

## Unifying neurology and psychiatry—a 'prescient but premature' notion?

We read with interest Dr. Henry A. Nasrallah's call to unify psychiatry and neurology into 1 specialty (CURRENT PSYCHIATRY, From the Editor, August 2013, p. 8-9; <http://bit.ly/16wImL3>). Trends in this direction already are evident. Medical schools, including New York University School of Medicine, the University of Massachusetts Medical School, and the Medical University of South Carolina, have 6-year combined psychiatry and neurology residency programs that prepare students for board exams in either specialty or both specialties. We offer considerations that we hope will energize and inform the discussion, in turn moving us toward discovery of an optimal framework for all stakeholders.

In support of unification, Dr. Nasrallah's editorial points to research advances in pharmacology, neuroimaging, and genetics. He writes that a "neuropharmacological revolution" is occurring, and it includes the discovery of medications that control symptoms of mood and anxiety disorders. The use of psychotropic medications certainly is escalating; >1 in every 10 Americans currently takes an

antidepressant,<sup>1,2</sup> reflecting a >400% increase over the past 2 decades.<sup>2</sup>

However, increasing use does not prove efficacy or establish causal mechanisms. Controversy persists regarding antidepressant efficacy, particularly for mild-to-moderate depression. The Sequenced Treatment Alternatives to Relieve Depression trial<sup>3</sup> was the largest study to evaluate antidepressant effectiveness.<sup>3</sup> Summarizing the findings, Thomas Insel, MD, Director of the National Institute of Mental Health stated, "Most important, this study demonstrates that for at least 70% of patients, appropriate treatment with an SSRI [selective serotonin reuptake inhibitor] is not enough."<sup>4</sup> What is clear is that the benefits of antidepressants are smaller than originally thought, and may be limited to patients with particular types of (severe) depression.

We agree that developments in neuroimaging and genetics of mental illness are exciting and some day may change the relationship between neurology and psychiatry. However, advanced neuroimaging technologies such as functional magnetic resonance imaging (fMRI) and diffusion tensor imaging (or diffusion MRI) have shown abnormalities involving brain-wide networks in psychiatric disorders<sup>5</sup>—not distinct regional abnormalities. In other words, psychiatry deals with mental phenomena that are modular in nature and not always reducible to their molecular origins, whereas in neurologic disorders, research linear cause-effect relationships and regional abnormalities are more common.

Genome-wide association studies have shown that few polymorphisms can be associated with numerous mental disorders<sup>6</sup> (ie, multifinality), and that several genes may be associated



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with a particular disorder (ie, equifinality). Multifinality and equifinality are characteristics of complex disorders, with nonlinear gene × gene and gene × environment interactions. In contrast, most heritable neurologic disorders follow a Mendelian pattern of inheritance and predictable cause-effect neuropathology. Furthermore, recent advances in epigenetics—in which environmental and social factors modify gene expression and affect patterns of inheritance<sup>7</sup>—have further complicated our understanding of genetic contributions to psychiatric illness, and have revealed limitations in reductionist models.

Although neurologic and psychiatric disorders ultimately reflect cerebral pathology, the former commonly result from circumscribed lesions, and the latter are more complexly determined, resulting from disruptions in brain circuitry influenced by genetic, epigenetic, environmental, and social factors.<sup>7</sup> As much as we might like it, research in psychiatry has not progressed to the point of fully explaining the brain-based processes underlying complex psychiatric disorders, decipher complex gene × gene and gene × environment interactions, or associate certain genes and biological pathways with specific disorders. A move to formally combine neurology and

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7 Century Dr., Suite 302  
Parsippany, NJ 07054

psychiatry may be prescient but premature because different sets of skills and methodologies might be required of clinicians and researchers in either specialty. More research is needed to shape and refine our disease and training models, and inform evidence-based practice.

**Patrick J. Lustman, PhD**  
St. Louis VA Medical Center  
John Cochran Hospital Division  
Department of Psychiatry  
Washington University School  
of Medicine

**John M. Ray, MA**  
St. Louis VA Medical Center  
John Cochran Hospital Division

**Andrea L. Taylor, PhD**  
St. Louis VA Medical Center  
John Cochran Hospital Division

**Kenneth E. Freedland, PhD**  
Department of Psychiatry  
Washington University School of Medicine

**Dragan M. Svrakic, MD**  
St. Louis VA Medical Center  
John Cochran Hospital Division  
Department of Psychiatry  
Washington University School  
of Medicine  
St. Louis, Missouri

#### References

1. Charney DS, Nemeroff CB, Lewis L, et al. National Depressive and Manic-Depressive Association consensus statement on the use of placebo in clinical trials of mood disorders. *Arch Gen Psychiatry*. 2002;59(3):262-270.
2. Pratt LA, Brody DJ, Gu Q. Antidepressant use in persons aged 12 and over: United States, 2005-2008. *NCHS Data Brief*. 2011;(76):1-8.
3. Trivedi MH, Rush AJ, Wisniewski SR, et al. Evaluation of outcomes with citalopram for depression using measurement-based care in STAR\*D: implications for clinical practice. *Am J Psychiatry*. 2006;163(1):28-40.
4. Insel TR. Beyond efficacy: the STAR\*D Trial. *Am J Psychiatry*. 2006;163(1):5-7.
5. Zhou Y, Liang M, Tian L, et al. Functional disintegration in paranoid schizophrenia using resting-state fMRI. *Schizophr Res*. 2007;97(1-3):194-205.
6. Sullivan PA. A framework for interpreting genome-wide association studies of psychiatric disorders. *Mol Psychiatry*. 2009;14(1):10-17.
7. Svrakic DM, Zorumski CF, Svrakic NM, et al. Risk architecture of schizophrenia: the role of epigenetics. *Curr Opin Psychiatry*. 2013;26(2):188-195.

## Flying high with Bromo-DragonFLY

I enjoyed reading “New ‘legal’ highs: Kratom and methoxetamine” (*CURRENT PSYCHIATRY*, Pearls, August 2013, p.54-55; <http://bit.ly/1gmPVFB>), which discussed legal substances of abuse with adverse effects. I appreciate Dr. Julianna Troy’s recommendation to be familiar with “legal” drugs given their prevalence and potential for adverse effects when taken alone or with psychotropics.

Another legal substance, Bromo-DragonFLY—so named for the resemblance of its chemical structure to the insect—is illegal in many European countries and is being abused in the United States, notably in New Orleans, Louisiana.<sup>1</sup> Available as a white or off-white powder, or as paper “blotters,” the drug exerts serotonergic and noradrenergic receptor agonism.<sup>1</sup> It is characterized by slow onset but long duration of action.

Intoxication with Bromo-DragonFLY beyond the usual dose of 800 to 1,300 µg can result in dystonia, tachycardia, hypertension, psychosis, tachypnea, vasoconstriction with necrosis, seizures, hepatic or renal dysfunction, and death.<sup>1-5</sup> Treatment comprises hydration, respiratory support, and benzodiazepines, muscle relaxants, or antipsychotics.<sup>1-4</sup>

**Jonathan R. Scarff, MD**  
VA Outpatient Clinic  
Spartanburg, South Carolina

#### References

1. Pletsch G, Rodgman C. Bromo-DragonFLY-induced dystonia. *Am J Psychiatry Res J*. 2013;8(2):7-8.
2. Nielsen VT, Høgberg LC, Behrens JK. Bromo-Dragonfly poisoning of 18-year-old male. *Ugeskr Laeger*. 2010;172(19):1461-1462.

3. Wood DM, Looker JJ, Shaikh L, et al. Delayed onset of seizures and toxicity associated with recreational use of Bromo-dragonFLY. *J Med Toxicol*. 2009;5(4):226-229.
4. Thorlacius K, Borna C, Personne M. Bromo-DragonFLY-life threatening drug: can cause tissue necrosis as demonstrated by the first described case. *Lakartidningen*. 2008;105(16):1199-1200.
5. Andreasen MF, Telving R, Birkler RI, et al. A fatal poisoning involving Bromo-Dragonfly. *Forensic Sci Int*. 2009;183(1-3):91-96.

## Clarifying a statement about efficacy of FGA, SGA

We appreciate Dr. Nasrallah referencing our work to assert that “most SGAs are similar to FGAs.” (*CURRENT PSYCHIATRY*, Comments & Controversies, October 2013, p. 39-40; <http://bit.ly/177QOy6>). What we actually found in our 2003<sup>1</sup> and 2011<sup>2</sup> meta-analyses was that “some anti-psychotics are more efficacious than others,” and the first-generation anti-psychotic vs second-generation anti-psychotic distinction is not very useful clinically.<sup>3</sup> These findings have repeatedly been replicated.<sup>3</sup>

**John M. Davis, MD**  
Professor  
Department of Psychiatry  
University of Illinois at Chicago  
Chicago, Illinois

**Ira D. Glick, MD**  
Professor Emeritus of Psychiatry  
and Behavioral Sciences  
Department of Psychiatry  
Stanford University School  
of Medicine  
Stanford, California

#### References

1. Davis JM, Chen N, Glick ID. A meta-analysis of the efficacy of second-generation antipsychotics. *Arch Gen Psychiatry*. 2003;60(6):553-564.
2. Glick ID, Correll CU, Altamura C, et al. Mid-term and long-term efficacy and effectiveness of antipsychotic medication for schizophrenia: a data-driven, personalized clinical approach. *J Clin Psychiatry*. 2011;72(12):1616-1627.
3. Leucht S, Cipriani A, Spinelli L, et al. Comparative efficacy and tolerability of 15 antipsychotic drugs in schizophrenia: a multiple-treatments meta-analysis. *Lancet*. 2013;382(9896):951-962.

#### CORRECTION

In Table 2 of “Expanding medication options for pediatric ADHD” (*CURRENT PSYCHIATRY*, December 2013, pp. 20-29), “Metadate CD” should have been “Metadate CR.”