Final PTE results (All bands; updated)

1) DELTA PTEs:

```
> Omnibus_Delta_Left
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   0.093  0.7600
 Motor_Region              2 527   8.295  0.0003
 Direction:Motor_Region    2 527   0.294  0.7451

> Delta_Left_MainEffect_Motor_Region
 contrast    estimate      SE  df t.ratio p.value bonferroni
 dPMC - M1    0.00327 0.00213 527   1.532  0.2770      0.830
 dPMC - vPMC  0.00868 0.00225 527   3.867  <.0001      0.001
 M1 - vPMC    0.00541 0.00301 527   1.799  0.1710      0.513
```

***dPMC**'s PTE value in **Left delta** is significantly higher than **vPMC**'s.*

```
> Omnibus_Delta_Right
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   1.096  0.2955
 Motor_Region              2 527   5.967  0.0027
 Direction:Motor_Region    2 527   0.264  0.7678

> Delta_Right_MainEffect_Motor_Region
 contrast    estimate      SE  df t.ratio p.value bonferroni
 dPMC - M1    0.00124 0.00212 527   0.587  0.8270      1.000
 dPMC - vPMC  0.01111 0.00321 527   3.462  0.0020      0.005
 M1 - vPMC    0.00986 0.00368 527   2.680  0.0210      0.062
```

***dPMC**'s PTE value in **Right delta** is significantly higher than **vPMC**'s.*

2) THETA PTEs:

```
> Omnibus_Theta_Left
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   5.383  0.0207
 Motor_Region              2 527  12.334  <.0001
 Direction:Motor_Region    2 527   0.362  0.6968

> Theta_Left_MainEffect_Direction
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.00366 0.00157 527   2.332  0.0200       0.02

> Theta_Left_MainEffect_MotorRegion
 contrast    estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1   -0.00199 0.000941 527  -2.114  0.0880      0.264
 dPMC - vPMC -0.00430 0.000944 527  -4.563  <.0001      0.000
 M1 - vPMC   -0.00232 0.001288 527  -1.799  0.1710      0.513
```

***M2S** direction in **Left theta** is globally higher than **S2M** direction.*

***vPMC**'s PTE value in **Left theta** is significantly higher than **dPMC**'s.*

```
> Omnibus_Theta_Right
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   6.849  0.0091
 Motor_Region              2 527   8.373  0.0003
 Direction:Motor_Region    2 527   3.410  0.0338

> Theta_Right_Interaction
Motor_Region = dPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.00609 0.00161 527   3.789  <.0001      0.001

Motor_Region = M1:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.00318 0.00199 527   1.598  0.1110      0.332

Motor_Region = vPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.00372 0.00197 527   1.893  0.0590      0.177
```

***M2S** direction in **Right theta dPMC** is significantly higher than **S2M** direction.*

3) ALPHA PTEs

```
> Omnibus_Alpha_Left
 model term             df1 df2 F.ratio p.value
 Direction                1 527  22.571  <.0001
 Motor_Region             2 527   7.519  0.0006
 Direction:Motor_Region   2 527  12.089  <.0001

> Alpha_Left_Interaction
Motor_Region = dPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  -0.0259 0.00463 527  -5.598  <.0001      0.000

Motor_Region = M1:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  -0.0147 0.00481 527  -3.053  0.0020      0.007

Motor_Region = vPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  -0.0210 0.00507 527  -4.137  <.0001      0.000
```

***S2M** direction in **Left alpha** is significantly higher within **all motor regions**.*

```
> Omnibus_Alpha_Right
 model term             df1 df2 F.ratio p.value
 Direction                1 527  11.663  0.0007
 Motor_Region             2 527   9.529  0.0001
 Direction:Motor_Region   2 527   8.700  0.0002

> Alpha_Right_Interaction
Motor_Region = dPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  -0.01864 0.00469 527  -3.978  <.0001      0.000

Motor_Region = M1:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M -0.00929 0.00486 527  -1.912  0.0560       0.169      doesn't survive

Motor_Region = vPMC:
 contrast  estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  -0.01866 0.00549 527  -3.399  0.0010      0.002
```

***S2M** direction in **Right alpha** is significantly higher in **dPMC** and **vPMC**.*

4) BETA PTEs

```
> Omnibus_Beta_Left
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   0.689  0.4069
 Motor_Region              2 527  16.023  <.0001
 Direction:Motor_Region    2 527   6.106  0.0024

> Beta_Left_Interaction
Motor_Region = dPMC:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.000179 0.00158 527   0.113  0.9100      1.000

Motor_Region = M1:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.005235 0.00215 527   2.435  0.0150      0.046

Motor_Region = vPMC:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M -0.001243 0.00205 527  -0.607  0.5440      1.000
```

***S2M** direction in **Left beta** is significantly higher within **M1**.*

```
> Omnibus_Beta_Right
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   5.612  0.0182
 Motor_Region              2 527  25.254  <.0001
 Direction:Motor_Region    2 527  13.342  <.0001

> Beta_Right_Interaction
Motor_Region = dPMC:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.005003 0.00188 527   2.658  0.0080      0.024

Motor_Region = M1:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M  0.009388 0.00221 527   4.250  <.0001      0.000

Motor_Region = vPMC:
 contrast   estimate      SE  df t.ratio p.value bonferroni
 M2S - S2M -0.000356 0.00242 527  -0.147  0.8830      1.000
```

***S2M** direction in **Right beta** is significantly higher in **dPMC** and **M1**.*

5) GAMMA1 PTEs (LEFT hemisphere):

```
> Omnibus_Gamma1_Left
 model term             df1 df2 F.ratio p.value
 Direction                1 527   0.833  0.3618
 Motor_Region             2 527  19.302  <.0001
 Direction:Motor_Region   2 527   3.374  0.0350

> Gamma1_Left_Interaction (Direction|Motor_region)
Motor_Region = dPMC:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.000981 0.000604 527  -1.625  0.1050      0.314

Motor_Region = M1:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M  0.000517 0.000761 527   0.679  0.4970      1.000

Motor_Region = vPMC:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.001135 0.000648 527  -1.750  0.0810      0.242       just a trend
```

S2M *direction in* ***Left gamma1*** *displays an uncorrected trend toward being higher in* ***vPMC.*** *Because the Direction|Motor_region contrasts do not explain the significant interaction, we will exceptionally compute the Motor_region|Direction ones, even though they are not relevant to our study:*

```
> Gamma1_Left_Interaction (Motor_region|Direction)

Direction = M2S:
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1   -0.000399 0.000348 527  -1.144  0.4870      1.000
 dPMC - vPMC -0.003182 0.000577 527  -5.519  <.0001      0.000
 M1 - vPMC   -0.002783 0.000604 527  -4.607  <.0001      0.000

Direction = S2M:
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1    0.001099 0.000583 527   1.885  0.1440      0.864
 dPMC - vPMC -0.003336 0.000617 527  -5.404  <.0001      0.000
 M1 - vPMC   -0.004435 0.000795 527  -5.580  <.0001      0.000
```

vPMC*'s PTE values within motor-to-auditory* ***and*** *auditory-to-motor directions in* ***Left gamma1*** *are significantly higher than* ***dPMC****'s and* ***M1****'s values.*

5) GAMMA1 PTEs (RIGHT hemisphere):

```
> Omnibus_Gamma1_Right
 model term             df1 df2 F.ratio p.value
 Direction                1 527   0.748  0.3875
 Motor_Region             2 527  18.595  <.0001
 Direction:Motor_Region   2 527   5.124  0.0063

> Gamma1_Right_Interaction (Direction|Motor_region)
Motor_Region = dPMC:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.001328 0.000591 527  -2.246  0.0250      0.075   doesn't survive

Motor_Region = M1:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M  0.000985 0.000846 527   1.165  0.2450      0.734

Motor_Region = vPMC:
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.001209 0.000688 527  -1.758  0.0790      0.238       just a trend
```

S2M *direction in* ***Right gamma1*** *is significantly higher in* ***dPMC*** *but doesn't survive correction for multiple comparisons (Bonferroni).* ***S2M*** *direction in* ***Right gamma1*** *displays an uncorrected trend toward being higher in* ***vPMC.*** *Because the Direction|Motor_region contrasts do not explain the significant interaction, we will exceptionally compute the Motor_region|Direction contrasts, even though they are not relevant to our study:*

```
> Gamma1_Right_Interaction (Motor_region|Direction)

Direction = M2S:
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1   -0.000707 0.000306 527  -2.311  0.0550      0.331
 dPMC - vPMC -0.003068 0.000529 527  -5.801  <.0001      0.000
 M1 - vPMC   -0.002361 0.000542 527  -4.355  <.0001      0.000

Direction = S2M:
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1    0.001606 0.000681 527   2.361  0.0490      0.292
 dPMC - vPMC -0.002949 0.000630 527  -4.683  <.0001      0.000
 M1 - vPMC   -0.004555 0.000883 527  -5.157  <.0001      0.000
```

vPMC*'s PTE values within motor-to-auditory* ***and*** *auditory-to-motor directions in* ***Right gamma1*** *are significantly higher than* ***dPMC****'s and* ***M1****'s values.*

6) GAMMA2 PTEs:

```
> Omnibus_Gamma2_Left
 model term              df1 df2 F.ratio p.value
 Direction                 1 527  14.888  0.0001
 Motor_Region              2 527  10.841  <.0001
 Direction:Motor_Region    2 527   2.324  0.0989

> Gamma2_Left_MainEffect_Direction
 contrast  estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.00104 0.000273 527  -3.832  <.0001          0

> Gamma2_Left_MainEffect_MotorRegion
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1   -0.000214 0.000316 527  -0.677  0.7770      1.000
 dPMC - vPMC -0.002761 0.000602 527  -4.587  <.0001      0.000
 M1 - vPMC   -0.002547 0.000659 527  -3.866  <.0001      0.001
```

***S2M** direction in **Left_gamma2** is globally higher than **M2S** direction.*

***vPMC**'s PTE values in **Left gamma2** are significantly higher than **dPMC** and **M1**'s.*

```
> Omnibus_Gamma2_Right
 model term              df1 df2 F.ratio p.value
 Direction                 1 527   7.329  0.0070
 Motor_Region              2 527  12.456  <.0001
 Direction:Motor_Region    2 527   1.667  0.1897

> Gamma2_Right_MainEffect_Direction
 contrast   estimate       SE  df t.ratio p.value bonferroni
 M2S - S2M -0.000744 0.000276 527  -2.689  0.0070      0.007

> Gamma2_Right_MainEffect_Motor_Region
 contrast     estimate       SE  df t.ratio p.value bonferroni
 dPMC - M1   -0.000563 0.000291 527  -1.934  0.1300      0.391
 dPMC - vPMC -0.002553 0.000548 527  -4.660  <.0001      0.000
 M1 - vPMC   -0.001991 0.000604 527  -3.299  0.0030      0.009
```

***vPMC**'s PTE values in **Right gamma2** are significantly higher than **dPMC** and **M1**'s.*