

# Supplementary Materials. Mean (SD) for ERP Effects by Group and Subgroup

Semantic (325-625 ms)

|     | Hearing Signers (N=20) |            | Deaf Signers (N=24) |            |
|-----|------------------------|------------|---------------------|------------|
|     | Unrelated              | Related    | Unrelated           | Related    |
| FP1 | 3.94(3.70)             | 4.06(3.68) | 1.35(4.66)          | 2.87(4.09) |
| F3  | 3.96(2.92)             | 4.45(3.42) | 1.78(4.29)          | 3.83(3.68) |
| C3  | 4.41(2.55)             | 5.35(3.18) | 2.85(3.47)          | 5.38(3.05) |
| P3  | 4.85(2.91)             | 6.25(3.58) | 3.82(3.58)          | 6.70(3.56) |
| O1  | 4.15(2.72)             | 5.28(3.26) | 3.41(3.90)          | 5.84(4.33) |
| FPz | 4.43(3.61)             | 5.02(3.64) | 1.79(4.92)          | 3.56(4.11) |
| Fz  | 4.26(2.92)             | 5.43(3.60) | 2.37(4.53)          | 5.09(4.05) |
| Cz  | 4.27(2.84)             | 6.11(3.64) | 2.45(4.39)          | 5.69(3.98) |
| Pz  | 4.60(3.19)             | 6.30(3.79) | 3.32(3.94)          | 6.64(3.75) |
| Oz  | 2.44(3.25)             | 3.50(3.17) | 1.84(3.51)          | 4.31(3.69) |
| FP2 | 3.93(3.22)             | 4.70(3.21) | 1.47(4.46)          | 3.27(4.07) |
| F4  | 3.51(2.92)             | 4.80(3.32) | 2.32(4.09)          | 4.41(3.67) |
| C4  | 4.00(3.09)             | 5.77(3.46) | 2.40(3.06)          | 5.02(2.85) |
| P4  | 4.30(3.37)             | 5.98(3.80) | 3.43(3.43)          | 6.25(3.26) |
| O2  | 3.52(3.91)             | 4.67(4.10) | 3.50(3.76)          | 5.64(4.02) |

Semantic (325-625 ms)

|     | Implicit Subgroup (N=14) |            | Explicit Subgroup (N=10) |            |
|-----|--------------------------|------------|--------------------------|------------|
|     | Unrelated                | Related    | Unrelated                | Related    |
| FP1 | 1.00(4.48)               | 2.60(3.92) | 1.83(5.09)               | 3.24(4.51) |
| F3  | 1.80(4.21)               | 3.76(3.57) | 1.74(4.64)               | 3.93(4.02) |
| C3  | 2.93(3.66)               | 5.43(3.24) | 2.74(3.38)               | 5.31(2.93) |
| P3  | 3.50(3.67)               | 6.55(4.10) | 4.26(3.59)               | 6.90(2.84) |
| O1  | 2.86(3.53)               | 5.43(4.50) | 4.18(4.46)               | 6.41(4.25) |
| FPz | 1.53(4.46)               | 3.58(3.96) | 2.15(5.75)               | 3.52(4.54) |
| Fz  | 2.30(4.40)               | 5.12(3.85) | 2.48(4.95)               | 5.03(4.54) |
| Cz  | 2.47(4.56)               | 6.00(4.40) | 2.43(4.37)               | 5.24(3.48) |
| Pz  | 2.87(4.19)               | 6.55(4.25) | 3.95(3.69)               | 6.78(3.14) |
| Oz  | 1.26(3.59)               | 4.08(4.32) | 2.65(3.41)               | 4.64(2.78) |
| FP2 | 1.21(3.88)               | 3.13(3.86) | 1.85(5.37)               | 3.47(4.54) |
| F4  | 2.07(3.79)               | 4.30(3.79) | 2.66(4.68)               | 4.57(3.70) |
| C4  | 2.18(2.99)               | 5.18(3.39) | 2.70(3.30)               | 4.79(2.02) |
| P4  | 3.09(3.96)               | 6.17(3.89) | 3.92(2.66)               | 6.36(2.29) |
| O2  | 2.61(3.67)               | 5.04(4.33) | 4.75(3.70)               | 6.47(3.60) |

Rime (325-625 ms)

|     | Hearing Signers (N=20) |            | Deaf Signers (N=24) |            |
|-----|------------------------|------------|---------------------|------------|
|     | Unrelated              | Related    | Unrelated           | Related    |
| FP1 | 3.84(3.94)             | 4.42(3.75) | 1.92(4.54)          | 0.77(4.71) |
| F3  | 4.30(3.16)             | 3.90(3.38) | 2.21(4.52)          | 1.19(4.35) |
| C3  | 4.53(2.64)             | 4.53(2.87) | 3.24(3.94)          | 2.35(3.69) |
| P3  | 4.70(2.81)             | 5.00(3.28) | 4.06(3.81)          | 3.37(4.00) |
| O1  | 3.85(2.46)             | 4.23(3.12) | 3.44(4.00)          | 3.16(4.11) |
| FPz | 4.19(3.94)             | 5.00(3.63) | 2.52(5.06)          | 0.91(4.76) |
| Fz  | 4.32(3.16)             | 4.62(3.26) | 2.61(4.77)          | 1.92(4.62) |
| Cz  | 4.12(2.86)             | 4.75(3.43) | 2.65(4.93)          | 2.15(4.61) |
| Pz  | 4.22(3.34)             | 4.96(3.71) | 3.47(4.23)          | 2.92(4.37) |
| Oz  | 2.04(3.21)             | 2.61(3.62) | 1.81(3.42)          | 1.66(4.08) |
| FP2 | 3.71(3.44)             | 4.59(3.25) | 1.78(4.70)          | 1.04(4.25) |
| F4  | 3.52(2.92)             | 3.95(3.34) | 2.48(4.28)          | 2.08(4.07) |
| C4  | 3.69(3.19)             | 4.54(3.72) | 2.42(3.49)          | 2.24(3.20) |
| P4  | 3.82(3.45)             | 4.67(3.99) | 3.55(3.89)          | 3.09(3.66) |
| O2  | 2.87(3.97)             | 3.90(4.29) | 3.23(3.69)          | 3.32(3.95) |

Rime (325-625 ms)

|     | Implicit Subgroup (N=14) |            | Explicit Subgroup (N=10) |            |
|-----|--------------------------|------------|--------------------------|------------|
|     | Unrelated                | Related    | Unrelated                | Related    |
| FP1 | 2.10(3.73)               | 0.77(4.33) | 2.21(4.77)               | 1.51(5.27) |
| F3  | 2.73(3.39)               | 1.49(3.78) | 1.80(5.03)               | 1.40(4.81) |
| C3  | 3.87(3.54)               | 2.91(3.74) | 2.69(4.21)               | 2.22(3.74) |
| P3  | 4.39(3.99)               | 3.83(3.90) | 4.21(3.82)               | 3.51(4.14) |
| O1  | 3.47(3.67)               | 3.36(3.68) | 4.20(4.56)               | 3.49(4.50) |
| FPz | 2.65(3.61)               | 0.89(4.20) | 2.59(6.08)               | 1.68(5.43) |
| Fz  | 3.13(3.60)               | 2.09(4.34) | 2.09(5.44)               | 2.47(5.08) |
| Cz  | 3.44(4.42)               | 2.70(4.83) | 1.99(5.37)               | 2.20(4.66) |
| Pz  | 3.93(4.37)               | 3.23(4.51) | 3.64(4.30)               | 3.32(4.15) |
| Oz  | 2.15(3.66)               | 1.67(3.61) | 2.45(3.14)               | 2.18(4.01) |
| FP2 | 2.06(3.37)               | 0.95(3.66) | 1.74(5.54)               | 1.72(5.25) |
| F4  | 2.78(3.05)               | 1.90(3.69) | 2.24(4.85)               | 2.93(4.63) |
| C4  | 2.99(2.86)               | 2.44(2.96) | 2.18(3.88)               | 2.64(3.46) |
| P4  | 4.26(4.41)               | 3.38(3.81) | 3.52(3.02)               | 3.38(3.00) |
| O2  | 3.35(3.69)               | 3.10(3.80) | 4.27(3.23)               | 4.12(3.88) |

Rime (700-900 ms)

|     | Hearing Signers (N=20) |            | Deaf Signers (N=24) |            |
|-----|------------------------|------------|---------------------|------------|
|     | Unrelated              | Related    | Unrelated           | Related    |
| FP1 | 4.02(4.60)             | 5.84(3.77) | 2.69(5.19)          | 1.63(5.91) |
| F3  | 5.30(4.54)             | 5.97(3.92) | 3.16(4.29)          | 2.12(4.52) |
| C3  | 5.90(4.07)             | 7.21(3.87) | 4.71(4.42)          | 3.75(3.85) |
| P3  | 6.70(3.65)             | 8.82(4.48) | 6.32(4.91)          | 5.63(4.49) |
| O1  | 4.25(2.18)             | 6.39(3.80) | 4.51(4.03)          | 4.59(4.34) |
| FPz | 5.12(4.68)             | 7.98(3.63) | 3.65(5.91)          | 2.25(6.06) |
| Fz  | 5.49(4.95)             | 7.97(3.92) | 4.05(4.26)          | 3.34(4.04) |
| Cz  | 5.89(5.14)             | 9.08(5.07) | 5.66(4.83)          | 5.11(4.40) |
| Pz  | 6.82(4.22)             | 9.96(5.17) | 7.90(5.35)          | 7.32(4.96) |
| Oz  | 3.18(3.12)             | 5.98(4.16) | 4.74(3.72)          | 4.75(4.05) |
| FP2 | 4.25(4.31)             | 6.80(3.95) | 3.11(5.38)          | 2.46(5.28) |
| F4  | 3.94(4.73)             | 6.42(4.48) | 3.97(3.81)          | 3.49(3.79) |
| C4  | 4.76(4.88)             | 7.55(4.56) | 4.91(3.75)          | 4.80(3.56) |
| P4  | 5.09(4.39)             | 8.18(4.91) | 6.37(4.63)          | 6.08(4.17) |
| O2  | 2.40(3.65)             | 5.41(3.99) | 4.46(4.22)          | 4.81(4.32) |

Rime (700-900 ms)

|     | Implicit Subgroup (N=14) |            | Explicit Subgroup (N=10) |            |
|-----|--------------------------|------------|--------------------------|------------|
|     | Unrelated                | Related    | Unrelated                | Related    |
| FP1 | 3.51(5.39)               | 1.84(6.27) | 1.54(4.94)               | 1.35(5.67) |
| F3  | 4.23(4.74)               | 2.82(4.66) | 1.65(3.20)               | 1.14(4.36) |
| C3  | 5.64(4.59)               | 4.15(3.80) | 3.40(4.03)               | 3.18(4.04) |
| P3  | 6.33(4.98)               | 5.11(4.59) | 6.30(5.08)               | 6.35(4.49) |
| O1  | 3.91(4.53)               | 3.57(4.45) | 5.36(3.23)               | 6.03(3.94) |
| FPz | 4.43(5.80)               | 2.05(5.99) | 2.55(6.20)               | 2.54(6.48) |
| Fz  | 4.95(4.71)               | 3.47(3.95) | 2.79(3.35)               | 3.15(4.37) |
| Cz  | 6.40(4.75)               | 5.07(3.70) | 4.62(4.99)               | 5.18(5.44) |
| Pz  | 7.89(4.98)               | 6.64(4.44) | 7.92(6.11)               | 8.27(5.73) |
| Oz  | 4.31(4.17)               | 3.90(4.14) | 5.35(3.11)               | 5.94(3.81) |
| FP2 | 3.61(5.72)               | 2.33(5.05) | 2.41(5.08)               | 2.64(5.87) |
| F4  | 4.38(4.35)               | 3.16(3.69) | 3.38(3.02)               | 3.96(4.09) |
| C4  | 4.93(4.08)               | 4.09(3.04) | 4.89(3.44)               | 5.80(4.13) |
| P4  | 6.24(5.33)               | 5.25(4.17) | 6.55(3.70)               | 7.24(4.08) |
| O2  | 3.58(4.89)               | 3.70(4.38) | 5.68(2.86)               | 6.36(3.93) |