

Supplementary Materials

Table S1

German/English Identical Cognate, Close Cognate, and Non-cognate Target Word Pairs.

Identical cognate target words pairs ($n = 54$)
Admiral/admiral, Altar/altar, Atlas/atlas, Ball/ball, Bandage/bandage, Bandit/bandit, Baron/baron, Bikini/bikini, Bus/bus, Butter/butter, Clown/clown, Detail/detail, Drama/drama, Element/element, Finger/finger, Gold/gold, Gorilla/gorilla, Hammer/hammer, Hamster/hamster, Hotel/hotel, Hunger/hunger, Kiwi/kiwi, Lava/lava, Mango/mango, Mast/mast, Minute/minute, Monarch/monarch, Monster/monster, Museum/museum, Nest/nest, Olive/olive, Orange/orange, Panther/panther, Partner/partner, Pedal/pedal, Plan/plan, Poster/poster, Problem/problem, Professor/professor, Radio/radio, Ring/ring, Robe/robe, Signal/signal, Status/status, Stress/stress, Taxi/taxi, Test/test, Tiger/tiger, Triumph/triumph, Tunnel/tunnel, Uniform/uniform, Wind/wind, Winter/winter, Wolf/wolf
Close cognate target word pairs ($n = 54$)
Applaus/applause, Axt/axe, Banane/banana, Bier/beer, Biest/beast, Biss/bite, Bruder/brother, Detektiv/detective, Doktor/doctor, Elefant/elephant, Feld/field, Fisch/fish, Foto/photo, Galopp/gallop, Garten/garden, Glas/glass, Haar/hair, Idee/idea, Ingwer/ginger, Insekt/insect, Kaktus/cactus, Kalb/calf, Kamel/camel, Kamera/camera, Keller/cellar, Klinik/clinic, Knie/knee, Koma/coma, Kompass/compass, König/king, Konzert/concert, Kostüm/costume, Lamm/lamb, Meister/master, Moos/moss, Muskel/muscle, Ozean/ocean, Palast/palace, Papier/paper, Pfeffer/pepper, Rost/rust, Salz/salt, Schulter/shoulder, Sohn/son, Sommer/summer, Stroh/straw, Sturm/storm, Tee/tea, Telefon/telephone, Theorie/theory, Tomate/tomato, Wein/wine, Wrack/wreck, Zirkus/circus
Non-cognate target word pairs ($n = 54$)
Bauch/belly, Baum/tree, Beispiel/example, Besen/broom, Dame/lady, Dampf/steam, Dieb/thief, Dreieck/triangle, Eber/boar, Efeu/ivy, Ente/duck, Fenster/window, Floß/raft, Gebäude/building, Gier/greed, Grenze/border, Haut/skin, Herbst/autumn, Holz/wood, Käfig/cage, Kaiser/emperor, Kellner/waiter, Kirsche/cherry, Kragen/collar, Küken/chick, Kürbis/pumpkin, Lehm/clay, Lehrer/teacher, Lied/song, Loch/hole, Locke/curl, Matrose/sailor, Möwe/gull, Neid/envy, Pfütze/puddle, Platz/space, Reise/trip, Richtung/direction, Riss/crack, Ruhm/fame, Saum/hem, Schlucht/ravine, Schurke/villain, Spiegel/mirror, Sprache/language, Steg/jetty, Stift/pencil, Stimme/voice, Stuhl/chair, Teil/part, Tüte/bag, Umschlag/envelope, Witz/joke, Wurf/throw

Note. Fifteen additional words were excluded from Experiment 2, due to their not clearly adhering to the definitions of identical cognate, close cognates, or non-cognates (e.g., Antwort/answer).

Table S2.*Likelihood Ratio Tests for Linear and Non-Linear Effects of Orthographic Similarity*

Dependant variable	Effect	Par.	AIC	BIC	logLik	χ^2	df	p-value
L2 English Accuracy	x	6	2294	2335	-1141			
	x + x ²	8	2296	2351	-1140	1.524	2	0.467
	x + x ² + x ³	10	2300	2369	-1140	0.243	2	0.886
L1 German Accuracy	x	6	2146	2187	-1067			
	x + x ²	8	2145	2200	-1064	4.886	2	0.087
	x + x ² + x ³	10	2146	2216	-1063	2.771	2	0.250
L2 English Latency	x	7	-3852	-3804	1933			
	x + x ²	9	-3848	-3786	1933	0.118	2	0.943
	x + x ² + x ³	11	-3844	-3769	1933	0.222	2	0.895
L1 German Latency	x	7	-5158	-5110	2586			
	x + x ²	9	-5155	-5093	2586	0.680	2	0.712
	x + x ² + x ³	11	-5152	-5076	2587	1.270	2	0.530
L2 English First Fixation Duration	x	9	780	837	-381			
	x + x ²	11	783	852	-380	1.422	2	0.491
	x + x ² + x ³	13	787	869	-380	0.053	2	0.974
L2 English Gaze Duration	x	9	2404	2461	-1193			
	x + x ²	11	2408	2477	-1193	0.235	2	0.889
	x + x ² + x ³	13	2411	2493	-1193	0.667	2	0.717
L2 English Total Viewing Time	x	9	4286	4343	-2134			
	x + x ²	11	4289	4358	-2133	1.439	2	0.487
	x + x ² + x ³	13	4288	4370	-2131	5.002	2	0.082
L2 English Gopast Time	x	9	3673	3730	-1828			
	x + x ²	11	3677	3746	-1828	0.059	2	0.971
	x + x ² + x ³	13	3680	3762	-1827	1.254	2	0.534
L1 German First Fixation Duration	x	7	67	110	-26			
	x + x ²	9	70	125	-26	1.136	2	0.567
	x + x ² + x ³	11	74	141	-26	0.134	2	0.935
L1 German Gaze Duration	x	7	1059	1102	-522			
	x + x ²	9	1062	1117	-522	0.769	2	0.681
	x + x ² + x ³	11	1066	1133	-522	0.044	2	0.978
L1 German Total Viewing Time	x	7	2527	2570	-1256			
	x + x ²	9	2530	2585	-1256	0.500	2	0.779
	x + x ² + x ³	11	2533	2601	-1256	1.048	2	0.592
L1 German Gopast Time	x	7	2643	2686	-1314			
	x + x ²	9	2645	2701	-1314	1.319	2	0.517
	x + x ² + x ³	11	2648	2716	-1313	1.266	2	0.531

Note. The simplified (G)LMM notation for each model was accuracy or log(RT) or log(fixation duration) ~ orthographic similarity × phonological similarity + (1|item) + (1|participants). X represents orthographic similarity, x² its quadratic effect, and x³ its cubic effect on accuracy, RT, or fixation durations.