Morphosyntactic Predictability

Interpreter data - Stress

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1 t-tests

- To answer the question of whether or not groups could predict the word before the target syllable onset
- We used single sided t-tests to compare each group in each condition against chance.
- NATIVE SPEAKER and INTERPRETERS fixate on targets above chance at the target syllable offset For both oxytone and paroxytone conditions (this is at bonforroni corrected alpha = 0.008)

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	group	condition	estimate	statistic	p.value	parameter	conf.low	sig
1	int	stressed	0.63	3.46	0.00357388323	9.00	0.52	*
2	int	unstressed	0.68	3.38	0.00406396949	9.00	0.53	*
3	la	stressed	0.50	0.05	0.47976999874	26.00	0.39	N.S.
4	la	unstressed	0.58	2.13	0.02149710485	26.00	0.49	N.S.
5	ss	stressed	0.63	2.80	0.00537726129	21.00	0.51	*
6	ss	unstressed	0.72	4.77	0.00005197742	21.00	0.61	*

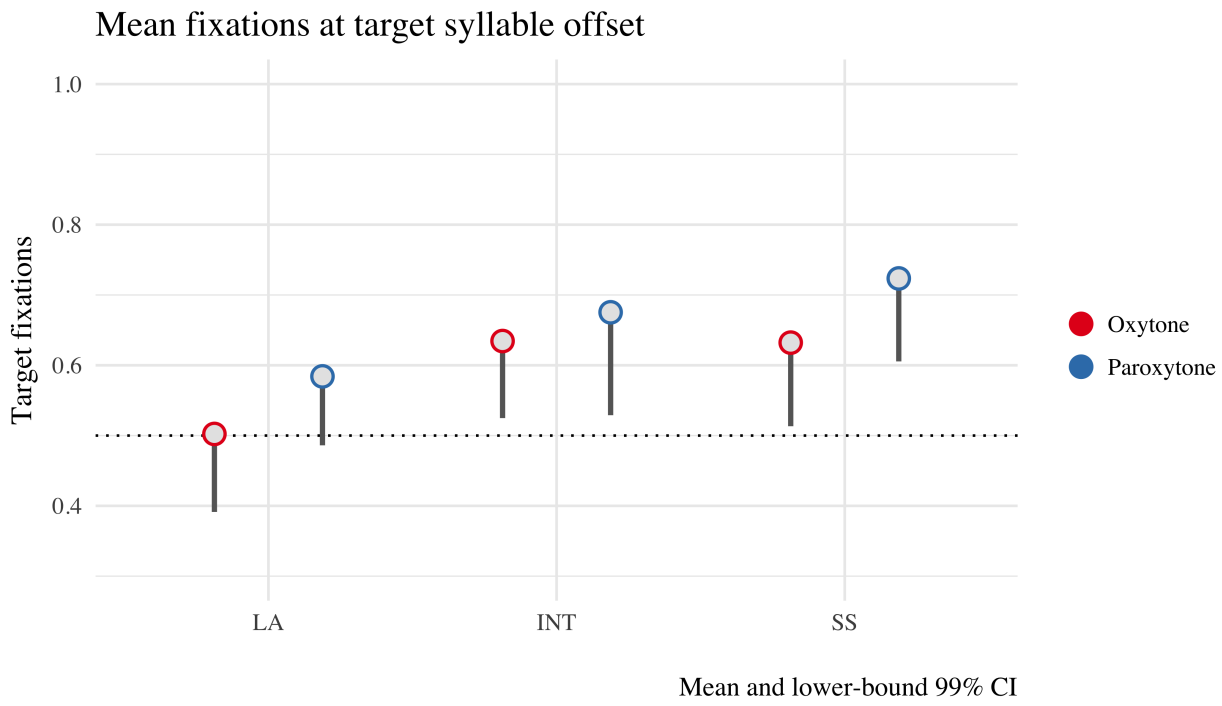

Figure 1: t-tests

2 glmem

- random intercept for subject/items, random slope for stress, WM added as covariate
- MAIN EFFECT OF GROUP:
  - NATIVES and INT fixate on targets at syllable offset significantly more than LA
- MAIN EFFECT OF CODA:
  - CVC syllables receive more target fixations at syllable offset than CV syllables
- NO MAIN EFFECT OF STRESS (cond: X2(1) = 0.62, p > 0.05) NOR WM (X2(1) = 1.16, p > 0.05)
- NO SIG. INTERACTIONS

2.1 Model comparisons

Model	AIC	BIC	logLik	deviance	Chisq	Chi Df	Pr(>Chisq)
group	8419.2	8490.6	-4194.6	8389.2	11.273	2	0.003565 ***
cond	8420.6	8496.8	-4194.3	8388.6	0.6178	1	0.4319
coda	8413.5	8489.7	-4190.7	8381.5	7.7467	1	0.005381 **
wm	8413.6	8489.8	-4190.3	8380.8	1.2563	1	0.4316
group x coda	8415.3	8501.0	-4189.7	8379.3	2.1485	2	0.3416
group x condition	8412.6	8503.1	-4187.3	8374.6	6.897	3	0.07525
cond x coda	8412.2	8497.9	-4188.1	8376.2	5.2914	2	0.07096
full	8420.5	8534.8	-4186.3	8372.5	8.9397	8	0.3474

2.2 Final mod

Term	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	1.6025	0.2886	5.553	2.81e-08 ***
groupla	-1.1382	0.3274	-3.476	0.000509 ***
groupint	-0.4926	0.4270	-1.153	0.248711
codaSum1	-0.8177	0.2258	-3.621	0.000294 ***

Relevel w/ int as baseline

	Estimate	Std. Error	z value	Pr(>|z|)
(Intercept)	1.0620	0.3840	2.765	0.00568 **
groupla	-0.6426	0.4049	-1.587	0.11249
groupss	0.4879	0.4244	1.150	0.25028
codaSum1	-0.6111	0.2170	-2.816	0.00486 **

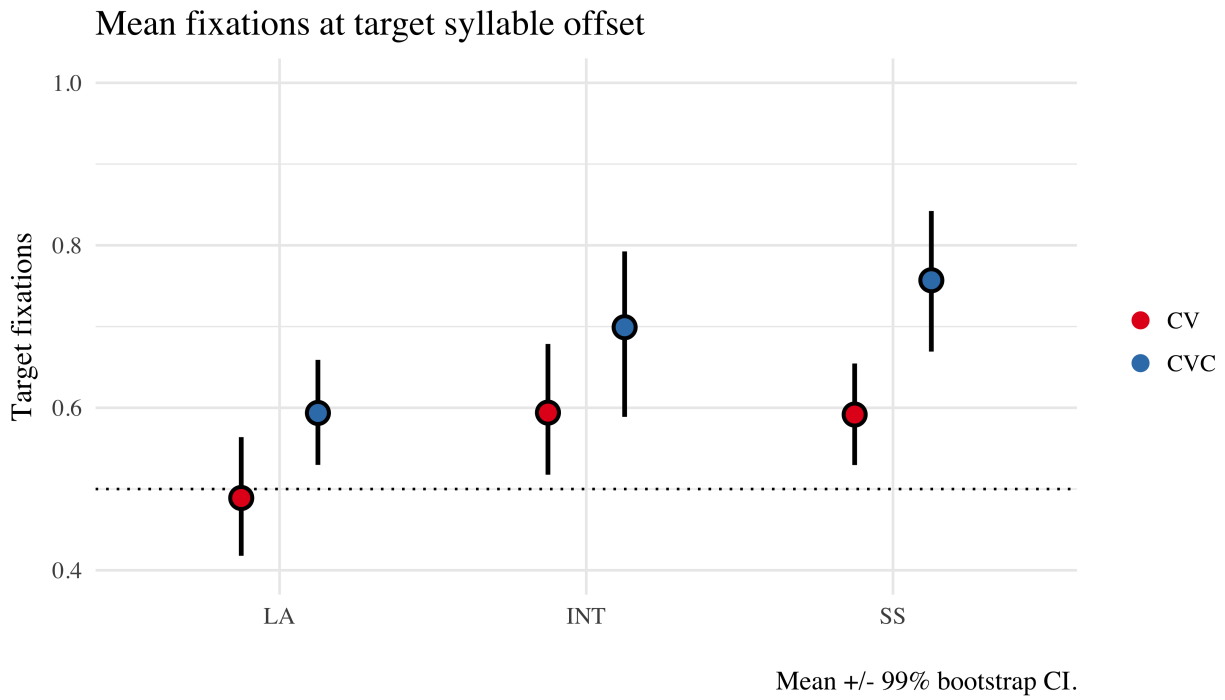

Figure 2: glmem

3 GCA

- Time course analyzed using GCA
- We fit 3rd order orthogonal polynomials to the data as the functional form
- No significant effects of cubic time terms
- No effects of STRESS (X2(1) = 3.39, p > 0.05)
- Sig. effect of quadratic time term on LA
  - overall, their time course is less bowed than the NS = slower fixation rate
- Group x coda interactions for INT and LA
  - LA fixate on targets earlier (before offset of target syllable) if there is a coda, without coda they do not anticipate
  - INT fixate at faster rate than natives, but later in time course (equal to natives by target offset)
- INT didnt differ from natives in CVC condition

	Estimate	Std. Error	df	t value	Pr(>|t|)
(Intercept)	0.89485	0.14747	68.00	6.068	6.41e-08 ***
ot1	3.33309	0.37630	67.00	8.858	7.25e-13 ***
ot2	-0.16281	0.23645	55.00	-0.689	0.49401
groupla	-0.37843	0.19871	68.00	-1.904	0.06107 .
ot1:groupla	-0.84030	0.50822	67.00	-1.653	0.10291
ot2:groupla	1.04784	0.31978	55.00	3.277	0.00182 **
groupint	-0.11347	0.26369	68.00	-0.430	0.66832
ot1:groupint	0.07456	0.67747	69.00	0.110	0.91268
ot2:groupint	-0.18355	0.42840	59.00	-0.428	0.66989
codaSum1	0.07384	0.05076	9377.00	1.455	0.14578
ot1:codaSum1	0.25070	0.17745	8565.00	1.413	0.15777
ot2:codaSum1	0.05033	0.17117	6255.00	0.294	0.76874
groupla:codaSum1	-0.17708	0.06821	9430.00	-2.596	0.00945 **
ot1:groupla:codaSum1	-0.33634	0.23883	8657.00	-1.408	0.15909
ot2:groupla:codaSum1	0.09856	0.23274	6338.00	0.423	0.67196
groupint:codaSum1	-0.29203	0.09172	9378.00	-3.184	0.00146 **
ot1:groupint:codaSum1	0.32001	0.32918	8746.00	0.972	0.33102
ot2:groupint:codaSum1	0.07729	0.31381	7054.00	0.246	0.80545

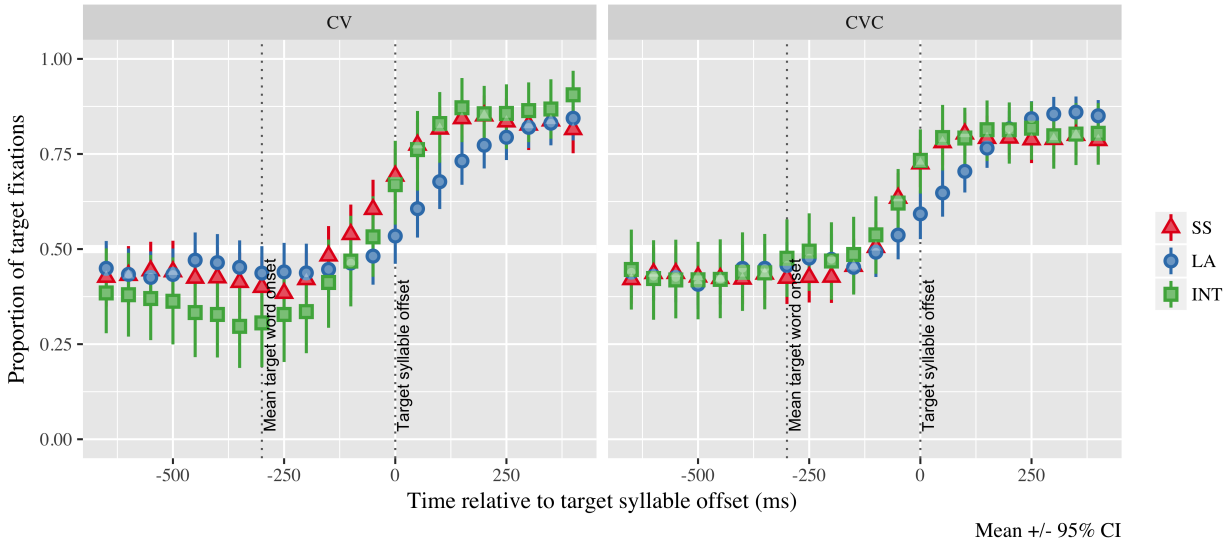

Figure 3: Eye-tracking time course

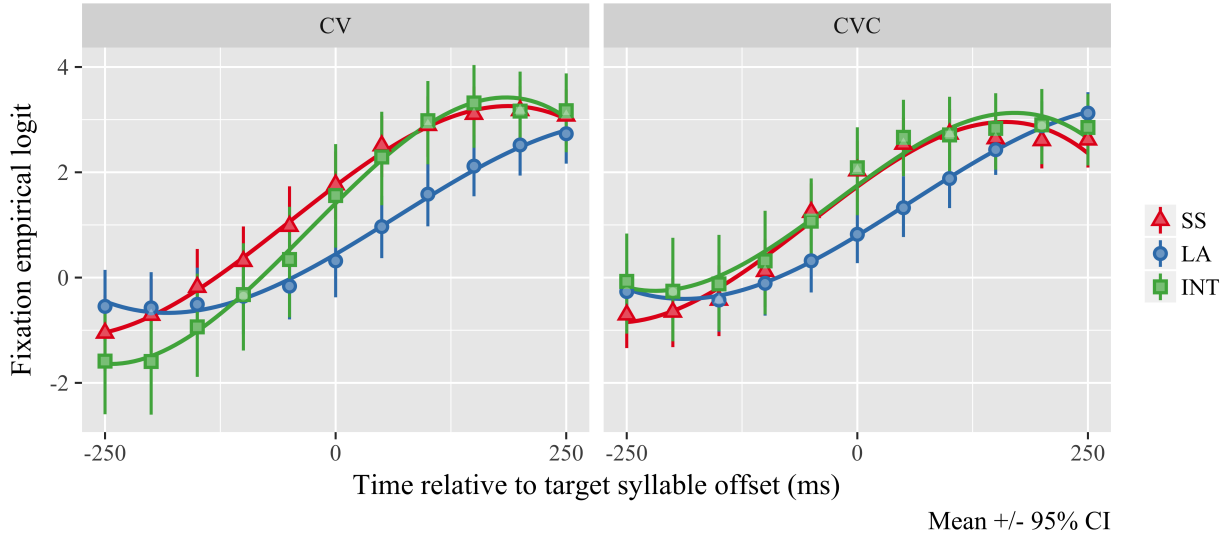

Figure 4: GCA model fits