SUPPLEMENTARY DOCUMENT

Table: Monkey K

Activations for all sounds for **Monkey K**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (core AI, R), belt, parabelt regions	t=7.45,	p_{FDR}=0, $p_{uncorrected}$=2 x10^{-11}
Right	Auditory cortex (core AI, R), belt, parabelt regions	t=4.93	p_{FDR}=0, $p_{uncorrected}$=4.2x10^{-7}

$p_{uncorrected} < 0.001$

Activations for rare sounds for **Monkey K**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex	t=7.91	p_{FDR}=0, $p_{uncorrected}$=2.2x10^{-12}
Right	Auditory cortex	t=6.26	p_{FDR}=0, $p_{uncorrected}$=5.3x10^{-9}
Left	Prefrontal area 8A	t=3.7	p_{FDR}= 0.017
Left	Premotor area 6V	t=4.45	p_{FDR}= 0.03
Left	Parietal cortex (ventral intraparietal area, VIP)	t=5.42,	p_{FDR}=0, $p_{uncorrected}$=2.3x10^{-7}
Left	Temporoparietal area TPt	t=4.09,	p_{FDR}=0.007
Left	Hippocampus	t=4.06	p_{FDR}=0.002
Right	Hippocampus	t=3.38	p_{FDR}=0.031
	Thalamus	t=4.35	p_{FDR}=0.004
Left	Cerebellar dentate nucleus	t=3.98	p_{FDR}= 0.009
Right	Cerebellar dentate nucleus	t=4.59	p_{FDR}= 0.002

No activations were seen for rare global deviants in anterior cingulate and striatum for Monkey K.

$p_{uncorrected} < 0.001$

Activations for Local effect (contrast between local deviants and local standards) for **Monkey K**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (area AI, caudomedial belt region of the auditory cortex)	t= 3.59	$p_{uncorrected}$=3.2 x10^{-4}
Right	Auditory cortex (area AI, caudomedial belt region of the auditory cortex)	t= 3.81	$p_{uncorrected}$=1.6 x10^{-4}
Right	Medial geniculate nucleus	t= 4.05	$p_{uncorrected}$=7.1 x10^{-5}
Left	Medial superior temporal area	t=4.5	$p_{uncorrected}$=1.5 x10^{-5}
Right	Medial superior temporal area	t=5.18,	$p_{uncorrected}$=1.2 x10^{-6}
Left	Area V4	t=4.48	$p_{uncorrected}$=1.5 x10^{-5}
Right	Area V4	t= 4.11	$p_{uncorrected}$=5.7 x10^{-5}
Left	Striatum	t=4.85	$p_{uncorrected}$=4.2 x10^{-6}
Right	Striatum	t=3.68	$p_{uncorrected}$=2.41 x10^{-4}
Left	Thalamus	t=5.15	$p_{uncorrected}$=1.3 x10^{-6}
Right	Thalamus	t=4.1	$p_{uncorrected}$=5.9 x10^{-5}

No activations were seen for local effect in the anterior cingulate coretx for Monkey K.
$p_{uncorrected} < 0.001$

Activations for Gobal effect (contrasting rare trials minus frequent trials) for **Monkey K**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (AI)	t=5.3	$p_{uncorrected}$=7.6 x10^{-7}
Right	Auditory cortex (AI)	t=4.4	$p_{uncorrected}$=2.1 x10^{-5}
Left	Prefrontal area 8A	t=3.77	$p_{uncorrected}$=1.8 x10^{-4}
Right	Prefrontal area 8A	t=3.61	$p_{uncorrected}$=2.9 x10^{-4}
Left	Premotor area 6V	t=3.91	$p_{uncorrected}$=1.1 x10^{-4}
Left	Parietal cortex (ventral intraparietal area, VIP)	t=4.42	$p_{uncorrected}$=2 x10^{-5}
Left	Temporoparietal area TPt	t=4.19	$p_{uncorrected}$=4.4 x10^{-5}
	Posterior cingulate cortex	t=4.53	$p_{uncorrected}$=1.3 x10^{-5}
Left	Hippocampus	t=3.64	$p_{uncorrected}$=2.7 x10^{-4}
Right	Thalamus	t=3.79	$p_{uncorrected}$=1.7 x10^{-4}
Right	cerebellar dentate nucleus	t=3.85	$p_{uncorrected}$=1.4 x10^{-4}

No activations were seen for the global effect in anterior cingulate and striatum for Monkey K.
$p_{uncorrected} < 0.001$

Table: Monkey R

Activations for all sounds for **Monkey R**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (core AI, R), belt, parabelt regions	t=7.45	p_{FDR}=0, $p_{uncorrected}$=1.7 x10^{-10}
Right	Auditory cortex (core AI, R), belt, parabelt regions	t=7.2	p_{FDR}=0, $p_{uncorrected}$=4.5x10^{-10}

$p_{uncorrected} < 0.001$

Activations for rare sounds for **Monkey R**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex	t=4.91	p_{FDR}=0.008
Right	Auditory cortex	t=4.84	p_{FDR}=0.009
	Anterior cingulate cortex	t=4.34	p_{FDR}=0.026
Right	Prefrontal area 8A	t=4.9	p_{FDR}= 0.008
Left	Premotor area 6V	t=4.65	p_{FDR}= 0.013
Right	Premotor area 6V	t=7.59	p_{FDR}= 0; $p_{uncorrected}$=9.4x10^{-11}
Left	Parietal cortex (ventral intraparietal area, VIP)	t=4.67	p_{FDR}=0.013
Left	Temporoparietal area TPt	t=4.38	p_{FDR}=0.024
	Thalamus	t=5.65	p_{FDR}=0.001
Right	Striatum	t=4.1	p_{FDR}=0.038
Left	Cerebellar dentate nucleus	t=4.22	p_{FDR}= 0.033

No activations were seen for rare global deviants in hippocampus for Monkey R.
$p_{uncorrected} < 0.001$

Activations for Local effect (contrast between local deviants and local standards) for **Monkey R**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (area AI, rostral core region, caudomedial belt region of the auditory cortex)	t= 5.62	$p_{uncorrected}$=7 x10^{-7}
Right	Auditory cortex (area AI, rostral core region, caudomedial belt region of the auditory cortex)	t= 6.47	$p_{uncorrected}$=4.2 x10^{-8}
	Anterior cingulate cortex	t= 4.26	$p_{uncorrected}$=5.7 x10^{-5}
Right	Medial geniculate nucleus	t= 4.3	$p_{uncorrected}$=5.2 x10^{-5}
Left	Medial superior temporal area	t=4.5	$p_{uncorrected}$=2.8 x10^{-5}
Right	Medial superior temporal area	t=3.8	$p_{uncorrected}$=2.2 x10^{-4}
Left	Area V4	t= 5.43	$p_{uncorrected}$=1.3 x10^{-6}
Right	Area V4	t=3.64	$p_{uncorrected}$=3.7 x10^{-4}
Left	Striatum	t=4.5	$p_{uncorrected}$=2.7 x10^{-5}
Right	Striatum	t=4.8	$p_{uncorrected}$=1.01 x10^{-5}
Left	Thalamus	t=4.31	$p_{uncorrected}$=4.8 x10^{-5}
Right	Thalamus	t=4.2	$p_{uncorrected}$=6.3 x10^{-5}

$p_{uncorrected} < 0.001$

Activations for Gobal effect (contrasting rare trials minus frequent trials) for **Monkey R**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (AI)	t=3.16	$p_{uncorrected}$=0.001
Right	Prefrontal area 8A	t=4.88	$p_{uncorrected}$=7.9 x10^{-6}
Left	Premotor area 6V	t=3.88	$p_{uncorrected}$=1.8 x10^{-4}
Right	Premotor area 6V	t=6.09	$p_{uncorrected}$=1.5 x10^{-7}
Left	Parietal cortex (ventral intraparietal area, VIP)	t=3.83	$p_{uncorrected}$=2 .1x10^{-4}
Left	Temporoparietal area TPt	t=4.67	$p_{uncorrected}$=1.5 x10^{-5}
Left	Thalamus	t=3.8	$p_{uncorrected}$=2.4 x10^{-4}
Right	Striatum	t=3.5	$p_{uncorrected}$=0.001

No activations were seen for the global effect in anterior cingulate for Monkey R. $p_{uncorrected} <$ 0.001

Table: Monkey J

Activations for all sounds for **Monkey J**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (core AI, R), belt, parabelt regions	t=12.3	p_{FDR}=0, $p_{uncorrected}$=4.4 x10^{-16}
Right	Auditory cortex (core AI, R), belt, parabelt regions	t=11.5	p_{FDR}=0, $p_{uncorrected}$=4.4x10^{-16}
Right	inferior colliculus	t=4.09	p_{FDR}= 0.002

Activations for rare sounds for **Monkey J**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex	t=8.8	p_{FDR}=0, $p_{uncorrected}$=5.5x10^{-16}
Right	Auditory cortex	t=9.94	p_{FDR}=0, $p_{uncorrected}$=4.4x10^{-16}
Left	Prefrontal area 8A	t=3.8	p_{FDR}=0.004
Right	Prefrontal area 8A	t=5.15	p_{FDR}= 0; $p_{uncorrected}$=2.7x10^{-7}
	Anterior cingulate cortex	t=3.5	p_{FDR}= 0.012
Left	Premotor area 6V	t=4.61	p_{FDR}= 0; $p_{uncorrected}$=3.3x10^{-6}
Left	Parietal cortex (ventral intraparietal area, VIP)	t=4.01	p_{FDR}=0.003
Left	Temporoparietal area TPt	t=3.24	p_{FDR}=0.022
Right	Hippocampus	t=4.82	p_{FDR}=0.001
Left	Striatum	t=4.3	p_{FDR}=0.001
Right	Thalamus	t=3.63	p_{FDR}=0.008
Left	Cerebellar dentate nucleus	t=5.19	p_{FDR}= 0; $p_{uncorrected}$=2.2x10^{-7}
Right	Cerebellar dentate nucleus	t=4.19	p_{FDR}= 0.001

Activations for Local effect (contrast between local deviants and local standards) for **Monkey J**

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (AI)	t= 3.82	$p_{uncorrected}$=9.3 x10^{-5}
Left	Medial geniculate nucleus	t= 4.65	$p_{uncorrected}$=3.4 x10^{-6}
Right	Medial geniculate nucleus	t= 3.59	$p_{uncorrected}$=2.2 x10^{-4}
Right	Medial superior temporal area	t=3.24	$p_{uncorrected}$=0.001
Left	Area V4	t=3.38	$p_{uncorrected}$=4.5 x10^{-4}
Right	Area V4	t= 3.24	$p_{uncorrected}$=0.001
Left	Striatum	t=3.39	$p_{uncorrected}$=4.3 x10^{-4}
Right	Striatum	t=3.92	$p_{uncorrected}$=6.4 x10^{-5}
Left	Thalamus	t=3.43	$p_{uncorrected}$=3.8 x10^{-4}
Right	Thalamus	t=3.34	$p_{uncorrected}$=0.001

No activations were seen for local effect in the anterior cingulate cortex for Monkey J. $p_{uncorrected} < 0.001$

Activations for Gobal effect (contrasting rare trials minus frequent trials) for Monkey J

Hemisphere	**Area**	**t value**	**p Value**
Left	Auditory cortex (AI)	t=4.75	$p_{uncorrected}$=2.2 x10^{-6}
Right	Auditory cortex (AI)	t=5.46	$p_{uncorrected}$=8.4 x10^{-8}
	Anterior cingulate cortex	t=3.43	$p_{uncorrected}$=3.9 x10^{-4}
Left	Prefrontal areas 8A	t=3.75	$p_{uncorrected}$=1.2 x10^{-4}
Right	Prefrontal areas 8A	t=4.34	$p_{uncorrected}$=1.2 x10^{-5}
Left	Premotor area 6V	t=3.69	$p_{uncorrected}$=1.5 x10^{-4}
Left	Parietal cortex (ventral intraparietal area, VIP)	t=3.3	$p_{uncorrected}$=0.001
Left	Temporoparietal area TPt	t=4.10	$p_{uncorrected}$=3.2 x10^{-5}
Right	Hippocampus	t=3.62	$p_{uncorrected}$=2 x10^{-4}
Left	Thalamus	t=3.84	$p_{uncorrected}$=8.8 x10^{-5}
Left	Striatum	t=4.12	$p_{uncorrected}$=3 x10^{-5}
Right	Striatum	t=4.6	$p_{uncorrected}$=4.2 x10^{-6}
Left	Cerebellar dentate nucleus	t=3.79	$p_{uncorrected}$=1.04 x10^{-4}

$p_{uncorrected} < 0.001$