Supplementary Materials:

Supplementary Figure 1: Performance Across Domains of Memory in Children with 22q11DS: 29 children aged 5-17 with confirmed 22q11.2 deletions were assessed with a comprehensive neuropsychological test battery, including matched tasks of verbal and visuospatial memory [California Verbal Learning Test –Children's Version (Delis 1994)/ WRAML Verbal Learning (Sheslow 1990) and Childrens' Memory Scale Dot Locations task (Cohen 1997) , respectively], as well as a measure of visual object memory (WRAML Design Memory ; Sheslow 1990). Results indicate that 22q11DS patients displayed a selective deficit in visual-spatial as compared to verbal memory. Further, a dissociation between visual-spatial and object memory was observed, indicating further selectivity of this pattern of deficit, and providing evidence for the dissociability of these components of visual cognition (Bearden and others 2001).

Supplementary Figure 2: Steps Used to Create Cortical Thickness Maps**: (**a) shows the sequence of steps required to derive cortical thickness maps from the MRI scans (see Methods for details). (b) shows gray matter thickness image, using a sagittal cut from the original T1-weighted image for one representative control subject; thickness is progressively coded in millimeters from inner to outer layers of cortex using a distance field. RF, radio frequency.

Supplementary Figure 3. Maps of cortical thickness asymmetry in 22q11DS vs. controls. (a) denotes areas of greater asymmetry in 22q11DS, whereas (b) denotes areas of reduced asymmetry in 22q11DS as compared to control subjects. Although the overall

maps were not significant after multiple comparison correction, ROI analyses indicated a statistically significant regional interaction between group (22q11DS vs. control) and hemisphere (left vs. right) only in the parieto-occipital cortex ROI (p=.02, corrected).

Supplementary Figure 4. Average profile of cortical thickness differences between Williams Syndrome (WMS) patients (N=42) and controls (N=40). Mean full-scale IQ in WMS patients was 68± 9 SD (Thompson and others 2005). In contrast to patients with 22q11DS, WMS patients showed significant cortical thickening in right hemisphere perisylvian and inferor temporal cortex (a), which may reflect the effect of cortical cells crowding over an area with reduced surface extent. Red colors in (b) depict areas in which mean cortical thickness was ~10% lower than the control mean (primarily superior parietal and temporal regions), although these reductions were not statistically significant after multiple comparison correction.

References:

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