

### Anatomical ROI definitions

Regions-of-interest (ROIs) are displayed in Figure S3. Separate masks were used in each hemisphere for each ROI, with the exception of the ventral tegmental area. We defined the ventral tegmental area as the combination of two spheres with radii of 6mm centered at  $x=\pm 3$ ,  $y=-18$ ,  $z=-12$ . The insula was anatomically defined by the TT-N27 atlas brain within AFNI.

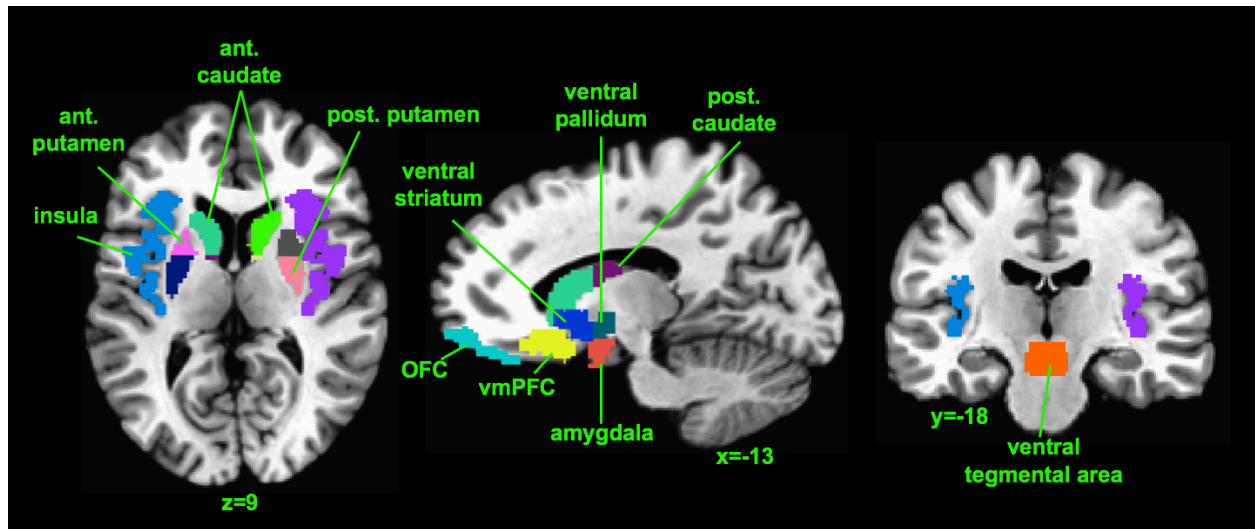
The ventral striatum ROI was defined based on Mawlawi et al.(1) "A line joining the intersection between the outer edge of the putamen with a vertical line going through the most superior and lateral point of the internal capsule and the center portion of the anterior commissure transaxial plane" extending to the internal edge of the caudate defined the dorsolateral boundary of the ventral striatum ROI in each coronal slice. The remaining boundaries were defined by marked image intensity differences, with the caudate defining the anterior extent and the anterior commissure defining the posterior extent of the ventral striatum in each coronal slice. The caudate and putamen were defined by separate ROIs that included all areas of these structures not contained in the ventral striatum ROI. For the caudate and putamen, separate ROIs were made for the anterior and posterior regions of these structures, and were divided by the anterior commissure.

The anterior commissure defined the anterior and dorsal extents of the ventral pallidum ROI. This ROI extended 7mm posterior from the commissure. Ventrally, the ventral pallidum included all of the subcommissural space (2). The ventral pallidum ROI extended laterally to a line drawn 15mm from the midline and medially to a line drawn 5mm from the midline (3).

A line drawn at  $y=20$  (Talairach space) defined the posterior extent of the orbitofrontal cortex (OFC) ROI, and the frontal pole defined its anterior extent. The OFC ROI extended dorsally to the fundus of the transverse orbital sulcus and ventrally to the surface of the cortex (4). The lateral edge of the olfactory sulcus defined the medial extent of the OFC ROI, and the more medial of either the lateral intermediate orbital sulcus or the lateral orbital sulcus defined its lateral extent.

The amygdala ROI was based on a pre-rendered ROI mask available in AFNI, which was defined using probability maps generated for various cortical areas (5) and the parcellation of cortical and subcortical structures generated by the FreeSurfer program based on the Talairach N27 atlas brain provided in AFNI. We adjusted the posterior edge of this amygdala map based on its extent in the Mai atlas (3).

The ventromedial prefrontal cortex (vmPFC) was defined medially and ventrally by the surface of the cortex. A line at the posterior edge of the genu of the corpus callosum ( $y=9$ ) defined the vmPFC ROI posteriorly, and a line at the anterior edge of the genu ( $y=31$ ) defined it anteriorly. The vmPFC ROI extended laterally to the lateral edge of the olfactory sulcus and dorsally to the fundus of the olfactory sulcus and the corpus callosum.



**Figure S3. Regions-of-interest masks.** Different colors signify different individual masks used for regions-of-interest analyses. Coordinates are in Talairach space. Ant.=anterior; post.=posterior; OFC=orbitofrontal cortex; vmPFC=ventromedial prefrontal cortex.

#### References

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- (3) Mai J, Paxinos G, Voss T. Atlas of the human brain. 3rd ed. San Diego: Academic Press; 2007.
- (4) Chiavaras MM, LeGoualher G, Evans A, Petrides M. Three-dimensional probabilistic atlas of the human orbitofrontal sulci in standardized stereotaxic space. *Neuroimage* 2001;13:479–96.
- (5) Desikan RS, Ségonne F, Fischl B, Quinn BT, Dickerson BC, Blacker D, Buckner RL, Dale AM, Maguire RP, Hyman BT, Albert MS, Killiany RJ. An automated labeling system for subdividing the human cerebral cortex on MRI scans into gyral based regions of interest. *Neuroimage* 2006;31:968–80.