SUPPLEMENTARY METHODS

Participant Demographics

Patients and controls had similar gender (Wilcoxon z=1.0, p=0.30), age (patients: mean age 37.6 years, SD=8.5; controls: mean 39.0 years, SD=10.6; Wilcoxon z=-0.443, p=0.64), years of education (patients: mean 14.3 years, SD=2.1; controls: mean 14.7 years, SD=2.2; Wilcoxon z=0.29, p=0.78), and level of parental education (patients: mean 14.1. years, SD=2.9; controls: mean 13.5 years, SD=2.9; Wilcoxon z=-0.6, p=0.53). The age of onset of psychotic symptoms in the context of functional decline was 22.9 years (SD=7.3), with an illness duration of 15.3 years (SD=11.0).

Participant Assessment Procedure

The participants underwent standardized assessment procedures, including medical, neurological, and psychiatric evaluations as well as laboratory tests. The psychiatric evaluation for patients included a clinical assessment; a structured interview; a history obtained from family, care providers, and records; and scale scores for measuring symptoms administered by investigators trained to a criterion reliability of intraclass correlation=0.90. The patients had a DSM-IV diagnosis of schizophrenia or schizoaffective disorder (depressed type), established in a consensus conference based on all information available, and had no history of other disorders or events affecting brain function. The comparison subjects underwent the same evaluation procedures. They had no history of major psychiatric illness personally or in first-degree relatives.

fMRI Procedures

Participants were required to demonstrate understanding of the task instructions, the response device, and complete one trial of practice prior to acquisition of face memory data. Earplugs were used to muffle scanner noise and head fixation was aided by foam-rubber restraints mounted on the head coil. Stimuli were rear-projected to the center of the visual field using a PowerLite 7300 video projector (Epson America, Inc.; Long Beach, CA) and viewed through a head coil mounted mirror. Stimulus presentation was synchronized with image acquisition using the Presentation software package (Neurobehavioral Systems, Inc., Albany, CA). Subjects were randomly assigned to use their dominant or non-dominant hand; responses were recorded via a non-ferromagnetic keypad (fORP; Current Designs, Inc.; Philadelphia, PA).

Image Acquisition

BOLD fMRI was acquired with a Siemens Trio 3 Tesla (Erlangen, Germany) system using a whole-brain, single-shot gradient-echo (GE) echoplanar (EPI) sequence with the following parameters: TR/TE=2000/32 ms, FOV=220 mm, matrix= 64 X 64, slice thickness/gap=3/0mm, 40 slices, effective voxel resolution of 3 x 3 x 3mm. To reduce partial volume effects in orbitofrontal regions, EPI was acquired obliquely (axial/coronal). The slices provided adequate brain coverage, from the superior cerebellum and inferior temporal lobe ventrally to the hand-motor area in the primary motor cortex dorsally. Prior to time-series acquisition, a 5-minute magnetization-prepared, rapid acquisition gradient-echo T1-weighted image (MPRAGE, TR 1620ms, TE 3.87 ms, FOV 250 mm, matrix 192x256, effective voxel resolution of 1 x 1 x 1mm)

was collected for anatomic overlays of functional data and to aid spatial normalization to a standard atlas space (1).

Image Preprocessing

fMRI data were preprocessed and analyzed using FEAT (fMRI Expert Analysis Tool) Version 5.1, part of FSL (FMRIB's Software Library, www.fmrib.ox.ac.uk/fsl). Images were slice-time corrected, motion corrected to the median image using a tri-linear interpolation with six degrees of freedom (2), high pass filtered (100s), spatially smoothed (6mm FWHM, isotropic), and grand-mean scaled using mean-based intensity normalization. BET was used to remove non-brain areas (3). The median functional and anatomical volumes were coregistered, and then transformed into the standard anatomical space (T1 MNI template, voxel dimensions of 2x2x2 mm) using tri-linear interpolation. Subject level time-series statistical analysis was carried out using FILM (FMRIB's Improved General Linear Model) with local autocorrelation correction (4). Condition events were modeled with a canonical hemodynamic response function and its temporal derivative.

SUPPLEMENTARY TABLES

Table S1. Whole brain analysis of the HIT-CR contrast

Cluster	Hem	Max Z	Count	Peak (x, y, z)
Controls				
Large cluster (inc PCC)	B	4.53	6795	12, -86, -4
Inferior parietal lobule	L	3.39	2227	-54, -44, 42
Anterior cingulate	B	4.14	1556	-2, 20, 46
Nucleus Accumbens	L	4.02	1331	-8, 8, -8
Pallidum	R	4.29	808	12, 6, -2
Orbitofrontal cortex	L	3.51	532	-24, 18, -14
Middle frontal gyrus	L	3.79	440	-52, 12, 38
Superior frontal gyrus	R	3.33	323	14, 62, 22
Inferior parietal lobule	R	4.02	228	38, -30, 38
Anterior cingulate	R	3.35	212	4, 46, 0
Middle temporal gyrus	L	3.05	142	-66, -34, -14
Superior frontal gyurs	L	3.68	113	-26, 46, 26
Insula	R	3.24	112	38, 4, 6
Patients				
Inferior parietal lobule	R	3.71	253	54, -36, 22
Angular gyrus	L	3.12	218	-52, -56, 16
Inferior parietal lobule	L	3.49	189	-36, -54, 46
Caudate	R	3.79	173	10, 8, 0
Lingual gyrus	R	3.11	117	24, -50, -6
Controls > Patients				
Posterior cingulate	R	3.23	240	-6, -40, 26
Occipital fusiform gyrus	R	3,04	187	18, -86, -16
Middle frontal gyrus	R	3.52	147	46, 24, 32
Patients > Controls	-	-	-	-

Table S2. Whole brain analysis of the THREAT – NON-THREAT contrast

Cluster	Hem	Max Z	Count	Peak (x, y, z)
Controls				
Middle temporal gyrus	L	3.15	177	-70, -38, 2
Orbitofrontal cortex	R	3.22	137	44, 56, -12
Superior temporal gyrus	L	3.53	127	-48, -14, -8
Patients	-	-	-	-
Controls > Patients	-	-	-	-
Patients > Controls	-	-	-	-

Table S3. Whole brain analysis of functional connectivity with the left amygdala

Cluster	Hem	Max Z	Count	Peak (x, y, z)
Controls: Positive Correlation				
Large limbic cluster	B	9.37	13,915	-22, -6, -18
Controls: Negative Correlation				
Large frontal cluster	R	5.68	12,033	44, 22, 38
Precuneous	R	5.03	4,157	2, -82, 46
Inferior parietal lobule	L	5.15	2,505	50, -44, 36
Postcentral gyrus	R	3.44	108	64, -6, 24
Patients: Positive Correlation				
Large limbic cluster	B	15.6	12,847	-18, -8, -20
Patients: Negative Correlation				
Large frontoparietal cluster	B	5.36	6,163	8, 48, 44
Large parietal cluster	L	4.75	4,827	-70, -42, 30
Paracentral lobule	R	4.29	280	6, -10, 46
Controls > Patients				
Thalamus	L	4.47	841	-18, -24, 16
Parietal white matter	R	4.13	266	26, -42, 24
Postcentral gyrus	L	3.81	241	-22, -28, 46
Cuneus	B	3.36	162	-10, -82, 12
Middle temporal gyrus	R	3.68	159	60, -70, 20
Superior temporal gyrus	L	3.52	117	-56, -14, 0
Middle temporal gyrus	L	3.70	109	-58, -70, 22
Patients > Controls				
Middle frontal gyrus	R	3.28	179	44, 24, 38
Insula	R	4.31	169	46, -4, -8
Middle frontal gyrus	R	2.97	126	52, 34, 18
Orbitofrontal cortex	R	4.05	111	42, 20, -12
Midbrain	R	3.70	103	12, -22, -12

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