

## Supplementary Materials

List of Target Words and their Related Primes<sup>1</sup>

<b>CognateType</b>	<b>Related Prime</b>	<b>Spanish Translation</b>	<b>Target</b>	<b>Spanish Translation</b>
<b>Non-Cognate</b>	oin	pie	dantza	baile
	piperbeltz	pimiento	gatz	sal
	belarritako	pendientes	zilar	plata
	gaixo	enfermo	sukar	fiebre
	kapel	sombrero	galtza	pantalones
	ostiko	patada	jipoi	paliza
	urte	años	mende	siglo
	zezen	toro	adar	rama
	eskumuturra	muñeca	hatz	dedo
	janari	comida	gose	hambre
	balea	ballena	izotz	hielo
	eguzkilore	girasol	olio	aceite
	arrano	águila	txori	pajaro
	egur	madera	makila	bara
	zira	chubasquero	beroki	abrigo
	zizare	gusano	sagar	manzana
	laguntza	apoyo	ezgai	incapaz
	beltz	negro	ilun	oscuro
	ikazkin	minero	ikatz	carbón
	ezkontza	boda	senar	marido
	belarri	oreja	hots	ruido
	jakintasun	sabiduría	amona	abuela
	baserritar	campesino	azoka	mercado
	tximista	aligeramiento	ekaitz	tormenta
	aldagela	vestuario	biluz	desnudo
	ukimen	tacto	usaimen	olfativo
	garbiketa	limpieza	neskame	servienta
	hosto	hoja	haize	viento
	aingura	ancla	itsasontzi	barco
	hilabete	meses	aste	semana
	tresna	herramienta	labana	cuchillo
	ate	puerta	giltza	llave
	gorri	rojo	lotsa	vergüenza
	garagardo	cerveza	mozkor	borracho
	bikote	pareja	emazte	esposa
	eraztun	anillo	esku	mano
	aterki	paraguas	euri	lluvia
	kizkur	rizo	buru	cabeza
	ibai	río	emari	caudal
	erabaki	decision	batzar	asamblea
	aurrerapen	progreso	urrats	paso
	abizen	apellido	izen	nombre

<sup>1</sup> Primes were randomized to create Unrelated Primes. In a few cases, the Related prime was randomly paired with its target and this error was not noted until after the experiment was run. These cases were relabeled accordingly in the analyses.

berritsu	hablador	isil	callado
ospe	fama	jelosia	celo
letagin	colmillo	hortz	diente
galtza	pantalones	aldaka	cadera
izerdi	sudor	bero	calor
arrautza	huevo	oilo	gallina
udaberri	primavera	loratu	florecimiento
ezkata	escama	arrain	pescado
malko	lágrima	min	dolor
hilkutxa	ataud	hildako	fallecido
ezi	miel	erle	abeja
kokots	barbilla	aho	boca
askatasun	libertad	gorroto	odio
berandu	tarde	azken	último
eskutitz	letras	zigilu	sello
egarri	sediento	lehor	seco
hondar	arena	maskor	concha
ogi	pan	gari	trigo
kopeta	frente	sudur	nariz
baso	bosque	ehiza	caza
eskuila	cepillo	orrazi	peine
osaba	tio	iloba	sobrino
komun	baño	konketa	lavabo
barre	risa	txantxa	broma
kutxa	caja	biltegi	almacén
amets	soñar	neke	cansancio
sabai	techo	harresi	pared
suge	serpiente	pozoi	veneno
idazketa	escritura	maisu	maestro
tximinia	hogar	teilatu	techo
urmael	estanque	igel	rana
erantzun	respuesta	galdera	pregunta
lehengusu	primo	seme	hijo
ubeldura	moretón	ukabil	puño
erre	asado	labe	horno
irten	salida	sartu	entrar
kazkabar	granizo	dardara	temblor
aurpegi	cara	lepo	cuello
sustrai	raíz	enbor	tronco
xerra	trozo	hirugihar	tocino
bizkar	espalda	sorbalda	hombro
mingain	lengua	ezpain	labio
soineko	vestido	gona	falda
ohe	cama	gau	noche
urduritasun	nerviosismo	zirrara	emocion
zahar	viejo	hauts	polvo
txar	malo	on	bueno
zelai	campo	belar	hierba
distira	brillo	garbi	limpio
sardeska	horquillas	aizto	cuchillo

urtebetetze	cumpleaños	adin	siglo
belaun	rodilla	hanka	pierna
arau	regla	jolas	juegos
arriba	hermana	anaia	hermano
zoriontasun	felicidad	gozamen	disfrute
ezker	izquierda	eskuin	derecho
aulki	silla	mahai	mesa
soka	cuerda	putzu	pozo
kandela	vela	nahi	deseo
ekialde	este	mendebalde	oeste
bilera	reunion	asteko	semanal
luzera	longitud	iraupen	duración
irakurketa	lectura	ulermen	compresion
etorkizun	futuro	itxaropen	esperanza
zabalera	anchura	neurri	medida
isiltasun	silencio	bakarti	solitario
igerileku	piscina	uda	verano
begirada	mirada	ikusmen	vista
txakur	perro	hozkada	bocado
azeri	zorro	otso	lobo
amuarra	trucha	marrazo	tiburón
oilasko	pollo	izter	muslo
gurutze	cruzar	biribil	redondo
aza	col	tipula	cebolla
jaunartze	comuni6n	eliza	iglesia
astigar	arce	belardi	prado
eztari	garganta	mihi	lengua
eskularru	guantes	txano	gorro
edalontzi	vaso	garden	transparente
pago	haya	haritz	roble
kondaira	leyenda	idazle	escritor
eskubalo	balonmano	kirol	deporte
berogailu	calefacci6n	negu	invierno
muxu	beso	masail	mejilla
larru	cuero	ile	pelo
erratz	escoba	sorgin	bruja
hondartza	playa	uhin	onda
gatazka	disputa	etsai	enemigo
heriotza	muerte	alargun	viuda
gizaki	hombre	isats	cola
hiztegi	diccionario	hitz	palabra
alkandora	camisa	oihal	tela
zentzumen	sentido	gor	sordo
gizon	hombre	bizar	barba
adibide	ejemplos	eredu	modelo
ardi	oveja	gazta	queso
liburu	libro	egile	autor
alkate	alcalde	herri	pueblo
hodei	nube	lanbro	niebla
lasterbide	atajo	bide	camino

**Partial**

erreka	arroyo	zubi	punte
zuri	blanco	elur	nieve
sagardotegi	sidreria	afari	cena
zotin	hipo	izualdi	susto
biloba	nieto	ondore	descendencia
azal	piel	bigun	blando
jaka	cazadora	patrika	bolsillo
eraikin	edificio	atari	portal
gosari	desayuno	gurin	mantequilla
lasto	paja	saski	cesta
kaiola	caja	untxi	conejo
oihan	selva	basati	salvaje
inurri	hormiga	apur	miga
helburu	objetivo	gailur	cima
bizitza	vida	hiri	ciudad
zaldi	caballo	behor	yegua
argi	luz	leiho	ventana
Haserre	enfado	frustrazio	frustracion
hotz	frio	temperatura	temperatura
landare	planta	lore	flor
beso	brazo	ukondo	codo
hauteskunde	elecciones	gobernu	gobierno
laguntasun	amistad	seketu	secreto
zorro	billetera	diru	dinero
arazo	problema	abokatu	abogado
erosketa	compra	prezio	precio
zakarrontzi	basura	botila	botella
komentu	conventos	moja	monja
errege	rey	balkoi	balcón
biztanleria	población	mundu	mundo
irakasle	profesor	eskola	escuela
basamortu	desierto	oasi	oasis
harri	piedra	zementu	cemento
orekari	equilibrista	zirku	circo
neska	chica	dontzeila	doncella
ikerketa	investigacion	esperimentu	experimento
su	fuego	infernu	infierno
okin	panadero	irin	harina
bihotz	corazón	pultsu	pulso
ohitura	costumbre	erritu	rito
borroka	lucha	ezpata	espada
kutxazain	cajero	banku	banco
ordu	hora	minutu	minuto
udare	pera	limoi	limón
hitzaldi	discurso	mutu	mudo
arrantza	pesca	portu	puerto
galdetegi	cuestionario	inkesta	encuesta
zauritu	ruido	anbulantzia	ambulancia
azkazal	uña	katu	gato
hori	amarillo	kolore	color

zuku	zumo	kafetegi	cafetería
izar	estrella	espazio	espacio
arotz	carpintero	zerra	sierra
irribarre	sonrisa	umore	humor
euskara	vasco	frances	francés
tximu	mono	eboluzio	evolución
talde	grupo	zeremonia	ceremonia
sukalde	cocina	txalet	chalet
muga	frontera	probintzia	provincia
urre	oro	brontze	bronce
gezi	flecha	arku	arco
ikasle	estudiante	paper	papel
bidaia	viaje	pilotu	piloto
ardo	vino	likore	licor
beldur	miedo	munstro	monstruo
albiste	noticia	informazio	información
margolari	pintor	diseinu	diseño
gauza	cosa	objektu	objeto
ume	niño	kanpamentu	canpamento
jantzi	traje	gorbata	corbata
betile	pestaña	erretina	retina
salda	caldo	zopa	sopa
hezkuntza	educación	dialektika	dialéctico
korrikalari	corredor	maratoi	maraton
iltze	clavo	mailu	martillo
inurri	hormiga	intsektu	insecto
barazki	vegetal	fruitu	fruta
garratz	amargo	zapore	sabor
aingeru	ángel	deabru	diablo
denbora	tiempo	erloju	reloj
esne	leche	kaltzio	calcio
ehun	cien	mila	mil
egunkari	periodico	prentsa	prensa
karratu	cuadrado	angelu	ángulo
heldu	adulto	esperientzia	experiencia
guraize	tijeras	mozte	corte
gezur	mentira	faltsu	falso
apaiz	sacerdote	santu	santo
kotoi	algodón	zeta	seda
jatetxe	restaurante	plater	plato
hizkuntza	idioma	azentu	acento
langile	trabajador	sindikatu	sindicato
txiki	pequeño	baxu	bajo
erizain	enfermera	doktore	doctor
saiakera	intento	konpromiso	compromiso
garraio	transporte	bizikleta	bicicleta
agure	anciano	beterano	veterano
bular	pechos	abdomen	abdomen
ipar	norte	hemisferio	hemisferio
baratze	huerta	tomate	tomate

**Identical**

opari	regalo	pakete	paquete
idazlan	redacción	letra	letra
loreontzi	florero	tulipa	tulipa
baratxuri	ajo	menta	menta
artizar	venus	astro	astro
arraun	remo	kanoa	canoas
arkatz	lápiz	koaderno	cuaderno
txirula	flauta	piano	piano
izeba	tía	familia	familia
maitasun	amor	poema	poema
txanpon	moneda	kasino	casino
iparorratz	brujula	mapa	mapa
lehoi	leone	tigre	tigre
usain	oler	perfume	perfume
negar	llanto	tragedia	tragedia
ostiral	viernes	taberna	taberna
abeslari	cantante	disko	disco
argazki	fotografía	galeria	galería
altxor	tesoros	pirata	pirata
gidari	conductor	autobus	autobus
abiadura	velocidad	radar	radar
zaldun	caballero	armadura	armadura
lekuko	testigo	krimen	crimen
pilula	pastilla	gripe	gripe
nahaste	trastorno	kaos	caos
mezu	código	morse	morse
gaixotasun	enfermedad	malaria	malaria
joku	juego	dado	dado
harrera	recepción	hotel	hotel
betaurrekoak	gafas	optiko	óptico
itsaso	mar	marea	marea
berdin	igual	simetria	simetria
lepoko	colgante	diamante	diamante
aldizkari	revista	propaganda	propaganda
babes	protección	kasko	casco
herrialde	país	bandera	bandera
ur	agua	dutxa	ducha
odol	sangre	kolesterol	colesterol
saihets	costilla	tibia	tibia
zigor	castigo	tortura	tortura
emakume	mujer	hormona	hormona
orein	ciervo	fusil	fusil
edari	bebida	kopa	copa
aztikeri	hechizo	magia	magia
burdin	hierro	metal	metal
arrisku	peligro	eskolta	escolta
ke	humo	tabako	tabaco
elikadura	nutrición	bitamina	vitamina
begi	ojo	iris	iris
abesti	cancion	poesia	poesia

bake	paz	espiritual	espiritual
lasaitasun	tranquilidad	monasterio	monasterio
itzal	sombra	silueta	silueta
lauki	cuadrado	forma	forma
igerilari	nadador	atleta	atleta
lege	ley	notario	notario
saskibalo	baloncesto	bola	bola
argal	delgado	dieta	dieta
zor	deuda	tarifa	tarifa
hezur	hueso	eskeleto	esqueleto
konorte	conciencia	koma	coma
arnas	respiración	karbono	carbono
haragi	carne	proteina	proteina
gorputz	cuerpo	organo	organo
kirolari	deportista	tenis	tenis
hegazkin	avión	maleta	maleta
hari	cuerda	gitarra	guitarra
zenbaki	número	inbentario	inventario
erakusketa	exposición	arte	arte
lamia	sirena	mitologia	mitologia
ipuin	cuento	literatura	literatura
norabide	dirección	labirinto	labirinto
hezetasun	humedad	klima	clima
puxika	globo	helio	helio
lapiko	hervidor	te	te
geltoki	estación	tren	tren
txerto	vacuna	diabete	diabete
errepide	carretera	taxi	taxi

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## Noise Mixing Procedure

For Experiment 1, targets were mixed with *reversed* Basque 6-talker speech babble<sup>2</sup> at a signal-to-noise ratio of -5dB. The procedure for mixing the noise with the stimuli was as follows. First, the stimuli were trimmed to remove silence from the beginning and end of the audio recordings. The stimuli were then matched in volume using a function in GoldWave “Match Vol” that matches the root mean square to the same value (Goldwave Version 6.15 Computer software, [www.goldwave.com](http://www.goldwave.com)). The word target stimuli were then mixed with unique segments of noise using a Praat script which added an additional 50 msec of noise before and after the target. The 50 msec segments of noise at the beginning and end of the recordings were gradually faded in and out, using the “fade in” and “fade out” linear functions in Goldwave. Unique segments of noise were used for each word target. The same segments were mixed with the pseudoword targets but words and pseudowords with the same noise segments were counterbalanced across participants. Note that because of the leading and trailing 50 ms noise segments, stimulus durations were 100 ms longer in Experiment 1 than in Experiment 2.

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<sup>2</sup> The babble-noise was constructed following the procedure used in Dole, Hoen, and Meunier (2012). Six speakers (three males, three females) were recorded in a soundproof room while reading passages of Basque newspapers. From these individual six recordings, silences of more than one second were removed. Fragments containing pronunciation errors or exaggerated prosody were also discarded. We then applied noise reduction to eliminate artifact interference for each of the six individual tracks, and, finally, mixed the tracks to create the 6-talker babble.



## Mixed linear effects analyses<sup>3</sup>

**Table A**

Experiment 1 Lexical Decision (Accuracy) <sup>4</sup>			
	Effect	CI	p
	Relatedness	[1.18 , 1.44]	<.001
	Cognate Status	[0.66, 0.91]	.002
	Relatedness*CognateStatus	[1.02 , 1.24]	.017
<b>Model</b>			
<code>&lt;- glmer(Accuracy ~ Relatedness * CognateStatus+ TargetDuration + (1 Participant)+(1 Item)), family=binomial</code>			
	Relatedness	[1.23 , 1.51]	<.001
	Contrast 1: Partial vs. Noncognate	[0.75, 1.22]	.71
<i>Finer Grained</i>	Contrast 2: Identical vs. Noncognate	[0.59, 0.95]	.02
	Related * Contrast 1	[0.98 , 1.33]	.10
	Related * Contrast 2	[0.89, 1.2]	.67
<b>Model</b>			
<code>&lt;- glmer(Accuracy ~ Relatedness * TypeOfCognate+ TargetDuration + (1 Participant)+(1 Item)), family=binomial</code>			
Experiment 1 Long-term Priming			
	Old/New	[0.82, 0.95]	<.001
	Cognate Status	[0.67, 0.95]	.009
	OldNew * Cognate Status	[0.86 , 0.99]	.024
<b>Model</b>			
<code>&lt;- glmer(Accuracy ~ OldNew * CognateStatus+ TargetDuration + (1 Participant) + (1 Item)), family=binomial</code>			
Old Items Only			
	Relatedness	[0.96, 1.17]	.246
	Cognate Status	[0.71, 1.02]	.081
	Relatedness * Cognate Status	[0.98, 1.19]	.137
<b>Model</b>			
<code>&lt;- glmer(Accuracy ~ Relatedness * CognateStatus+ TargetDuration + (1 Participant) + (1 Item)), family=binomial</code>			
New Items Only			
	Cognate Status	[0.64-0.93]	.007
<b>Model</b>			
<code>&lt;- glmer(Accuracy ~ CognateStatus+ TargetDuration + (1 Participant) + (1 Item), family=binomial</code>			

  

<sup>3</sup> Model comparisons were performed using likelihood ratio tests and a forward-testing approach maximizing the effects structure (Baayen et al., 2008; Barr et al., 2013). More complex models were disregarded only if the p-value for the significance of the difference was above 0.20 (Matuschek, Kliegl, Vasishth, Baayen, & Bates, 2017). All models were best fit by including by Item and by Subject random intercepts.

<sup>4</sup> Reaction Time Analysis for correct responses in Experiment 1

Experiment 1 (Reaction Time)			
	Effect	CI	p
	Relatedness	[-28.95 , -1.33]	.03
	Cognate Status	[10.49, 44.06]	.002
<b>Model</b>			
<code>&lt;- lmer(Accuracy ~ Relatedness + CognateStatus+ TargetDuration + (1 Participant)+(1 Item))</code>			

**Table B**

<b>Experiment 2 Lexical Decision (Reaction Time)</b>			
	<b>Effect</b>	<b>CI</b>	<b>p</b>
	Relatedness	[-26.09, 10.02]	<.001
	Cognate Status	[5.94, 40.48]	0.01
<b>&lt;- lmer(ReactionTime ~ Relatedness + CognateStatus+ TargetDuration + (CognateStatus Participant)+(1 Item))</b>			
	Relatedness	[-26.15, -10.34]	<.001
	Contrast 1: Partial vs. Noncognate	[-19.92, 13.84]	.73
<b>Finer Grained</b>	Contrast 2: Identical vs. Noncognate	[6.90, 57.78]	.015
<b>Model</b>			
<b>&lt;- lmer(ReactionTime ~ Relatedness + CognateType+ TargetDuration+ (TypeOfCognate Participant)+(1 Item))</b>			
<b>Experiment 2 Long-term Priming</b>			
	Old:New	[22.71, 33.55]	<.001
	CognateStatus	[-5.31-13.35]	.4
	OldNew:CognateStatus	[-4.53-6.31]	.75
<b>Model</b>			
<b>&lt;- lmer(ReactionTime ~ OldNew + CognateStatus + TargetDuration+ (1 Participant)+(1 Item))</b>			
<b>Old Items Only</b>			
	Relatedness	[-2.16 – 12.65]	.17
	CognateStatus	[-7.27 – 16.03]	.46
	Relatedness:CognateStatus	[-5.73-9.07]	.66
<b>Model</b>			
<b>&lt;- lmer(ReactionTime ~ OldNew + CognateStatus + TargetDuration+ (CognateStatus Participant)+(1 Item))</b>			
<b>New Items Only</b>			
	Cognate Status	[-8.39-15.66]	.55
<b>Model</b>			
<b>&lt;- lmer(ReactionTime ~ CognateStatus + TargetDuration+ (1 Participant)+(1 Item))</b>			

## References

- Baayen, R. H., Davidson, D. J., & Bates, D. M. (2008) Mixed-effects modeling with crossed random effects for subjects and items. *Journal of Memory and Language*, 59, 390-412.
- Barr, D. J., Levy, R., Scheepers, C., & Tily, H. J. (2013). Random effects structure for confirmatory hypothesis testing: Keep it maximal. *Journal of memory and language*, 68(3), 255-278.
- Matuschek, H., Kliegl, R., Vasishth, S., Baayen, H., & Bates, D. (2017). Balancing Type I error and power in linear mixed models. *Journal of Memory and Language*, 94, 305-315.