


2015

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Recommended Citation

Utah L. Rev, Vol. 2015, No. 4, p. 743, 2015

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FROM BIBLES TO BIOMARKERS: THE FUTURE OF THE DSM AND FORENSIC PSYCHIATRIC DIAGNOSIS

Teneille R. Brown*

I. INTRODUCTION

The Diagnostic and Statistical Manual on Mental Disorders (DSM) represents the current thinking on the symptomology of mental illness, from the perspective of the American Psychiatric Association. The most recent version, DSM-5, was published in May 2013 after nearly two decades of research and a highly politicized revision process.¹ Intended primarily as an aid in the diagnosis and treatment of mental illness, the uses of the DSM have spilled over into research. The DSM has also become the *de facto* guide for forensic psychiatry.² Despite the strong language in the introduction to the DSM that advises otherwise, “the DSM is now regularly used unadulterated in forensic contexts”³

Having researched how judges sentence psychopaths in the past, it was curious to me that some judges would ignore any evidence of psychopathy, whether presented by the defense or the prosecution, because the diagnosis of psychopathy is not in the DSM.⁴ Despite the fact there is a validated diagnostic tool for

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¹ While not the focus of this paper, the authors of the DSM-5 were accused of having financial ties to the pharmaceutical industry, lacking transparency, and not being open to the criticisms of outsiders. Roger Collier, *DSM Revision Surrounded by Controversy*, 182 CANADIAN MED. ASS’N J. 16, 16–17 (2010). See also Lisa Cosgrove & Sheldon Krimsky, *A Comparison of DSM-IV and DSM-5 Panel Members’ Financial Associations with Industry: A Pernicious Problem Persists*, 9 PLOS MED. 1, 1 (2012) (“[I]ndustry relationships persist despite increased transparency. Currently, 69% of the DSM-5 task force members report having ties to the pharmaceutical industry.”); Ron Grossman, *Psychiatry Manual’s Secrecy Criticized*, L.A. TIMES (Dec. 29, 2008), <http://articles.latimes.com/2008/dec/29/nation/national-disorders29>, archived at <http://perma.cc/H6FC-PJ3F>.

² Daniel W. Shuman, *Softened Science in the Courtroom: Forensic Implications of a Value-Laden Classification*, in DESCRIPTIONS AND PRESCRIPTIONS: VALUES, MENTAL DISORDERS, AND THE DSMs 217, 218 (John Z. Sadler ed., 2002) (“[t]he DSM has not only become a staple presence of civil and criminal litigation, it has transformed that litigation as well. For example, the recognition of the diagnosis of post-traumatic stress disorder in the DSM-III transformed tort litigation resulting in a host of new claims tied to the diagnosis.”).

³ *Id.*

⁴ See Robert D. Hare et al., *Psychopathy and the DSM-IV Criteria for Antisocial Personality Disorder*, 100 J. ABNORMAL PSYCHOL. 391, 392–93 (1991) (“The lack of

psychopathy, the Psychopathy Checklist-Revised (PCL-R), the PCL-R is not incorporated verbatim into the DSM, so to many judges and legal scholars, the diagnosis is not “real.”⁵ This observation is troubling. Reliable labels are useful for mental illness diagnosis, and to a lesser extent to guide our legal decisions. Even so, and despite its clinical utility, it seems that judges and lawyers are being far too deferential to the DSM—to the exclusion of everything else.

To be sure, many legal rights and procedures hinge on whether the individual has a disorder that is recognized by the DSM.⁶ Convicts are executed⁷ and committed,⁸ custody battles are lost,⁹ disability benefits are awarded,¹⁰ children are

congruence between the *DSM-III-R* criteria for APD [antisocial personality disorder] and other well-established conceptions of psychopathy does not appear to have been intentional. Rather, this construct drift seems to have been the unforeseen result of reliance on a fixed . . . set of behavioral indicators in the *DSM-III* and the *DSM-III-R*. That is, the behavioral indicators do not provide adequate coverage of the construct they were designed to measure Criticisms of the *DSM-III-R* criteria for APD would be moot if there were no viable alternatives available. Over the last 10 years, however, a great deal of empirical evidence indicates that at least one viable alternative does exist—the PCL-R.”); Donald R. Lynam & David D. Vachon, *Antisocial Personality Disorder in DSM-5: Missteps and Missed Opportunities*, 3 PERSONALITY DISORDERS: THEORY, RES., & TREATMENT 483, 489 (2012).

⁵ Notably, Law Professor Deborah Denno questions why my co-authors and I used the “diagnosis” of psychopathy, when it is not recognized by the medical community, as expressed through its omission from the DSM. As she puts it, “the DSM is still considered a mainstay of the classification of psychiatric disorders, ‘the Bible of psychiatry, providing a scriptural basis for the profession.’” Deborah W. Denno, *What Real-World Criminal Cases Tell Us About Genetics Evidence*, 64 HASTINGS L.J. 1591, 1596–97 (2013) (quoting GARY GREENBERG, *THE BOOK OF WOE: THE DSM AND THE UNMAKING OF PSYCHIATRY* 15 (2013)).

⁶ “[T]he *DSM* is regularly relied upon by attorneys and referenced by courts in judicial proceedings. In fact, many state and federal statutes include definitions of mental illnesses based specifically on the diagnostic guidelines found in the *DSM* for use in both civil and criminal proceedings.” Cia Bearden, *The Reality of the DSM in the Legal Arena: A Proposition for Curtailing Undesired Consequences of an Imperfect Tool*, 13 HOUS. J. HEALTH L. & POL’Y 79, 80 (2012) (citations omitted).

⁷ *Atkins v. Virginia*, 536 U.S. 304, 308 n.3, 309 (2002), construed in *Thomas v. Allen*, 614 F. Supp. 2d 1257, 1262–63 (N.D. Ala. 2009), *aff’d*, 607 F.3d 749 (11th Cir. 2010).

⁸ See *People v. Felix*, 169 Cal. App. 4th 607, 614–15 (2008) (discussing how the DSM terminology generally determines the outcome of civil commitment proceedings); *In re Det. of New*, 21 N.E.3d 406, 411 (Ill. 2014) (discussing how revisions to the DSM may impact the civil commitment of sexually violent predators).

⁹ While not always clearly dispositive, courts rely heavily on whether a diagnosis is contained in the DSM when deciding expert testimony admissibility in custody battles. See *Zafran v. Zafran*, 740 N.Y.S.2d 596, 598 (2002); see also Matt Stroud, *Is the New ‘Bible of Psychiatry’ a Weapon for the Courts?*, THE VERGE (May 28, 2013, 12:00 PM), <http://www.theverge.com/2013/5/28/4370328/legally-unsound-a-book-meant-to-assist-doctors-becomes-a-weapon-in>, archived at <http://perma.cc/4PDE-D7XA>.

¹⁰ See *Brown v. Sec’y of Health & Human Servs.*, 948 F.2d 268, 270 (6th Cir. 1991).

denied educational accommodations,¹¹ and insurance benefits are refused¹² based upon the criteria contained in the DSM. It is difficult to overstate its prevalence and “linguistic dominance” in legal proceedings.¹³ As of 2014, the DSM has been cited in over 10,000 court cases and about 430 statutes.¹⁴ The regular reference to the DSM is particularly disturbing given that the DSM-5 has now expanded to include behaviors that were previously considered within the range of normal experience, such as bereavement¹⁵ and childhood defiance.¹⁶ At one time the DSM also included the diagnosis of homosexuality.¹⁷ As the editor of an earlier version stated when

¹¹ See *Jaffess v. Council Rock Sch. Dist.*, Civil Action No. 06-0143, 2006 WL 3097939, at *6 (E.D. Pa. Oct. 26, 2006) (“As to HJ’s purported learning disabilities, Dr. Lamberth stressed that: (1) the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) does not include a non-verbal learning disability among possible disorders”); see also *Roe v. Nevada*, 621 F. Supp. 2d 1039, 1048–49 (D. Nev. 2007).

¹² See CONN. GEN. STAT. ANN. § 38a-488b (West 2012) (requiring that health insurance plans provide coverage for autism treatments, as autism is defined by the DSM). This will impact people previously diagnosed with Asperger’s disorder, who now may “fall outside of DSM-5 severity thresholds for receiving state-funded, school-supported, and/or insurance-covered services for their developmental, social, and communication deficiencies.” Kristine M. Kulage et al., *How Will DSM-5 Affect Autism Diagnosis? A Systematic Literature Review and Meta-analysis*, 44 J. AUTISM DEV. DISORDER 1918, 1930 (2014). Most states do not require parity between health insurance coverage of mental and physical illnesses. In many states, like Kansas, even where statutes are passed that require parity in health insurance coverage between mental and physical illness, the statutes limit coverage to those diagnoses that are included in the DSM. See KAN. STAT. ANN. § 40-2,105a (West 2008); NAT’L ALLIANCE ON MENTAL ILLNESS, MENTAL HEALTH INSURANCE COVERAGE: A GUIDE TO STATE PARITY LAW 3–4, available at http://www.nami.org/Content/ContentGroups/Policy/Issues_Spotlights/Parity1/Mental_Health_Insurance_Coverage_A_Guide_to_State_Parity_Law1.htm, archived at <http://perma.cc/F5BV-B8RD> (last visited Jan. 27, 2015).

¹³ “As partial custodians of the state’s police power, mental health professionals may separate parents from their children through expert testimony in custody hearings or may deprive persons of physical liberty through the process of involuntary commitment. As their ‘special language’ for communicating about mental disorders . . . , the DSM-III also confers upon professionals the power of linguistic dominance, serving as a private communication mode that helps to preserve and promote acceptance of their beliefs and value systems.” Thomas E. Schacht, *DSM-III and the Politics of Truth*, 40 AM. PSYCHOLOGIST 513, 514 (1985) (citation omitted).

¹⁴ This is based on a Westlaw search requiring the use of “Diagnostic and Statistical Manual” using all states and all federal cases and statutes.

¹⁵ Jerome C. Wakefield & Michael B. First, *Validity of the Bereavement Exclusion to Major Depression: Does the Empirical Evidence Support the Proposal to Eliminate the Exclusion in DSM-5?*, 11 WORLD PSYCHIATRY 3, 3 (2012).

¹⁶ Robert R. Althoff et al., *Classes of Oppositional-Defiant Behavior: Concurrent and Predictive Validity*, 55 J. CHILD PSYCHOL. & PSYCHIATRY 1162, 1162–63 (2014).

¹⁷ Consider also, for example, the oft-cited example of homosexuality being inserted and then removed from the DSM since the DMS-I. It once was considered deviant enough of sexual behavior to count as a mental illness, but now, under the DSM, it no longer fits the definition of mentally disordered. For a thorough discussion of the many ways that values

discussing the DSM-5, “[t]he history of psychiatry is littered with fad diagnoses that in retrospect did far more harm than good.”¹⁸

Given its importance to the law, it is regrettable that judges and lawyers do not fully understand how the DSM is constructed, and the bedrock of values on which it rests.¹⁹ As evidence of this, lawyers and judges often refer to the DSM as the “psychiatric bible.”²⁰ This language is both fascinating and perplexing. It is *fascinating* because the metaphor of the bible commands reverence. It suggests that therapists treat the DSM as a canonical text, akin to the way American lawyers treat the U.S. Constitution. The metaphor is *perplexing* because it confers faith-based power on a document that is not only completely unsacred to psychotherapists,²¹ but indeed is so regularly criticized in its production, content, and philosophy that its criticisms have become cliché.²²

and cultural biases are incorporated into the DSM, see Thomas A. Widiger, *Values, Politics, and Science in the Construction of the DSMs*, in DESCRIPTIONS AND PRESCRIPTIONS: VALUES, MENTAL DISORDERS, AND THE DSMs 25, 29 (John Z. Sadler ed., 2002).

¹⁸ Allen J. Frances, *DSM 5 Is Guide, Not a Bible—Ignore Its Ten Worst Changes*, PSYCHOL. TODAY (Dec. 2, 2012), <http://www.psychologytoday.com/blog/dsm5-in-distress/201212/dsm-5-is-guide-not-bible-ignore-its-ten-worst-changes>, archived at <https://perma.cc/4HVD-45HY>.

¹⁹ The DSM has been challenged for being sexist as well as representing hegemony. See Marcie Kaplan, *A Woman’s View of DSM-III*, 38 AM. PSYCHOLOGIST 786, 788–91 (1983) (arguing that a contributor to sex differences in mental illness treatment rates is the DSM-III); Janet M. Stoppard, *Sexism and the DSM-III-R*, 32 CANADIAN PSYCHOL. 148, 148–50 (1991) (stating that recognizing certain disorders would redress the sexist bias of the DSM-III-R); see also Shuman, *supra* note 2, at 217–18 (explaining that the DSM has become a staple in civil and criminal litigation).

²⁰ “The *Diagnostic and Statistical Manual of Mental Disorder* (aka ‘DSM’) is the mental health field’s diagnostic bible. Like the *AMA Guides to the Evaluation of Permanent Impairment* . . . , the *DSM* is received in courts as black letter truth.” Warren Moise, *Shrink Rap*, 20 S.C. LAW., Mar. 2009, at 13, 13.

²¹ According to Dr. Vivek Datta, “It is an open secret that most psychiatrists do not [use the DSM]!” Vivek Datta, *Does DSM-5 Matter? Yes, but not to Psychiatrists.*, MED. & SOC’Y BLOG (May 13, 2013, 12:40 AM), <http://canardtheduck.blogspot.com/2013/05/does-dsm-5-matter-yes-but-not-to.html>, archived at <http://perma.cc/BBE9-JS7M>. See also Mark Zimmerman & Janine Galione, *Psychiatrists’ and Nonpsychiatrist Physicians’ Reported Use of the DSM-IV Criteria for Major Depressive Disorder*, 71 J. CLINICAL PSYCHIATRY 235, 235–36 (2010) (reporting that nearly one-quarter of the psychiatrists indicated that they usually did not use the DSM-IV major depressive disorder criteria when diagnosing depression).

²² See Schacht, *supra* note 13, at 520 (arguing for a position that permits fuller recognition of the scientific and political complexities of the DSM, instead of political attack rhetoric); Arthur Caplan, *Viewpoint: Stop Critiquing the DSM 5*, TIME (May 21, 2013), <http://ideas.time.com/2013/05/21/viewpoint-stop-critiquing-the-dsm-5/>, archived at <http://perma.cc/EKV3-5SDW> (“Not since the critics uniformly declared Adam Sandler’s *Jack and Jill* ‘the worst movie ever made’ long before it actually was shown in a theater has

Part II of this Article will attempt to correct the notion that the DSM is a legal “psychiatric bible” by explaining how it is created and used by the medical field. Parts III and IV will also provide a few reasons why the law may have come to view it as a “bible.” This is the primary focus of this article. Parts V and VI consider the future of psychiatric diagnosis, and describe an alternative to the DSM, empowered by a new research tool called the Research Domain Criteria (RDoC). While the DSM may be an imperfect legal tool, this Article calls for a more nuanced application of its diagnoses rather than abandoning it whole cloth in favor of the RDoC, or any other singular diagnostic criteria.

II. THE DSM IS NOT A BIBLE, BUT A DICTIONARY

As a threshold matter, the entire idea of what *counts* as a mental illness is one that is not obvious or self-revealing.²³ Should behavior be classified as characteristic of mental illness if it *impairs* important and complex *functions*, such as thinking and feeling? Is it behavior that falls below an arbitrary, yet *statistically-driven* measurement of normal (i.e., anyone two standard deviations below the mean of a distributional function)? Is it behavior that is antisocial, and therefore *morally judged*? Or should it be determined without reference to behavior, based solely on underlying dysfunction in *brain circuits* and *genetic mutations*? Most psychologists are committed to definitions of mental illness that focus on abnormal behavioral impairment.²⁴ Even so, the subjective assessment of which behaviors count as normal and which are disordered is inescapable. This same conundrum exists at the opposite end of the spectrum when one attempts to distinguish *treatment* of mental illness from *enhancement*. When is a legitimate illness being treated (Adderall for attention disorders), and when are people being catapulted to be above average (Adderall for cognitive enhancement)? These judgment-calls depend greatly on an underlying baseline of what “counts” as disordered.

something not yet put out in public gotten such full-throated critical panning.”); Frances, *supra* note 18 (advising practitioners not to blindly follow the DSM-5).

²³ See Allyson Skene, *Rethinking Normativism in Psychiatric Classification*, in DESCRIPTIONS AND PRESCRIPTIONS: VALUES, MENTAL DISORDERS, AND THE DSMs 114, 114 (John Z. Sadler ed., 2002) (“At the most general level, terms that describe the domain of psychopathology, such as *disorder*, *dysfunction*, and *impairment*, connote specific values. A more specific example would be *personality disorder*, which is defined as an ‘enduring pattern of inner experience and behavior that deviates markedly from the expectations of the individual’s culture.’”) (citation omitted); Laurence J. Kirmayer & Daina Crafa, *What Kind of Science for Psychiatry?*, 8 FRONTIERS HUM. NEUROSCIENCE 435, 435 (2014) (discussing the current psychiatric issues of understanding mental disorders).

²⁴ See *Mental Health Basics*, CTRS. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/mentalhealth/basics.htm>, archived at <http://perma.cc/7XKH-HCUE> (last visited Mar. 4, 2015). Indeed, the law is chiefly concerned with behavior as well. Laws regulate people, not brains. If a defect exists in the brain or genes, and there is no corresponding behavioral deficit, then there is a strong claim to be made that the defect is irrelevant to the law.

Importantly, the DSM manual is based on the consensus of a small group of psychiatrists (not psychologists, psychotherapists, or social workers).²⁵ It necessarily reflects the social norms and research agendas of this group, and much has been written on the cultural values that underscore the DSM. What is obvious to psychiatrists may not be obvious to lawyers: the authors of the DSM bring their personal beliefs to the publication process, and may have very different ideas of which factors to include in diagnosing mental illness.²⁶

The DSM provides one important and useful perspective on what counts as mentally disordered. However, ultimately for the law this is not a question that science or data can answer. Because criminal defenses of insanity receive so much media attention, it must be acknowledged that the DSM contains no reference to legal insanity. At first blush, this might suggest that in capital cases, when the reliance on psychiatric testimony might matter most to save someone's life from execution, the DSM is silent. This supposition would be incorrect. While tempting to conflate legal and medical definitions of mental illness, the definition of legal insanity, as interpreted through the M'Naughten Test²⁷ or Model Penal Code²⁸ is not a psychological construct.²⁹ Psychologists do not diagnose patients as "insane," and

²⁵ The DSM is published by the American Psychiatric Association under the direction of a group of its task force members. See *Frequently Asked Questions*, AM. PSYCHIATRIC ASS'N, <http://www.dsm5.org/about/pages/faq.aspx>, archived at <http://perma.cc/KR8Z-FURX> (last visited Mar. 9, 2015).

²⁶ John Z. Sadler, *Introduction*, in DESCRIPTIONS AND PRESCRIPTIONS: VALUES, MENTAL DISORDERS, AND THE DSMs 3, 3–8 (John Sadler Z. ed., 2002); see also Kenneth W.M. Fulford et al., *Looking with Both Eyes Open: Fact and Value in Psychiatric Diagnosis?*, 4 WORLD PSYCHIATRY 78, 78 (2005) ("[A]s early as the fourth century BC, mental health, in Plato's Republic, had both medical and moral aspects . . . [M]ental disorder has shifted this way and that across the medical-moral boundary, and in both Christian and Islamic culture, ever since.").

²⁷ The most common test for criminal insanity is the M'Naghten "right-wrong" test. To prove legal insanity, the test requires that the defendant be suffering from a mental disorder that he did not "know the nature and quality of the act he was doing, or if he did know it that he did not know he was doing what was wrong." 1 WAYNE R. LAFAYE, SUBSTANTIVE CRIMINAL LAW § 7.2 (West Group ed., 2d ed. 2003).

²⁸ Under the Model Penal Code test for insanity, a defendant is not legally responsible if at the time of his criminal conduct, and "as a result of mental disease or defect he lacks substantial capacity either to appreciate the criminality (wrongfulness) of his conduct or to conform his conduct to the requirements of law." 2 CHARLES E. TORCIA, WHARTON'S CRIMINAL LAW § 104 (15th ed. 1994). The first section of the Model Penal Code test "is really only a summary of the whole of M'Naghten in more comprehensive terms." *Id.* (citations omitted).

²⁹ See also *Bonnifield v. Lewis*, No. C12–3857 PJH (PR), 2014 WL 1101658, at *8 (N.D. Cal. Mar. 18, 2014) ("[T]here's a substantial difference between someone who's medically insane and someone who's legally insane.") (citation omitted); *State v. Silman*, 663 So. 2d 27, 34–35 (La. 1995) ("[B]y the [American Psychiatric Association's] own principles, a person clinically diagnosed with a particular mental disorder does not in itself determine that the person was legally insane at the time the crimes were committed . . . the

“insanity” appears nowhere in the DSM.³⁰ Even so, criminal defendants *do* rely on psychiatric testimony of particular DSM diagnoses, usually schizophrenia or dissociative personality (so-called, “split personality”), to argue that their diagnosis and related symptoms render them legally insane or incapable of forming the specific intent to kill.³¹

The DSM is a helpful aid in the diagnosis of everything from depression and anxiety to organic brain disease and autism. The manual is organized to aid in reliable diagnosis in an iterative way, meaning that the therapist and the patient can “try out” different diagnoses and see which seems to fit. The DSM privileges reliability over validity, meaning that its aim is to make sure mental health specialists are using the same terms to describe similar constellations of traits.³² At the moment, the DSM does not address whether anxiety disorder is completely separate from depression in etiology or cause—i.e., whether the constructs are valid and separate from one another. While a few disorders are presented in the DSM as existing on a continuum, such as the Autism Spectrum Disorder, most diagnoses are considered justified in a binary way (present, not present) if a patient meets a specified number of listed criteria.³³

Importantly, the DSM diagnoses do not represent validated “theories” of mental illness. Diagnoses such as autism, gambling disorder, obsessive-compulsive disorder, and narcissism are not theories, but labels. Both for questions related to

issue before this court is not whether defendant suffered from a particular psychiatric personality disorder, but rather whether the defendant was able to distinguish right from wrong at the time of the offenses.”).

³⁰ See Mark P. Goodman, *The Right to A Partisan Psychiatric Expert: Might Indigency Preclude Insanity?*, 61 N.Y.U. L. REV. 703, 717–18 (1986) (explaining that psychiatrists outside the legal context are not asked to determine whether a person is sane or insane).

³¹ The latter, while technically a means of poking holes in the prosecution’s ability to prove *mens rea*, is often discussed alongside insanity defenses. For an overview of how claims of legal insanity have relied on DSM diagnoses, see, for example, *Weaver v. Chappell*, No. 1:02–cv–05583 AWI, 2014 WL 1232208, at *10 (E.D. Cal. Mar. 24, 2014); *United States ex rel. Bradford v. Gilmore*, No. 98 C 1593, 2000 WL 549489, at *6 (N.D. Ill. May 1, 2000); *People v. Coddington*, 2 P.3d 1081, 1110–11 (Cal. 2000); *People v. Skinner*, 704 P.2d 752, 763 (Cal. 1985); *People v. Gomez*, E056133, 2013 WL 6797764, at *10 (Cal. Ct. App. Dec. 24, 2013); *Davis v. State*, 121 So. 3d 462, 474 (Fla. 2013); *People v. Houseworth*, 903 N.E.2d 1, 8–14 (Ill. App. Ct. 2008); *State v. McCarroll*, No. 88AP-978, 1989 WL 155215, at *10 (Ohio Ct. App. Dec. 21, 1989).

³² Giovanni A. Fava et al., *The Missing Link Between Clinical States and Biomarkers in Mental Disorders*, 83 PSYCHOTHERAPY & PSYCHOSOMATICS 136, 136 (2014).

³³ AM. PSYCHIATRIC ASS’N, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS 646 (5th ed. 2013) [hereinafter AM. PSYCHIATRIC ASS’N, DSM-5] (“The diagnostic approach used in this manual represents the categorical perspective that personality disorders are qualitatively distinct clinical syndromes.”); Thomas A. Widiger & Douglas B. Samuel, *Diagnostic Categories or Dimensions? A Question for the Diagnostic and Statistical Manual of Mental Disorders—Fifth Edition*, 114 J. ABNORMAL PSYCHOL. 494, 494 (2005).

admissibility of psychological testimony as well as how the jury interprets these diagnoses, this is a crucial distinction. Unfortunately, “some experts have misled courts to believe falsely that the existence of a diagnostic label [in the DSM] somehow proves general acceptance of the existence of the described disorder,” when there *is* no acceptance.³⁴ Rather than representing psychological theories that are falsifiable, the “[DSM] is simply an agreed upon set of terms and descriptions—a catalog.”³⁵ As two researchers put it, when explaining that the DSM contains labels and not valid theoretical constructs: “the word *unicorn* is in the dictionary and we all agree on the concept and description of a unicorn, but this surely does not document the existence of unicorns.”³⁶ The same is true with diagnoses that appear in the DSM.

Let us turn now to the contents of the catalog to better understand how it facilitates diagnosis. While there are too many diagnoses to unpack them all, an examination of Post-Traumatic Stress Disorder (PTSD) reveals the subjective line-drawing that is a necessary component of the DSM. The DSM diagnosis of PTSD contains eight criteria (A–H).³⁷ In addition to persistent re-experiencing of the traumatic event, the patient must also meet at least one of several criteria related to stress, avoidance, functional deficits lasting at least one month that are not caused by drugs, as well as two criteria each related to negative mood and arousal alterations.³⁸ While the criteria may seem meticulous, they are also arbitrary. Why are two criteria for arousal alterations required for a PTSD diagnosis, but only one criterion related to intrusiveness of the traumatic memories? And why is one month of symptoms required over two, six, or twelve? The answer is that the DSM, while modestly field-tested, is really just a helpful starting point for mental health professionals and by no means a sacred “bible” to be rigidly followed.

The DSM does not reveal hidden truths about mental disorders based on empirical data. Rather, it captures the evolution of thinking on mental illness, incorporating current practices and responding to social values. Because the DSM has not changed much in its nosology since 1980, the DSM can be thought of as an evolving compendium of values and data based on precedent and something like *stare decisis*. In this way, it resembles the common law more than a statute. This metaphor is important, because just as judges can distinguish a controlling case

³⁴ William M. Grove & R. Christopher Barden, *Protecting the Integrity of the Legal System: The Admissibility of Testimony From Mental Health Experts Under Daubert/Kumho Analyses*, 5 PSYCHOL., PUB. POL’Y, & L. 224, 230 (1999). Judges assume that because the DSM is the diagnostic manual approved by the American Psychiatric Association, it is “generally accepted” in the relevant scientific community, which is the alternative to *Daubert’s* test for admissibility of expert evidence.

³⁵ *Id.*

³⁶ *Id.*

³⁷ PTSD: National Center for PTSD: DSM-5 Criteria for PTSD, U.S. DEP’T OF VETERANS AFFAIRS, http://www.ptsd.va.gov/professional/PTSD-overview/dsm5_criteria_ptsd.asp, archived at <http://perma.cc/238L-9RY2> (last visited Jan. 27, 2015).

³⁸ *Id.*

under the common law, so too can psychologists distinguish their patient's set of symptoms from those technically required by the DSM. For policy reasons, psychologists also engage in DSM nullification; they choose not to adhere to the DSM if its rigid prescriptions fail to label their patient's constellation of traits in the way they personally think is appropriate.

The DSM evolves from version to version, but is deeply rooted in an account of mental illness that relies on self-reports of symptoms, rather than on etiology or cause.³⁹ "It has been widely accepted that etiological diagnosis of medical illness is superior to syndromal (symptom-based) diagnosis."⁴⁰ However, there are currently no clinical lab tests that can be used by therapists to diagnose psychiatric disorders.⁴¹ Describing the DSM as reliant on self-reports is not meant to disparage it. If valid and reliable biomarkers or causal explanations for mental illness do not exist, how else might illness be diagnosed, if not through self-reports and clinical observation? Should individuals be followed around with surveillance cameras, and *then* have their behavior assessed based upon the footage? Clinical observation and self-reports are currently the best methods available, but the limitations of these methods must be understood when the DSM is employed in forensic contexts.

Psychiatrists and psychologists appreciate that the DSM is not a bible. It simply provides a diagnostic starting point and convenient set of labels and criteria for comparisons between clinics and patients. If a patient meets most of the criteria for bipolar disorder, but technically not enough criteria to be considered bipolar under the DSM, many psychologists would lose little sleep diagnosing this person with this disorder.⁴² There is nothing inherently magical, or diagnostically more valid, in a patient that has five, rather than six, of the listed DSM criteria.

If you ask a mental health practitioner what she thinks of the idea that the DSM is considered by lawyers to be the "psychiatric bible," you will likely be met with a befuddled face. The DSM is our *bible*?⁴³ The fact that lawyers refer to the DSM as the psychiatric bible is evidence of excessive legal deference, especially given that

³⁹ Sadler, *supra* note 26, at 15–17.

⁴⁰ Shaheen E. Lakhan et al., *Biomarkers in Psychiatry: Drawbacks and Potential for Misuse*, 3 INT'L. ARCHIVES MED. 1, 1 (2010).

⁴¹ Izabela Sokolowska et al., *The Potential for Biomarkers in Psychiatry: Focus on Proteomics*, 122 J. NEURAL TRANSMISSION (ISSUE 1 SUPP.) 9, 9 (2015), available at <http://dx.doi.org/10.1007/s00702-013-1134-6>, archived at <http://perma.cc/9QBF-KFLB> ("[T]here is still no biological diagnostic test available for any mental disorder."); see Lakhan, *supra* note 40, at 1.

⁴² The author had various personal conversations with psychiatrists such as Brent Kiouss, M.D., and Jan Terpstra, M.D., who expressed these concerns with the use of the term "psychiatric bible," precisely because the DSM is just a "starting point" not an "ending point" for clinical diagnosis of mental illness. See also Frances, *supra* note 18 (criticizing many of the changes in DSM-5).

⁴³ Perhaps the DSM may be considered the psychiatric bible only in so far as the DSM labels are used for the holy grail of clinical practice: insurance reimbursement. See NAT'L ALLIANCE OF MENTAL ILLNESS, *supra* note 12, at 4–5 (citing the DSM as a common reference for defining covered conditions).

the medical profession itself is not so deferential to the manual, and given that the manual cautions specifically against use in forensic settings.⁴⁴

III. SO WHY THEN IS THE LAW SO DEFERENTIAL TO THE DSM?

Policymakers rely heavily on definitions of mental illness contained in the DSM when creating statutes, and judges dismiss psychological diagnoses that are not contained in the DSM.⁴⁵ Apart from surveying policymakers and judges about the reasons for this, there seem to be at least three different reasons that can be deduced from the traditional goals of litigation, regulation, and punishment. The first reason finds its roots in the legal system's desire for efficiency, the second in its acknowledgment of different institutional competencies, and the third in a deep distrust for the unobservable, or anything relying overtly on psychologists.

First, the desire for efficiency is an obvious reason that lawyers came to rely so heavily on the DSM.⁴⁶ Without the DSM, there is a concern that judges would spend too much time trying to decipher whether someone's mental illness is real or imagined. Given that most biological functions exist on a continuum, some believe that without the appearance of objectivity that the DSM provides, it would be administratively impossible to distinguish those who are truly mentally disordered from those who are merely a tad below average. Using psychiatric diagnosis, as interpreted through the lens of the DSM, provides clear, if arbitrary, cut-off points for when someone is considered legitimately mentally disordered. This would no doubt be very attractive to judges, who need a principled basis for labeling one person mentally ill, perhaps even legally insane based on a diagnosis of schizophrenia, while labeling someone else merely low-functioning or simply criminal.

⁴⁴ The DSM-5 contains a page-long "Cautionary Statement for Forensic Use of DSM-5." AM. PSYCHIATRIC ASS'N, DSM-5, *supra* note 33, at 25. The DSM-IV contained a similar, though shorter, warning. AM. PSYCHIATRIC ASS'N, DIAGNOSTIC AND STATISTICAL MANUAL OF MENTAL DISORDERS, at xxxii–xxxiii (4th ed. 1994). Though hardly representing the majority, there are fortunately examples of courts that have been responsible in heeding the advice of the American Psychiatric Association. *See, e.g.*, *State v. Horne*, 679 So. 2d 953, 961 (La. Ct. App. 1996).

⁴⁵ Laura Freberg, *How Should DSM-5 Be Used in Forensics?*, ANSWERS, <http://psych.answers.com/abnormal/how-should-dsm-5-be-used-in-forensics>, archived at <http://perma.cc/W5C8-EHJB> (last visited Jan. 27, 2015); *see also* *People v. Houseworth*, 903 N.E.2d 1, 13–14 (Ill. App. Ct. 2008). There is one notable exception, where the Supreme Court allowed Arizona to prefer descriptions of mental illness rather than diagnostic labels in case where the defendant was claiming legal insanity. Commentators remarked that this was due to skepticism about the validity of all psychological testimony, as well as exhibiting concerns about the validity of DSM criteria. *See* *Clark v. Arizona*, 548 U.S. 735, 774 (2006).

⁴⁶ *See* Allen Frances et al., *Defining Mental Disorder When It Really Counts: DSM-IV-TR and SVP/SDP Statutes*, 36 J AM. ACAD. PSYCHIATRY & L. 375, 375–84 (2008) (discussing the difficulty in drawing "bright-line" rules between mentally ill and criminal definitions).

The second reason that lawyers came to rely so heavily on the DSM is an acknowledgment of institutional competencies. While the DSM might not be considered a “bible” to the psychotherapist community, it still designates the best working labels for the symptoms of mental illness, as defined by the American Psychiatric Association. It seems like a very tall order to impose upon generalist lawyers the requirement that they second-guess the authority of the DSM, which, after all, is published (for-profit) by a well-respected arm of the psychiatric profession. But this *is* the job of the trial judge, in the federal courts and state courts that follow *Daubert*.⁴⁷ Following *Daubert*, only expert testimony that is based on sound, reliable, and testable scientific methods should be admitted. While the DSM diagnoses are not themselves testable theories, the nosology upon which they rest and the inter-rater reliability of the classification system itself should be subjected to the rules of evidence pertaining to expert testimony. Conclusions, or diagnoses, that have no sound basis in scientific methodology should not be admitted.⁴⁸

Unfortunately, when judges fail to properly evaluate the admissibility of psychological theories, advocates relying on the DSM are allowed to conflate the goals of clinical treatment with the goals of the legal system. In a clinical setting, the cost of providing an incorrect diagnosis may be trivial. The patient may have to experience the side effects of an ineffective drug, or spend a month working on cognitive strategies that may or may not work. But the cost of getting it wrong in the legal system may be much more consequential. When inferences are drawn about individuals based on group data in capital cases, there is a risk of yielding false negatives that might lead to someone’s death, or at the very least may make them ineligible for certain government benefits. False positives, on the other hand, may result in a mother losing custody of her children or someone being civilly committed. Clearly, the risks of getting it wrong are not symmetrical in the clinical and legal settings. Such a small group of psychiatrists should not be excessively deferred to when deciding whether the legal costs of false positives and false negatives are worth it.

The third related reason legal processes defer so much to the DSM is that in addition to the difficulty differentiating true mental illness from normal behavior, one cannot *see* mental illness. It is not measurable and observable in the same way crime scene DNA, security camera footage, or telephone records are. Christopher Slobogin has noted the difficulty in determining whether someone has a relevant mental disorder, and has referred to this pursuit as an effort to “prove the

⁴⁷ Grove & Barden, *supra* note 34, at 226.

⁴⁸ Gen. Elec. Co. v. Joiner, 522 U.S. 136, 146 (1997) (“[C]onclusions and methodology are not entirely distinct from one another. Trained experts commonly extrapolate from existing data. But nothing in either *Daubert* or the Federal Rules of Evidence requires a district court to admit opinion evidence that is connected to existing data only by the *ipse dixit* of the expert. A court may conclude that there is simply too great an analytical gap between the data and the opinion proffered.”).

unproveable.”⁴⁹ People rarely “look crazy,” even though the public has demanded that a mentally ill defendant comport with its visual images of “craziness.”⁵⁰

Because self-reports of mental illness are notoriously unreliable, lawyers, judges, and policymakers have been tantalized by the idea of bypassing self-reports, to look directly at biomarkers, or measurable biological indicators, of mental illness. The last century was riddled with examples of premature attempts to prove mental illness through the contours (phrenology) or images (brain scans) of a litigant’s brain, or through an assessment of his genes (Fragile X syndrome and the MAOA allele).⁵¹ We are desperate for a biological test for mental illness that does not rely on the credibility of the person testifying.

The desire for objectivity and direct observation of mental illness is intriguing. Why are we so wary of the self-described default functioning of someone’s mind, as opposed to what someone says she saw, heard, or remembered? Is not this latter type of testimony, common and unscientific, also the product of mental processes that cannot be directly observed?

While there are certainly reasons to be skeptical of eyewitness testimony, we somehow intuitively feel that a lay jury can ferret out liars through observing the witness’s mannerisms on the stand. We are confident in our human capacity to read people in this way, even though studies show we are no better than a coin toss at detecting lies.⁵² If we place so much faith in the jury’s ability to assess a witness’s veracity, despite the evidence that we are not good at it, then why do we not trust the trial system to also ferret out psychological malingerers, acknowledging that we might not be very good at that either? There seems to be something unique about the public’s distrust of people, usually defendants, who claim to be mentally ill. There also seems to be something unique about testimony that is relayed through expert psychologists or psychiatrists.

The skepticism toward psychological science manifests in paradoxical ways: judges and evidence scholars worry juries may give therapists’ testimony too much

⁴⁹ CHRISTOPHER SLOBOGIN, PROVING THE UNPROVABLE: THE ROLE OF LAW, SCIENCE, AND SPECULATION IN ADJUDICATING CULPABILITY AND DANGEROUSNESS 64–66 (2007).

⁵⁰ Michael L. Perlin, *Unpacking the Myths: The Symbolism Mythology of Insanity Defense Jurisprudence*, 40 CASE W. RES. L. REV. 599, 724–25 (1990).

⁵¹ See Teneille Brown & Emily Murphy, *Through a Scanner Darkly: Functional Neuroimaging as Evidence of a Criminal Defendant’s Past Mental States*, 62 STAN. L. REV. 1119, 1122 (2010); see also Erica Beecher-Monas, *Circumventing Daubert in the Gene Pool*, 43 TULSA L. REV. 241, 241–42 (2007) (explaining courts’ skepticism of the use of genetic testing may be due in part to the “long shadow cast by the eugenics movements and eugenicists’ racial biases”); William Bernet et al., *Bad Nature, Bad Nurture, and Testimony Regarding MAOA and SLC6A4 Genotyping at Murder Trials*, 52 J. FORENSIC SCIENCE 1362, 1362 (2007) (explaining that “[e]arly attempts to explain criminal behavior on the basis of inherited genetic predisposition focused on phenotype rather than genotype”).

⁵² Aldert Vrij & Simon Easton, *Fact or Fiction? Verbal and Behavioural Clues to Detect Deception*, 70 MEDICO-LEGAL J. 29, 29 (2002).

weight,⁵³ but in reality judges (and jurors) do not give this testimony much weight at all.⁵⁴ If it is true that jurors are skeptical of psychological science and expert testimony, then it would seem that there is not much harm in allowing them to hear about patterns of symptoms and the testimony of family and friends, as opposed to requiring that those symptoms coalesce around a predetermined label.⁵⁵ Why not endorse a plurality of methods and diagnoses, rather than relying nearly exclusively on the DSM? The question is a tricky one, and not one that lends itself to pithy answers.⁵⁶ Ultimately, however, it comes back to mistrust to things that are often associated with psychologists, and the “soft sciences.”⁵⁷

We do not trust the personal injury plaintiff who claims she suffers from PTSD and anxiety. We do not trust the father who accuses the mother of being bipolar and narcissistic, so that he can have sole custody of their children. We do not trust the

⁵³ “[I]n *Clark v. Arizona*, the Supreme Court . . . held that Arizona’s rule prohibiting consideration of evidence of mental illness in determining the presence of the requisite mens rea did not violate due process. In doing so, the Court advanced thin countervailing concerns that ultimately are insufficient to outweigh defendants’ due process rights, revealing a deep skepticism of contemporary psychiatry.” *Leading Cases—Required Scope of Insanity Defense*, 120 HARV. L. REV. 125, 223 (2006) [hereinafter *Leading Cases*].

⁵⁴ See, e.g., Scott E. Sundby, *The Jury as Critic: An Empirical Look at How Capital Juries Perceive Expert and Lay Testimony*, 83 VA. L. REV. 1109, 1124–43 (1997); see also Goodman, *supra* note 30, at 721–22 (“[T]he judiciary has been highly skeptical of the psychiatrists upon whom it must rely . . . ‘given the lack of certainty and the fallibility of psychiatric diagnosis, there is a serious question as to whether a state could ever prove beyond a reasonable doubt that an individual is both mentally ill and likely to be dangerous.’ . . . Indeed, the Court was of the opinion that the ‘subtleties and nuances of psychiatric diagnosis’ usually render accurate diagnosis an illusory goal.”) (citation omitted); *Leading Cases*, *supra* note 53, at 231 (“[N]either Arizona nor the Court has reason to fear that jurors will rely excessively on expert psychiatric opinion. Post-trial surveys of jurors reveal, if anything, greater—or at least more candid—skepticism of expert psychiatric testimony than that exhibited by the *Clark* Court.”).

⁵⁵ There is evidence that expert testimony on mental illness is most powerful when combined with narratives from lay witnesses such as family and friends. See Sundby, *supra* note 54, at 1135, 1163–64.

⁵⁶ Our reluctance to entertain mental illness as a cause of behavior may stem from vague notions of Cartesian dualism, or the idea that the body is separate from mind. The law cares about the body, and is suspicious of those who are seeking to “get off” by pointing to something errant in their brains. See Denno, *supra* note 5, at 1593 (warning of fears that defendants may be “let off the hook” due to predispositions).

⁵⁷ See *Leading Cases*, *supra* note 53, at 231–32 (2006) (“[T]here is something inherently tenuous about psychiatry that makes evidence concerning it, as opposed to other scientific disciplines, per se excludable as unreliable.”). As mentioned above, this is in contrast to the acceptance of so many types of psychological testimony that are not perceived as “psychological.” For example, witnesses may also mangle about their experience of grief, pain, or remorse, and yet we do not require psychological experts to validate these claims. These are often taken, unexamined, as reliable and valid, and not even viewed as “psychological” evidence.

woman seeking social security benefits based on her paranoia or severe depression. In these types of cases, we do not trust that through someone's testimony alone, and its cross-examination, we will be able to access the truth.⁵⁸ And yet, we are confronted with a legal system where jurors and judges are routinely expected to be able to engage in "theory of mind" and determine the sincerity of others' claims.⁵⁹

There are no doubt other reasons that the law has been so deferential to the DSM. But efficiency, institutional competence, and the fear of malingering seem to be the three most prominent. These three reasons are powerful justifications for endorsing the DSM. These concerns of efficiency, institutional competence, and the fear of malingering do not disappear if a diagnostic system like the RDoC, that focuses instead on neurobiology and genetics, is endorsed.

Despite the lack of validity in the DSM diagnoses, it would be misguided to abandon their use completely in forensic contexts. However, judges and lawyers should recognize three things about the DSM. The first is that there are many real phenomena that do not make their way into the DSM. Second, there are also many diagnoses that are in the DSM, which may be little more than a "diagnostic fad." Third, mental illness, like most biological phenomenon, exists on a spectrum. Most of us have disordered thoughts or emotions to some degree, and these symptoms might wax and wane in parallel with other stressors in our lives. Mental illness is not binary; it is not cleanly present or absent. Once these three important caveats of the DSM have been factored in, there is still a place for the DSM in trials, statutes, and regulations. Rather than dismissing the testimony of a party or expert because what they describe is not in the DSM, the judge ought to serve as the evidentiary gate-keeper based on general principles of reliability and validity, and then let the fact-finder decide whether to give any weight to the testimony. This is not a controversial idea; this is precisely what many judges are already required to do. In legislative settings, policymakers need to think critically about why inclusion in the DSM might be required, and when requiring a DSM diagnosis might undercut justice.

⁵⁸ Despite the fact that opposing experts disagree all of the time on subjects such as causation and breach in torts, there is something particularly unsettling about two psychologists who disagree about whether the criminal defendant is "insane." This is despite the fact that "insanity" is a legal construct, not a medical one, so it is not surprising that psychologists waffle when using legal, rather than clinical, terms. Even so, high profile cases where the experts disagree seem to fuel the general skepticism toward psychological expert testimony. See Perlin, *supra* note 50, at 652–53.

⁵⁹ "[Theory of mind], or mentalizing, is the ability to consider the mental states of others, and recognize that not only are they different from yours, but in fact they might be in conflict with the individual's overt speech or behavior (i.e., she might be lying). . . . Theory of mind is crucial for making all kinds of credibility determinations. Specifically, determining 'culpability and liability frequently requires inferences about the motives, goals, intentions, and emotions of the actors involved.'" Teneille R. Brown, *The Affective Blindness of Evidence Law*, 89 DENV. U. L. REV. 47, 94–95 (2011) (citation omitted).

IV. DEVELOPMENT OF THE DSM: THE EVOLUTION OF CLINICAL PSYCHIATRIC DIAGNOSIS AND HOW IT BECAME A POOR MIRROR OF NATURE

In order to understand and then critique the over-reliance by lawyers on the DSM, it is important to know more about how the DSM has developed and how it is intended to be used. In the United States, the initial classification system for mental disorders was created so that the government could collect census information.⁶⁰ The DSM I and DSM II followed, and were largely glossaries describing a few existing mental disorders, tracking the World Health Organization's International Classification of Diseases (ICD).⁶¹ These two first DSMs were not widely accepted clinically, as they were still largely tools for gathering population health statistics.⁶² Then came DSM-III, which was revolutionary. The DSM-III "was driven by a medical model that saw psychiatric disorders as closely analogous to physical diseases."⁶³ The DSM-III aligned the goals of psychiatry with the rest of medicine, and became an important clinical tool for diagnosing mental illness. It included explicit diagnostic criteria, a multi-axial system that separated out different root kinds of disorders (personality, clinical, neurobiological, cultural), and "a descriptive approach that attempted to be neutral with respect to [causal] theories"⁶⁴ It relied mostly on self-reports by patients as to the symptoms they were experiencing. As with any document, over time, the DSM-III proved to contain ambiguous definitions and criteria.⁶⁵ The DSM-IV was thus published in 1994, employing empirical data to validate the existing DSM diagnoses, reshuffle categories of disorders, and create a few new diagnoses. Because the DSM-IV was built upon the foundations of DSM-III, it perpetuated some of its perceived classification problems, such as the reliance on self-reported symptoms rather than biomarkers, lab tests, or causes.

It became increasingly apparent to researchers, and to a lesser extent to clinicians, that because the DSM was agnostic as to biological and environmental

⁶⁰ See *DSM: History of the Manual*, AM. PSYCHIATRIC ASS'N, <http://www.psychiatry.org/practice/dsm/dsm-history-of-the-manual>, archived at <http://perma.cc/KD8X-8N2B> (last visited Mar. 10, 2015) ("What might be considered the first official attempt to gather information about mental health in the United States was the recording of the frequency of 'idiocy/insanity' in the 1840 census.").

⁶¹ *Id.*

⁶² See Sadler, *supra* note 26, at 4–5 (tracing the history through each edition of the DSM and explaining that "the DSM-III committee wished to make diagnosis more reliable, and ultimately more valid"); see also Kirmayer & Crafa, *supra* note 23, at 2 (explaining the improvements that came from material changes to the DSM-III).

⁶³ Kirmayer & Crafa, *supra* note 23, at 2.

⁶⁴ Woo-kyoung Ahn & Nancy S. Kim, The Effect of Causal Theories on Mental Disorder Diagnosis 4–5 (Sep. 10, 2007), available at <http://www.yale.edu/thinkinglab/papers/AhnKim2005.pdf>, archived at <http://perma.cc/9H7N-TP55> (quoting the DSM-IV and stating that later editions of the DSM took a more "theory-neutral approach"); see also Kirmayer & Crafa, *supra* note 23, at 2–3.

⁶⁵ See Kirmayer & Crafa, *supra* note 23, at 2–3.

causes, it was not capturing valid and discrete diagnoses.⁶⁶ As one researcher put it, the DSM relied upon “overly heterogeneous or spurious categories that do not have single, simple neurobiological mechanisms.”⁶⁷ Translation: the diagnoses were not capturing truly different types and causes of behavior. As the former head of the National Institutes of Mental Health (NIMH), Steven Hyman said, “it was clear that *DSM* was a poor mirror of nature.”⁶⁸ By way of illustration, Hyman noted that the DSM-IV diagnosis of major depression required that a patient have at least five of nine possible symptoms. Given this diagnostic scenario, it would be possible for two people to receive the same diagnosis while only sharing *one* symptom in common. As Hyman described it, “[t]heir inner turmoil and its biological roots might differ substantially, but they could easily be lumped together in a study on ‘major depression.’”⁶⁹ There was also a problem with terminology. Terms that are routinely used in clinical practice, and embodied in the DSM, such as “neuroticism,” “extraversion,” or even “depression,” do not represent “meaningful, cohesive psychological constructs; rather, they represent combinations of constructs.”⁷⁰ These imprecise terms were capturing lots of different moods and traits, and moods and traits that exist on a spectrum.

Treatments also proved to be far less specific when DSM diagnoses were used. Specifically, antidepressants are prescribed for panic disorder, anxiety, obsessive-compulsive disorder, and many other conditions.⁷¹ These broad off-label uses follow marketing efforts by pharmaceutical companies to extend (and over-extend) medications to new conditions, but it also suggests that the shared “therapeutic efficacy of medications reflects their effects on common pathways.”⁷² Put another way, the drugs might operate well in two very different DSM disorders because the disorders in fact share a common biological cause.⁷³ Combined, these findings led researchers to believe that new treatments for mental illness were stalling because the DSM categories were artificial: illnesses were separated that should be compared

⁶⁶ See *id.* at 2–3.

⁶⁷ *Id.* at 3.

⁶⁸ Greg Miller, *Beyond DSM: Seeking a Brain-Based Classification of Mental Illness*, 327 SCIENCE 1437, 1437 (2010).

⁶⁹ *Id.*

⁷⁰ Bruce N. Cuthbert, *The RDoC Framework: Facilitating Transition from ICD/DSM to Dimensional Approaches That Integrate Neuroscience and Psychopathology*, 13 WORLD PSYCHIATRY 28, 28 (2014) (citation omitted).

⁷¹ See Letizia Bossini et al., *Off-Label Uses of Trazodone: A Review*, 13 EXPERT OPINION PHARMACOTHERAPY 1707, 1707–08 (2012); Graham Mellsop et al., *Releasing Psychiatry from the Constraints of Categorical Diagnosis*, 15 AUSTRALASIAN PSYCHIATRY 3, 3 (2007).

⁷² Kirmayer & Crafa, *supra* note 23, at 3.

⁷³ For example, data on depression and anxiety suggest that mutations in the D2 receptor in the brain, or reward system, can lead to various psychiatric disorders, depending on the genetic variant and environmental factors. See Ernest P. Noble, *D2 Dopamine Receptor Gene in Psychiatric and Neurologic Disorders and Its Phenotypes*, 116 AM. J. MED. GENETICS 103, 103–04 (2003).

to each other, and things were lumped together that perhaps should be researched separately.

V. THE FUTURE OF PSYCHIATRIC DIAGNOSIS: THE NEED TO UNDERSTAND BIOLOGICAL CAUSES

What this all pointed to was the need to classify mental illness according to its underlying neuroscientific or genetic cause. There is a mantra in scientific research: if you can describe causal mechanism, you can prescribe better treatment. If the cause is a genetic mutation on a particular receptor in the brain, target that receptor's dysfunction through chemicals. If the cause is an error in the stimulation of brain regions responsible for glutamate processing, stimulate those areas. But the DSM was organized to be agnostic to cause, and this was the essential problem with the validity of the psychiatric research that stemmed from using the DSM.

There was great excitement when the American Psychiatric Association began discussing revisions, with an eye toward the DSM-5. Many hoped the DSM-5 would herald a new type of psychiatric diagnosis that relied on the neurobiology and genetics revolution of the 1990s and 2000s.⁷⁴ After all, the human genome project and the "Decade of the Brain"⁷⁵ should have resulted in much better data on the biological causes of mental illness. The time had come to move toward notions of mental illness that were no longer agnostic to cause.

Unfortunately, the final DSM-5 includes very little by way of biological cause. The DSM-5 continues to be based on self-reported symptoms, rather than causes, because there is still just too little known about the biological basis of most mental illness.⁷⁶ The problem "is a failure of our neuroscience and biology to give us the level of diagnostic criteria, a level of sensitivity and specificity that we would be able to introduce into the diagnostic manual."⁷⁷ For example, neuregulin 1 represents a likely genetic biomarker for schizophrenia. Even so, the presence of this mutation accounts for only 1% of the increased risk of developing the symptoms.⁷⁸ In this optimistic case for a "test" for mental illness, the biomarker is legally and clinically

⁷⁴ David J. Kupfer & Darrel A. Regier, *Neuroscience, Clinical Evidence, and the Future of Psychiatric Classification in DSM-5*, 168 AM. J. PSYCHIATRY 672, 672 (2011).

⁷⁵ During the 1990s, the Library of Congress and the National Institute of Mental Health of the National Institutes of Health sponsored a unique interagency initiative to advance the goals set forth in a statement by President George Bush designating the 1990s as the Decade of the Brain: "to enhance public awareness of the benefits to be derived from brain research" through "appropriate programs, ceremonies, and activities." *Project on the Decade of the Brain*, LIBRARY OF CONGRESS, <http://www.loc.gov/loc/brain/> (quoting Proclamation No. 6158, 55 Fed. Reg. 29,553 (July 20, 1990)), archived at <http://perma.cc/3CFR-KAH2> (last visited Feb. 27, 2015).

⁷⁶ See Miller, *supra* note 68, at 1437.

⁷⁷ Pam Belluck & Benedict Carey, *Psychiatry's New Guide Falls Short, Experts Say*, N.Y. TIMES, May 7, 2013, at A13.

⁷⁸ Lakhan, *supra* note 40, at 2.

irrelevant, because the presence of neuregulin 1 only makes it a tiny bit more likely that someone will actually develop schizophrenia.

At present, the data on neuroscience and genetics are just too preliminary. There are no examples of biomarkers that can predict the expression of a mental illness with anything resembling accuracy or reliability.⁷⁹ In part, this is because researchers have a difficult time quantifying the impact of important environmental moderators. This is also because the inclusionary criteria for research rely on DSM diagnoses. Researchers need a better way to recruit subjects to studies that reflect what they have biologically in common.

Enter the Research Domain Criteria (“RDoC”), a new research project developed at the National Institutes of Health (NIH). The RDoC represents a radically different way of classifying mental illness. Rather than labeling mental illness based on the symptoms someone experiences, as the DSM does, the RDoC seeks to define mental illness based upon underlying neurobiological and genetic causes, or their correlated biomarkers. It also embraces a dimensional approach to mental illness that assumes all cognitive, social, and emotional functions exist on a spectrum, with no magic boundaries between those labeled “disordered” and those labeled “normal”.

The RDoC will use five domains that are present in everyone, but are correlated with mental illness only when expressed in extremes. For example, the RDoC recognizes that many feelings, such as fear, are not only helpful, but are evolutionarily adaptive.⁸⁰ Everyone responds to fear differently, and on a continuum, with some people being fairly insensitive to fear (perhaps leading to risk-seeking and compulsion) and others being overly sensitive to fear (perhaps leading to severe anxiety or depression). In any case, the processing of fear can be explained at various levels of biological detail, starting with neurons, then leading to brain circuitry, brain regions, genetics and ultimately behavioral output.⁸¹ The NIH decided to begin with the five best validated functional domains with established neural circuits, and progress from there. These functional domain “starting points” are negative

⁷⁹ See Cynthia H. Y. Fu & Sergi G. Costafreda, *Neuroimaging-Based Biomarkers in Psychiatry: Clinical Opportunities of a Paradigm Shift*, 58 CANADIAN J. PSYCHIATRY 499, 499 (2013).

⁸⁰ See Philip L. Johnson et al., *Etiology, Triggers and Neurochemical Circuits Associated with Unexpected, Expected, and Laboratory-Induced Panic Attacks*, 46 NEUROSCIENCE & BIOBEHAVIORAL REVS. 429, 430, 446–47 (2014); Robert F. Krueger et al., *Challenges and Strategies in Helping the DSM Become More Dimensional and Empirically Based*, 16 CURRENT PSYCHIATRY REP. 515, 515 (2014).

⁸¹ One critique of the RDoC is that the units of analysis may need to be refined. Circuitry as a unit of analysis has great variability. It can vary from detailed descriptions of single neuron recordings, DTI, through anatomical mapping of large white matter tracts, and even “box-and-arrow diagrams of information processes based on anatomical localization of activation during specific tasks.” See Kirmayer & Crafa, *supra* note 23, at 7.

emotionality (such as fear), positive emotionality, cognitive processes, social processes, and arousal/regulatory systems.⁸²

The current DSM diagnoses do not map on to the RDoC entries, and that is precisely the point.⁸³ Instead of relying on self-reports and symptoms, the RDoC will ask: “[w]hat is the normal distribution for a certain trait or characteristic; what is the brain system that primarily implements this function; and, how can we understand, at various levels of mechanism, what accounts for the development of dysregulation or dysfunction in these systems along normal-to-abnormal dimensions?”⁸⁴ “The ultimate goal is to build a research literature that” provides “precision diagnosis” for the treatment of mental disorders, by reflecting advances in genetics, cognitive psychology, and neuroscience.⁸⁵

VI. A CASE FOR CAUTIOUS OPTIMISM

A. *The RDoC May Lead to More Precise Treatments*

The NIH set up a multi-study database (RDoCdb), which will contain subject-level data from RDoC-sponsored research. This will make it easier to collect population data to help researchers identify biological causes that cut across traditional DSM diagnoses. If the research is successful, and yields new ways of categorizing mental disorders by cause, then in the future many more targeted and personalized treatments will likely emerge.

Currently mental health workers employ a trial-and-error approach, where the patient and clinician work through various options over months or years to see what, if anything, works for them. The RDoC may eventually facilitate using the patient’s unique DNA or neurobiology to help the clinician narrow the potential treatments from the beginning. Put differently, by helping us understand what it is that mental illnesses share in common causally and biologically, the RDoC will be transformative in terms of treatment, or predictive validity. Mental health workers will be able to be much more precise in treatments, and target the specific treatments that operate on the particular patient’s disordered neurobiology.

This could certainly improve efficiency in the legal system, if the treatments are cheap and not too invasive. For example, if the research leads to new, targeted drug therapies with few significant side-effects, people with mental illness who take effective medications might be released after serving their sentence, rather than being civilly committed. However, if the research leads to expensive surgeries or stimulation treatments that carry with them significant negative effects on arousal or cognition, the Eighth and Fourteenth Amendments would likely not allow these

⁸² *Id.* at 4.

⁸³ “Exactly the problem with the *DSM* disorders is that they’re very heterogeneous and may involve multiple brain systems,” Bruce Cuthbert, an NIMH psychophysicologist leading the RDoC effort, says. Miller, *supra* note 68, at 1437.

⁸⁴ Cuthbert, *supra* note 70, at 31 (citation omitted).

⁸⁵ *Id.* at 29.

treatments to be forced upon convicts (or those seeking entitlement benefits or custody of their children, for that matter).

Of course, this optimism in the RDoC's ability to improve our legal system presumes a rehabilitative theory of justice, which would be in line with most clinical health workers' theories of how the legal system should operate.⁸⁶ However, not all *judges* endorse a theory of punishment that puts treatment at the front and center. Given that judges can adopt whichever theory of justice or punishment that they wish, more precise treatment options will not reduce punishments in all cases. For example, until a treatment is state-funded and cheap, a predictive biomarker of mental illness might lead to greater reliance on incapacitation theories of punishment, where people with so-called "genes for violence" or "neurobiology of sexual deviance" are warehoused without many constitutional protections.

B. The Legal Field May Be Demanding Too Much Validity for Some Legal Uses

Judges and lawyers need to be more nuanced in their application of the DSM to legal questions. While the DSM might be describing "unicorns" rather than valid and separate constructs, the main problem with its use is that lawyers view it as the psychiatric bible. This metaphor, and the thinking that underlies it, have perpetuated naïve deference to the DSM. But the DSM is still quite useful to the law, as it provides a way to label diverse sets of behavior, albeit in fairly crude ways.

The descriptive validity that the DSM provides might be enough in some contexts. In the epistemological hierarchy of validity, descriptive validity sits just above face validity, and below prescriptive validity and construct validity.⁸⁷ Face validity just asks whether the classification system makes sense and seems "on its face" to be valid. Here, one might ask whether someone who runs naked in a public parking lot while screaming God-fearing nonsense might be mentally ill. Does the label make sense on its face? Yes. It is the least demanding form of validity. An example of the use of face validity may be when a school needs some threshold indicator that a student is mentally ill in order for the state to pay for a screening exam. Merely asking, "does this child seem mentally ill?" may be enough for the state's Department of Education to foot the bill. The cost of getting it wrong here is quite low, because the child would be thoroughly tested for educational, social, and

⁸⁶ Remarkably, knowing about biomarkers may, in clinical contexts, lead to a dehumanized view of patients. A recent study in the Proceedings of the National Academy of Sciences found that when mental health workers were told that their patients' mental illnesses were biologically caused, they were less sympathetic with their patients. In the future, if the RDoC gains traction and supplements the DSM, this may undercut the rehabilitative commitment of clinicians. MATTHEW S. LEBOWITZ & WOO-KYOUNG AHN, EFFECTS OF BIOLOGICAL EXPLANATIONS FOR MENTAL DISORDERS ON CLINICIANS' EMPATHY 1–5 (2014), available at <http://www.ncmhr.org/downloads/effects-of-biological-explanations.pdf>, archived at <http://perma.cc/M79G-5PQZ>.

⁸⁷ See Laura D. Goodwin & Nancy L. Leech, *The Meaning of Validity in the New Standards for Educational and Psychological Testing: Implications for Measurement Courses*, 36 MEASUREMENT & EVALUATION COUNSELING & DEV. 181, 181–83 (2003).

psychological deficits before the school decides that the student ultimately deserves special state-funded accommodation. The face validity of a teacher's determination that the student may be mentally ill is enough for these legal purposes.

Moving up the "validity ladder," next comes descriptive validity. It is a bit more demanding than face validity, but less exacting than prescriptive validity. Descriptive validity is what the DSM provides. It allows people to describe or classify phenomena in reliable ways. Here, if one simply wants to know how to label someone's mental illness so that the public health authorities can track roughly how many people are affected with this set of behaviors, then the DSM's descriptive validity is probably enough. The power that descriptive validity wields is in terms of reliable classifications or sorting of phenomena.

The next and even more exacting form of validity is prescriptive validity. Prescriptive validity describes a system that allows us to consistently predict future outcomes. When a system possesses prescriptive validity, it allows one to ask whether the DSM will help to predict who will be affected, and who will respond to particular treatments. Predictive validity is the goal of clinical care, and also, importantly, rehabilitative justice. It is what the RDoC seeks to offer. If one is looking to determine which sentencing factors should be considered aggravating based on recidivism, then what is needed is predictive validity. If one wants to know whether a father is likely to respond well enough from treatment to return to work or take care of his children, again, predictive validity is needed. There is some predictive validity in DSM diagnoses, because the medical community has gathered additional information on the treatment outcomes for various diagnoses. However, if the understanding of the biological causes of mental illness were improved, the predictive validity would also be greatly improved. It would allow for a move from trial and error to "precision treatments."

The most exacting form of validity is construct validity. This form of validity asks whether one can truly know that something is real. Construct validity demands proof of the existence of a phenomenon as a discrete and unique thing. Under construct validity, it is not enough to see, describe, or predict something. Its existence must also be defended through reliable measurement. To make this hierarchy of validity concrete, the next section will offer an example outside of the world of mental illness, and then tie this back to the discussion of forensic psychology.

Let us use the example of love. A person could be watching a film in a language she does not speak, and know that the two actors are supposed to be in love. This ability to interpret overt actions as "love" means that society's common assessment of love satisfies face validity. Descriptive validity asks what the signs or symptoms are of love. For example, companionship, desire, fondness, lust, interest, sympathy, and longing for are the symptoms of love. If the relationship can be described in this way, it can be reliably said that the two people are likely in love. Predictive validity allows one to predict whether two people will fall in love, or what the future holds for two people in love. Here, in order to predict outcomes, one needs to know more about how to measure either love or things correlated with love. Predictive validity is about knowing causes and being able to extrapolate into the future. Construct

validity can be deeply philosophical, as it asks, what is love? Is it real? How can one demonstrate that it is a real and discrete emotion?

Hopefully this example sheds some light on the various forms of validity that can be expected and then demanded from forensic psychology. If the DSM definitions are being used to say that someone is incompetent to stand trial, more than face validity in mental illness diagnosis is probably required. Moreover, more than descriptive validity is needed if the DSM diagnosis is to be used to civilly commit someone after they have served their sentence. But if, instead, the diagnosis is being used to just raise reasonable doubt in the prosecution's case, then perhaps descriptive validity is enough. Ultimately the type of validity that may be morally or legally required depends on how comfortable society is with false positives and negatives, and the consequences of the outcome. In many cases, it might be asking too much from psychology to expect it to demonstrate the RDoC's aspirational prescriptive validity before it is given weight by regulators, legislatures, judges, and juries.

C. The RDoC Might Improve Some Things, But Cannot Fix Major Problems with Forensic Psychiatric Diagnosis

If research stemming from the RDoC provides for precision diagnosis and treatment that is cheaper and more effective, then the use of biomarkers might greatly improve legal efficiency. For example, a recent neuroimaging study found that brain activation patterns could much better predict a psychopath's likelihood of recidivating than behavioral data alone.⁸⁸ This is an example of biomarkers being used to increase predictive validity. Psychological testing can be time-consuming and quite expensive. Eventually the cost of imaging will be low enough that a few hours in a brain scanner could be cheaper and more effective than a traditional psychological battery.

However, reducing the economic cost of diagnosis only improves one kind of efficiency. There is another type of efficiency—administrative costs—which may be worsened by the RDoC. Namely, judges would have to listen to all evidence and decide whether someone's behavior classifies as disordered enough to receive social security or disability benefits, insurance coverage, a reduced sentence, or custody of their child. Judges could no longer rely on binary DSM diagnoses that are either present or not, but would have to see how an individual fits on a spectrum from normal to extremely disordered. This is not all that different from other types of evidence, in that most biological processes are not binary. Even so, it would mark a departure from being able to rely on an expert psychiatrist to rule that someone is either schizophrenic, or not, or suffering from anxiety disorder, or not. Under the

⁸⁸ Eyal Aharoni et al., *Neuroprediction of Future Rearrest*, 110 PNAS 6223, 6224 (2013), available at <http://www.pnas.org/content/110/15/6223.full.pdf>, archived at <http://perma.cc/5CKF-3K82>.

RDoC, there would no longer be a bright line between what is considered normal, and what is not.

Even for the researchers who will employ the RDoC, studies will still need a control group of “normals” in order to evaluate mechanisms of normal function along a particular dimension.⁸⁹ This means that despite the RDoC’s commitment to studying mental disorders on a spectrum that mirrors its presentation in the population, the studies themselves will be question-begging in terms of defining what counts as normal. They will also need to do what judges struggle with, which is draw a line between those who are below average in a particular domain, and those who are impaired enough to be considered “disordered.” Thus, the RDoC method will likely work better if researchers start with severe dysfunction that is less variable and dependent on culture and context, such as schizophrenia. Eventually, however, the RDoC will have to grapple with significant environmental and cultural moderators, given that most mental illness shows substantial individual, cultural, and contextual variation.

Another problem with the idea of using a continuum of functioning to diagnose mental illness is that some truly pathological states might not represent a point on a continuum of normal-to-abnormal functioning. Put differently, some mental illnesses might not reflect symptoms of behavior that we all exhibit. Instead, they might involve circuits that are unique in kind, circuits that are turned on from unique learning or developmental histories. Thus, looking to normal continuums of functioning will not reveal mechanisms of pathology in some cases.⁹⁰

Of course, for some time it is likely that the DSM will persevere. Even if the RDoC becomes admissible as a form of measuring mental disorders, it is likely it will not replace the DSM, but would rather supplement it. Having options besides the DSM for mental illness diagnosis would greatly improve the way the law comes to think about the admissibility of expert testimony. It would be easier to disabuse judges of the idea that the DSM is the psychiatric bible, if there is another system that also satisfies the two basic tests for admissibility of expert testimony, and offers greater predictive validity. Namely, if the RDoC became the benchmark for psychiatric diagnosis it would then satisfy the *Frye* standard, which requires that the evidence be “generally accepted” by the relevant scientific community,⁹¹ and would present an even more “reliable and valid” system for classifying mental illness, which is what is required under the *Daubert* standard.

VII. CONCLUSION

What the RDoC *will not do* is rid us of the concern that people are malingering. There will always be the potential for malingering, as individuals may have the

⁸⁹ See Kirmayer & Crafa, *supra* note 23, at 5.

⁹⁰ See *id.* at 6.

⁹¹ *Daubert v. Merrell Dow Pharm., Inc.*, 509 U.S. 579, 584–92 (1993) (citing *Daubert v. Merrell Dow Pharm., Inc.*, 951 F.2d 1128, 1129–1130 (9th Cir. 1991) (superseding the rule stated *Frye v. United States*, 293 F. 1013, 1014 (D.C. Cir. 1923)).

biomarker and will never exhibit the disorder, and others will not have the biomarker and yet will ultimately develop it. This will be the case until biomarkers can account for a large percentage (near 100%) of the variance between those who are disordered and those who are not.

There are two big reasons biomarkers will struggle to predict whether someone actually has or will develop a disorder. The first is the strong interaction between genetic and environmental causes. Most complex behaviors are caused both by mutated genes as well as the impact that environmental and social factors have on these genes. Without some reliable way of controlling or measuring significant differences in individuals' environments, it will be impossible to say whether many disorders will manifest.

It is quite unlikely that a biomarker would have high enough positive predictive value to determine the presence of mental illness given that good population data on the baserates of various mental illnesses does not exist. Baserates identify how many people in the underlying population are affected, and the baserate of a disorder must be known before anything can be said about how precise and accurate the biomarkers are at detecting the disorder. The existing data on mental illness baserates would be complicated by the new RDoC's diagnostic system, which relies on a continuum of functioning rather than a bright line between disordered and normal.

There is great anticipation for the RDoC's neurobiological approach to mental illness to replace the DSM and make everything from research funding to insurance coverage more fair. Whether or not the legal applications of this new system will indeed be an improvement on the DSM depends greatly on how it is used, and what the normative commitments are in that particular legal domain. While the DSM provides one important and useful perspective on what counts as mentally disordered, ultimately for the law this is not a question that science or data can answer. Societies, comprised of people, must grapple with a normative account of when to treat, when to pardon, and when to punish. The DSM cannot decide these questions for us, tempting as it may be to defer to its diagnostic criteria. That we expect it to reveals a deep insecurity about the legal system's ability to defend its methods and theories of punishment.