0.520		

Note. Type III Sum of Squares

Table S1.3

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, original 52 statements, including known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.289	1	0.289	2.416	0.121
concreteness * set	0.002	1	0.002	0.018	0.895
concreteness * country	< .000	1	< .000	< .001	0.979
concreteness * set * country	0.333	1	0.333	2.787	0.096
Residual	28.938	242	0.120		
truth_value	9.020	1	9.020	83.305	< .001
truth_value * set	0.323	1	0.323	2.982	0.085
truth_value * country	0.129	1	0.129	1.193	0.276
truth_value * set * country	0.251	1	0.251	2.315	0.129
Residual	26.203	242	0.108		
concreteness * truth_value	0.026	1	0.026	0.257	0.613
concreteness * truth_value * set	0.374	1	0.374	3.711	0.055
concreteness * truth_value * country	0.054	1	0.054	0.532	0.466
concreteness * truth_value * set * country	0.625	1	0.625	6.206	0.013
Residual	24.379	242	0.101		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	1.972	1	1.972	3.370	0.068
country	0.924	1	0.924	1.578	0.210
set * country	0.030	1	0.030	0.052	0.820
Residual	141.613	242	0.585		

Note. Type III Sum of Squares

Table S1.4

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, revised 52 statements, including known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.353	1	0.353	3.124	0.078
concreteness * set	1.349	1	1.349	11.948	< .001
concreteness * country	0.009	1	0.009	0.080	0.777
concreteness * set * country	0.099	1	0.099	0.878	0.350
Residual	27.315	242	0.113		
truth_value	11.956	1	11.956	89.278	< .001
truth_value * set	0.319	1	0.319	2.380	0.124
truth_value * country	2.838	1	2.838	21.191	< .001
truth_value * set * country	0.165	1	0.165	1.229	0.269
Residual	32.409	242	0.134		
concreteness * truth_value	0.084	1	0.084	0.787	0.376
concreteness * truth_value * set	0.587	1	0.587	5.507	0.020
concreteness * truth_value * country	0.166	1	0.166	1.558	0.213
concreteness * truth_value * set * country	0.832	1	0.832	7.801	0.006
Residual	25.808	242	0.107		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	1.400	1	1.400	2.490	0.116
country	1.262	1	1.262	2.244	0.135
set * country	0.005	1	0.005	0.010	0.922
Residual	136.080	242	0.562		

Note. Type III Sum of Squares

## Experiment 1b

Table S1.5

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, original 52 statements, excluding known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.198	1	0.198	2.274	0.133
concreteness * set	0.011	1	0.011	0.125	0.724
concreteness * country	0.006	1	0.006	0.072	0.789
concreteness * set * country	0.727	1	0.727	8.336	0.004
Residual	18.848	216	0.087		
truth_value	4.417	1	4.417	46.576	< .001
truth_value * set	0.101	1	0.101	1.061	0.304
truth_value * country	< .001	1	< .001	0.006	0.939
truth_value * set * country	0.319	1	0.319	3.365	0.068
Residual	20.482	216	0.095		
concreteness * truth_value	0.220	1	0.220	2.651	0.105
concreteness * truth_value * set	1.976	1	1.976	23.821	< .001
concreteness * truth_value * country	0.017	1	0.017	0.209	0.648
concreteness * truth_value * set * country	0.229	1	0.229	2.756	0.098
Residual	17.916	216	0.083		

*Note.* Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	0.974	1	0.974	1.834	0.177
country	5.668	1	5.668	10.675	0.001
set * country	2.463	1	2.463	4.639	0.032
Residual	114.694	216	0.531		

*Note.* Type III Sum of Squares

Table S1.6

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, revised 52 statements, excluding known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.087	1	0.087	0.973	0.325
concreteness * set	2.164	1	2.164	24.229	< .001
concreteness * country	0.042	1	0.042	0.470	0.494
concreteness * set * country	0.113	1	0.113	1.263	0.262
Residual	19.293	216	0.089		
truth_value	5.793	1	5.793	60.674	< .001
truth_value * set	0.041	1	0.041	0.427	0.514
truth_value * country	1.004	1	1.004	10.514	0.001
truth_value * set * country	0.161	1	0.161	1.690	0.195
Residual	20.623	216	0.095		
concreteness * truth_value	0.082	1	0.082	0.926	0.337
concreteness * truth_value * set	2.583	1	2.583	29.144	< .001
concreteness * truth_value * country	0.004	1	0.004	0.041	0.840
concreteness * truth_value * set * country	0.316	1	0.316	3.564	0.060
Residual	19.143	216	0.089		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	0.706	1	0.706	1.343	0.248
country	4.919	1	4.919	9.359	0.003
set * country	1.594	1	1.594	3.032	0.083
Residual	113.523	216	0.526		

Note. Type III Sum of Squares

Table S1.7

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, original 52 statements, including known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.174	1	0.174	1.968	0.162
concreteness * set	0.003	1	0.003	0.029	0.864
concreteness * country	0.066	1	0.066	0.751	0.387
concreteness * set * country	0.608	1	0.608	6.887	0.009
Residual	19.079	216	0.088		
truth_value	8.740	1	8.740	83.413	< .001
truth_value * set	0.094	1	0.094	0.899	0.344
truth_value * country	0.049	1	0.049	0.467	0.495
truth_value * set * country	0.641	1	0.641	6.115	0.014
Residual	22.633	216	0.105		
concreteness * truth_value	0.255	1	0.255	2.727	0.100
concreteness * truth_value * set	1.419	1	1.419	15.193	< .001
concreteness * truth_value * country	0.024	1	0.024	0.257	0.613
concreteness * truth_value * set * country	0.098	1	0.098	1.044	0.308
Residual	20.171	216	0.093		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	0.993	1	0.993	1.820	0.179
country	5.909	1	5.909	10.831	0.001
set * country	2.880	1	2.880	5.278	0.023
Residual	117.848	216	0.546		

Note. Type III Sum of Squares



Table S1.8

*Mixed ANOVA of truth ratings by concreteness, set, country, and truth value, revised 52 statements, including known items.*

### Within Subjects Effects

	Sum of Squares	df	Mean Square	F	p
concreteness	0.078	1	0.078	0.896	0.345
concreteness * set	2.613	1	2.613	29.830	< .001
concreteness * country	0.003	1	0.003	0.029	0.866
concreteness * set * country	0.062	1	0.062	0.706	0.402
Residual	18.920	216	0.088		
truth_value	11.742	1	11.742	100.365	< .001
truth_value * set	0.025	1	0.025	0.212	0.646
truth_value * country	1.463	1	1.463	12.507	< .001
truth_value * set * country	0.330	1	0.330	2.820	0.095
Residual	25.271	216	0.117		
concreteness * truth_value	0.127	1	0.127	1.433	0.233
concreteness * truth_value * set	2.440	1	2.440	27.517	< .001
concreteness * truth_value * country	< .001	1	< .001	0.006	0.936
concreteness * truth_value * set * country	0.240	1	0.240	2.709	0.101
Residual	19.154	216	0.089		

Note. Type III Sum of Squares

### Between Subjects Effects

	Sum of Squares	df	Mean Square	F	p
set	0.762	1	0.762	1.392	0.239
country	4.750	1	4.750	8.677	0.004
set * country	2.080	1	2.080	3.799	0.053
Residual	118.245	216	0.547		

Note. Type III Sum of Squares

## Supplement 2

### Experiment 1a

Table S2.1

*One-sided, paired samples t-test comparing average responses to concrete and abstract statements, original 52 statements, including known items.*

#### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
concrete	- abstract	1.526	245	0.064

*Note.* Student's t-test.

#### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
concrete	246	3.572	0.425	0.027
abstract	246	3.538	0.418	0.027

Table S2.2

*One-sided, paired samples t-test comparing average responses to concrete and abstract statements, revised 52 statements, including known items.*

#### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
concrete	- abstract	1.653	245	0.050

*Note.* Student's t-test.

#### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
concrete	246	3.583	0.412	0.026
abstract	246	3.547	0.414	0.026

## Experiment 1b

Table S2.3

*One-sided, paired samples t-test comparing average responses to concrete and abstract statements, original 52 statements, including known items.*

### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
concrete	- abstract	1.485	219	0.069

*Note.* Student's t-test.

### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
concrete	220	3.673	0.424	0.029
abstract	220	3.643	0.395	0.027

Table S2.4

*One-sided, paired samples t-test comparing average responses to concrete and abstract statements, revised 52 statements, including known items.*

### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
concrete	- abstract	0.924	219	0.178

*Note.* Student's t-test.

### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
concrete	220	3.671	0.421	0.028
abstract	220	3.652	0.399	0.027

**Supplement 3**  
**Experiment 1a**

Table S3.1

*Two-sided, paired samples t-test comparing average responses to new and replaced statements, combining across concrete/abstract, including known items.*

**Paired Samples T-Test**

		<b>t</b>	<b>df</b>	<b>p</b>
New items	- Replaced items	1.731	245	0.085

*Note.* Student's t-test.

**Descriptives**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
New items	246	3.622	0.461	0.029
Replaced items	246	3.572	0.462	0.029

Table S3.2

*One-sided, paired samples t-test comparing average responses to new and replaced statements, concrete statements only, including known items.*

**Paired Samples T-Test**

		<b>t</b>	<b>df</b>	<b>p</b>
Concrete new items	- Concrete replaced items	1.354	245	0.088

*Note.* Student's t-test.

**Descriptives**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
Concrete new items	246	3.639	0.617	0.039
Concrete replaced items	246	3.581	0.575	0.037

Table S3.3

*One-sided, paired samples t-test comparing average responses to new and replaced statements, abstract statements only, including known items.*

#### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
Abstract new items	- Abstract replaced items	1.151	245	0.875

Note. Student's t-test.

#### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
Abstract new items	246	3.610	0.569	0.036
Abstract replaced items	246	3.562	0.540	0.034

Table S3.4

*One-sided, paired samples t-test comparing the concrete-abstract difference between revised (close) and original (distant) items including known items.*

#### Paired Samples T-Test

		<b>t</b>	<b>df</b>	<b>p</b>
C-A diff close items	- C- A diff distant items	0.174	245	0.431

Note. Student's t-test.

#### Descriptives

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
C-A diff close items	246	0.029	0.747	0.048
C-A diff distant items	246	0.019	0.636	0.041

### Experiment 1b

Table S3.5

*Two-sided, paired samples t-test comparing average responses to new and replaced statements, combining across concrete/abstract, including known items.*

#### Paired Samples T-Test

		t	df	p
New items	- Replaced items	1.439	219	0.152

*Note.* Student's t-test.

#### Descriptives

	N	Mean	SD	SE
New items	220	3.605	0.453	0.031
Replaced items	220	3.561	0.496	0.033

Table S3.6

*One-sided, paired samples t-test comparing average responses to new and replaced statements, concrete statements only, including known items.*

#### Paired Samples T-Test

		t	df	p
Concrete new items	- Concrete replaced items	0.929	219	0.177

*Note.* Student's t-test.

#### Descriptives

	N	Mean	SD	SE
Concrete new items	220	3.627	0.614	0.041
Concrete replaced items	220	3.587	0.596	0.040

Table S3.7

*One-sided, paired samples t-test comparing average responses to new and replaced statements, abstract statements only, including known items.*

#### Paired Samples T-Test

		t	df	p
Abstract new items	- Abstract replaced items	1.349	219	0.911

*Note.* Student's t-test.

**Descriptives**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
Abstract new items	220	3.588	0.596	0.040
Abstract replaced items	220	3.527	0.561	0.038

Table S3.8

*One-sided, paired samples t-test comparing the concrete-abstract difference between revised (close) and original (distant) items including known items.*

**Paired Samples T-Test**

	<b>t</b>	<b>df</b>	<b>p</b>
C-A diff close items - C-A diff distant items	-0.331	219	0.629

*Note.* Student's t-test.

**Descriptives**

	<b>N</b>	<b>Mean</b>	<b>SD</b>	<b>SE</b>
C-A diff close items	220	0.039	0.800	0.054
C-A diff distant items	220	0.061	0.600	0.040