

1 **High gamma response tracks different syntactic**
2 **structures in homophonous phrases**

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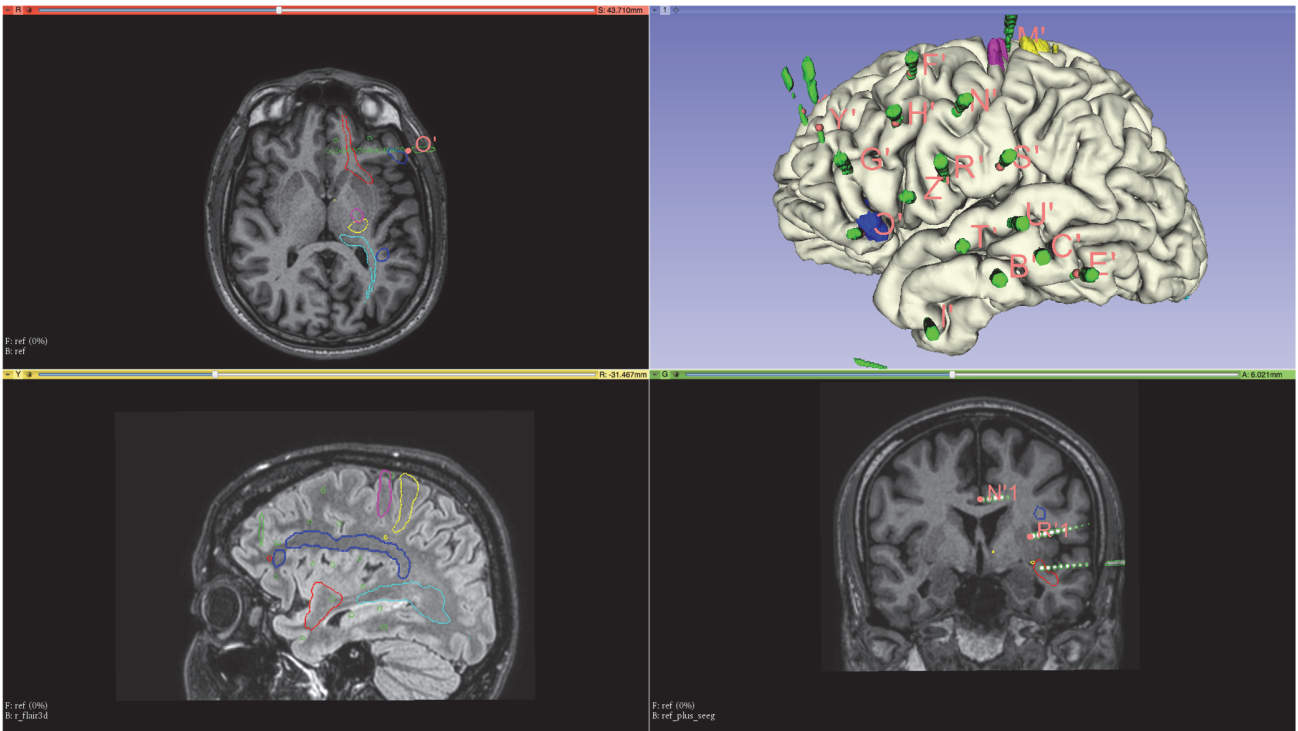
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1 Supplemental Data Items

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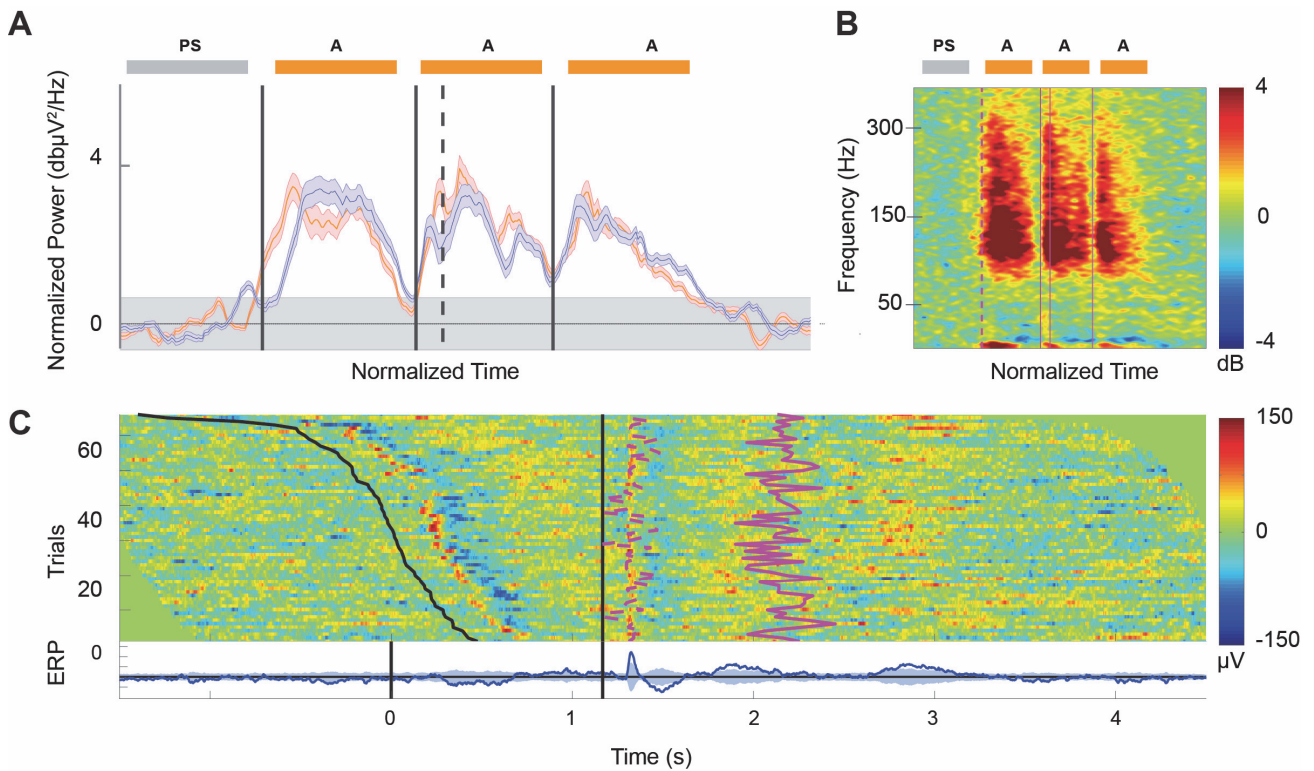
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4 Ext. Data Figure 1: Example of Multimodal and interactive scene assembled with 3D Slicer software of patient
5 s11.

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 2 **Ext. Data Figure 2:** Heschl ERPImage and Time Frequency. A) Band-specific (150 -300 Hz) ERSP (bERSP) for
 3 VPs (red) and NPs (blue) respectively for a Heschl contact. The four vertical bars separate the auditory stimuli
 4 (A) from the prestimulus interval (PS) and respectively indicate the beginning of the phrase, the beginning of
 5 the Art/CI, the beginning of the word immediately following Art/CI (Verb/Noun), the beginning of the word
 6 after. B) Time-warped Event-Related Spectral Perturbation (ERSP) of verb and noun phrases pooled together.
 7 The four vertical bars have the same meaning as in the baseline-normalized power plots (panel A). C) Event-
 8 related single-trial potential image (ERPImage) time-locked to the stimulus presentation. Trials are aligned to
 9 the beginning of Art/CI (continuous black vertical line). The first black line indicates the beginning of the
 10 phrase for each trial. The following two pink lines respectively indicate the beginning of the word immediately
 11 following Art/CI (Verb/Noun) and the beginning of the word after, for each trial.

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	Noun-phrase				Verb-phrase			
	Article				Pronoun			
	<i>valid</i>	<i>miss %</i>	<i>mean</i>	<i>std</i>	<i>valid</i>	<i>miss %</i>	<i>mean</i>	<i>std</i>
freq. Repubblica form	30	3.23	1.45	0.50	21	32.26	2.95	0.52
freq. ITWAC form	31	0	1.46	0.48	22	29.03	2.84	0.64
freq. Repubblica lemma	30	3.23	1.14	0.86	31	0	2.23	0.66
freq. ITWAC lemma	31	0	1.39	0.68	31	0	2.39	0.63
	Noun				Verb			
	<i>valid</i>	<i>miss %</i>	<i>mean</i>	<i>st.dev.</i>	<i>valid</i>	<i>Miss %</i>	<i>mean</i>	<i>st.dev.</i>
freq. Repubblica form	31	0	3.90	0.76	18	41.94	3.73	0.9
freq. ITWAC form	31	0	3.78	0.57	23	25.81	4.07	1.16
freq. Repubblica lemma	31	0	3.67	1.09	31	0	3.80	0.71
freq. ITWAC lemma	31	0	3.90	0.72	31	0	3.72	0.71

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2 **Ext. Data Table 2:** Surprisal values analyses. Number of valid cases, percentage of missing, mean and the standard deviation relative to the
3 surprisal value, separately for the two experimental conditions (Noun-phrase, Verb-phrase).
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	Low Surprisal	High Surprisal	tot (n)
noun-phrase	26	5	31
verb-phrase	5	26	31
tot (n)	31	31	

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- 2 **Ext Data Table 3:** distribution of the surprisal values of articles and clitics on the basis of the median ($M = 1.9097$) obtained from the occurrence of
- 3 the lemma in the ITWAC database.
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Number of patients	10
Gender	5 male and 5 female
Median age at SEEG	32 (range 17-44)
Median years of scholarization	13 (range 0-17)
Median age of onset of epilepsy	16 (range 2-30)
Median duration of epilepsy (years)	15 (range 3-30)

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2 **Ext. Data Table 4:** Demographic data. Summary of demographic data of patients that successfully completed the study. SEEG: Stereo-Electro-
3 Encephalography.
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