

Effects of familiarity, iconicity and phonological density* in the LSE lexicon

Brendan COSTELLO¹ b.costello@bcbl.eu

Marcel GIEZEN¹

Levi STUTZMAN¹

Miguel Ángel SAMPEDRO²

Saúl VILLAMERIEL¹

Manuel CARREIRAS^{1,3,4}

¹ Basque Center on Cognition, Brain and Language, Spain

² Universidad Rey Juan Carlos, Madrid, Spain

³ Ikerbasque (Basque Foundation for Science), Spain

⁴ University of the Basque Country UPV/EHU, Spain

bcbl

BASQUE CENTER
ON COGNITION, BRAIN
AND LANGUAGE

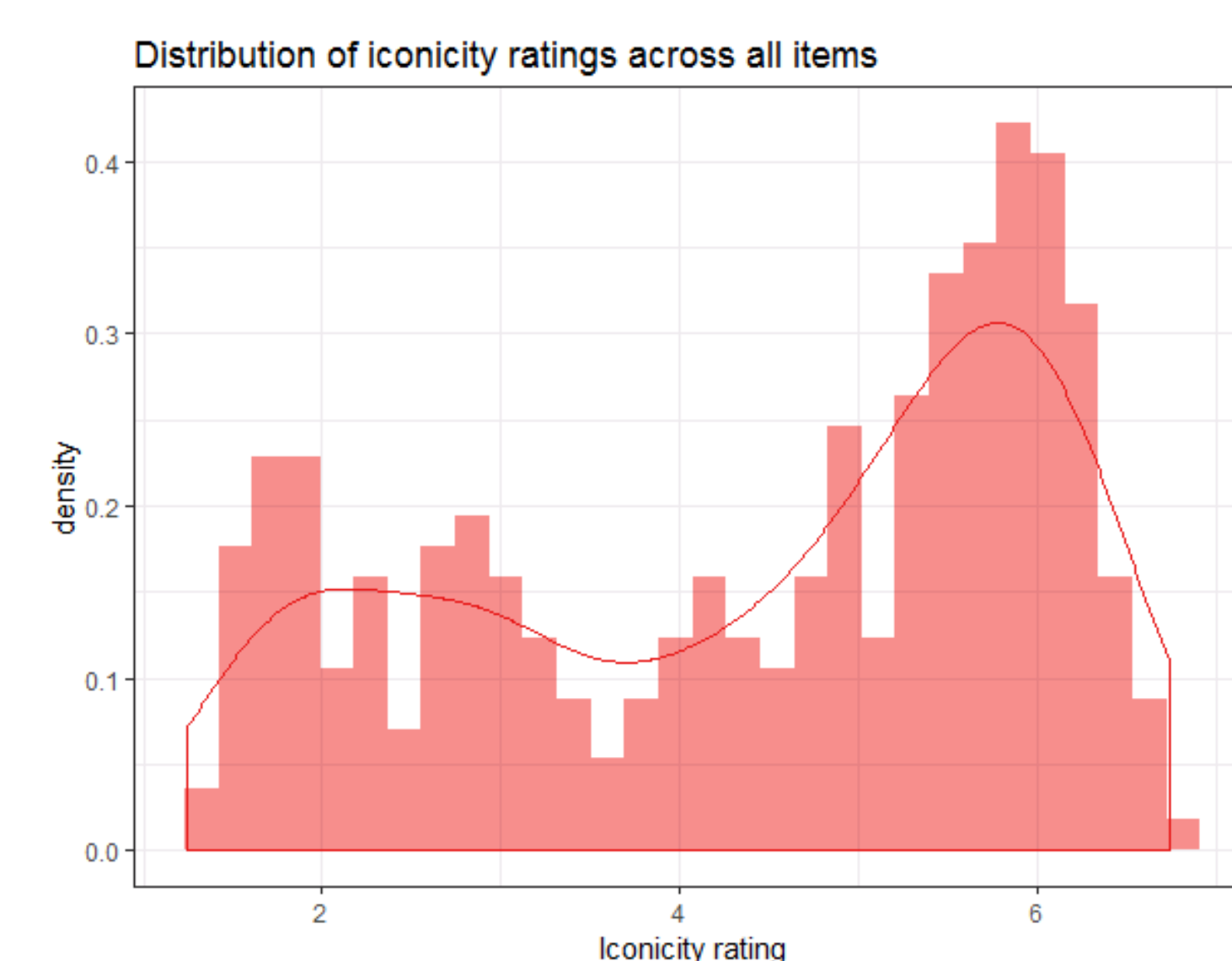
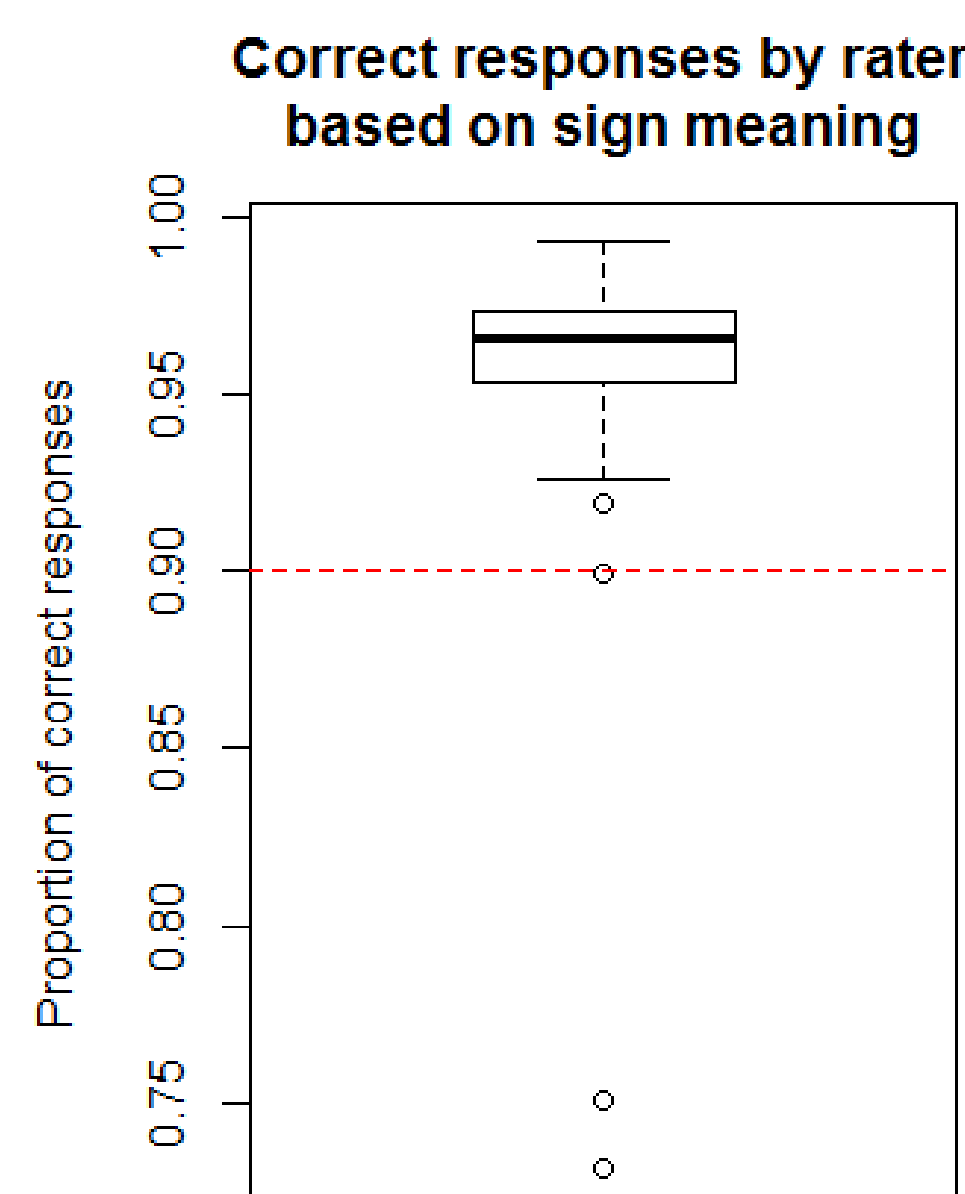
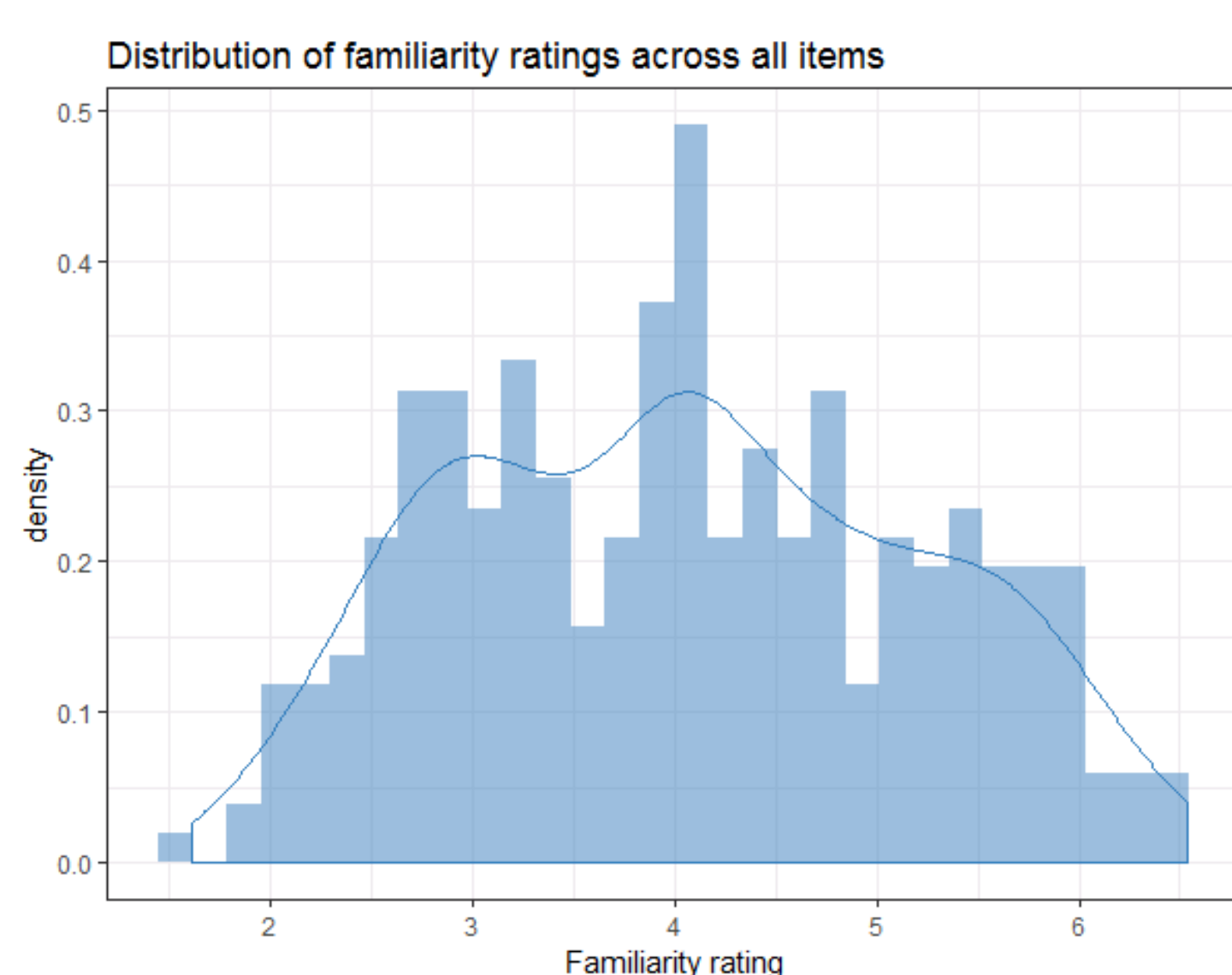
LEXICAL RATINGS

91 Deaf Spanish Sign Language (LSE) users provided ratings on 300 signs using on-line surveys:

Familiarity
(85 raters)

Meaning of sign
(as Spanish gloss)

Iconicity
(80 raters)



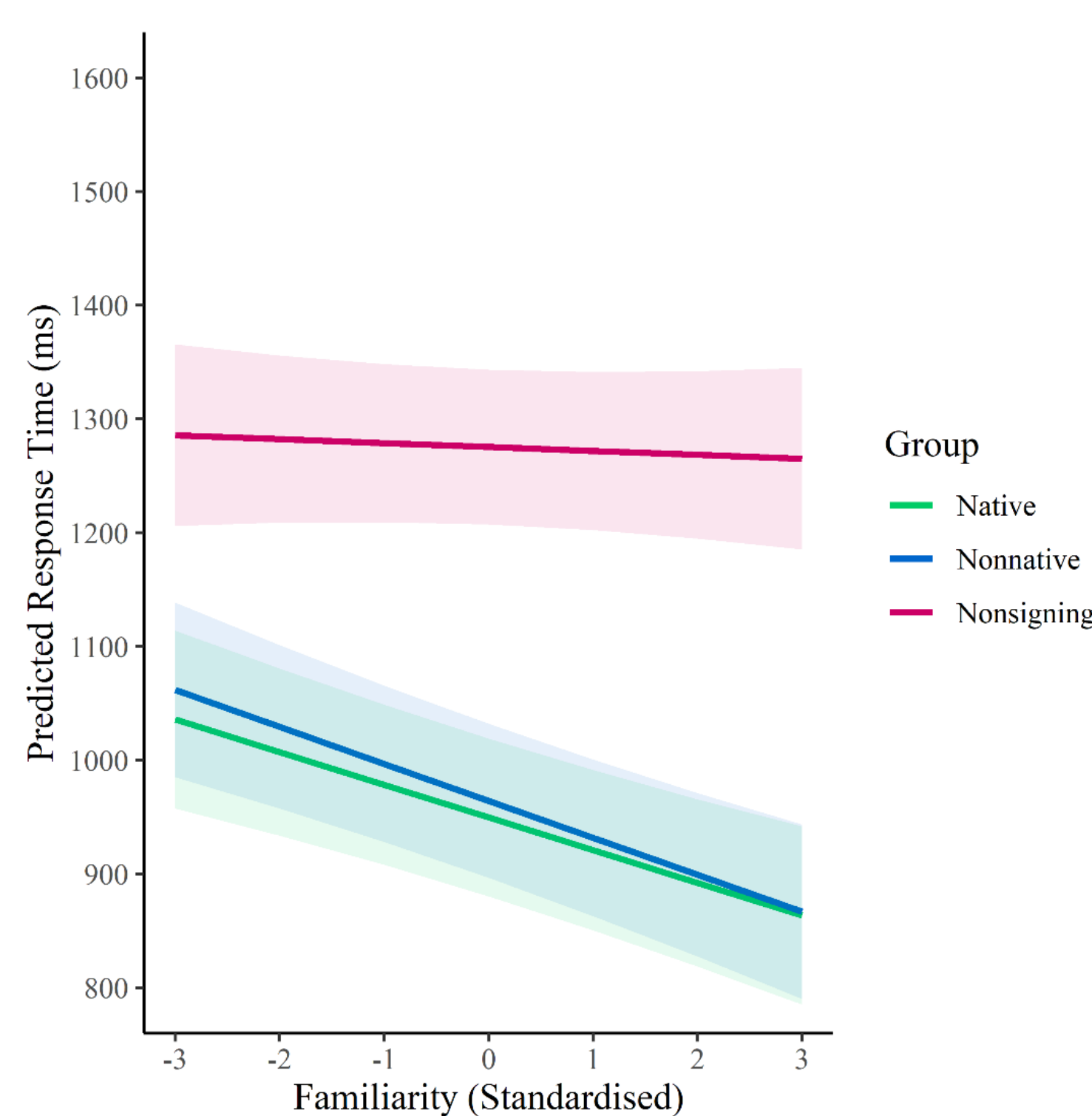
LEXICAL DECISION TASK

Participants:

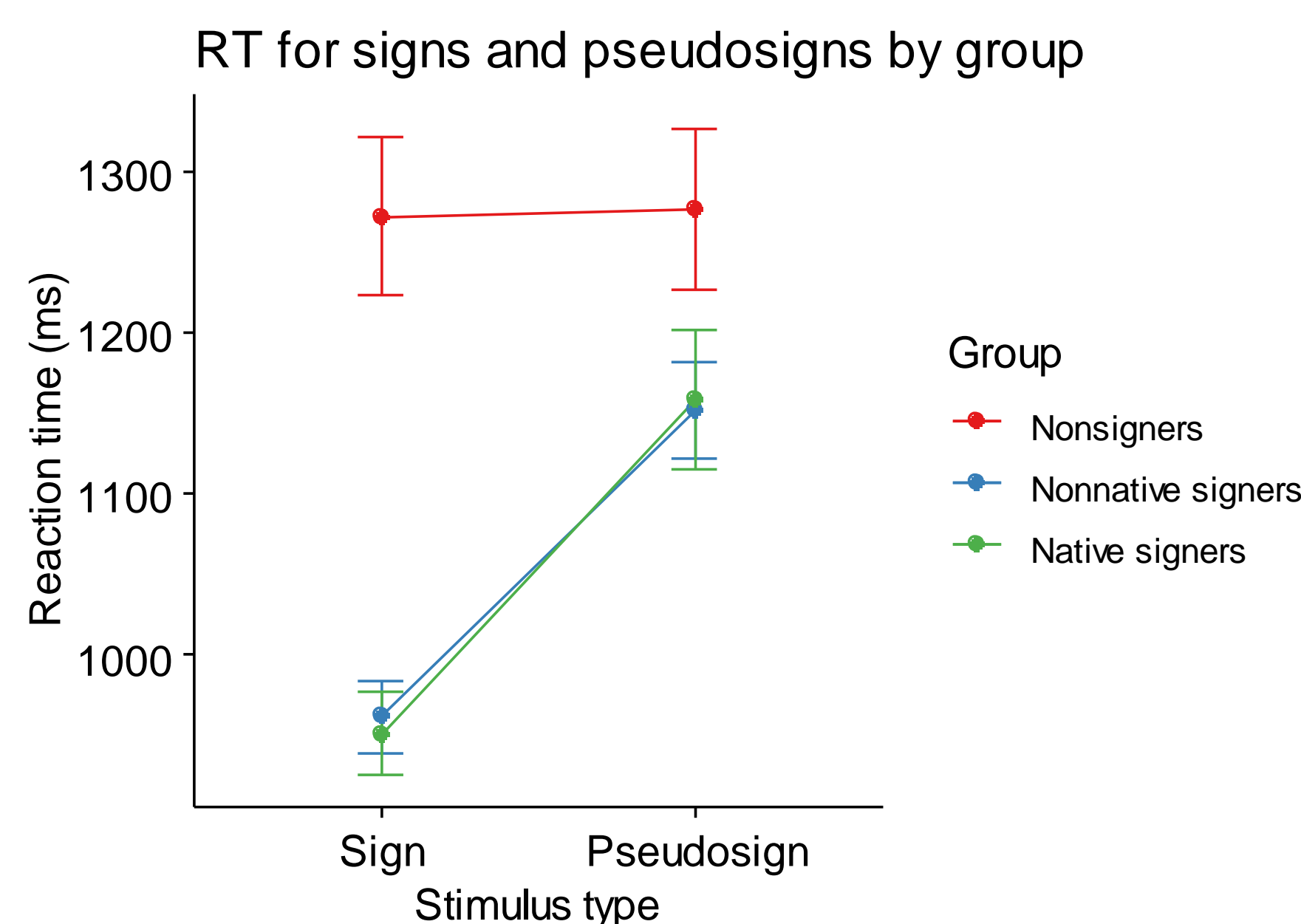
- 21 Deaf native signers (learned LSE from birth from a family member)
- 21 Deaf nonnative signers (mean LSE AoA = 7.5 years; range 3-23)
- 21 hearing nonsigners (no knowledge of LSE)

Stimuli:

200 LSE signs with ratings
200 unrelated pseudosigns

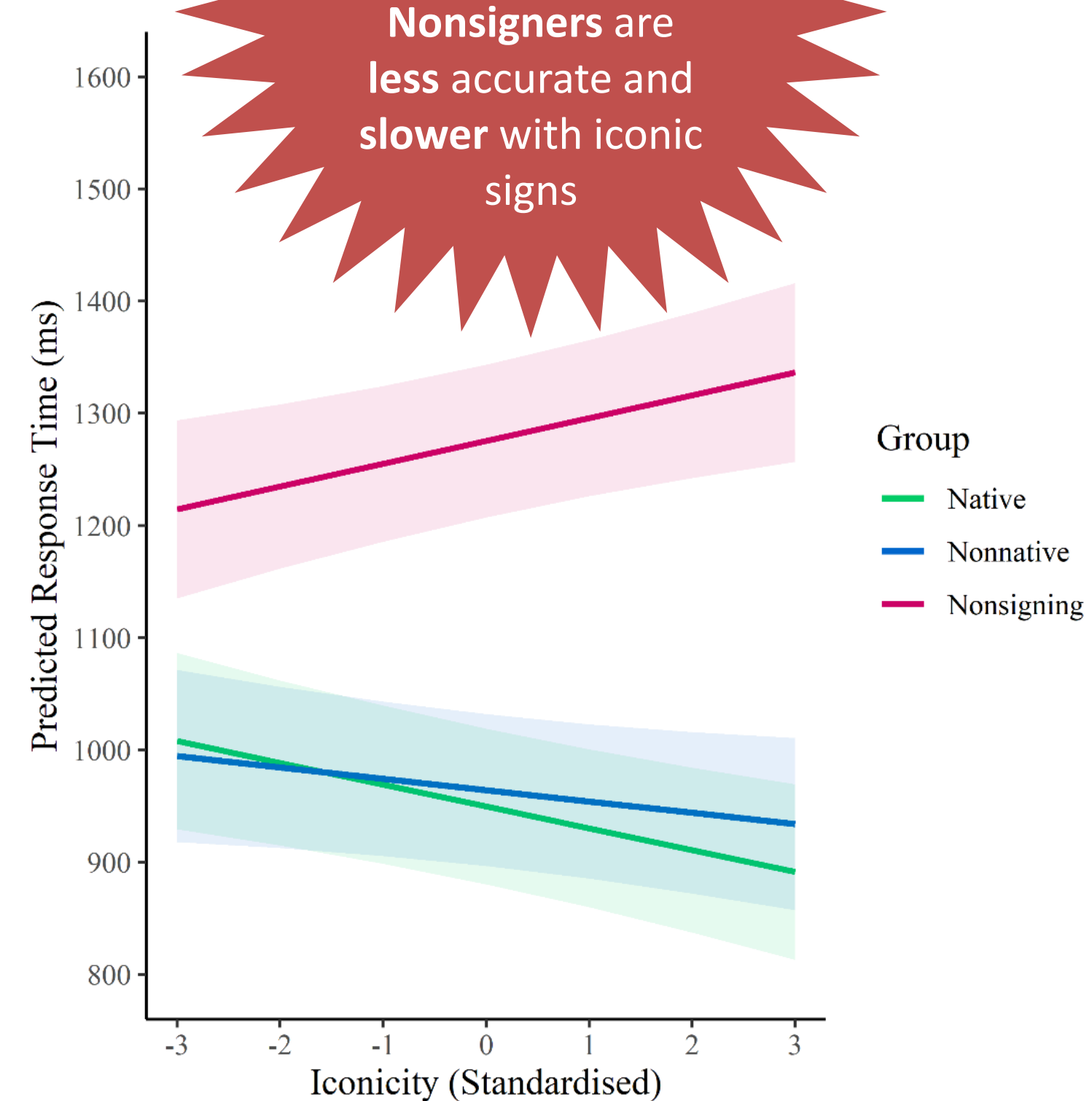


Familiarity effect
Signers are more accurate and faster with familiar signs



Iconicity effect

Nonsigners are less accurate and slower with iconic signs



Iconicity effect

Signers are more accurate and faster with iconic signs

*

The work on phonological density is still in progress. Please ask if you're interested.

FUNDING

Spanish Ministry of Economy and Competitiveness (PSI2016-76435-P and FJCI-2017-31806)
Severo Ochoa Programme for Centres/Units of Excellence in R&D (SEV-2015-490)

deaf	6.541	cigarette	6.541
come	6.432	appliance	6.733
night	6.368	lock	6.775
row	6.353	motorcycle	6.663
coffee	6.277	comb	6.588
tread	6.200	thush	6.563
breakfast	6.146	cock	6.525
problem	6.106	photograph	6.488
sun	6.035	broom	6.468
man	6.024	musical	6.404
look at	5.988	icecream	6.418
door	5.965	pencil sharpener	6.388
milk	5.952	boot	6.388
close caption	5.941	guitar	6.383
tree	5.940	bell	6.383
share	5.918	beard	6.350
photograph	5.892	iron (for ironing)	6.321
cap	5.871	nose	6.295
book	5.857	telescope	6.278
whistle	5.838	hobby	6.260
forget	5.812	pirate	6.247
quiet	5.812	walking stick, cane	6.216
ball	5.793	headrest	6.208
key	5.765	bag	6.192
use sign language	5.759	handheld fan	6.189
learn	5.729	flag	6.188
thing	5.729	rhinoceros	6.188
far	5.700	neck	6.182
oil	5.667	faucet	6.145
bus	5.635	gorilla	6.139
sleepy	5.633	boat	6.138
strange	5.624	drawer	6.127
used	5.620	ball	6.125
coincide, agree	5.607	(cochlear) implant	6.113
future	5.588	monkey	6.113
nothing	5.557	duck	6.101
happy	5.546	tear	6.079
city	5.546	eyebrow	6.079
sweet	5.500	circle	6.067
hair	5.483	chair	6.055
law	5.484	purse	6.063
late	5.488	bull	6.063
chair	5.483	gun	6.055
love	5.470	milk	6.038
provident	5.412	elbow	6.026
respect	5.412	pocket	6.026
school	5.386	lightning	6.025
knife	5.380	scorpion	6.014
federation	5.366	bracelet	6.013
dawn	5.329	coffee	6.005
empty	5.329	hang on clothes line	6.000
participate	5.271	rain	5.986
expression	5.260	umbrella	5.975
enough	5.220	eclipse	5.938
egg	5.217	tooth	5.938
breakfast	5.214	flower	5.934
technology	5.200	rectangle	5.930
permission	5.200	ambulance	5.925
fruit	5.197	hair	5.903
often	5.181	egg	5.897
ring	5.171	claw	5.897
some	5.167	pants	5.895
city	5.141	compass (drawing)	5.895
nervous	5.141	tongue	5.884
window	5.108	calculator	5.882
rent	5.106	skirt	5.861
pants	5.074	scarf	5.850
trash	5.061	whistle, shot	5.845
congratulations	5.049	electrical plug	5.831
motorcycle	5.024	wolf	5.811
reap	5.000	door	5.811
(cochlear) implant	4.993	judge	5.810
cheese	4.929	rhinoceros	5.800
pass (a test)	4.847	hoar	5.789
resource	4.806	zipper	5.773
beg, request	4.807	lie	5.772
defend	4.807	lunatic	5.763
investigator	4.833	spider	5.763
interest	4.805	robot	5.759
mix	4.800	giant	5.763
towel	4.785	use sign language	5.748
bread	4.785	elephant	5.693
mainstream	4.765	door	5.688
tree	4.753	scorpion	5.671
comb	4.741	angel	5.667
research	4.741	hall	5.662
purse	4.729	stairs	5.654
history	4.726	knife	5.635
plate	4.711	worm	5.625
sensitive	4.694	phib	5.613
give a gift	4.694	bell	5.613
thame on you	4.671	chees	5.603
ad	4.671	dis, period	5.590
terrie	4.669	postage stamp	5.573
theater	4.612	bus	5.550
ridiculous	4.610	run	5.544
cloud	4.607	water well	5.541
black, rest	4.576	octopus	5.541
icecream	4.571	giraffe	5.529
pharmacy	4.538	stair	5.525
put pressure on somebody	4.524	pillow	5.519
moon	4.491	kangaroo	5.510
shop	4.486	padlock	5.493
hugle	4.486	oil	5.481
roughly	4.424	flower	5.481
pregnans	4.412	bag, request	5.474
salish	4.405	lighthouse	5.466
arrive	4.395	elevator	5.443
pod	4.373	freeman	5.443
dress	4.366	dress	5.416
perspective	4.366	woman	5.413
ham	4.357	thous	5.400
detail	4.345	bold	5.395
drawer	4.337	fox	5.378
peace	4.309	beer	5.372
shirt	4.265	sleepy	5.350
gentleman	4.238	horse and cart	5.339
actor	4.217	pass (a test)	5.325
train	4.214	mountain	5.325
swimming pool	4.212	recticulate	5.320
become fat	4.212	priest	5.308
bird	4.202	compass (to find north)	5.300
sofa	4.171	domino (game)	5.283
bag	4.169	volcano	5.270
ball	4.156	desert	5.269
court case	4.154	bridge	5.266
lennon	4.150	lemon	5.260
locks	4.147	atmos	5.139
iron (for ironing)	4.145	butt	5.163
deers	4.145	atmos	5.139
lust	4.141	picture	5.089
broom	4.122	stow	5.083
region	4.119	swallow	5.081
hang on clothes line	4.107	ruler (for drawing lines)	5.057
mirror	4.106	column	5.041
path	4.103	flower	5.033
faucet	4.099	right	5.000
two	4.096	look at	5.000
fork	4.090	boot	4.962
furniture	4.085	whic	4.962
millions	4.080	grass	4.944
request	4.078	year	4.937
door	4.066	TV antenna	4.935
umbrella	4.024	rectic	4.904
brave	4.012	rape	4.900
naughty	4.012	train	4.886
spoon	4.000	carrot	4.813
rise	4.000	oven	4.800
elevator	4.000	ghost	4.787
war	3.988	woods, forest	4.785
drunk	3.988	smoke	4.776
pest	3.970	prison	4.770
musium	3.964	laboratory	4.763
carrot	3.963	staf	4.760
sidow	3.962	salad	4.750
woods, forest	3.952	newspaper	4.700
heart	3.935	trans	4.661
flower	3.929	curtain	4.650
judge	3.905	perfume	4.626
insist	3.896	whic	4.617
mountain	3.854	give a gift	4.613
thous	3.851	heart	4.600
cat	3.852	retro	4.418
tooth	3.852	dog	4.380
widess	3.852	shot (injection)	4.385
mean, stingy	3.776	radio	4.363
over	3.776	witress	4.362
boot	3.774	cloud	4.312
nurse	3.768	folder	4.303
garlic	3.766	dawn	4.288
pillow	3.744	window	4.265
brood	3.709	room	4.264
boat	3.694	ham	4.253
soap	3.682	chair	4.200
goats	3.650	police officer	4.182
candy	3.618	principle	4.167
betray, traitor	3.615	calendar	4.137
car	3.607	sat	4.088
pocket	3.598	bread	4.014
lightning	3.583	swimming pool	3.963
ambulance	3.556	a wound, cut	3.948
battery	3.485	truck	3.948
scaundrel, rascal	3.482	breast	3.889
strawberry	3.464	raindriam	3.875
picture	3.460	low	3.769
flag	3.424	mailbox	3.764
perfume	3.420	fly (the insect)	3.746
a wound, cut	3.412	oppression	3.746
bridge	3.400	oppression	3.693
razor	3.395	ridiculus	3.664
ball	3.341	bone	3.614
calculator	3.333	give a gift	3.613
bald	3.329	strawberry	3.603
pineapple	3.311	future	3.603
octopus	3.291	cut	3.416
panties	3.286	empty	3.400
robes	3.286	lightbulb	3.329
labor union	3.283	put pressure on somebody	3.247
disrupt	3.274	breakfast	3.238
athlete	3.237	mis	3.125
frail	3.235	forget	3.123
nervous	3.231	musium	3.179
ring	3.213	near	3.148
some	3.210	insist	3.143
city	3.191	participate	3.076
nervous	3.169	black, rest	3.063
religion	3.167	panties	3.066
ted	3.165	pharmacy	3.027
recreation	3.165	soap	2.951
history	3.163	cone	2.925
thing	3.160	city	2.925
enough	3.157	prospect	2.913
interest	3.154	congratulations	2.896
often	3.151	school	2.885
problem	3.149	defect	2.883
scaundrel, rascal	3.145	mouse	2.851
shoe	3.123	copy	2.838
		butt	2.829
		socks	2.825
		court case	2.800
		these	2.797
		arrive	2.776
		primary	2.773
		thurs	2.763
		coincide, agree	2.747
		tail	2.744
		research	2.725
		kitchen	2.690
		miracle	2.671
		request	2.567
		perspective	2.545
		repair	2.538
		low	2.425
		learn	2.405
		brave	2.390
		sweet	2.380
		doll	2.393
		actor	2.321
		selfish	2.316
		candy	2.310
		rent	2.288
		request	2.275
		betray, traitor	2.217
		man	2.175
		furniture	2.143
		president	2.114
		sensitive	2.113
		rofling	2.090
		naughty	2.075
		frail	2.072
		nervous	1.938
		religion	1.937
		ted	1.925
		recreation	1.922
		history	1.871
		thing	1.850
		enough	1.649
		interest	1.636
		often	1.628
		problem	1.625
		scaundrel, rascal	1.545
		shoe	1.545