

Evoked and oscillatory EEG activity differentiates language discrimination in young monolingual and bilingual infants

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ANOVA	F value	p value	SS effect	SS total	eta squared
P200					
RM_ANOVA					
Group	0.668	0.4213	0.001	0.167	0.006
Language	2.209	0.120	0.003	0.167	0.018
Group*Language	4.110	0.022	0.006	0.167	0.036
One-Way-ANOVA					
Monolingual	3.886	0.024	0.008	0.094	0.088
Bilingual	0.672	0.513	0.001	0.073	0.017
Theta					
RM_ANOVA					
Group	0.120	0.731	0.127	104.732	0.001
Language	2.852	0.066	2.351	104.732	0.022
Group*Language	5.948	0.004	21.428	104.732	0.205
One-Way-ANOVA					
Monolingual	0.558	0.574	1.117	82.132	0.014
Bilingual	15.208	<0.001	6.135	22.437	0.273

T-Test	t value	p value	Cohen's d	effect-size r_Y
P200				
Monolingual				
Native-Italian	-0.035	0.971	-0.019	0.009
Native-German	-2.891	0.007	-1.604	0.626
Italian-German	-2.501	0.018	-1.387	0.569
Bilingual				
Native-Italian	-1.277	0.212	-0.708	0.334
Native-German	-0.056	0.955	-0.031	0.016
Italian-German	0.950	0.350	0.527	0.255
Theta				
Monolingual				
Native-Italian	-1.032	0.310	-0.572	0.275
Native-German	0.047	0.962	0.026	0.013
Italian-German	1.198	0.241	0.665	0.315
Bilingual				
Native-Italian	4.387	<0.001	2.43	0.77
Native-German	5.169	<0.001	2.867	0.820
Italian-German	-0.309	0.759	-0.171	0.085

STAT analysis: ERP amplitudes

Ttest within (p-values):

	NAT-ITA	NAT-GER	ITA-GER
MONO	0.539	0.339	0.785
BI	0.318	0.688	0.234

Ttest between (p-values):

	NAT	GER	ITA
	0.483	0.753	0.524

ANOVA

Monolingual: n.s. (p= 0.69)
Bilingual: n.s (p=0.49)

Repeated Measures ANOVA

Group: n.s. (p= 0.83)
Language: n.s (p=0.56)
GroupxLang: n.s (p=0.60)

MONO

	Mean	Median	Sigma
NAT	0.455	0.418	0.414
ITA	0.398	0.371	0.344
GER	0.376	0.362	0.305

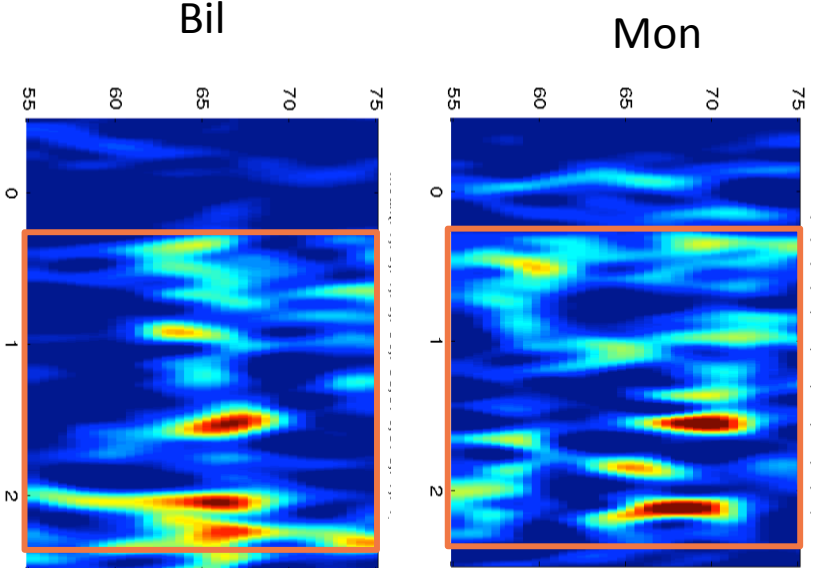
BI

	Mean	Median	Sigma
NAT	0.382	0.426	0.362
ITA	0.453	0.415	0.303
GER	0.348	0.385	0.349

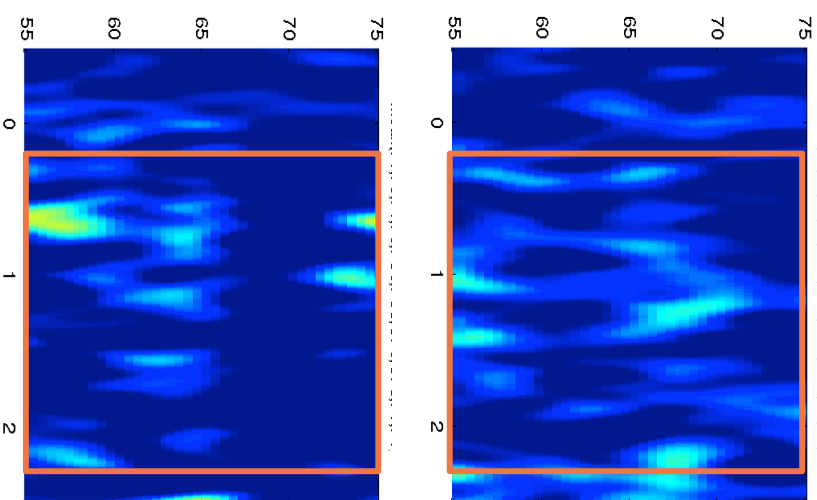
Groups:

	Mean	Median	Sigma
MONO	0.410	0.365	0.354
BI	0.394	0.397	0.338

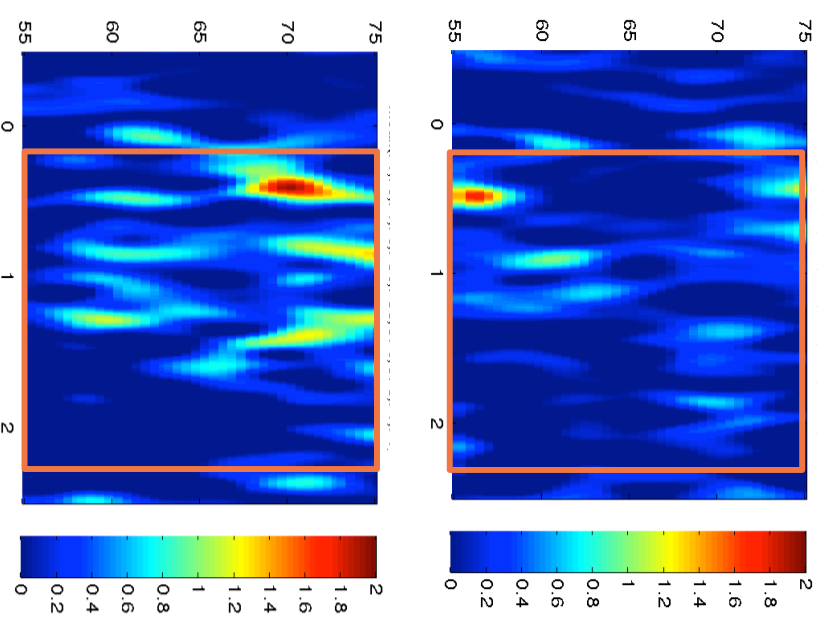
Native



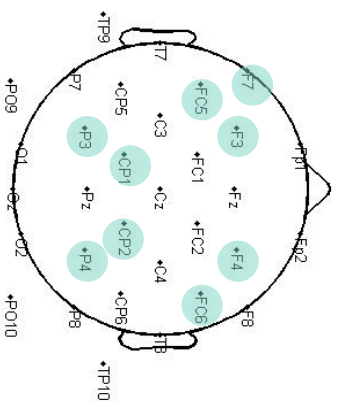
Italian



German



Bil



Time intervals: 0.3-2.8 secs; 0.4-1.85secs
 Freq sub-bands: 55-75Hz;65-75Hz
 Stat results (red box interval):
 n.s (see next slides for more details)

Statistics between 55-75Hz and 0.3 -2.8secs.

MONO

	Mean	Median	Sigma
NAT	1.025	1.023	0.273
ITA	1.148	1.051	0.583
GER	1.195	1.093	0.380

BI

	Mean	Median	Sigma
NAT	1.269	1.048	1.121
ITA	0.996	0.953	0.301
GER	1.085	1.001	0.015

Groups

	Mean	Median	Sigma
MONO	1.123	1.051	0.432
BI	1.117	1.003	0.733

STAT analysis resume (55-75Hz,0.3-2.8 secs)

Ttest within (p-values):

	NAT-ITA	NAT-GER	ITA-GER
MONO	0.35	0.05	0.57
BI	0.26	0.43	0.49

Ttest between (p-values):

NAT	GER	ITA
0.27	0.37	0.23

ANOVA
Monolingual: n.s. (p= 0.32)
Bilingual: n.s (p=0.37)

RM ANOVA
Group: n.s. (p= 0.95)
Language: n.s (p=0.76)
Group x Language: n.s (p=0.16)

