Table S1. Examples for sentence materials.

Example in Turkish and Persian with Literal Translations in Parenthesis	
L1	**L2**
Number Violation	
اوشاخلار3.pl آغاچلاری سیندیردی3.sg.	دانشجویان3.pl مقاله‌ها را نوشت 3.sg.
Children tree.PL.OBJ-CLT.Def break.PAST-3SG	Students article.PL.OBJ-CLT.Def write.PAST-3SG
(Children broke trees)	(Students wrote articles)
Person Violation	
بیز1.pl اولریمیزی سیلدولر3.pl.	ما1.pl نامه‌هایتان را فرستادند3.pl.
We house.PL.HI.OBJ-CLT.Def clean-PAST-3PL	We letter.PL.HI.OBJ-CLT.Def send.PAST-3PL
(We cleaned our houses)	(We sent your letters.)
Number Correct	
قارداشلاریم1.sg پالتارلارین یودولار1.sg.	ورزشکاران1.sg مسابقه را باختند1.sg.
My brothers their cloth.PL.OBJ-CLT.Def wash.PAST-3PL	The athletes race.OBJ-CLT.Def lose.PAST-3PL
(My brothers washed their clothes.)	(The athletes lost the race.)
Person Correct	
من1.sg پالتارمی یودوم1.sg.	من1.sg نظرش را پذیرفتم1.sg.
I cloth.HI.OBJ-CLT.Def wash.PAST-1SG	I offer.OBJ-CLT.Def accept.PAST-1SG
(I washed my cloth.)	(I accepted her/his offer.)

1: First Person; SG: Singular; ACC: Accusative; PAST: Past; 3: Third Person; PL: Plural; HI: Hiatus; OBJ-CLT: Objective clitic;

Table S2. Whole-Brain Significant activated regions in L1 (Turkish) and L2 (Persian) compared to the baseline.

Language	Contrasts	PO			pSTG		
		x, y, z (mm)	Maximum Z score	Voxels	x, y, z (mm)	Maximum Z score	Voxels
L1	Number Violation	-50, 12, 2	7.13	156	-66, -16, 6	6.74	212
	Number Correct	No activation			-62, -22, 10	6.98	225
	Person Correct	No activation			-66, -18, 8	6.91	237
	Person Violation	No activation			-66, -16, 6	6.51	194
L2	Number Violation	No activation			-66, -18, 8	6.8	170
	Number Correct	No activation			-66, -18, 8	7.14	187
	Person Correct	No activation			-66, -16, 6	6.93	175
	Person Violation	No activation			No activation		

Notes. x, y, z (mm) = Coordinates of the local maxima. Voxels = Number of voxels significantly activated inside the cluster belonging to each local maximum. Data were cluster corrected for each contrast using a cluster-level threshold of $Z > 3.1$ (corrected $p < 0.05$). PO: pars opercularis. pSTG: posterior superior temporal gyrus.

Table S3. Mean reaction times and percentage of correct responses with their corresponding standard errors per experimental condition

	Reaction Times (ms)		Correct Responses (%)	
	Mean	SD	Mean	SD
L1				
Number Correct	898.2	43	98.10	3.28
Number violation	1168.8	56	94.79	7.97
Person Correct	946.9	45	99.30	1.99
Person violation	897.2	43	99.13	2.65
L2				
Number Correct	842.9	43	99.30	1.99
Number violation	987.1	51	98.61	3.69
Person Correct	887.3	44	99.30	1.99
Person violation	817.1	46	99.65	2.08

Table S4. Significant contrasts at the whole-brain level.

Contrasts	Region	X (mm)	Y (mm)	z (mm)	Maximum Z score	Voxels
Grammaticality Contrast						
Number Violation > Number Correct	PO	-56	22	16	5.22	36
Feature Contrast						
L1 Number > Person Violation	PO	-48	18	24	5.92	54
	pSTG	-54	-38	2	4.14	30
L2 Number > Person Violation	PO	-50	24	10	4.16	24
Language Contrast						
L1 > L2 Number Violation	pSTG	-54	-38	4	5.76	33
L1 > L2 Person Violation	pSTG	-54	-36	4	3.97	48

Notes. x, y, z (mm) = Coordinates of the local maxima. Voxels = Number of voxels significantly activated inside the cluster belonging to each local maximum. Data were cluster corrected for each contrast using a cluster-level threshold of $Z > 3.1$ (corrected $p < 0.05$). PO: pars opercularis. pSTG: posterior superior temporal gyrus.