In This Issue

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A brief summary of the articles appearing in this issue of *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*.

The Self-Other Divide in Autism

Autism spectrum disorder (ASD) is associated with alterations in both social and sensory processing. Here, **Noel *et al.*** (pages 756–764) studied how social context influences the representation of peripersonal space, the space surrounding one's body. Findings revealed that in a social context, peripersonal space shrinks in neurotypical young adults, but not in young adults with ASD. Electroencephalography (EEG) data further revealed that social context alters multisensory integration in neurotypical adults but not in adults with ASD. The authors suggest that the inflexibility of this representation may be due to alterations in excitatory/inhibitory balance in ASD.

Depression vs. Bipolar: Brain Network Properties

Individuals with bipolar disorder are often misdiagnosed with unipolar major depression, which can have deleterious consequences because some pharmacological treatments for depression can trigger mania. Using a graph theory approach with functional magnetic resonance imaging data, **Spielberg *et al.*** (pages 765–773) identified emergent brain network properties that were able to differentiate between bipolar disorder and major depressive disorder in currently depressed patients. Further, patterns differed in patients with major depressive disorder at high versus low risk for bipolar disorder. This work may help to refine the diagnostic process for these disorders, which is crucial to avoid potentially harmful responses to treatment.

Brain Connectivity Changes in Youth

Resting-state functional connectivity is altered in depression, but more work has been required to disentangle the potential neural consequences of depression from the neural markers of risk. Using longitudinal data from an adolescent cohort, **Afzali *et al.*** (pages 774–781) found distinct resting-state functional connectivity patterns that showed association with risk for depression while other patterns appeared to be consequential to adolescent-onset depression. These data suggest that early onset of depression may further contribute to alterations in brain connectivity.

White matter connections linking the thalamus and cortex may play a role in psychosis risk. However, little is known about thalamocortical white matter development. In a sample of youth, **Avery *et al.*** (pages 782–792) found that white matter microstructure increased with age and was higher in males than females, lower in youth on the psychosis spectrum, and associated with better cognition. This study provides a foundation for further conceptualization of white matter microstructure as a risk marker for psychosis.

Neural Mechanisms of Meditation

Mindfulness-based stress reduction (MBSR) has been shown to be effective in treating symptoms of posttraumatic stress disorder (PTSD), but the underlying neurobiological mechanisms of these effects are unclear. In a randomized clinical trial for veterans with PTSD, **Kang *et al.*** (pages 793–804) report that the MBSR group showed greater improvements in PTSD symptoms and increases in spontaneous brain activity, cognitive task–related brain responses, and interoceptive brain responses compared with a group who received a control intervention. Analyses revealed that only the interoceptive brain responses mediated the treatment effect of MBSR. These data suggest that mindfulness-based interventions may have multiple beneficial effects on brain functions, but that the interoceptive-linked function may be the primary therapeutic mechanism of MBSR.

Brain Stress Networks in Risky Drinkers

The brain's stress response plays an important role in alcohol use disorder, but brain network alterations in nondependent risky drinkers remain unclear. Using functional magnetic resonance imaging and predictive modeling, **Goldfarb *et al.*** (pages 805–813) found that brain circuitry linked to subjective stress differed between risky drinkers (visual/motor networks) and light drinkers (default mode/frontoparietal). Stress networks also prospectively predicted real-world stress and control over drinking. These data highlight early brain differences in risky drinkers and the adaptability of brain stress circuitry.

Brain EEG Microstates in Adult ADHD

Attention-deficit/hyperactivity disorder (ADHD) is associated with abnormal electrocortical signatures, but much remains unclear. In this study of EEG microstates, **Férat *et al.*** (pages 814–823) found that adults with ADHD, relative to neurotypical adults, show an increased contribution of a brain state with a frontal activation (microstate D), a biomarker that has previously been associated with attentional function. This work provides further insight into the electrophysiological characteristics of ADHD and identifies a potentially novel functional biomarker of ADHD.

Reward Circuitry Alterations

Parental depression has been shown to impact ventral striatum reward responding in adolescent offspring, but whether there are even earlier effects is less understood. Here, **Morgan *et al.*** (pages 824–832) report that children of mothers with a history of depression showed blunted responding in the ventral striatum, but only when mothers tended to actively discourage their child's positive emotion expression. These data suggest

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that neural reward-related alterations linked to parental depression may emerge in childhood, and that interventions that coach parents on how to encourage positive emotions in their young children may be beneficial in preventing the future development of depression in children at risk.

The reward circuit is important for motivation and learning, and dysregulation of the reward circuit is prominent in anhedonic depression. In this work, **Ryan *et al.*** (pages 833–840) demonstrate that transcranial magnetic stimulation directed to the rostral medial prefrontal cortex increases reward sensitivity, as measured by EEG, in healthy individuals. These findings suggest that this noninvasive intervention may hold promise for the treatment of altered reward circuitry functioning in depression.