Scripting 1st Level Analysis

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Make_FSL_Timings.sh :

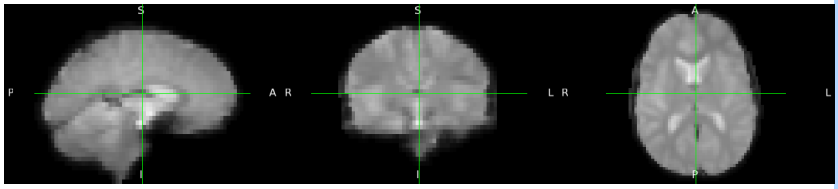
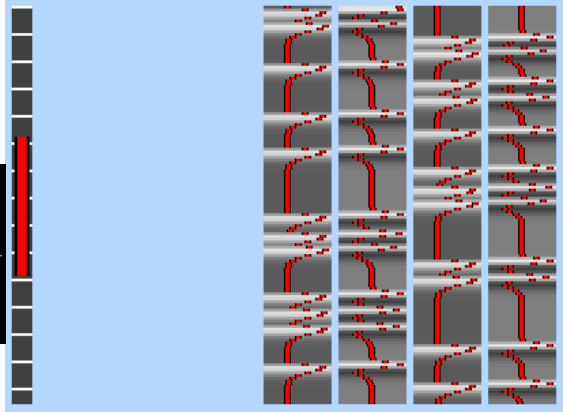
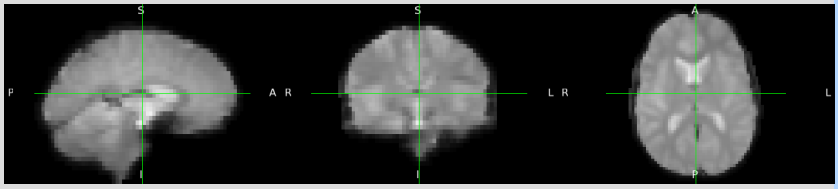
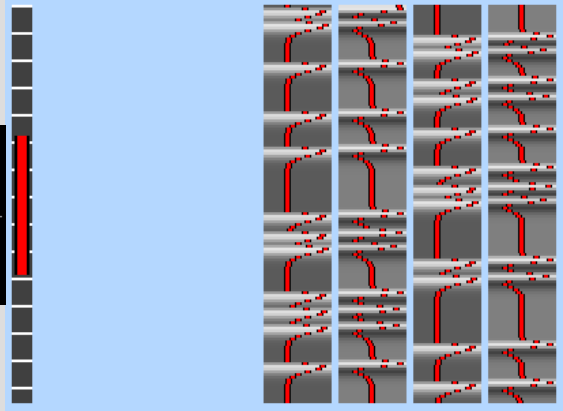
```
#!/bin/bash

#Check whether the file subjList.txt exists; if not, create it
if [ ! -f subjList.txt ]; then
	ls -d sub-?? > subjList.txt
fi

#Loop over all subjects and format timing files into FSL format
for subj in `cat subjList.txt` ; do
	cd $subj/func #Navigate to the subject's func directory, which contains the timing files

	#Extract the onset times for the incongruent and congruent trials for each run. NOTE: This script only extracts the trials in which the subject made a correct response. Accuracy is nearly 100% for all subjects, but as an exercise the student can modify this to extract the incorrect trials as well.
	cat ${subj}_task-flanker_run-1_events.tsv | awk '{if ($3=="incongruent_correct") {print $1, $2, "1"}}' > incongruent_run1.txt
	cat ${subj}_task-flanker_run-1_events.tsv | awk '{if ($3=="congruent_correct") {print $1, $2, "1"}}' > congruent_run1.txt

	cat ${subj}_task-flanker_run-2_events.tsv | awk '{if ($3=="incongruent_correct") {print $1, $2, "1"}}' > incongruent_run2.txt
	cat ${subj}_task-flanker_run-2_events.tsv | awk '{if ($3=="congruent_correct") {print $1, $2, "1"}}' > congruent_run2.txt

	cd ../..
done
```

run_1stLevel_Analysis.sh :

```
#!/bin/bash


# Generate the subject list to make modifying this script
# to run just a subset of subjects easier.

for id in `seq -w 1 26` ; do
    subj="sub-$id"
    echo "===> Starting processing of $subj"
    echo
    cd $subj
        
        # If the brain mask doesn't exist, create it
        if [ ! -f anat/${subj}_T1w_brain_f02.nii.gz ]; then
            echo "Skull-stripped brain not found, using bet with a fractional intensity threshold
of 0.2"
            # Note: This fractional intensity appears to work well for most of the subjects in
the
            # Flanker dataset. You may want to change it if you modify this script for your own
study.
            bet2 anat/${subj}_T1w.nii.gz \
                anat/${subj}_T1w_brain_f02.nii.gz -f 0.2
        fi

        # Copy the design files into the subject directory, and then
        # change "sub-08" to the current subject number
        cp ../design_run1.fsf .
        cp ../design_run2.fsf .

        # Note that we are using the | character to delimit the patterns
        # instead of the usual / character because there are / characters
        # in the pattern.
        sed -i '' "s|sub-08|${subj}|g" \
            design_run1.fsf
        sed -i '' "s|sub-08|${subj}|g" \
            design_run2.fsf

        # Now everything is set up to run feat
        echo "===> Starting feat for run 1"
        feat design_run1.fsf
        echo "===> Starting feat for run 2"
        feat design_run2.fsf
                echo

    # Go back to the directory containing all of the subjects, and repeat the loop
    cd ..
done
echo
```

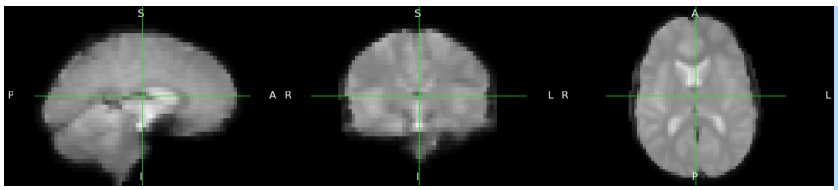
Run 1 Design						Run 2 Design					
		incongruent	incongruent	congruent	congruent			incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0	C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0	C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0	C3	incongruent-congruent	1	0	-1	0

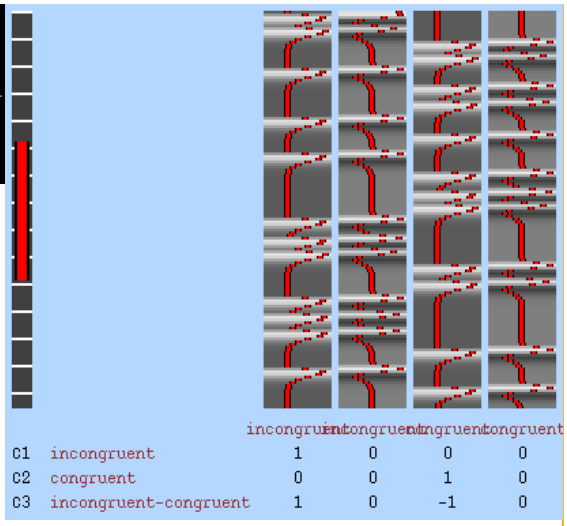
Run 1

Subject	Preprocessed Image	GLM Design
Sub 1		
Sub 2		

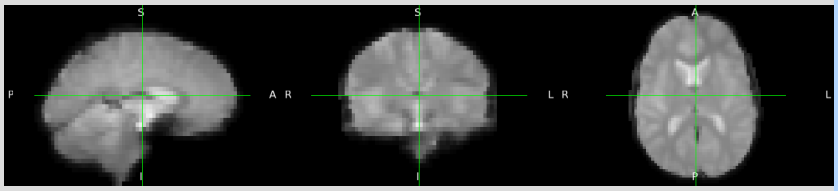
		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

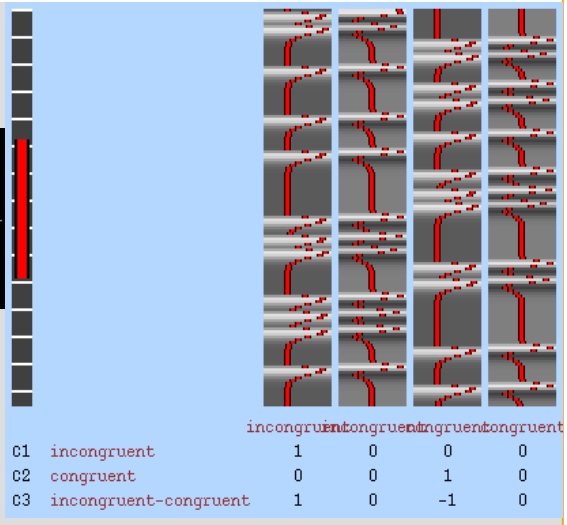
Sub 3



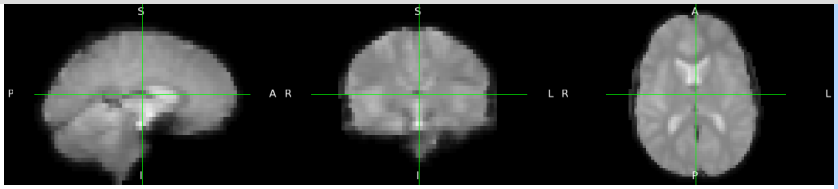


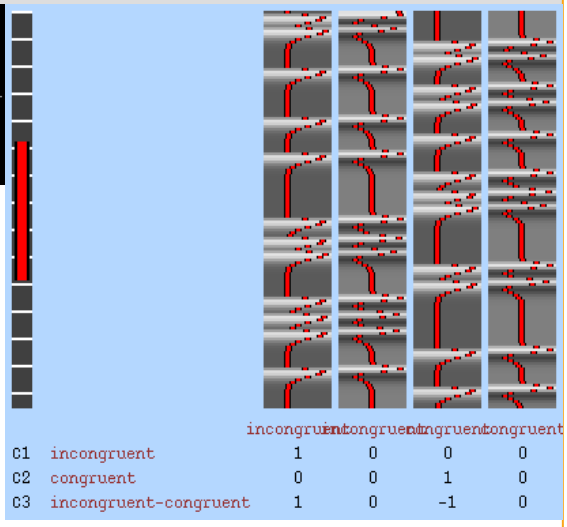
Sub 4



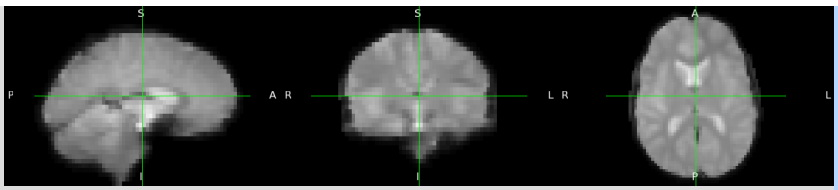


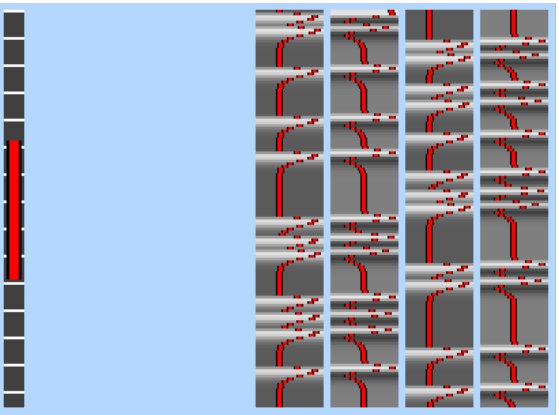
Sub 5





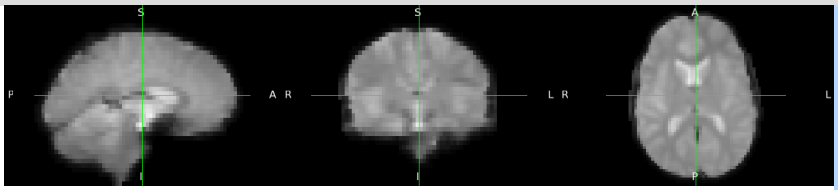
Sub 6

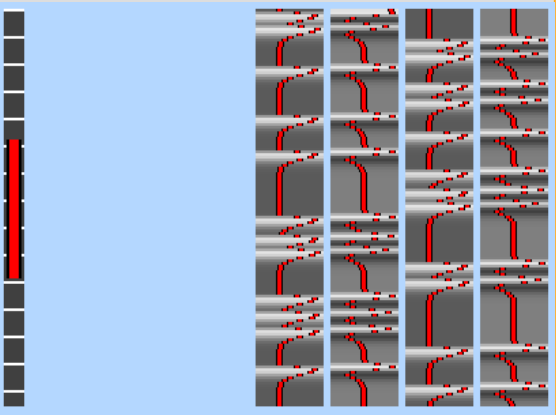




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

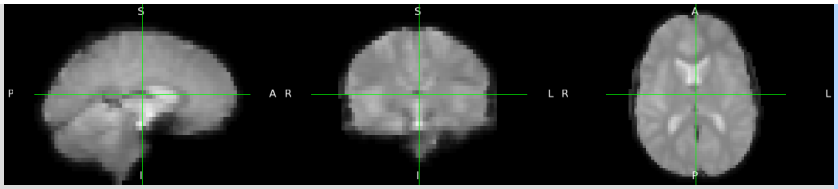
Sub 7

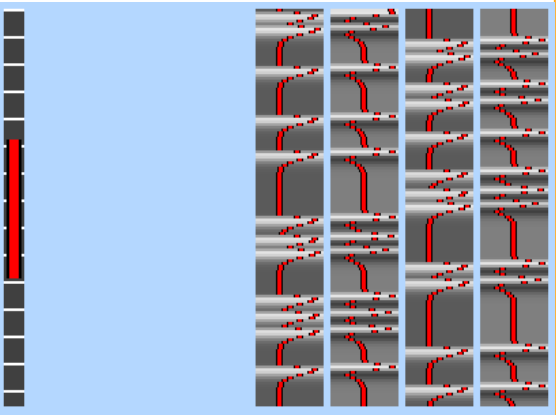




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

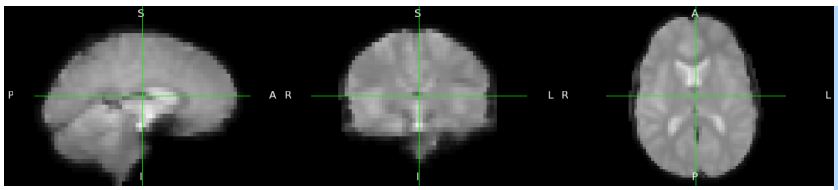
Sub 8

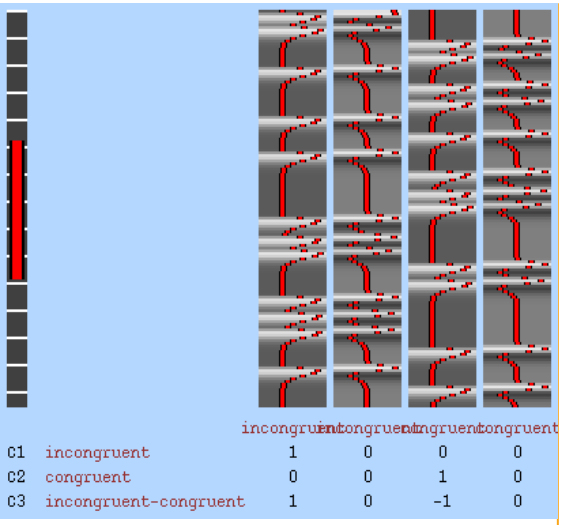




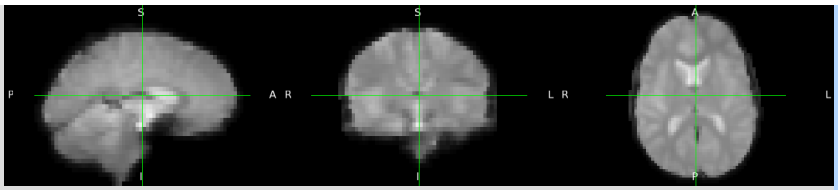
		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

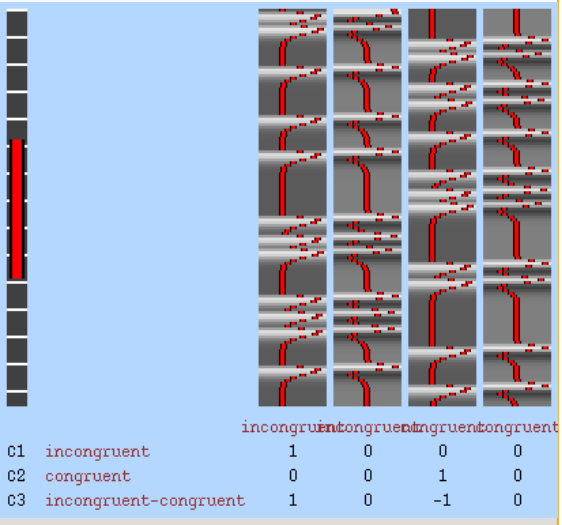
Sub 9



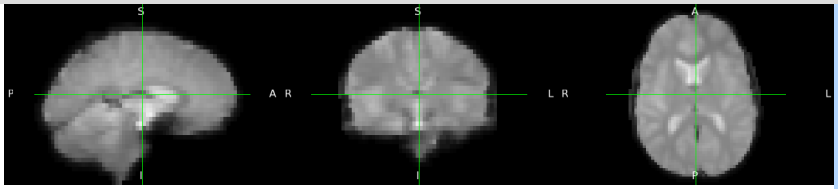


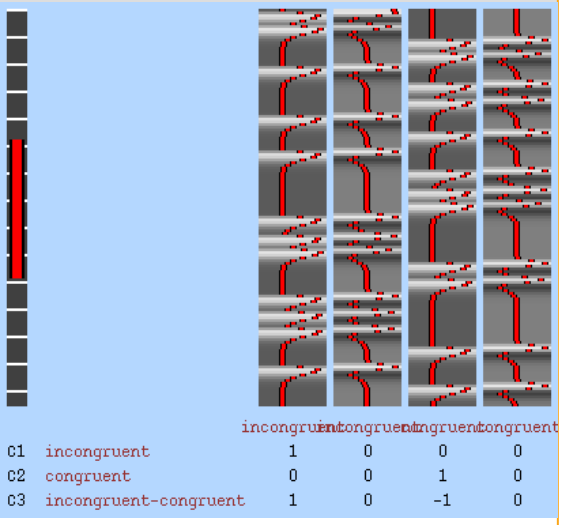
Sub 10



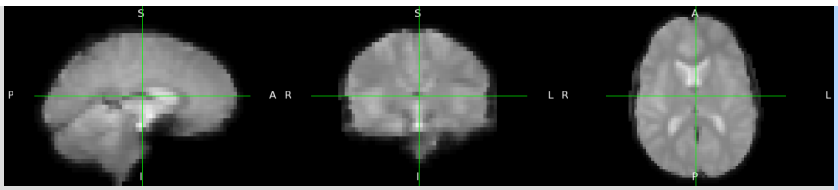


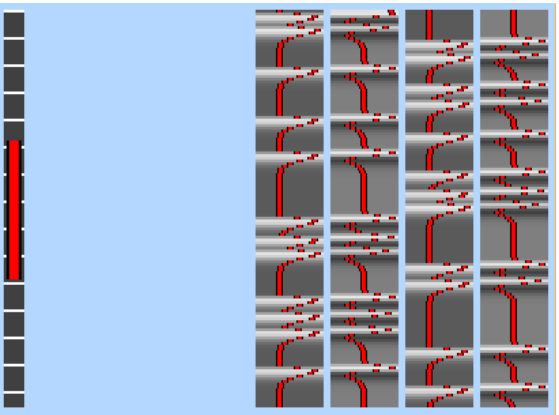
Sub 11





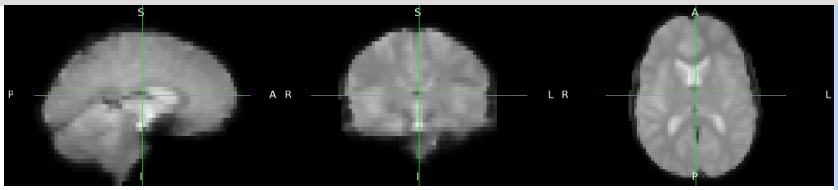
Sub 12

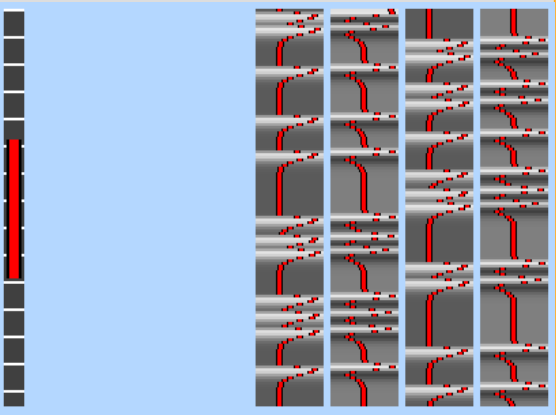




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

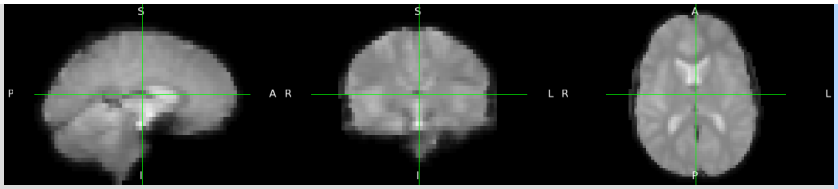
Sub 13

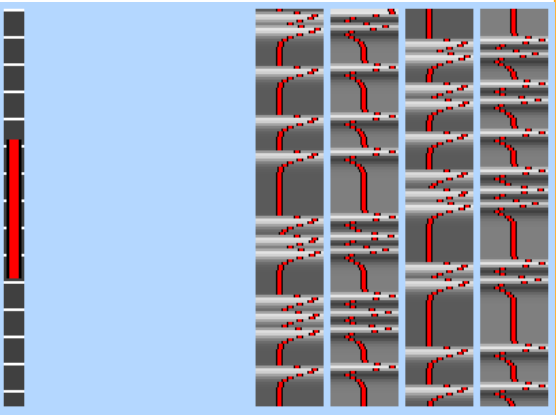




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

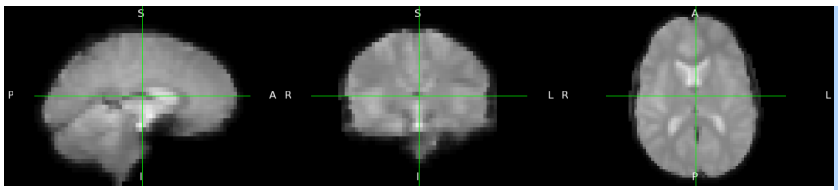
Sub 14

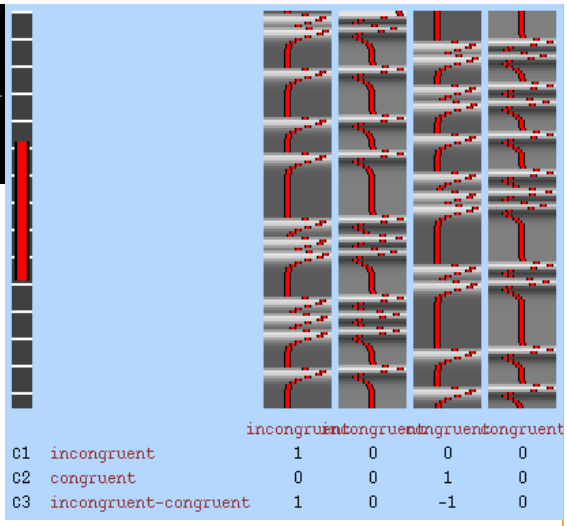




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

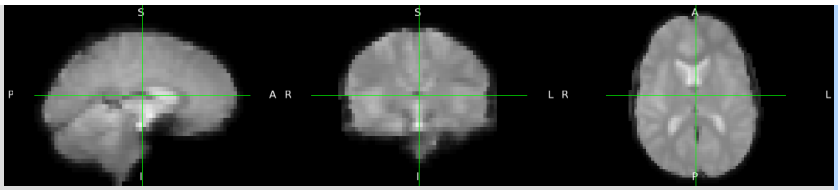
Sub 15

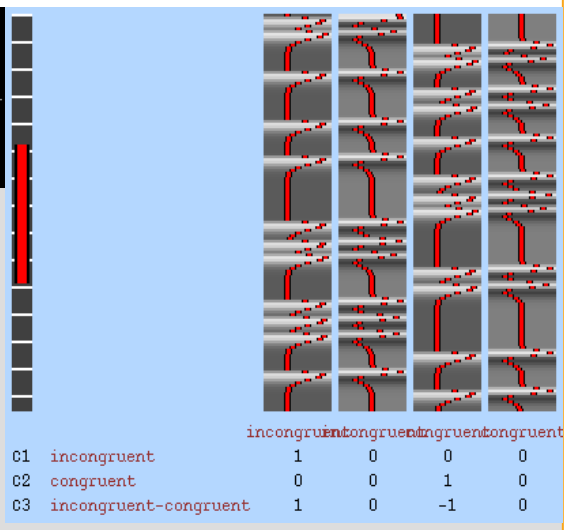




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

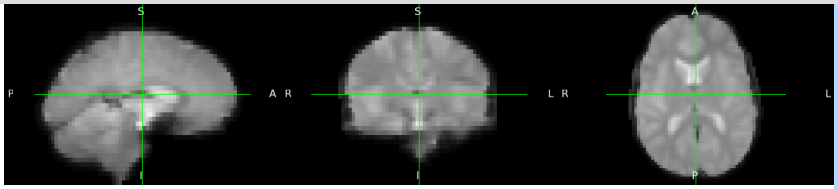
Sub 16

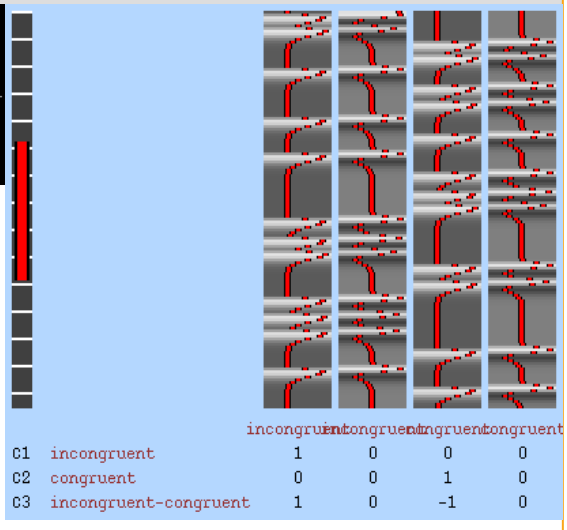




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

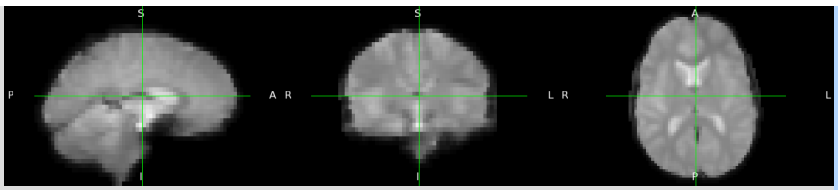
Sub 17

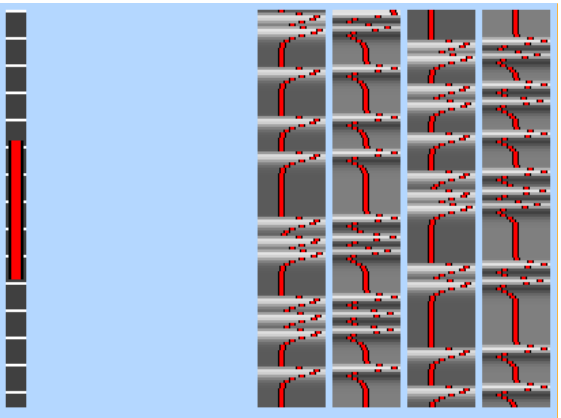




		incongruent	incongruent	congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

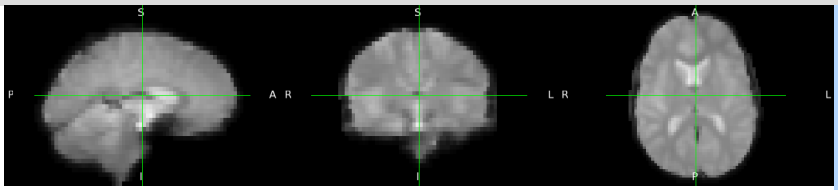
Sub 18

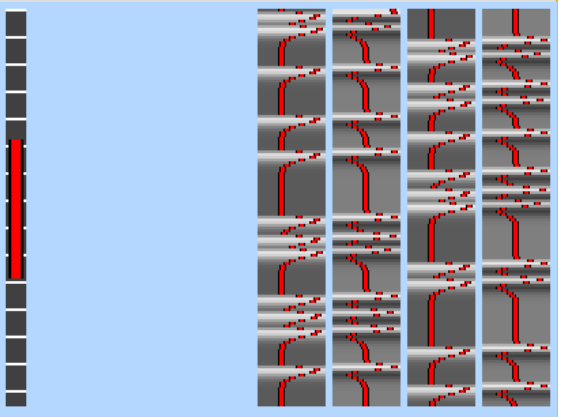




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

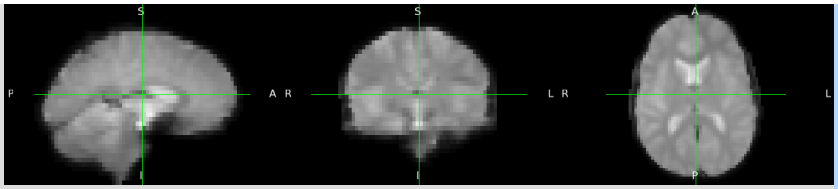
Sub 19

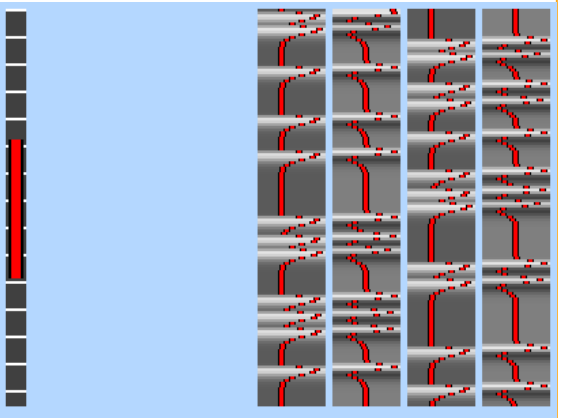




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

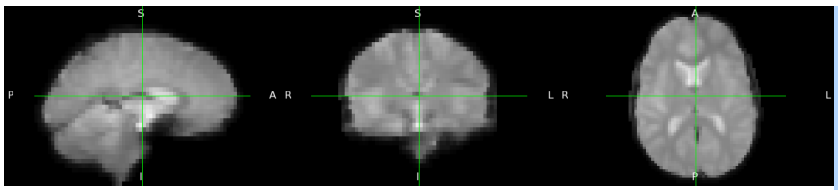
Sub 20

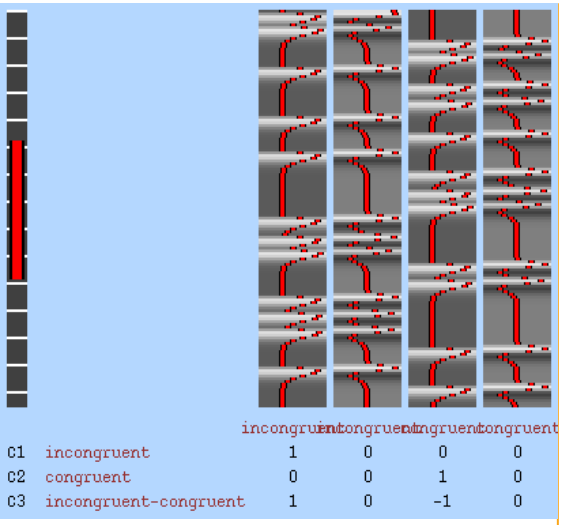




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

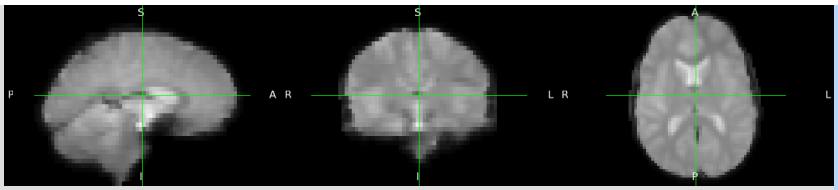
Sub 21

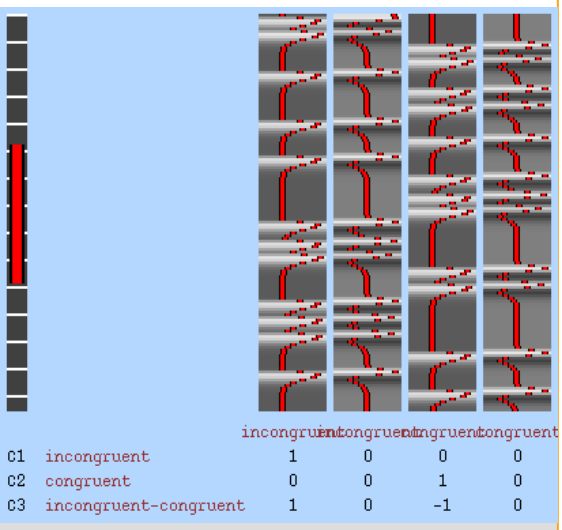




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

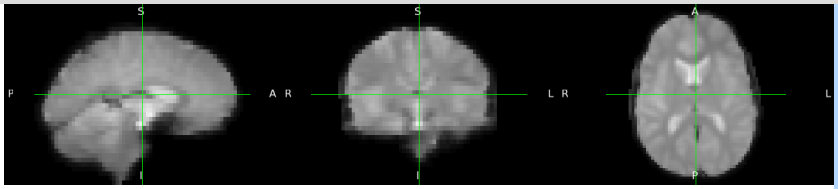
Sub 22

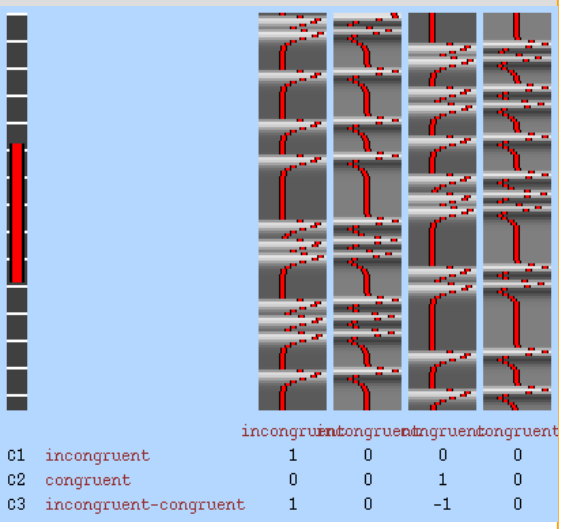




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

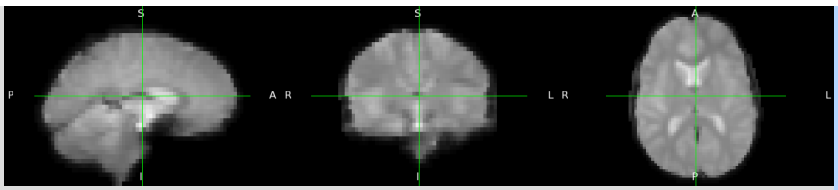
Sub 23

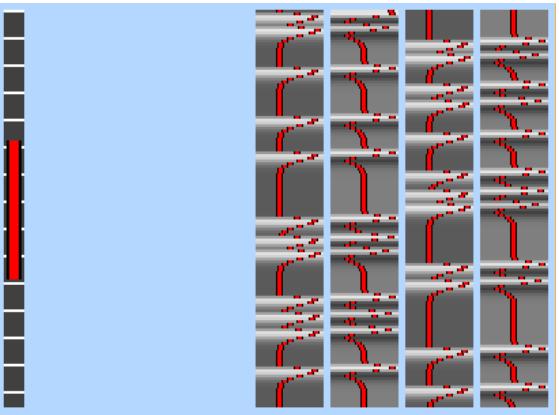




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

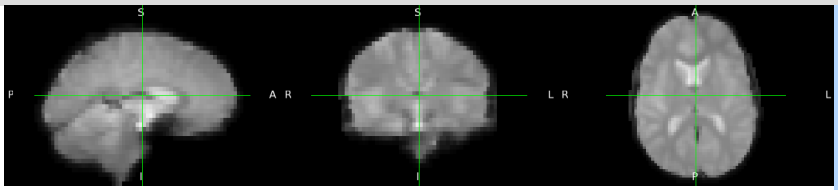
Sub 24

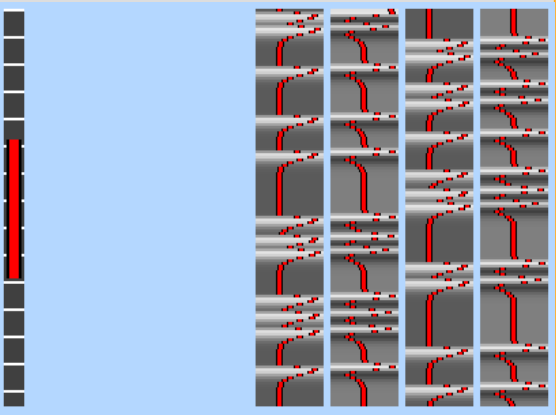




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

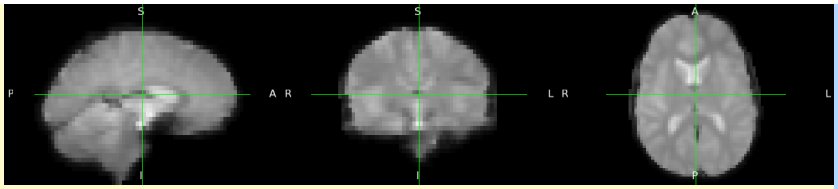
Sub 25

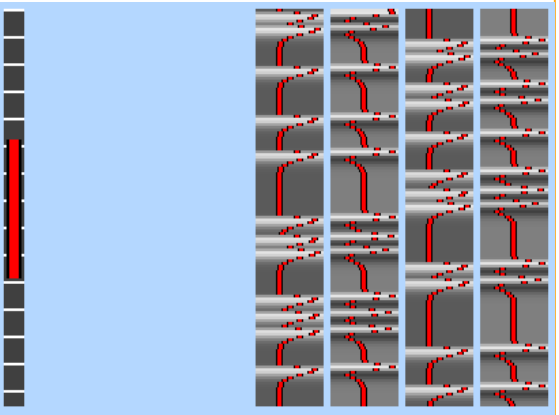




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

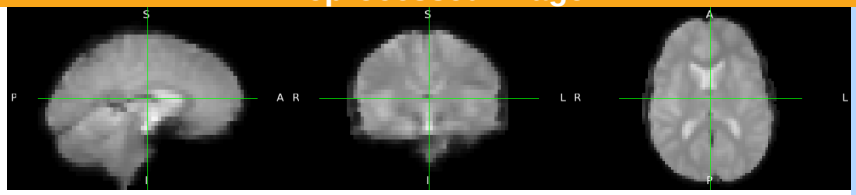
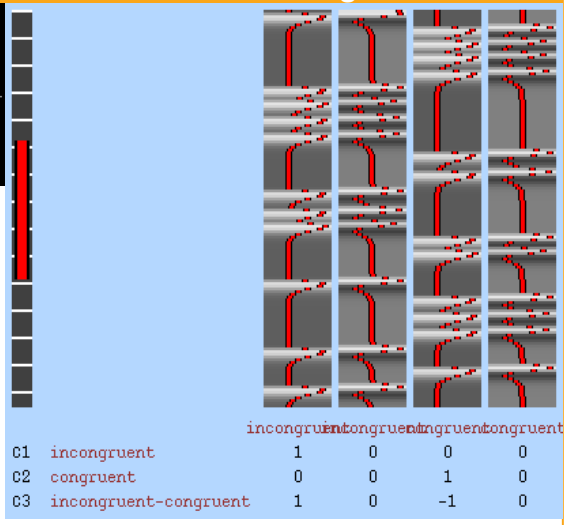
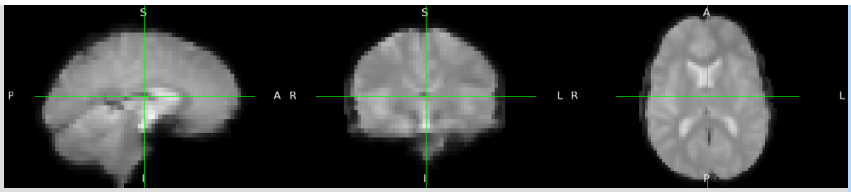
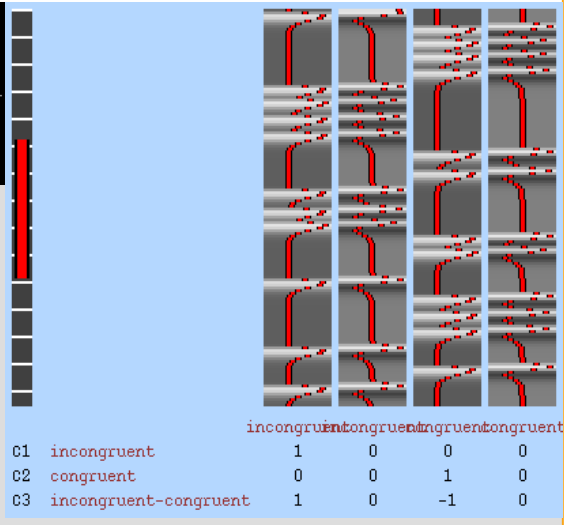
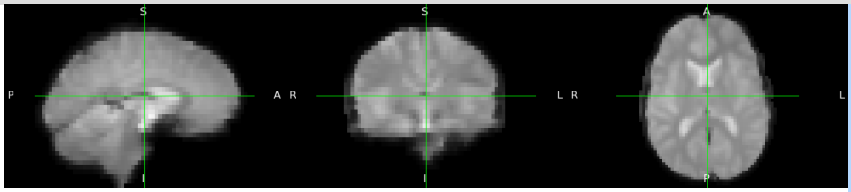
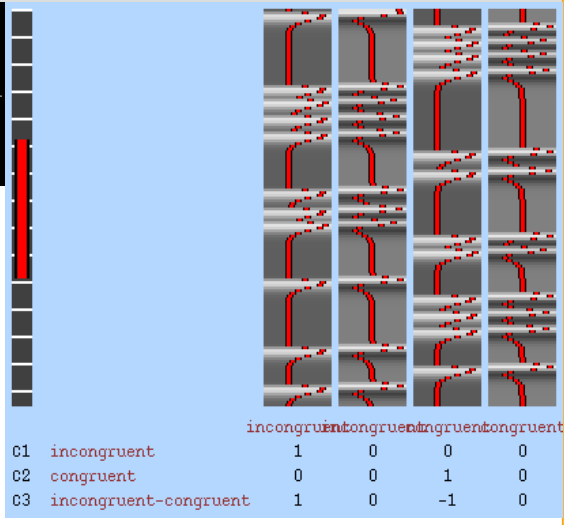
Sub 26





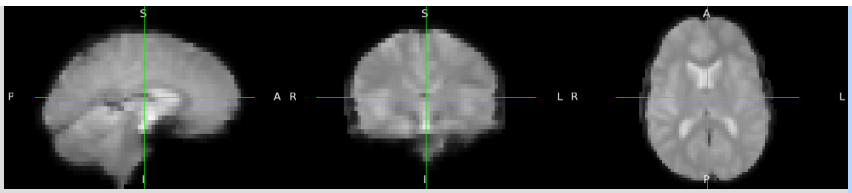
		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

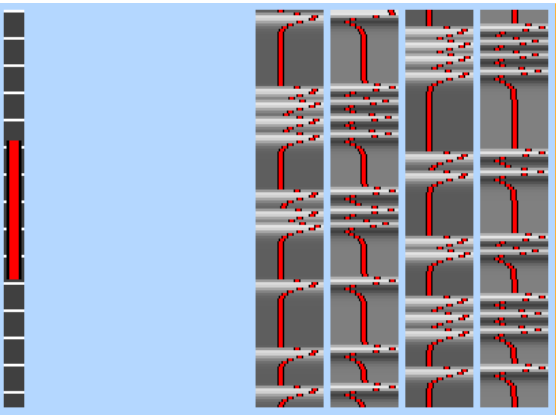
Run 2

Subject	Preprocessed Image	GLM Design
Sub 1		
Sub 2		
Sub 3		

		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

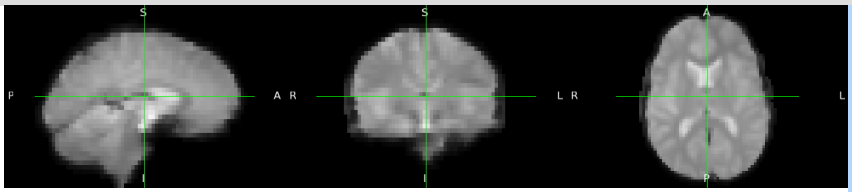
Sub 4

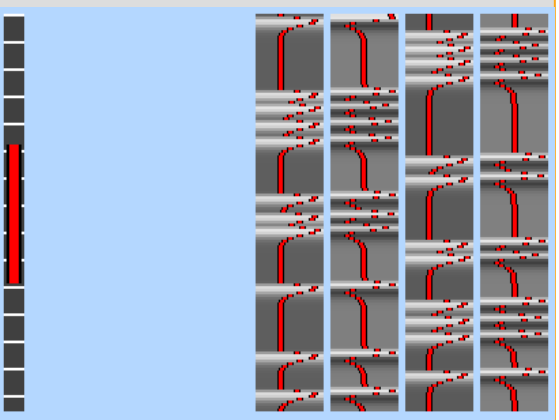




		incongruent	congruent	incongruent-congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

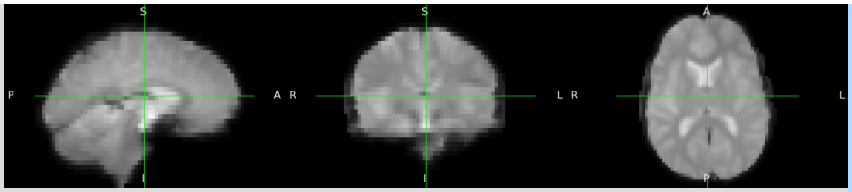
Sub 5

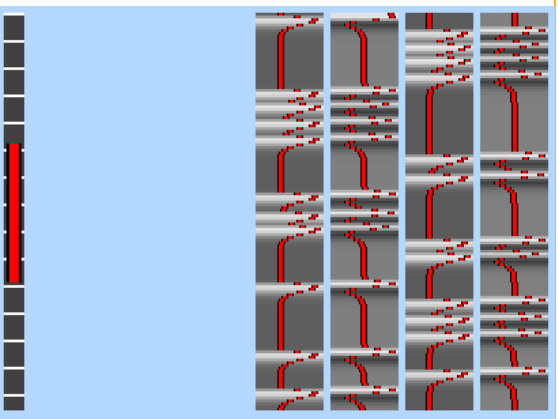




		incongruent	congruent	incongruent-congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

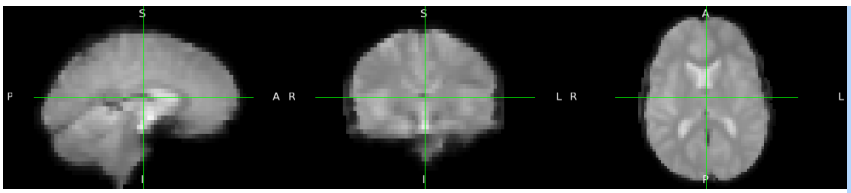
Sub 6

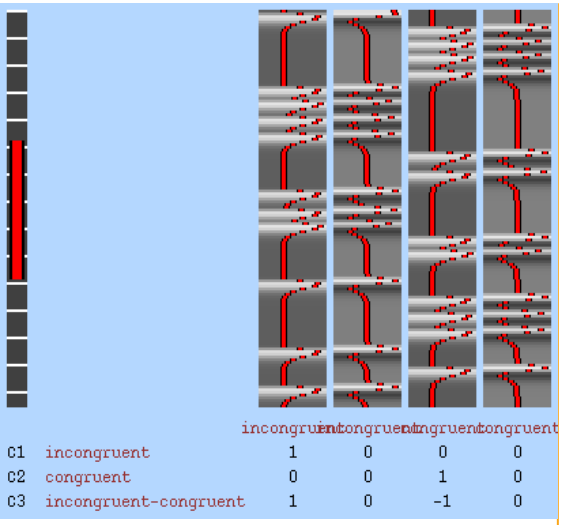




		incongruent	congruent	incongruent-congruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

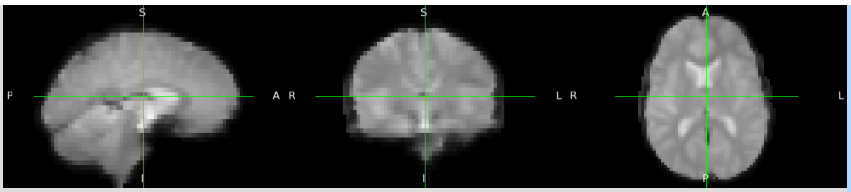
Sub 7

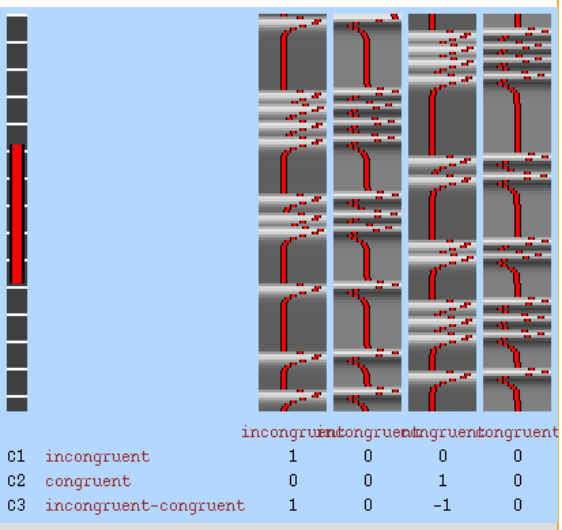




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

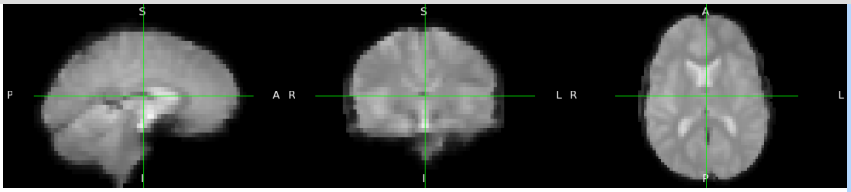
Sub 8

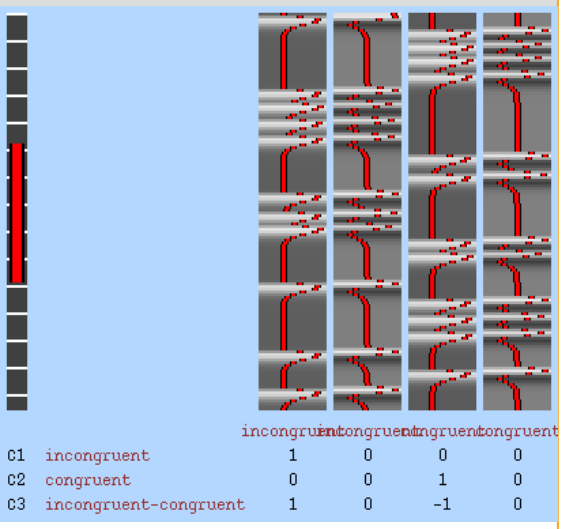




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

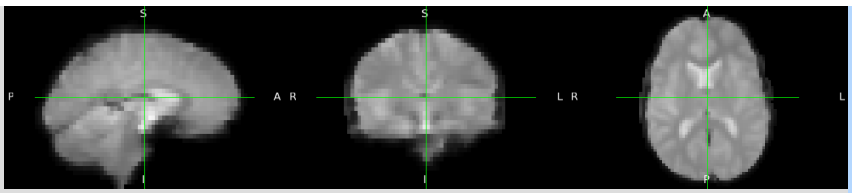
Sub 9

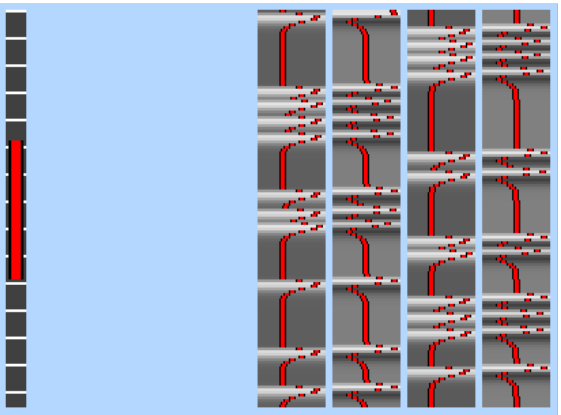




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

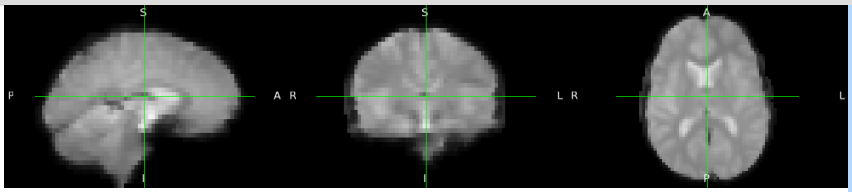
Sub 10

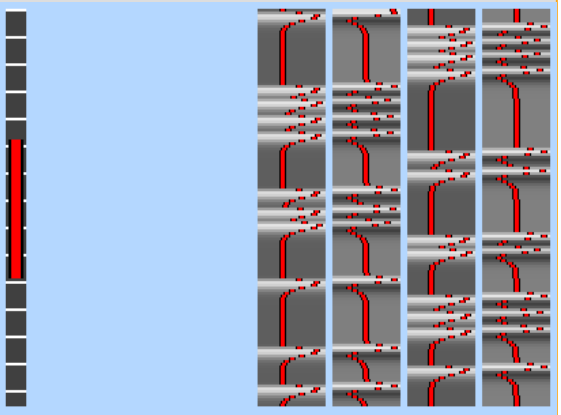




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

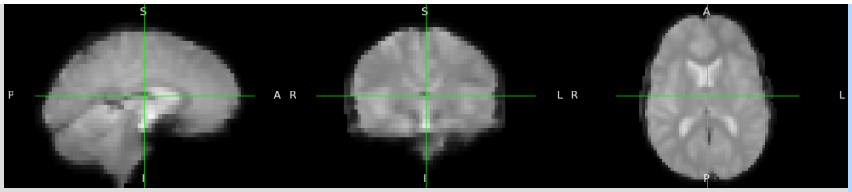
Sub 11

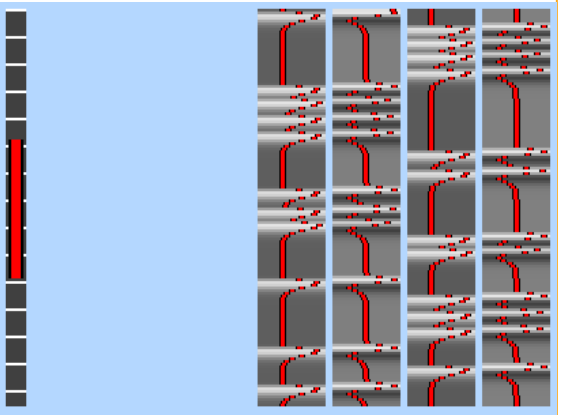




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

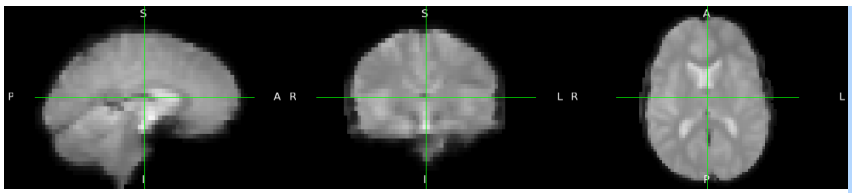
Sub 12

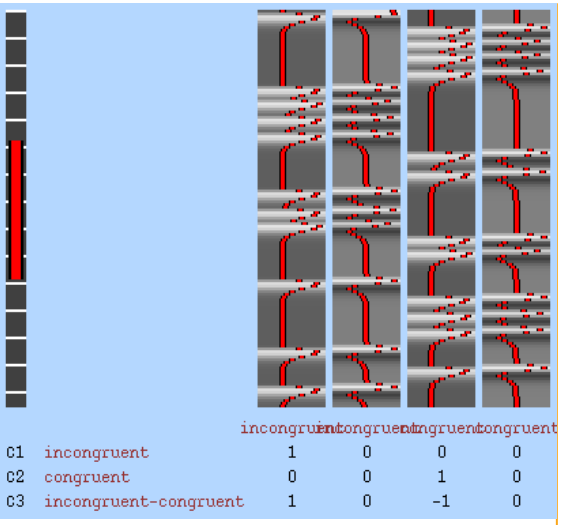




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

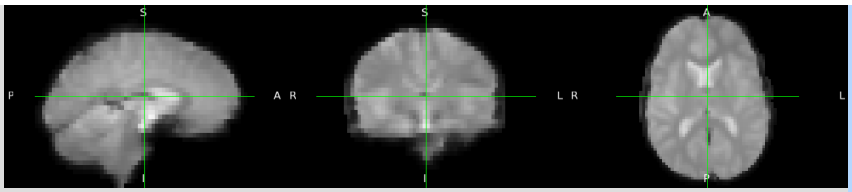
Sub 13

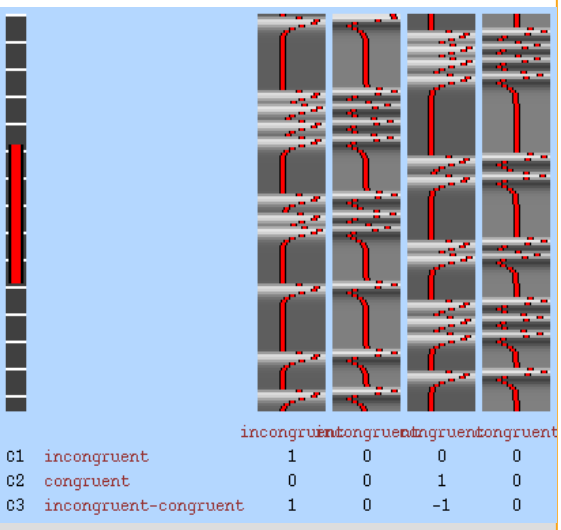




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

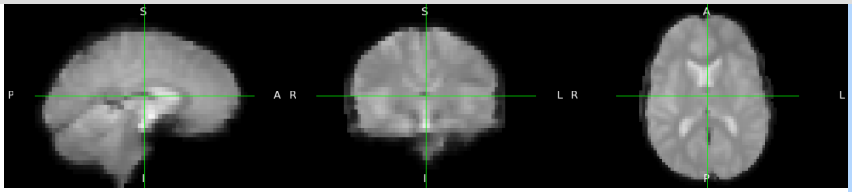
Sub 14

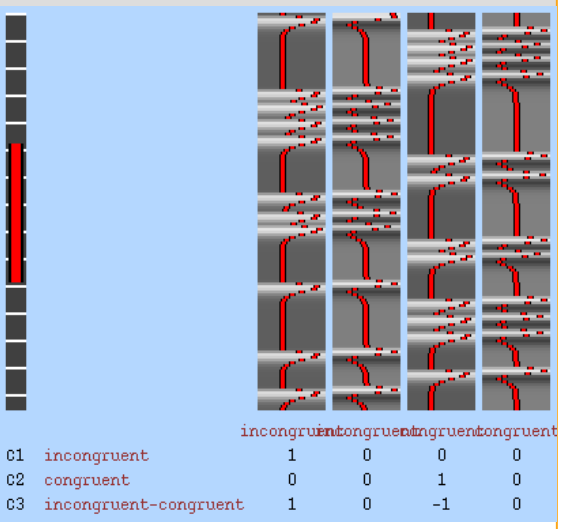




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

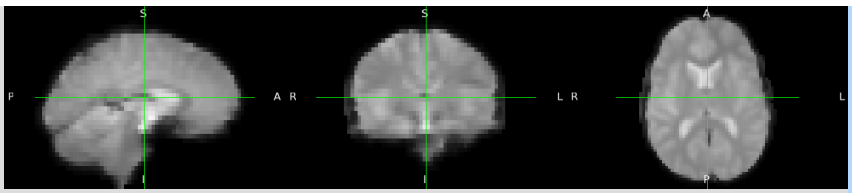
Sub 15

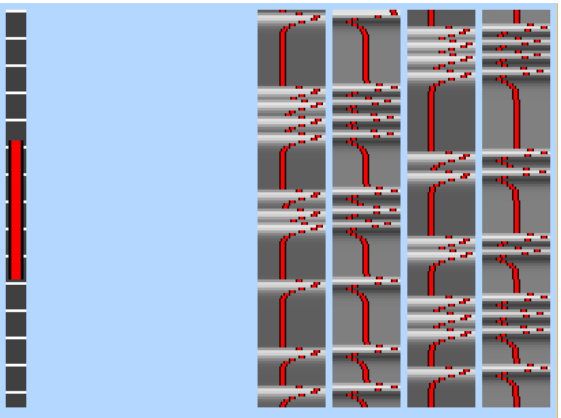




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

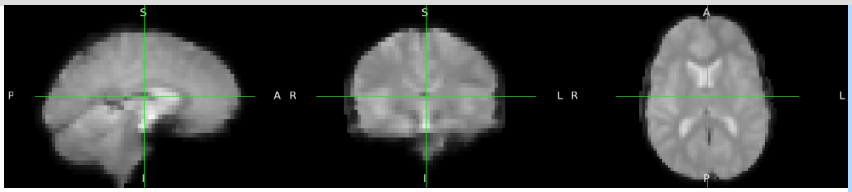
Sub 16

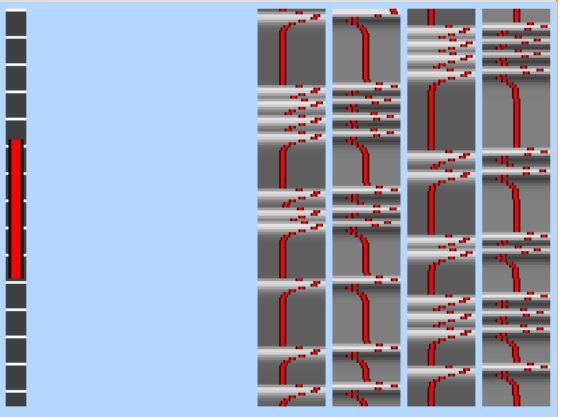




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

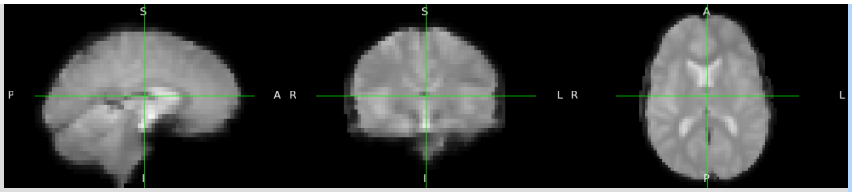
Sub 17

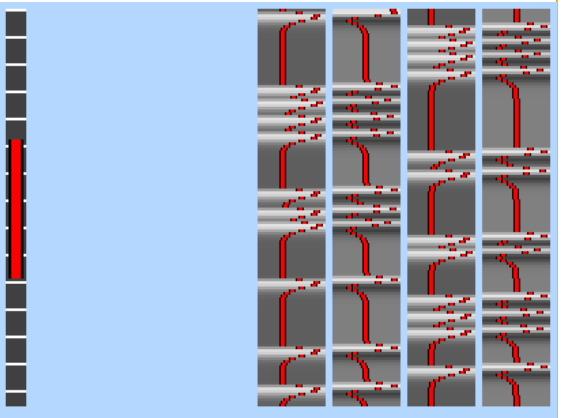




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

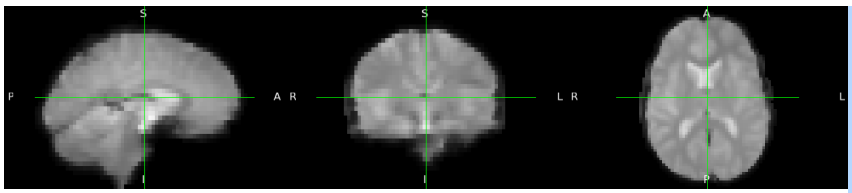
Sub 18

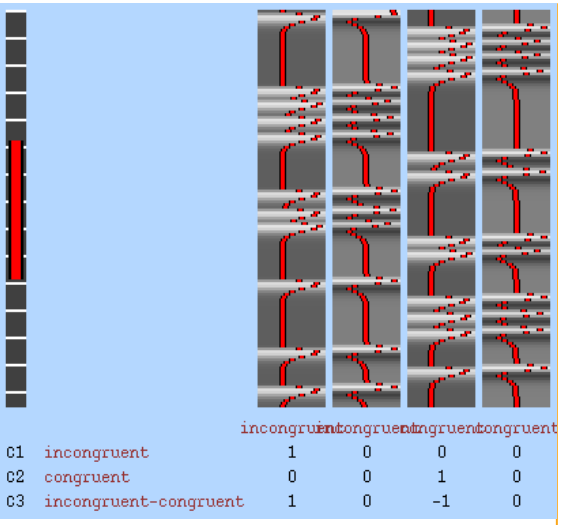




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

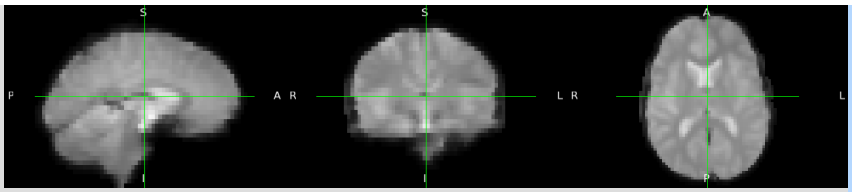
Sub 19

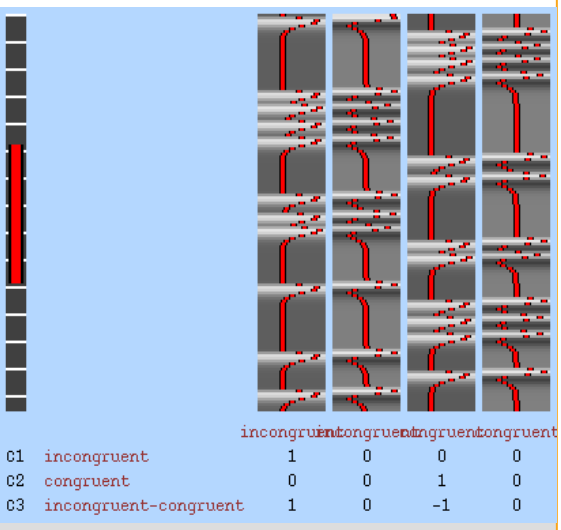




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

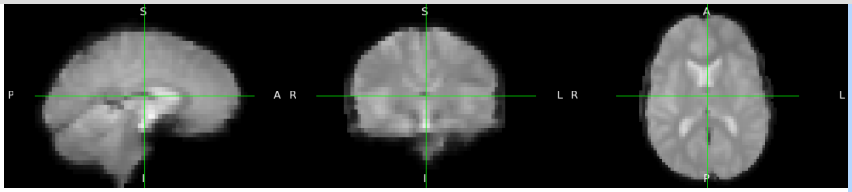
Sub 20

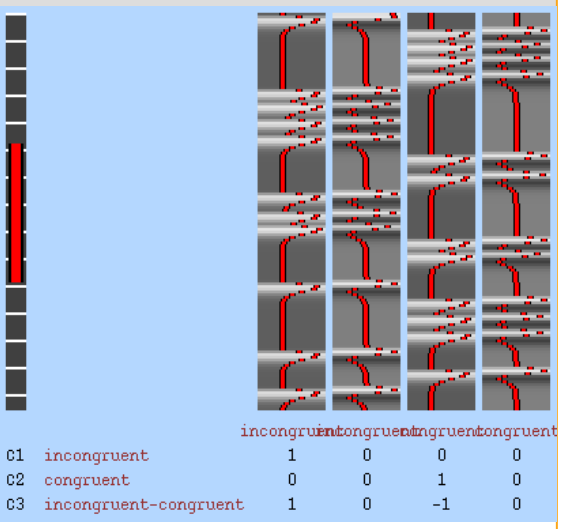




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

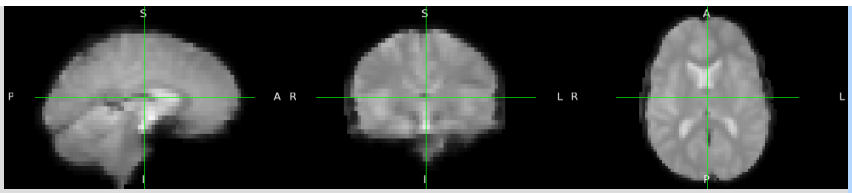
Sub 21

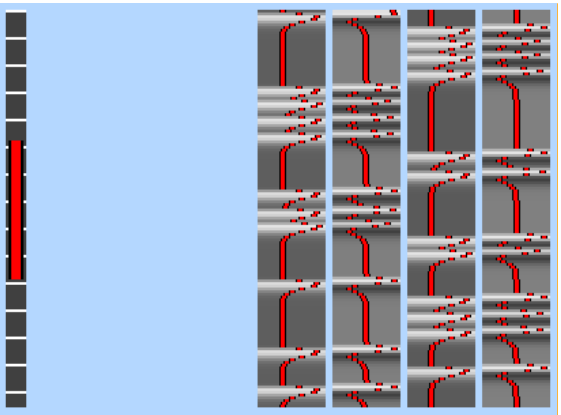




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

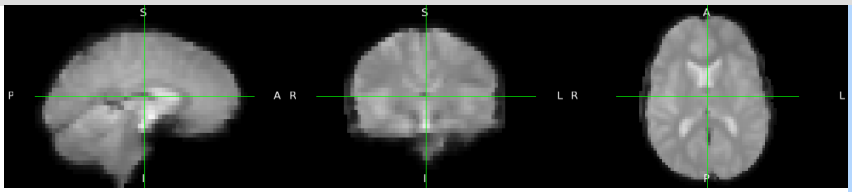
Sub 22

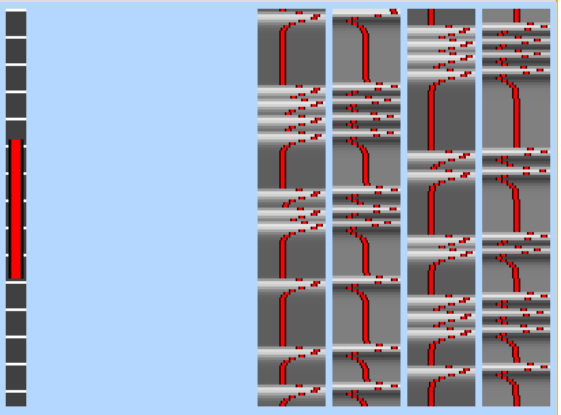




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

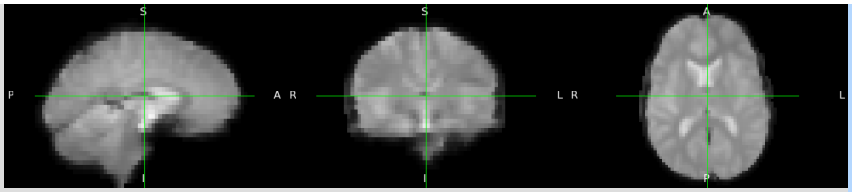
Sub 23

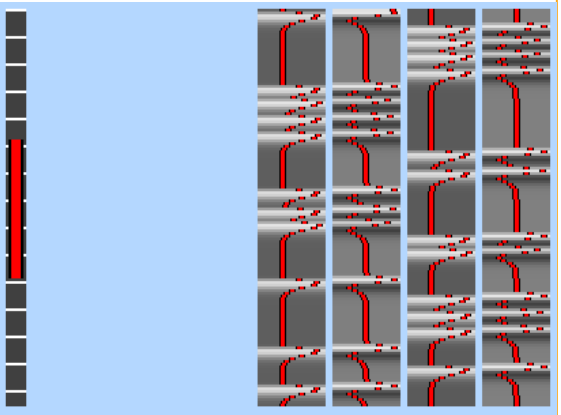




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

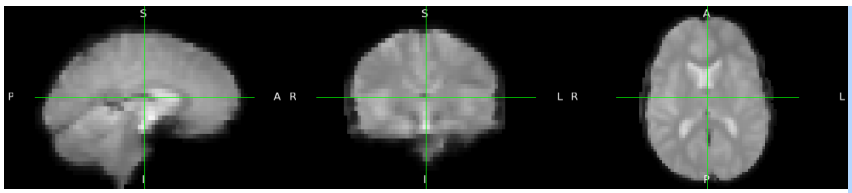
Sub 24

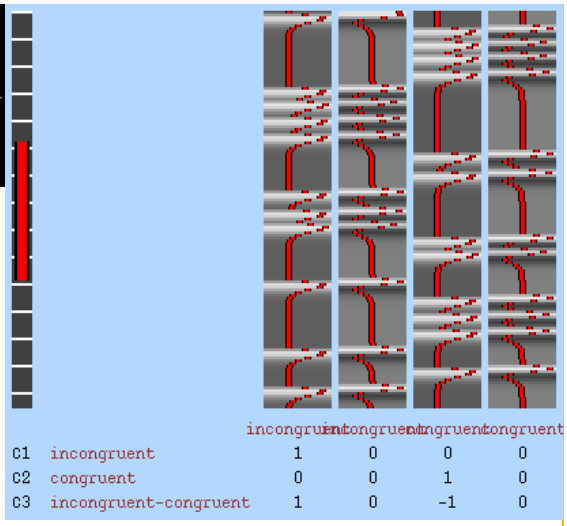




		incongruent		congruent	
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

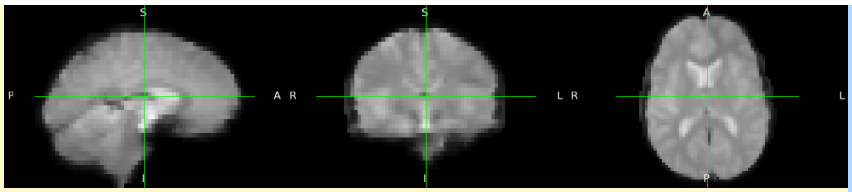
Sub 25

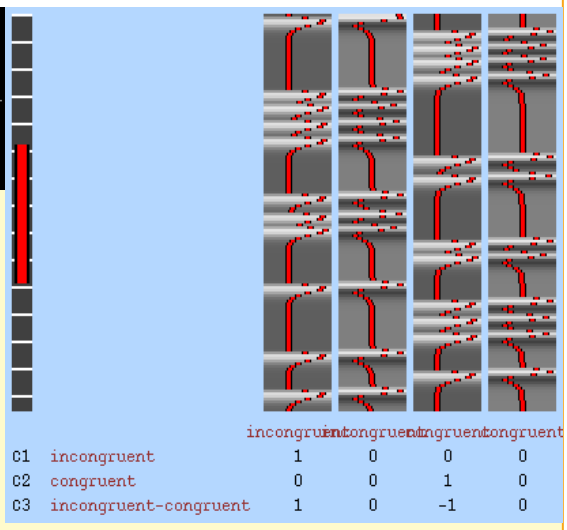




		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0

Sub 26





		incongruent	congruent	incongruent	congruent
C1	incongruent	1	0	0	0
C2	congruent	0	0	1	0
C3	incongruent-congruent	1	0	-1	0