structed for each participant a sFC matrix, $\mathbf{W}$, whose elements were equal to $W_{ij} = \frac{1}{T-1}\sum_{t=1}^{T} z_i(t) \cdot z_j(t)$, where $\mathbf{z}_i = \{z_i(1), \ldots, z_i(T)\}$ is the zero-mean, unit-variance fMRI BOLD time series for region i.

Dynamic functional connectivity

We also constructed each participant's dynamic functional connectivity (dFC) matrix, $\mathcal{W} = \{\mathbf{W}(1), \ldots, \mathbf{W}(T - L + 1)\}$, where $\mathbf{W}(t) = [W_{ij}(t)]$ is the estimated connectivity matrix for the time interval beginning at t. This entailed first dividing the regional BOLD time series into overlapping windows of approximately 100 seconds in length. With a sampling frequency of $f = \frac{1}{0.645}$ Hz, this translated to a window of $L = 156$ time points. The decision to select a window of 100 s was made so that the window was long enough to capture a full cycle of the slowest frequency component. As the high-pass cutoff for the BOLD time series was 0.01 Hz, the shortest possible window was 100 s long (Zalesky and Breakspear, 2015; Leonardi and Van De Ville, 2015). For each window, we then calculated the cross-correlation matrix using only the observations within that window. The cross-correlation was calculated after exponentially discounting the fluctuations of more distant time points so that the correlation coefficients weighed recent events more heavily.

In slightly more detail, we define a discounting function for each window:

$$w(\tau) = w_0 e^{(\tau - L)/\theta} \tag{1}$$

where $\tau = 1, \ldots, L$, $w_0 = (1 - e^{-1/\theta})/(1 - e^{-L/\theta})$, and $\theta = L/3$.

Based on this weighting, we calculated for each window:

$$\bar{z}_i(t) = \sum_{\tau=1}^{L} w(\tau) z_i(t - L + \tau) \tag{2}$$