Familiarity Modulates Mirror Neuron and Mentalizing Regions During Intention Understanding

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Abstract: [illegible] (1) [illegible] (2) [illegible]

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[illegible] 30630025, 30 2 012, 30 10103 01 [illegible] 2010 [illegible] 33 03 [illegible] 0 13067 [illegible]

* [illegible] 3641 [illegible] 00 -2520. [illegible] 100 71, [illegible]

INTRODUCTION

[illegible]

[illegible] 2- [illegible] ([illegible] 12 [illegible]).

Action execution

[illegible]

[illegible] 10- [illegible]
[illegible] $P < 0.05$ [illegible]
2004. [illegible] ( ) [illegible] (k ≥). [illegible]
[illegible] $P < 0.001$ (t [illegible]) [illegible] 200 . [illegible] (k ≥).

[illegible] 2004 [illegible]
[illegible] 2005, [illegible] 10 [illegible]. 2 × 2 [illegible]

Figure 2.

Brain responses to observations of gestures versus still images (all images displayed at $P < 0.001$ uncorrected for visualization purposes; $x = -51$). **A**: Observation of all gestures across familiarity and races versus still images evoked greater activity in components of the pMNS [the left dorsal inferior frontal gyrus (IFG) and dorsal premotor cortex and inferior parietal lobule (IPL)], as well as the posterior superior temporal sulcus (pSTS) and posterior cingulate cortex (PCC; not shown). **B**: Observation of the same race versus still (red) evoked activity in the left IPL and pSTS, while observation of a different race versus still (green) evoked activity in the left dorsal premotor cortex and pSTS. **C**: Observation of familiar gestures versus still images (red) evoked greater activity in the left pSTS, while unfamiliar gestures versus still images (green) evoked activity in dorsal IFG, IPL, and pSTS.

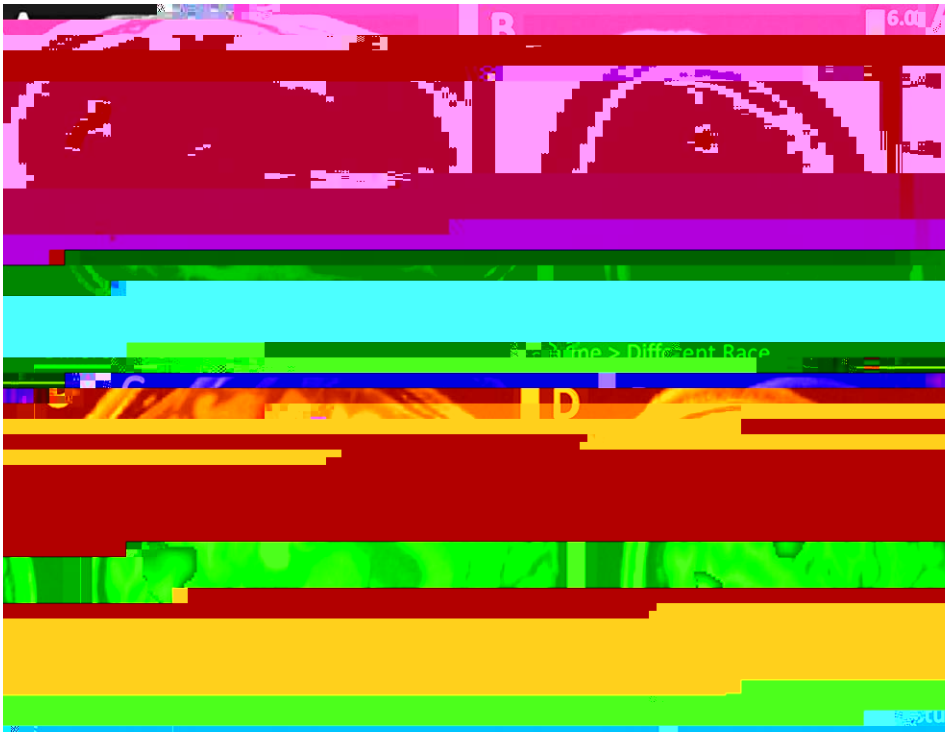

Figure 3.

Race-driven and experience-driven brain responses (all images displayed at $P < 0.001$ uncorrected for visualization purposes). **A**: Observations of another race versus one's own race (DifferentRace > SameRace) evoked greater activity in the occipital cortex bilaterally in the fusiform gyrus and middle temporal gyrus (area V5/MT; not shown; $z = -11$). **B**: Observations of one's own race versus another race (SameRace > DifferentRace) evoked greater activity in the left IPL and right posterior insula (not shown; $x = -59$). **C**: Observations of familiar gestures versus unfamiliar gestures (Familiar > Unfamiliar) evoked greater activity in the dorsal medial prefrontal cortex (dMPFC), the posterior cingulate (PCC), the cuneus, and the bilateral temporoparietal junctions (not shown), regions associated with mentalizing and reasoning processes ($x = -4$). **D**: Observations of unfamiliar gestures versus familiar gestures (Unfamiliar > Familiar) evoked greater activity in the left IPL and postcentral gyrus and the bilateral middle temporal gyri (area V5/MT) in the putative extrastriate body area (EBA; $x = -53$).

[illegible] 1 6 [illegible]

RESULTS

Behavioral Results

[illegible] .40 ± 1.27 [illegible] 3.17 ± 1. 6 P < 0.001). [illegible] (51.7%), [illegible] (2 .3%), [illegible] (20.0%). [illegible]

($F = 15.35$, $P < 0.0005$ $F = .\ $, $P < 0.010$ $F = 12.7$, $P < 0.0022$ $F = 5.67$, $P < 0.11$). [illegible]

[illegible]

[illegible], 2002 [illegible] 2005, [illegible]

[illegible] (1 7) [illegible] 20 7 105.

[illegible] (2004) [illegible] 7 542 54 .

[illegible] 4 6 01.

[illegible] (200) [illegible] 4 4 30.

[illegible] (200) [illegible] 1 661 667.

[illegible] (200) [illegible] 21 21 36.

[illegible] (2007) [illegible] 11 153 157.

[illegible] (200) [illegible] 4 564 5 4.

[illegible] (200) [illegible] 46 2371 23 2.

[illegible] (2007) [illegible] 37 1371 13 3.