Lab meeting 5/28/13

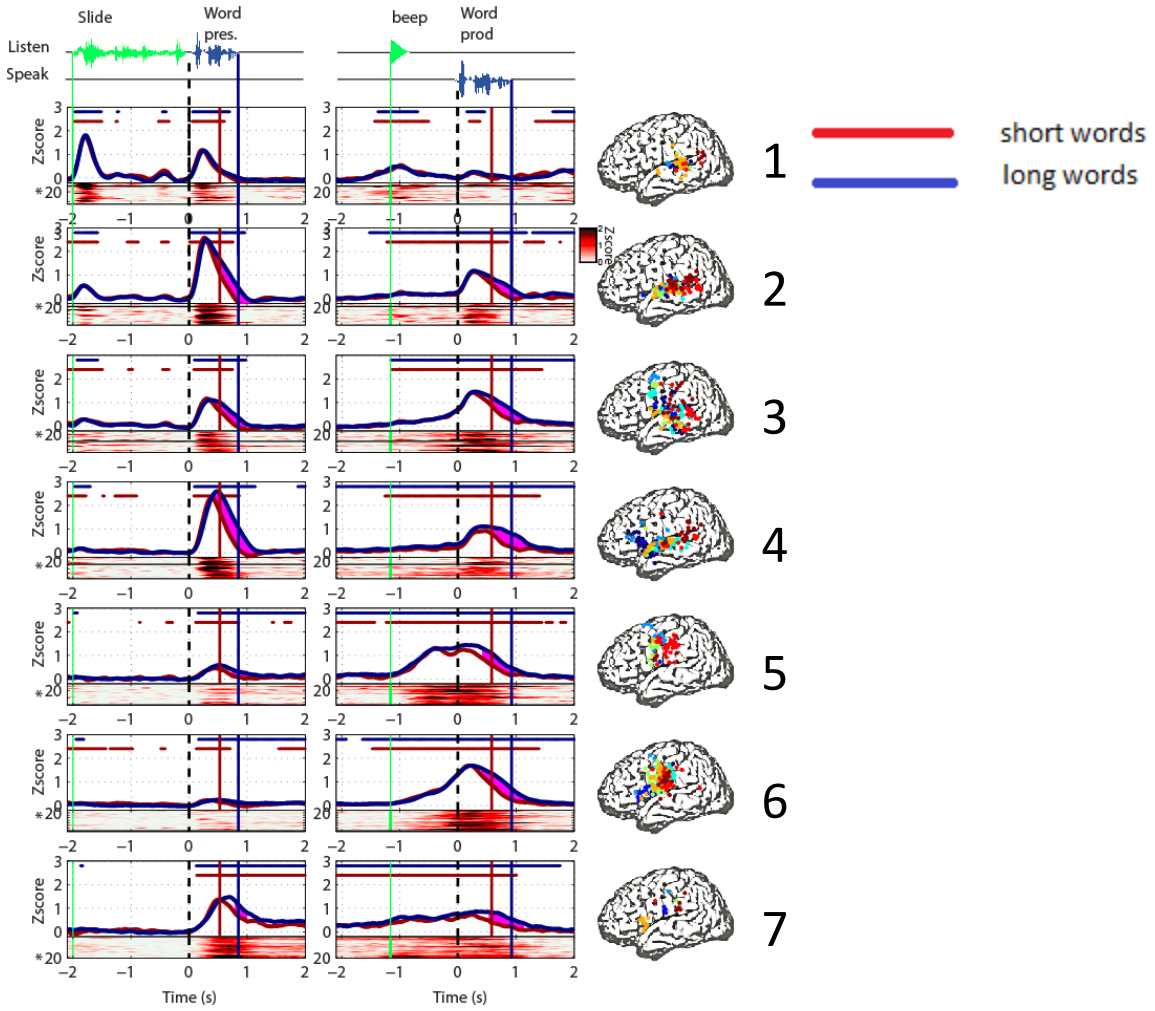
Questions

- What are the spatiotemporal dynamics involved in repetition task?
- What role does each region play?
- How does activity differ by word type?

Experimental Design

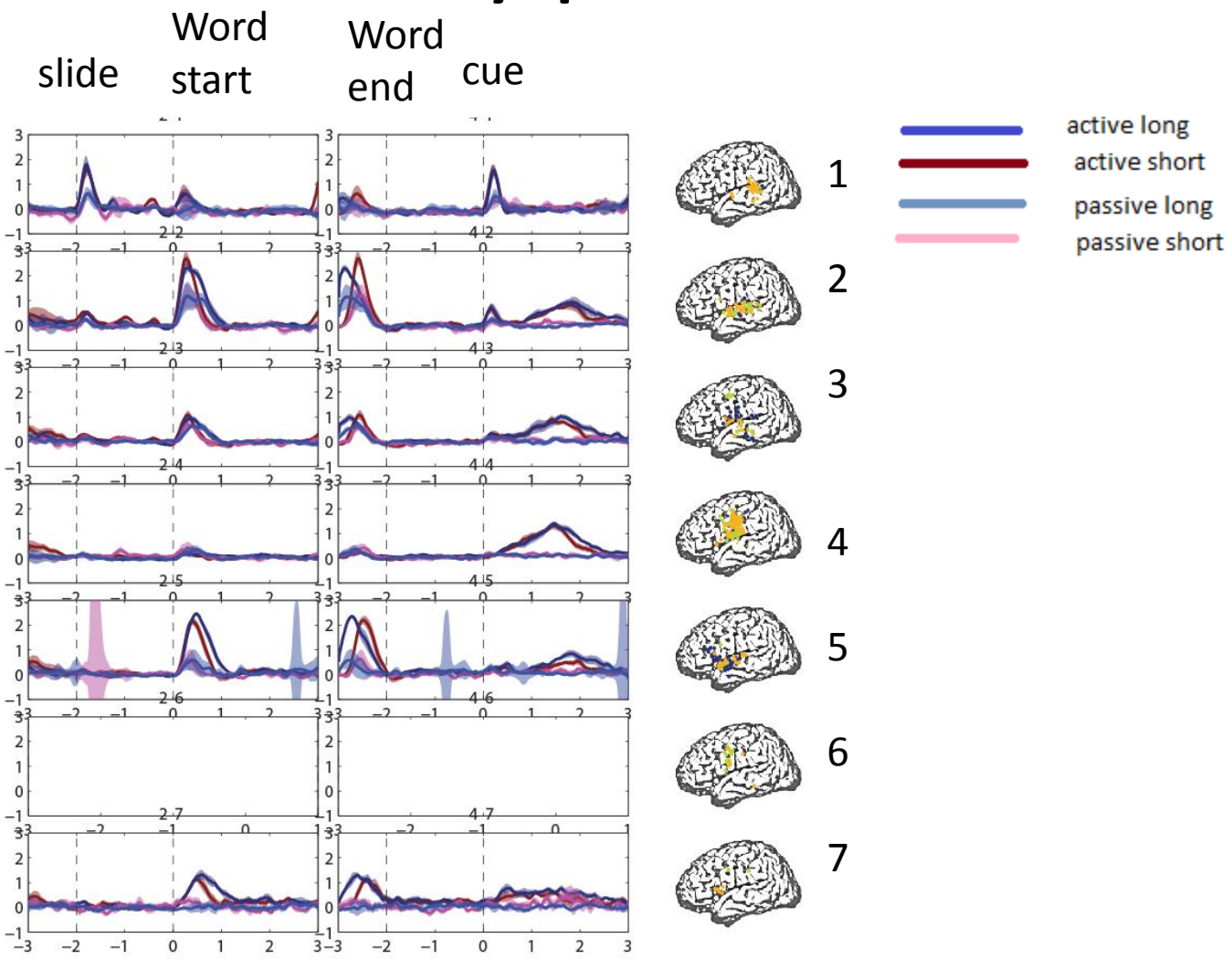
- 28 real words presented by speakers (vary by length, frequency, and articulatory difficulty)
- 2 second delay
- Go Cue
- Subject repeat word

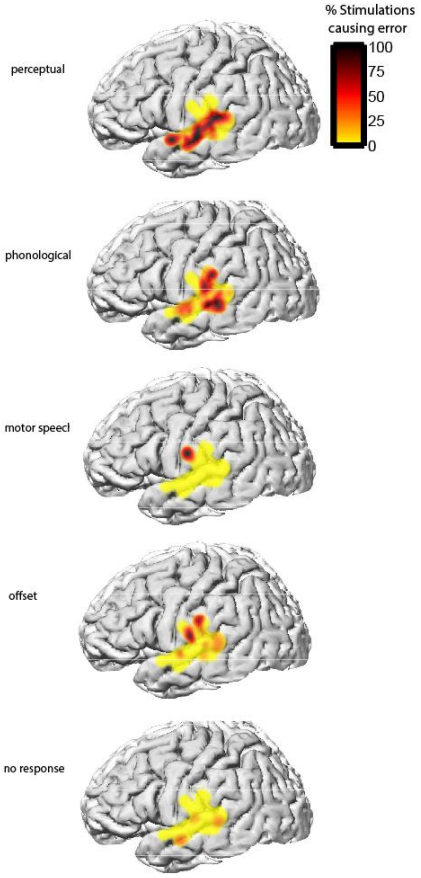
Average Electrode ERPs



*Stacked Averaged ERPs per channel (above horizontal line are electrodes above SF). Responses to long words

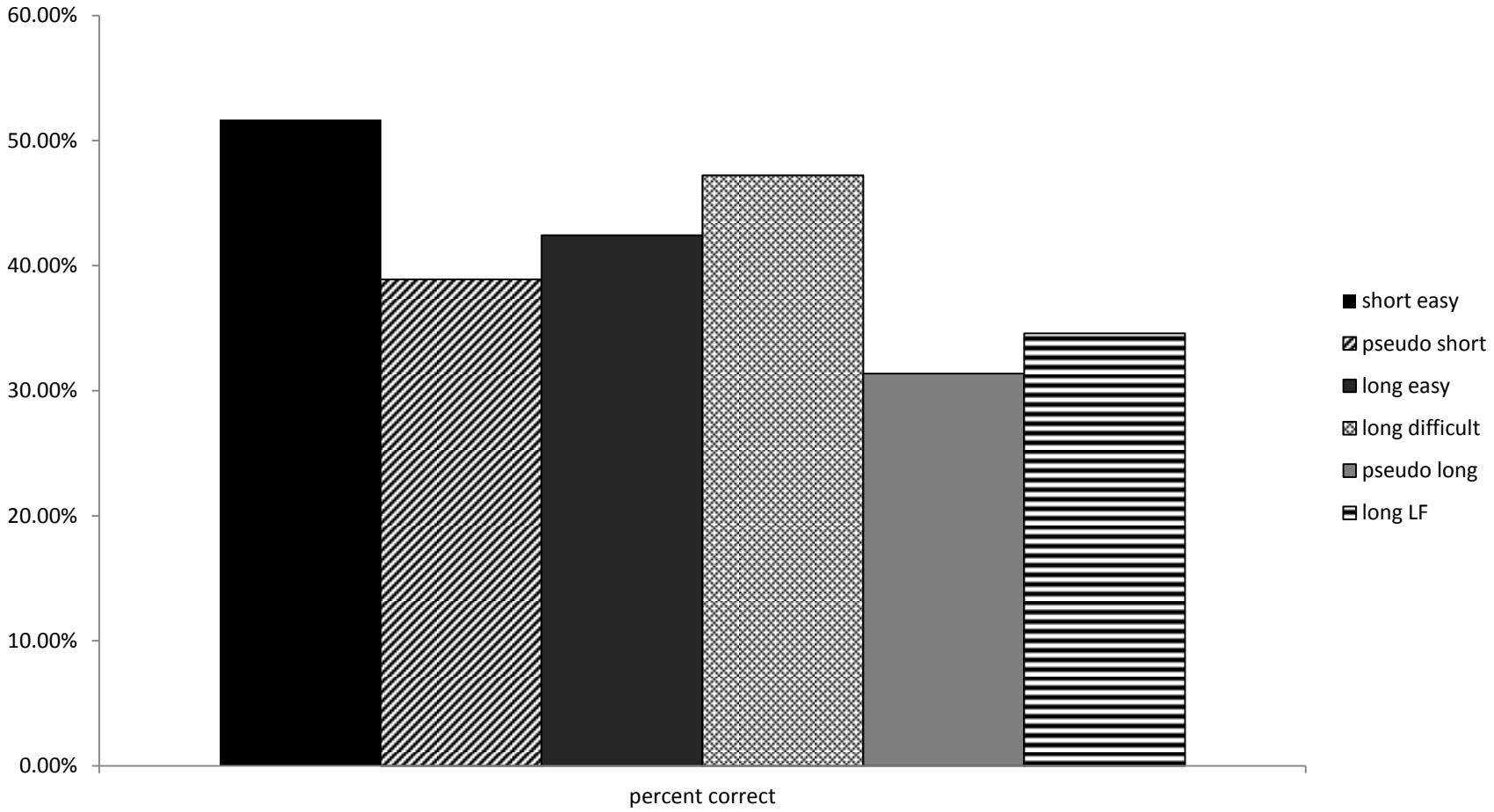
Active very passive





Error category	Criteria	Example
No response (nr)	No verbal response	
Perceptual (per)	Patient appear---s to have not "heard" the target word	"huh", "what", "I don't know", "can you repeat that?"
Phonological (ph)	Addition, deletion, substitution, or transposition of phonemes of the target word	"de" for debate, "opti" for optimism, "caterpilly" for caterpillar, "fedometer" for speedometer
Offset (off)	Delay in response until stimulation is terminated	"say...delivery" [stimulation offset] → "delivery"
Motor speech (ms)	Phonologically correct, but the phonetic quality is altered (i.e., slurred or distorted)	"prosperity" [slurred]
Real word substitution (rws)	Response word that is not the target word	"declaration" for decoration

FIGURE 4: ERROR RATES FOR EACH ERROR TYPE WITHIN FIRST FIVE STIMULATIONS AND THEIR LOCATIONS.


60.00%
50.00%
40.00%
30.00%
20.00%
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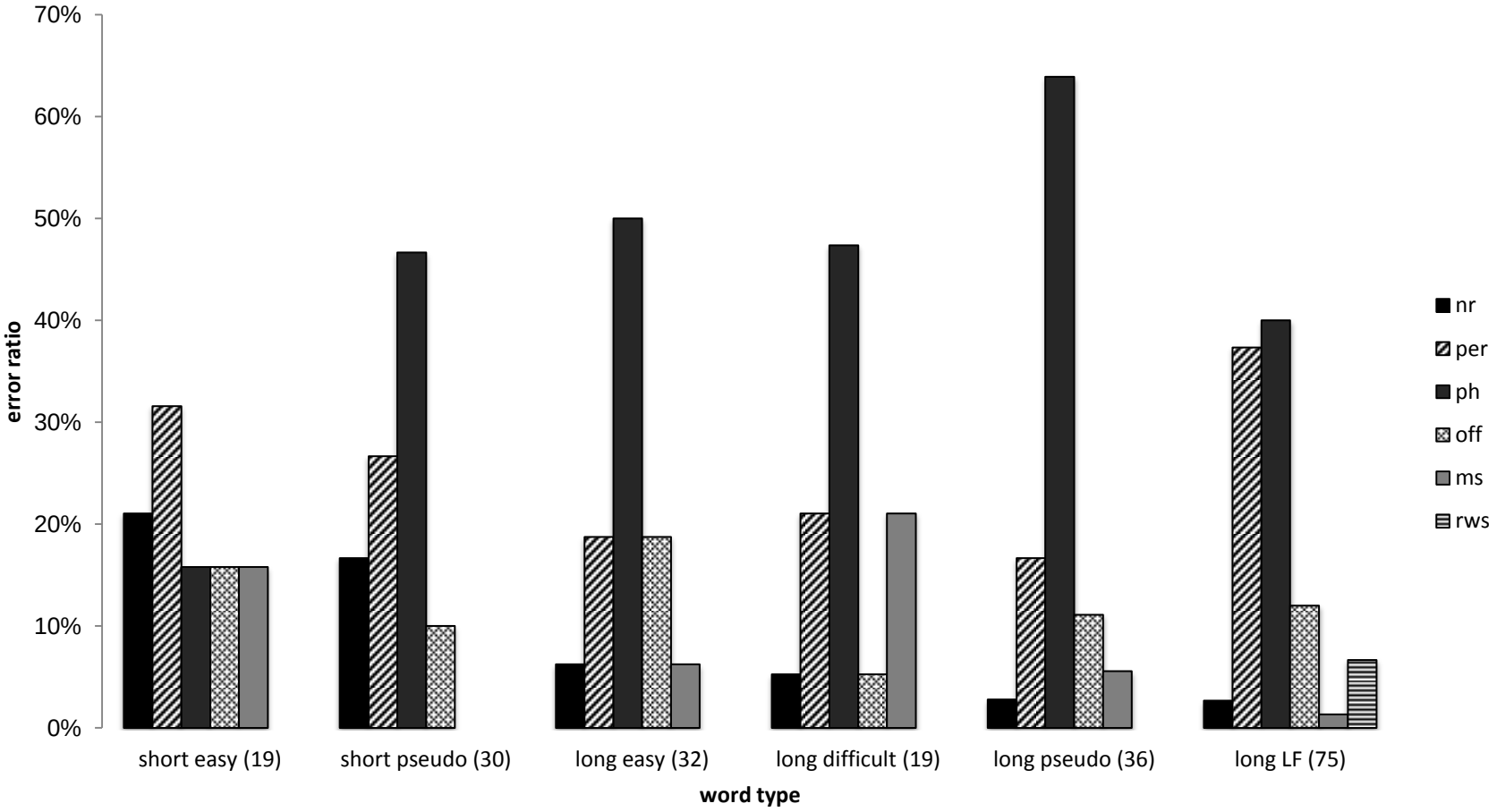
0.00%
percent correct
short easy
pseudo short
long easy
long difficult
pseudo long
long LF


70%
60%
50%
40%
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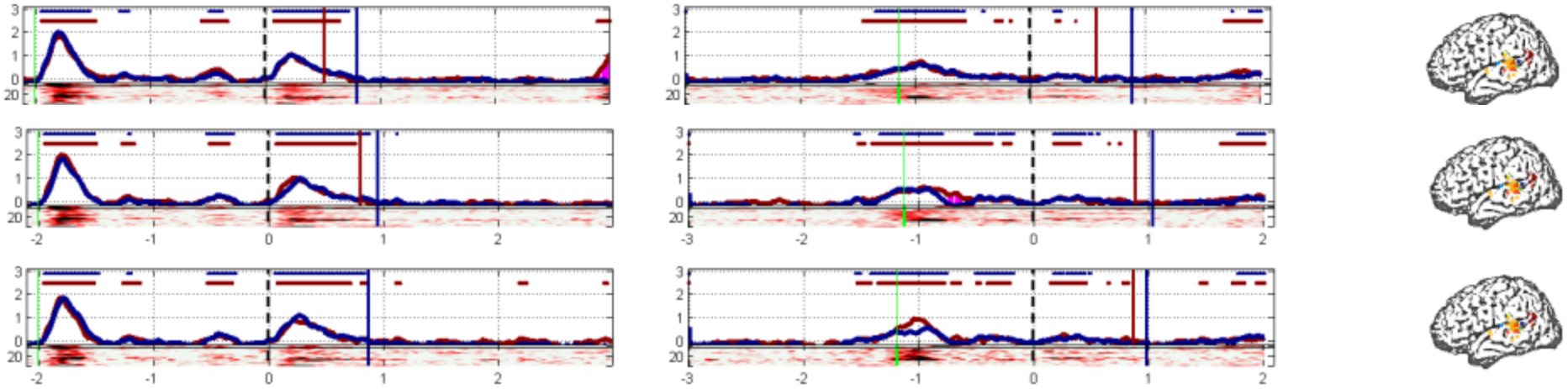
20%
10%
0%
error ratio
short easy (19)
short pseudo (30)
long easy (32)
long difficult (19)
long pseudo (36)
long LF (75)
word type
nr
per
ph
off
ms
rws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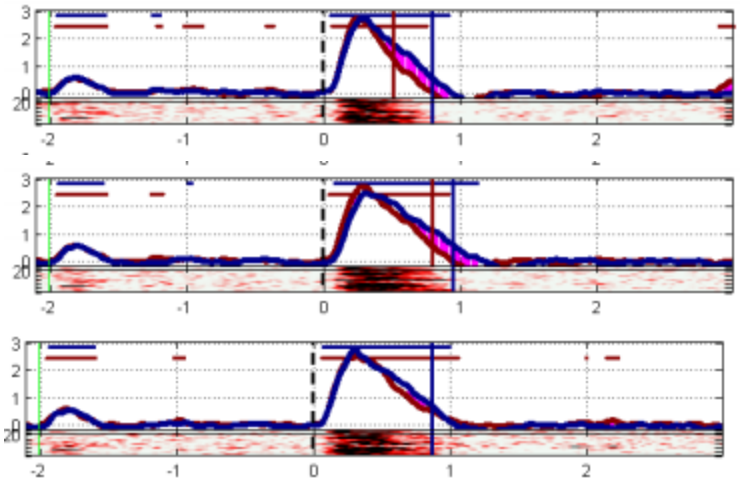
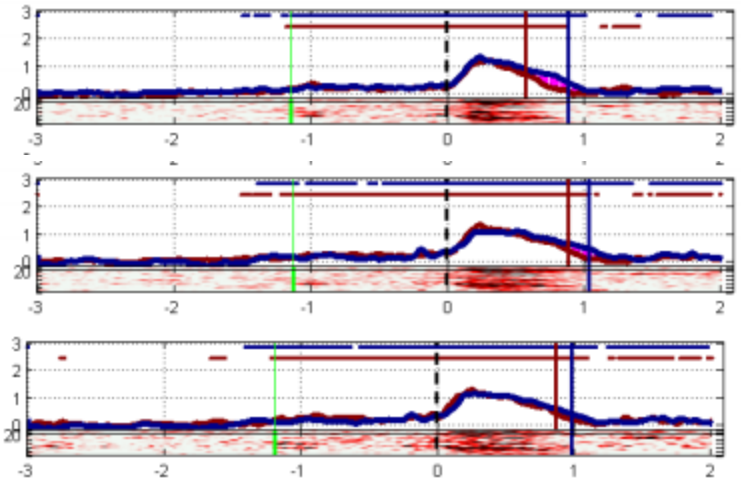
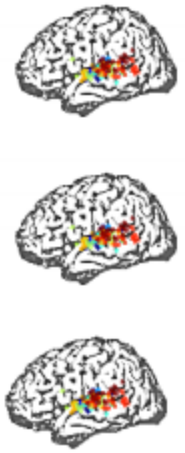

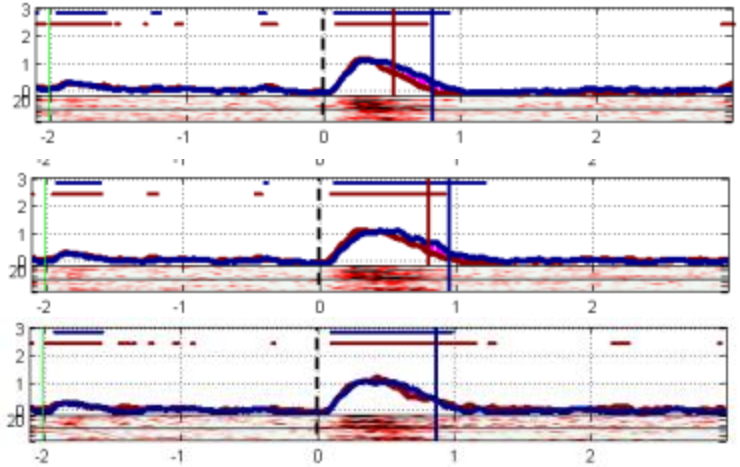
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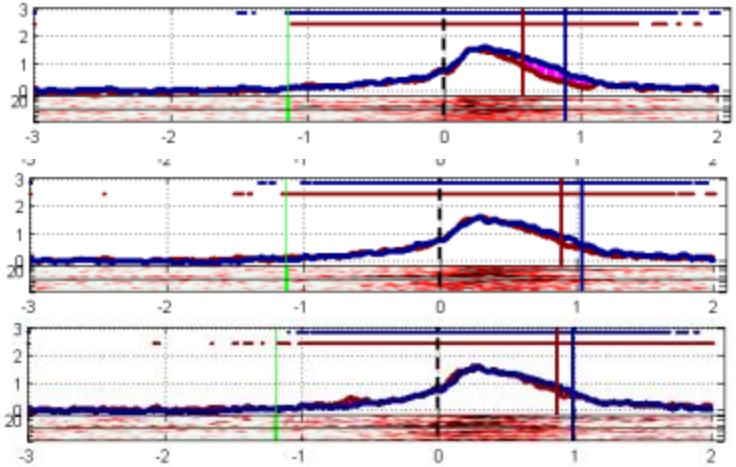
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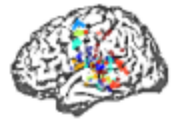

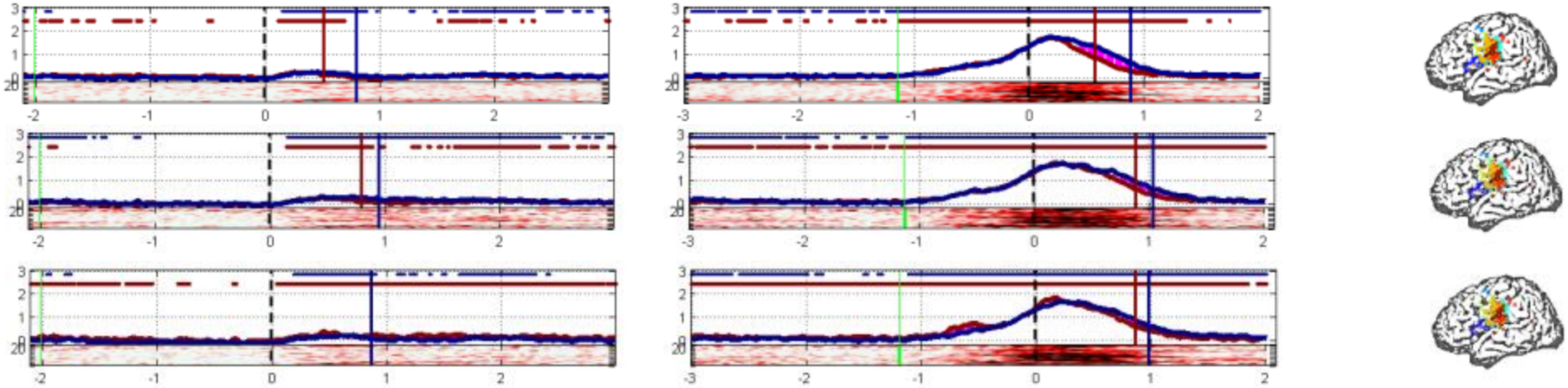
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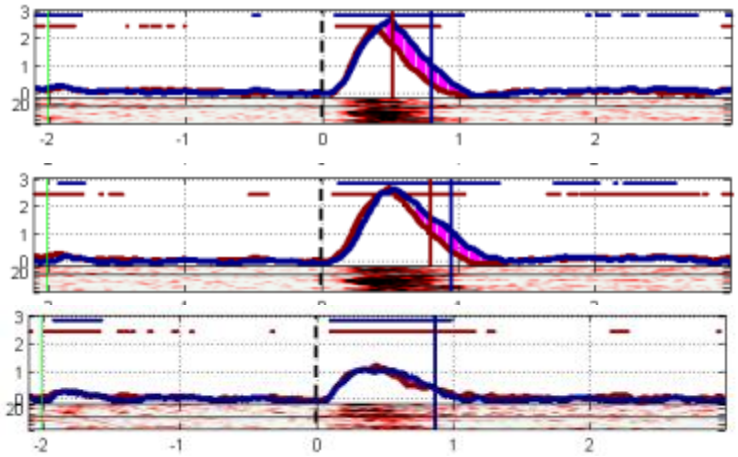
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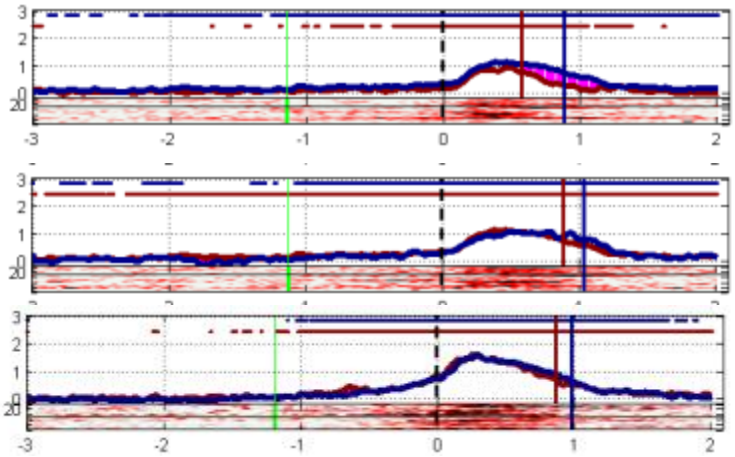
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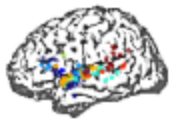

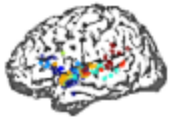

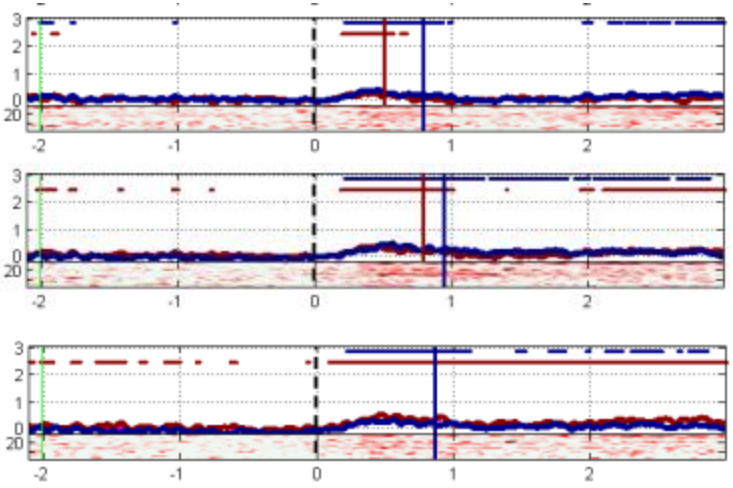
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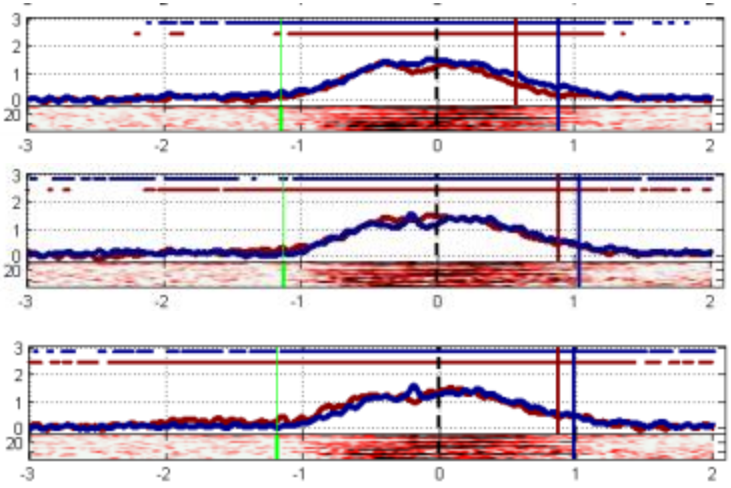
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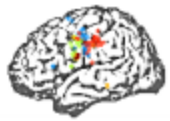

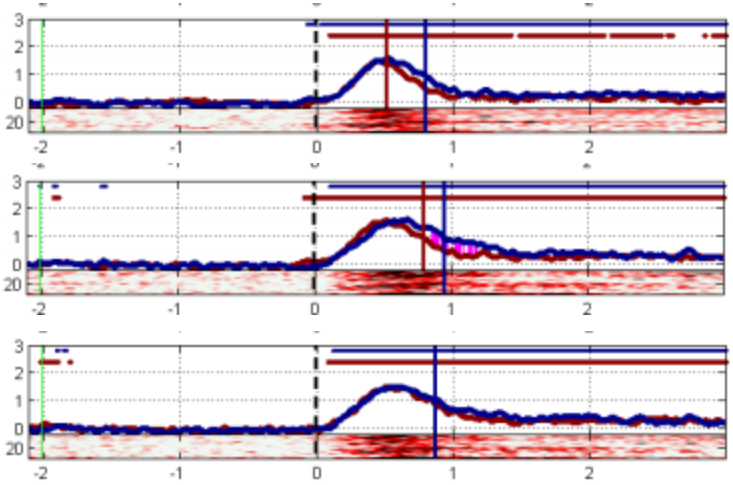
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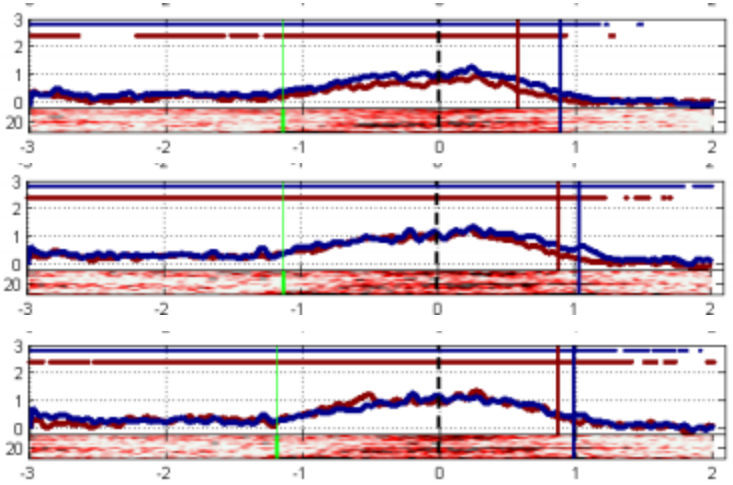
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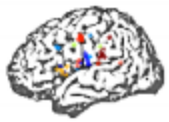
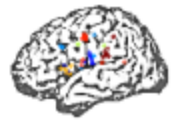
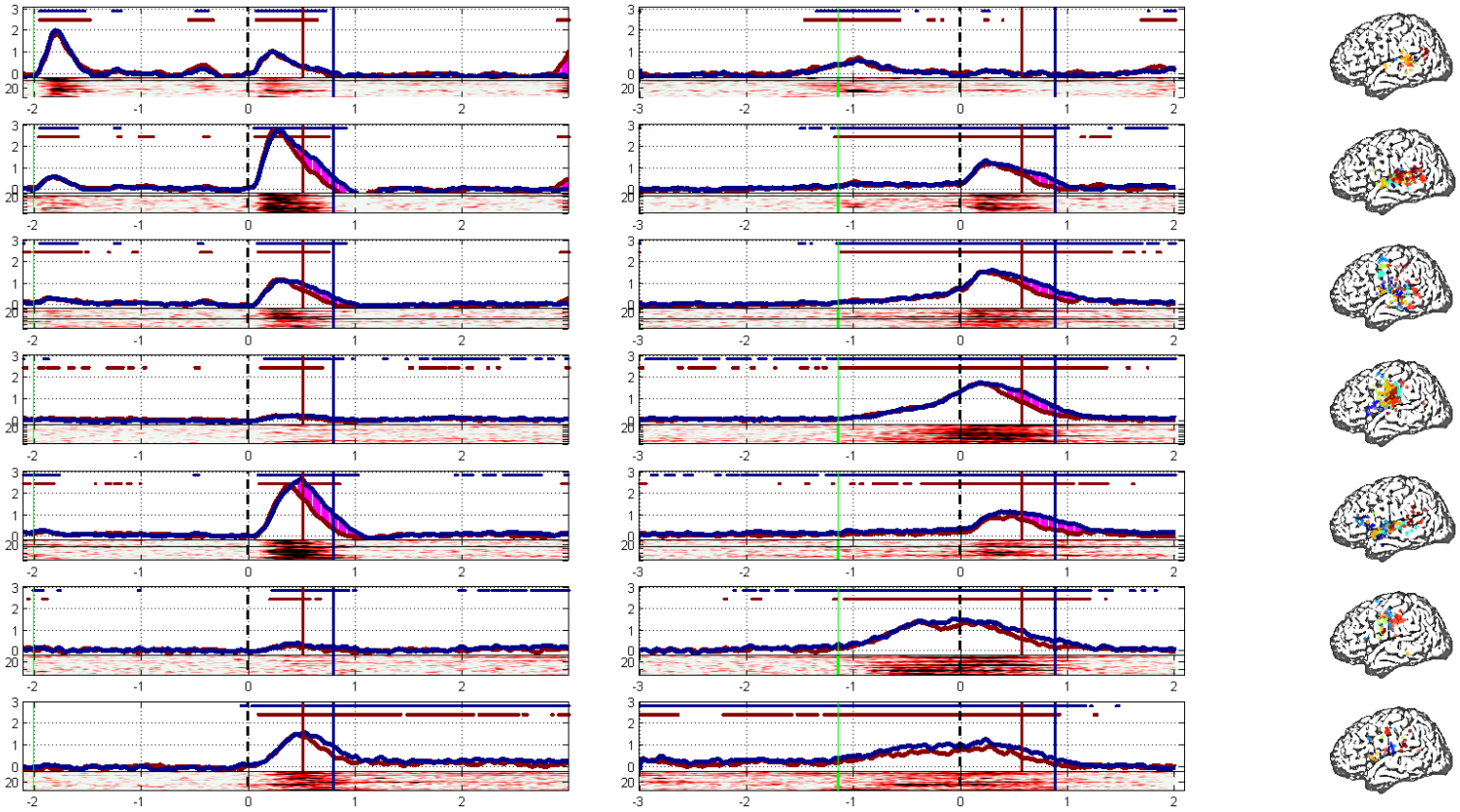
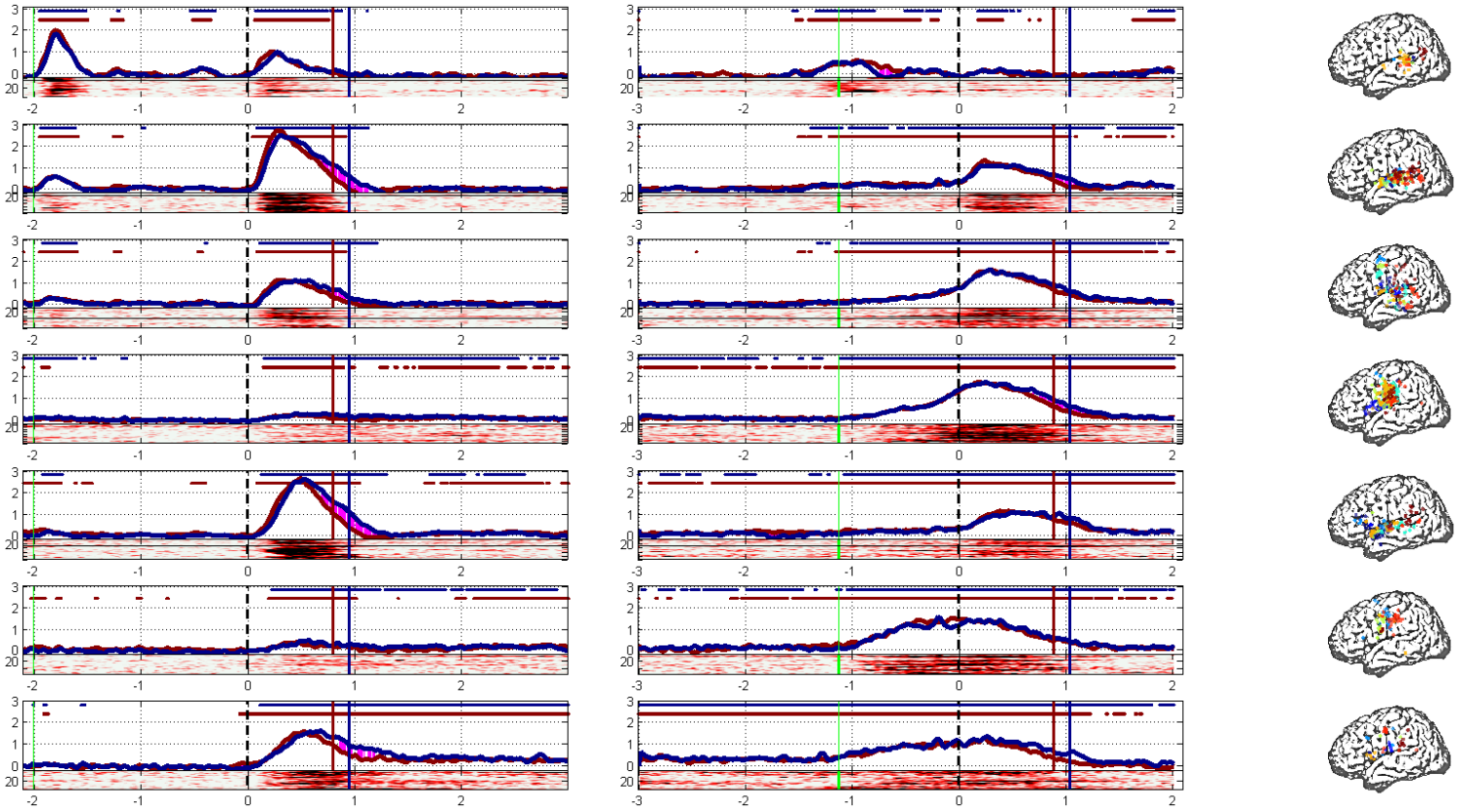




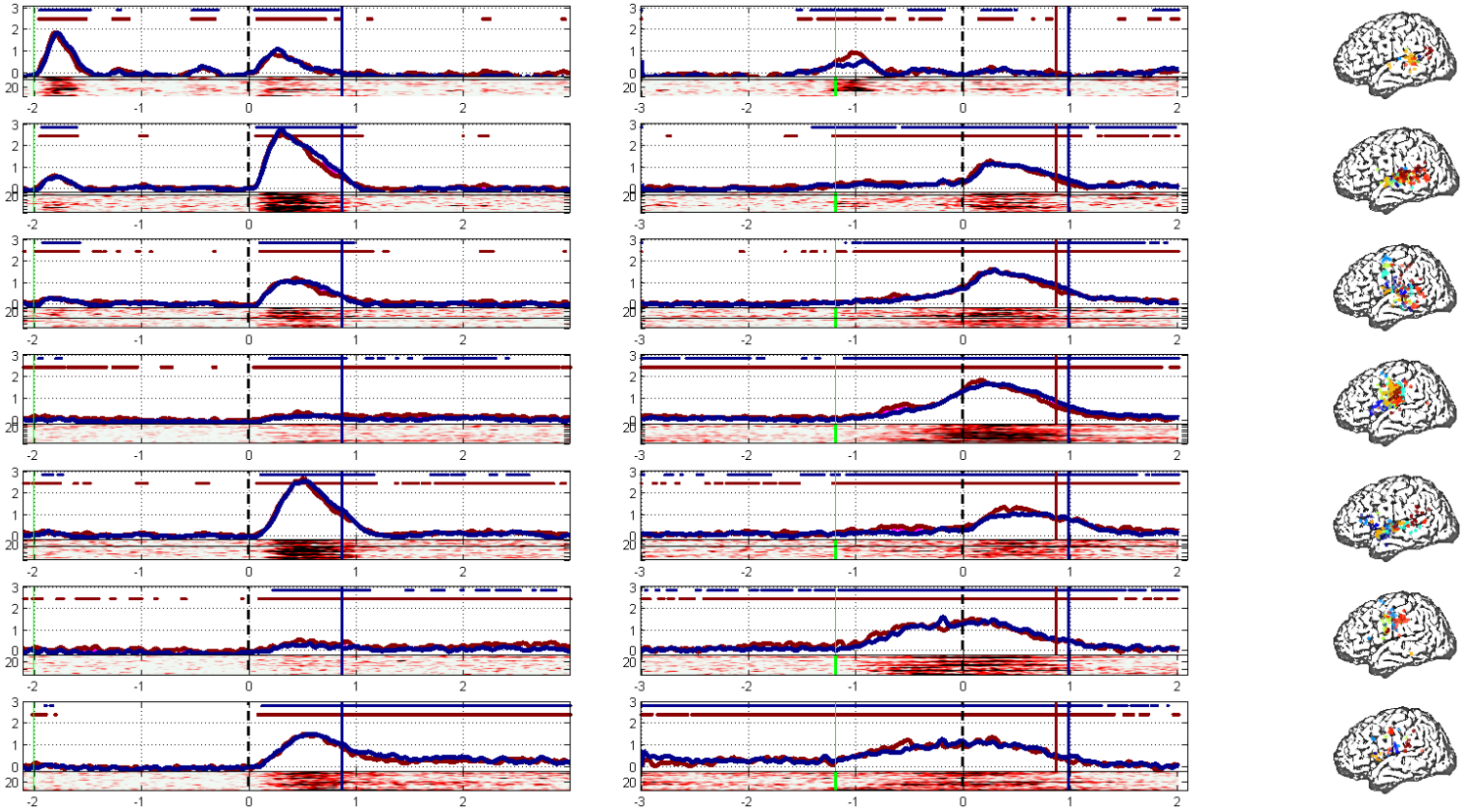
Se vs le



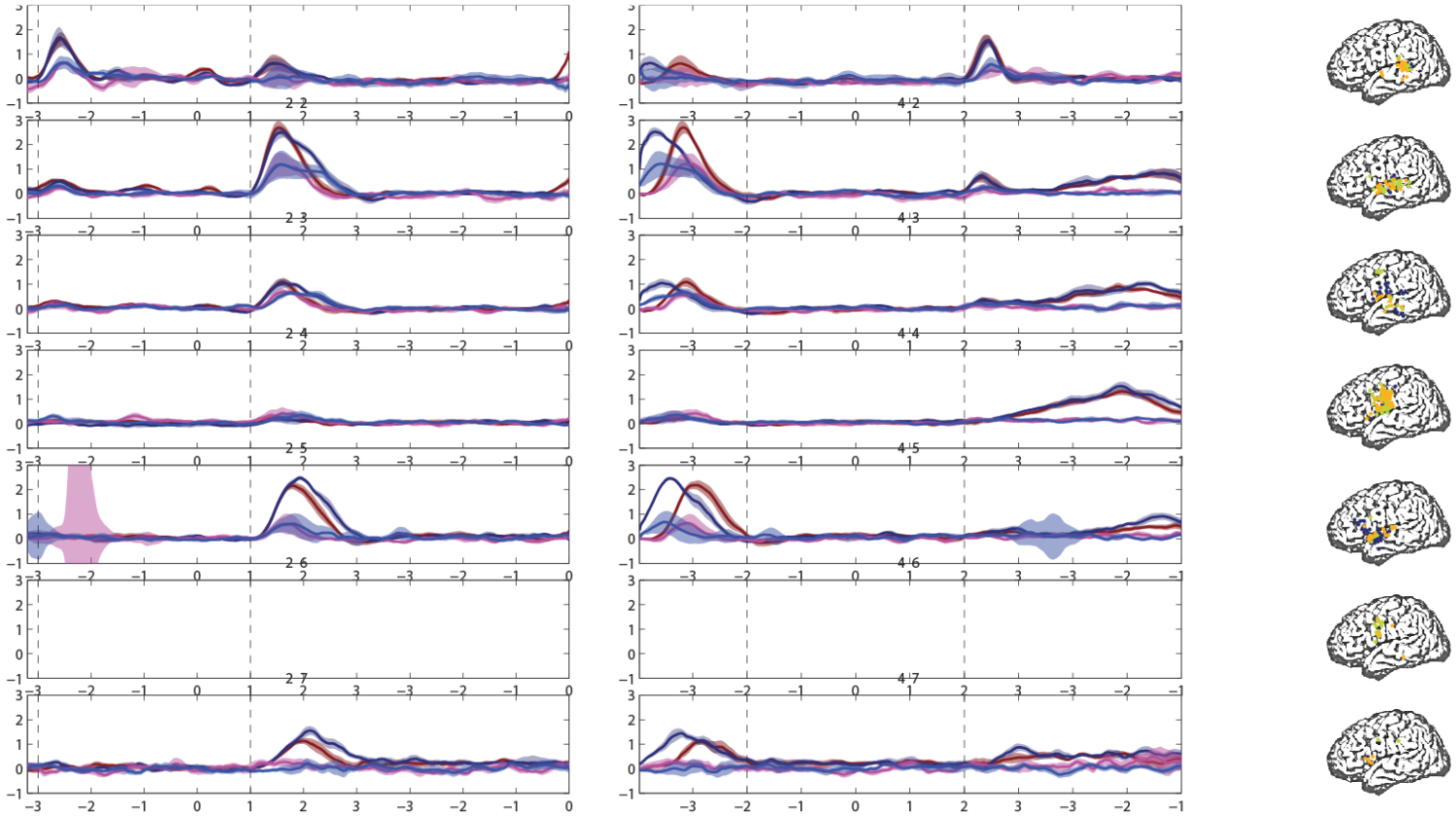
Le vs ld



Lf vs li



Appendix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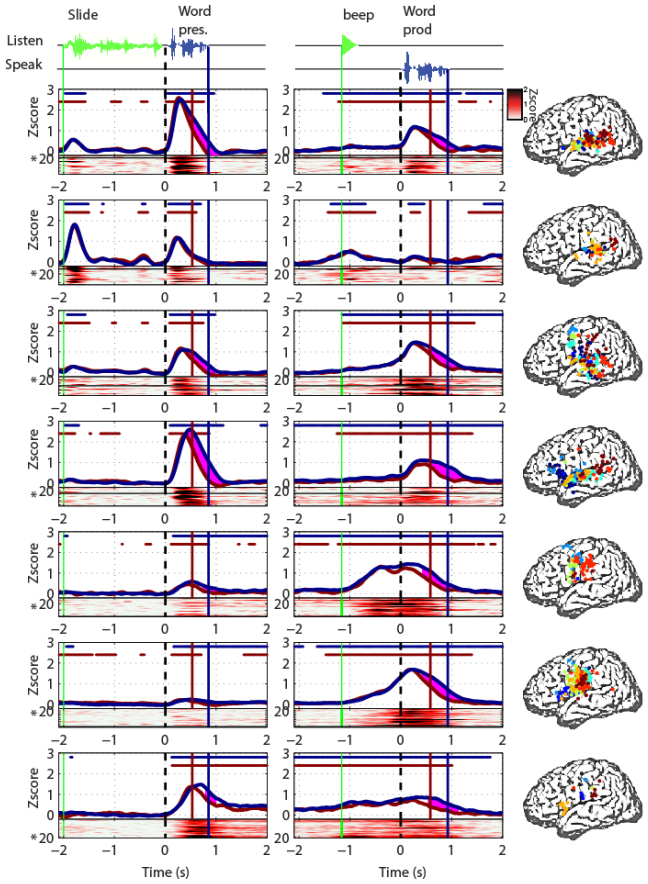
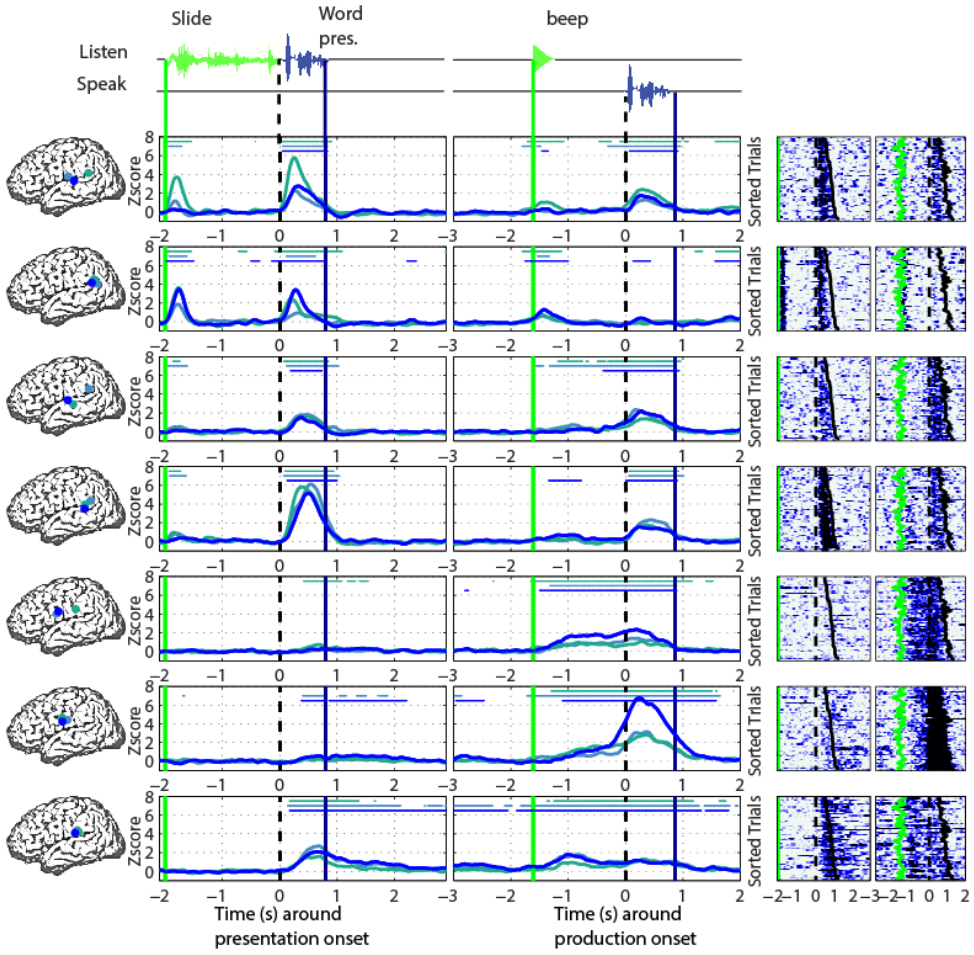
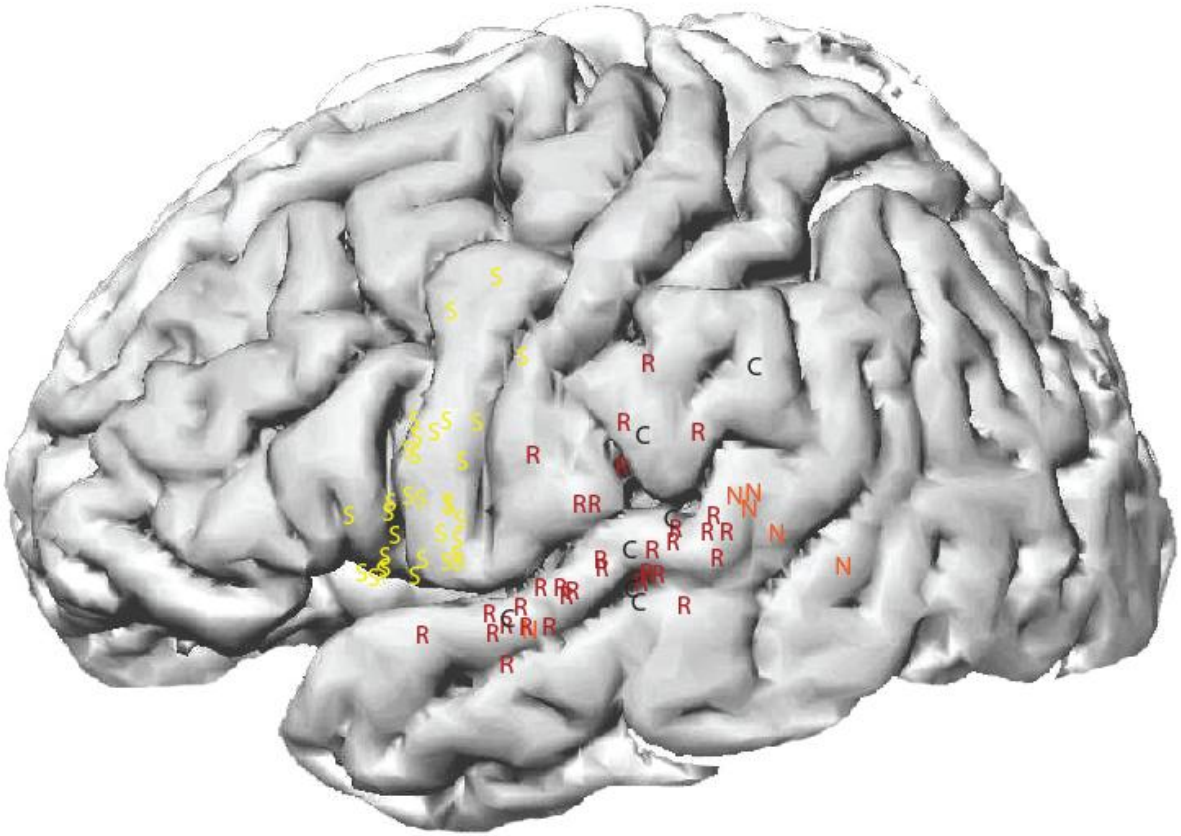


*Stacked Averaged ERPs per channel (above horizontal line are electrodes above SF). Responses to long words


Slide
Word pres.
beep
Listen
Speak
Zscore
Sorted Trials
Time (s) around presentation onset
Time (s) around production onset


S
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