

Analysis:

DSM Biases Evident in Clinical Training and Courtroom Testimony

“There are more things in heaven and earth, Horatio, than are dreamt of in your philosophy.”
—William Shakespeare, from *Hamlet* (Act I, scene 5, lines 166-167)

The American Psychiatric Association's *Diagnostic and Statistical Manual* (DSM),¹ which was most recently revised in 2000 with DSM, fourth edition, text revision (DSM-IV-TR), has been helpful in promoting inter-rater reliability or agreement among clinicians. This reliability has been achieved by moving from a causation-heavy, narrative-rich system to a causation-free, narrative- and context-empty system

of diagnostic categories. However, as helpful as an increased degree of agreement among clinicians may be, this measure of the reliability of a diagnosis does not indicate if the diagnosis is valid. A challenge for those involved in the construction of the DSM, fifth edition (DSM-V) is how to retain the strength of reliability and increase diagnostic validity.

When decisions need to be made quickly, heuristic processes are more

Abilash A. Gopal, AB, is a Pasteur/Doris Duke Research Fellow of Harvard Medical School and a fourth-year student at Tufts University School of Medicine. Harold J. Bursztajn, MD, is co-Founder of the Program in Psychiatry and the Law at Beth Israel Deaconess Medical Center, Department of Psychiatry, Harvard Medical School.

Mr. Gopal and Dr. Bursztajn have disclosed no relevant financial relationships.

Address correspondence to: Harold J. Bursztajn, MD, 96 Larchwood Drive, Cambridge, MA 02138; e-mail hbursztajn@hms.harvard.edu.

Acknowledgements: Thomas Gutheil, MD's, insights into the dilemmas of clinical training and the courtroom initiated this analysis. Carol Nadelson, MD; Robert M. Hamm, PhD; and Bennett Simon's insights have been vital to the authors' understanding of the cognitive psychology of medical decision making. Lisa Cosgrove, PhD; Eric Drogin, JD, PhD; Ron Abramson; K. Ellen Lowenthal, JD; and Archie Brodsky, BA, have provided helpful commentary throughout the writing process. The authors also thank members of the Program for helpful discussions and Ellen Dubie, Jason Huffman, and Jennifer Maiona for assistance with the evolving manuscript.



likely to be used,² reacting to the need for speed with simplifying strategies for diagnostic decision-making. However, when clinicians lack the time to check if the processes they used have led to a fundamentally misleading diagnosis, errors are more likely to go unnoticed. With insufficient time to learn about individual patients, and to observe them, there is a growing tendency to make

premature cognitive commitments to diagnoses that fit the menu or bullet-point layout of the DSM.³

Heuristic approaches are routinely employed to limit potential information overload in diagnostic decision-making.⁴ Unfortunately, reliance on simplifying procedures may introduce unintended biases, which are magnified by the categorical structure of the DSM.

In this context, recent work on Holocaust survivors has shown that posttraumatic stress disorder (PTSD) combined with psychosis presents a diagnostic and clinical challenge.⁵ Throughout the course of repeated diagnostic interviews, PTSD symptoms decreased for some of these survivors; however, this does not mean that PTSD disappeared from their lives. Rigid, premature, and overly authorita-

Abilash A. Gopal, AB; and Harold J. Bursztajn, MD

tive diagnostic categorizations relying on the authority of the DSM's bright lines, which separate the traumatic spectrum into categories, can distract from humane treatment by resulting in a shift of diagnosis. A spectrum or sliding scale model of psychopathology might be more accommodating of these shifts than a discontinuous, categorical model. Moreover, keeping an open mind and approaching diagnosis as a process rather than as an event will likely result in a better thera-

training and testimony might avoid these biases. We will also discuss the implications of our analysis for the construction of the information architecture of the next generation of the DSM.

COMMON PITFALLS IMPAIRING THE USE OF THE CURRENT VERSION OF THE DSM

Ideally, all trainees in clinical practice and all experts who use the DSM in the courtroom would heed the caution-

statistics applicable to the general population. Clinicians have evolved maxims¹⁰ to counteract the systematic tendency to disregard prevalence in diagnostic reasoning, eg, "When you hear hoof beats, think of horses, not zebras." The DSM fails to remind the novice reader that such maxims are not universally true: When listening for hoof beats, what may be true in Montana may not be true in Kenya. Similarly, the probabilities of a fact pattern being indicative of a disorder



In the worst-case scenario, insecure time-pressured trainees and testifying clinician experts tend to apply DSM-IV categories reflexively or in a cookbook fashion.

peutic relationship (B. Simon, personal communication, Jan. 7, 2007).

The limitations of the categorical approach are mentioned in the preface to the DSM but are relatively underemphasized in the main body of the work. For each disorder, the text describing relevant limitations invariably pales into insignificance relative to the boldfaced bullet points presenting the criteria.⁶

In addition, although the categorical format is useful for constructing clinical trials for medications that target symptoms throughout the short term, it may inhibit deeper understanding of an individual patient throughout an extended period of time. This raises the concern that the choice of categorical approach for the DSM, third edition (DSM-III) and DSM, fourth edition, (DSM-IV) was unduly influenced by the undisclosed pharmaceutical company ties of its creators.

In this article, we will focus primarily on how the need for simple decision-making procedures generates biases in the application of DSM-IV criteria as to type or category, and how clinicians in

ary notes in the preface regarding its limited validity both for understanding individual patients and for its use in a forensic context.¹ Unfortunately, these cautionary notes are too often overshadowed by the bright lines created by the DSM's categorical approach, which sharply divide the neuropsychiatric spectrum of human suffering into easily digestible, "sound-bite" syndromes presented in bold typed criteria.^{3,7,8}

With its bright lines, the categorical approach is especially vulnerable to oversimplification, particularly during time-pressured situations. Heuristics, such as availability,⁹ rule that how neatly a finding fits a criterion (eg, dramatic weight loss) because of its vividness or salience is likely to outweigh harder to imagine, less concrete, and less available but nonetheless important experiences such as chronic emptiness and demoralization.

In keeping with its tendency toward oversimplification, the DSM cites prevalence statistics without noting that in any given treatment setting, the prevalence of a disorder may be different from the

will likely be different in public hospital inpatient settings compared with private outpatient settings.

In the worst-case scenario, insecure time-pressured trainees and testifying clinician experts tend to apply DSM-IV categories reflexively or in a cookbook fashion. Missing is a narrative thread that meaningfully and helpfully describes the nature of someone's personality in the midst of suffering and impairment.¹¹

THE CURRENT VERSION OF THE DSM

Diagnostic reasoning is best understood as a process rather than as an event.⁸ This perspective encourages physicians to revisit their initial assumptions and formulate alternative hypotheses or differential diagnoses. Attention to the diagnostic process can decrease the likelihood of premature cognitive commitment to reliable but misleading diagnoses.^{12,13} Instead of pigeonholing patients at the outset of a diagnostic process, clinicians can start with the viewpoint that a patient is more important than their illness, and that a primary goal of any

diagnostic process is a formulation to help the patient.

In addition to regarding diagnosis as a process, trainees and testifying experts can be encouraged to formulate any specific diagnosis as a hypothesis within a spectrum of disorders rather than as a best-fit peg in a diagnostic disorder category. Just as rigid application of the DSM categories can obscure patient individuality, a debate as to if a patient's suffering crosses a particular categori-

point for the diagnostically perplexed, the more recent versions of the DSM are less useful for the development of a sufficiently deep understanding of a patient to serve the ends of either patient care or relevant, clinically valid courtroom testimony. The DSM format — while giving temporary relief from feelings of diagnostic uncertainty by offering standardized categorization — impedes the development of dimensional understanding of the individual-

subject to a confirmatory bias when using information to test a hypothesis,²¹ the DSM's categorical format reinforces the tendency to look only for confirmatory evidence. Trainees' initial impressions, based on limited DSM-guided patient interviews, may become entrenched and unyielding even in the face of subsequent information.

The risk of premature cognitive commitment increases with time pressure and with the current state of training. In



Diagnostic interviewing skills have become overly reliant on DSM bullet points.

cal boundary can be a sterile process. Such categorical misapplication can be avoided by keeping in mind that a more valid understanding of a person's suffering can be achieved by exploring their life experiences in terms of the notion of spectrum disorders. For example, one can speak validly of a posttraumatic spectrum or psychotic spectrum.

Long-term, actual experience with trainees (residents, medical students, and non-psychiatrists) and with courtroom testimony has revealed a number of distortions of the diagnostic process resulting from uncritical use of the DSM's approach to diagnosis. In particular, the courtroom setting offers many lessons on the pitfalls of hasty decision-making that are applicable within clinical practice.¹⁴⁻¹⁶ Awareness of these pitfalls allows for their avoidance and increases the opportunities for the valid use of the DSM, particularly under pressure.¹⁷⁻¹⁹

The Illusion of Certainty

Although useful for reimbursement purposes and for providing a starting

ity of human suffering. Unfortunately, once established, the illusion of certainty tends to dominate clinical reasoning and blurs recognition of other pitfalls. Given the human need for confidence, an illusion of certainty is perhaps the heuristic pitfall that is the most difficult to avoid.⁸ Nevertheless, identification of this pitfall is a first and vital step in moving towards diagnostic humility.

Premature Cognitive Commitment

First impressions are all too often last impressions.²⁰ Premature cognitive commitment is the handmaiden of the too often unshakable illusion of certainty. Although cognitive commitment encourages perseverance, premature cognitive commitment leads to overconfidence and insensitivity to the additional information that becomes available once a relationship with a patient is created.¹² The categorical layout of the DSM encourages rigid, formulaic diagnosing and increases the risk of premature cognitive commitment. Indeed, in light of evidence suggesting that clinicians are

many training programs, trainees have little opportunity to see how the spectrum of individual suffering, symptom presentation, impairment, and even diagnoses can change.

Diagnostic interviewing skills have become overly reliant on DSM bullet points. Although the DSM criteria for any mental illness are useful in specifying a patient's official diagnosis, trainees must be mindful of the narrative unreliability associated with DSM-guided interviews and DSM-constructed psychiatric records. These precepts should be integrated from the outset into the DSM text and into supervision, rather than in the preface or as an afterthought in lectures.

Mistaking the Menu for the Meal

Attorneys, trainees, and, regrettably, some testifying clinician experts seem to believe that if they can successfully and accurately characterize a patient according to the latest DSM, they will then understand this person's suffering. A particularly misleading corollary of this

presumption is to claim that the lack of a neat fit of a person's condition into DSM criteria renders a diagnostic formulation clinically or forensically invalid (ie, "This patient does not have this disorder"). This assumption leads to a focus on amassing lists of criteria rather than on establishing empathic contact with a person in distress.

This tendency can be counteracted in two ways: First, by avoiding "bullet points," which are all too often generic and tend to confuse even the simplest sequential relationships; and second, by presenting a diagnostic formulation in narrative form.³ The narrative form lends itself to a consideration of the history, motivation, and defenses that condition the reliability and validity of what can be learned from listening to the patient, as well as the consideration of potential clinical factors.²² The latter includes cultural sensitivity (acknowledged in the current DSM) and the unacknowledged counter-transferences that affect the understanding of the patient's presentation, observed symptoms, and history.

In the courtroom, some attorneys habitually ignore the disclaimers at the front of the DSM, which caution about its use in the courtroom or by untrained personnel. Moreover, many testifying experts have encountered a literal-minded cross-examination contending that if even one of the listed minimum symptom descriptors is not present, the person's suffering is meaningless: the condition does not exist, or the doctor is incorrect. This misuse would be embarrassing solely for attorneys if not for the fact that some clinicians, when testifying as experts, also share the bad habits of literal-mindedness and blindness as to what is central in a patient's suffering as it evolves. This can be clearly seen when attorneys attempt to exclude testimony about an patient as "unreliable" because of supposedly insufficient congruence with all the DSM criteria needed to fit a diagnos-

tic category.^{23,24} Both clinically and in the courtroom, the dynamics of life-setting changes and substance use are all too often neglected, as are other factors that reduce the likelihood of a static categorical fit of mindset and behavior across clinical and social settings.²⁵

Compartmentalization; Snap Judgments; 'Yes or No, Doctor?'

Among other pitfalls for the untrained, unsophisticated, or overly rigid user, the DSM criteria-based schema encourages the natural tendency to compartmentalize, particularly in high-anxiety situations. As to snap judgments, they can be useful. But the likelihood of pitfalls increases when snap judgments are formed to allay clinical anxiety.

Pitfalls also loom in the courtroom, when attorneys insist on cross-examining experts in their favorite "yes or no, Doctor?" form. This approach promotes binary reasoning: this patient meets either these criteria or those criteria. Seeking clarity in the often amorphous psychological realm, trainees, attorneys, and even some testifying experts at times become obsessed with the question of which single category a patient fits into. This fixation represents a problematic approach when, as is almost always the case, more than one diagnosis or diagnostic possibility applies to understanding a person's suffering; the problem is even worse when the disorder constitutes a mixture of elements from several categories.²⁶

When tolerance of this diagnostic ambiguity is replaced by an illusion of certainty provided by listings of ostensibly distinct disorders, we stop paying attention to how patients' lives and suffering evolve over time.

In addition, qualities such as adaptation and resiliency, which can be best represented dimensionally, find no place in the categorical model of the DSM. What does not fit within the DSM categories becomes a neglected afterthought. When these qualities are not considered in diagnostic

formulations, they are more likely to also be disregarded in treatment formulations.

Symptom Set versus Diagnosis

Some trainees and attorneys have difficulty understanding that listed symptom sets do not constitute a diagnosis. For example, although many paranoid people use obsessive defenses, this does not necessarily mean that trainees should diagnose these patients with an obsessive-compulsive disorder (OCD) in addition to their underlying paranoid condition. Clearly, patients are capable of borrowing symptoms, traits, or defenses from other diagnostic entities. They are entitled to treatment for all of their conditions, not just those related to their primary diagnosis.

Testifying clinicians may face attempted impeachment of testimony that obsessive behavior, prior trauma, or self-medication-related impairments exist on the grounds that the patient did not meet full OCD, PTSD, or substance abuse criteria. For example, when a patient who presents a clinical picture of PTSD falls short of having the threshold number of symptoms for a DSM diagnosis of this disorder, experienced clinicians and testifying experts often refer to "subclinical PTSD." Unfortunately, this way of reconciling formula with reality is all too easily lost in the time crunch of clinical training, practice, and expert testimony.

Whither Defenses?

In a related realm, trainees currently are taught little about the notion of psychological defenses. They may fail to see that obsessive symptoms, somatoform symptoms, phobic symptoms, and sometimes even basic anxiety may be functioning as defenses against intolerable affect within a larger condition, rather than as discrete disorders requiring additional, separate diagnoses. Defenses against shame and humiliation often accompany suffering in a variety of forms, yet the body of the DSM does little to

elucidate these concepts for courts and trainees, who may have a difficult time grasping the notion of defenses.

Influence on Diagnostic Interviewing

As previously noted, the DSM has been influential on trainees in the context of diagnostic interviewing. Its injudicious use, however, can result in careless interviewing practices. For example, residents have been known to use

The DSM criteria for any disorder are best used as only an aid in the formulation of a patient's illness. A checklist can never take the place of careful listening; an open mind and an attentive ear are likely to yield much better results than a list read off in questionnaire form. With proper instruction, trainees can learn to use the DSM criteria as signposts in the course of exploring a patient's condition rather than as a list to be checked off during a patient interview.

Unfortunately, these wise cautions are presented only in the preface and as a result are often ignored. They become irrevocably lost when trainees begin a life of cookbook diagnosis or when testifying experts are confined by courts to "yes or no" answers to questions regarding diagnoses that cannot be answered validly with a "yes" or "no." Ideally, future editions of the DSM will strive to weave the lessons from the preface into the fabric of the text, because they are essential to proper diagnosis.



The shortcuts or heuristics that clinicians automatically use to process text can result in the misunderstanding and/or misusing of DSM criteria.

the lists of symptoms associated with various disorders as checklists while interviewing patients. One can imagine the ensuing conversation: "Are you experiencing this symptom? No? How about this symptom? How about this one?" and so on, with rapidly diminishing returns. Similarly, patients may be tempted to learn DSM checklists from each other in order to fit the criteria in question when insurance or legal benefits for treatment are at stake.

This is especially important in today's climate of managed care, where time constraints are of utmost concern. In this harried context, residents may be more likely to be overly concrete in their use of the DSM to guide their diagnostic interviewing. Although this is less risky in relaxed settings, when clinicians have time to check themselves to ensure that their decisions are valid, limitations on time can lead to an over-reliance on DSM criteria.²⁷ If this is done improperly by using DSM criteria as a mere checklist, the result will be to restrict, rather than facilitate, the patient interview.

WHAT REMEDIES CAN BE PROVIDED IN DSM-V?

Making DSM Limitations Salient

The DSM is filled with useful information regarding the potential pitfalls associated with its use. Much of this information is lost or ignored because of misplacement within the text. One area conveying vital information that is typically glossed over by readers (particularly trainees) is the preface, which contains useful cautions regarding the need for clinical judgment when applying diagnostic categories to patients.

With its caveat that "individuals sharing a diagnosis are likely to be heterogeneous" and its emphasis on "the need to capture additional clinical information that goes beyond diagnosis,"²⁸ the preface serves as a reminder that to fully appreciate a patient's illness, trainees, treating clinicians, and testifying experts must avoid rigid categorization and instead delve into a patient's life in search of the details that make each person unique.

Important information is also found outside of the DSM in adjunct texts such as the *Handbook of Differential Diagnosis* and *The Clinical Interview*.²⁸⁻³⁰ These works contain useful lessons pertaining to their titular themes, but because of their placement outside of the primary DSM text, are subject to neglect. In the interest of medical education, it would be helpful to integrate these important lessons into the main DSM text. Such integration can be achieved by the testifying expert on the witness stand by reminding the examining attorney when necessary that some diagnostic questions cannot be answered in "yes or no" terms.

Avoiding Reader Bias: A Few Caveats

The shortcuts or heuristics that clinicians automatically use to process text can result in the misunderstanding and/or misusing of DSM criteria. It is important to realize that these cognitive shortcuts take place without conscious recognition and are thus difficult to suppress. For example, as noted above,

LEXAPRO® (escitalopram oxalate) TABLETS/ORAL SOLUTION

(3% and <1%); Anorgasmia (2% and <1%). *Events reported by at least 2% of patients treated with Lexapro are reported, except for the following events which had an incidence on placebo ≥ Lexapro: headache, upper respiratory tract infection, back pain, pharyngitis, inflicted injury, anxiety. †Primarily ejaculatory delay. ‡Denominator used was for males only (N=225 Lexapro; N=188 placebo). §Denominator used was for females only (N=490 Lexapro; N=404 placebo). **Generalized Anxiety Disorder Table 3** enumerates the incidence, rounded to the nearest percent of treatment-emergent adverse events that occurred among 429 GAD patients who received Lexapro 10 to 20 mg/day in placebo-controlled trials. Events included are those occurring in 2% or more of patients treated with Lexapro and for which the incidence in patients treated with Lexapro was greater than the incidence in placebo-treated patients. The most commonly observed adverse events in Lexapro patients (incidence of approximately 5% or greater and approximately twice the incidence in placebo patients) were nausea, ejaculation disorder (primarily ejaculatory delay), insomnia, fatigue, decreased libido, and anorgasmia (see TABLE 3). **TABLE 3: Treatment-Emergent Adverse Events: Incidence in Placebo-Controlled Clinical Trials for Generalized Anxiety Disorder* (Lexapro (N=429) and Placebo (N=427)):** **Autonomic Nervous System Disorders:** Dry Mouth (9% and 5%); Sweating Increased (4% and 1%). **Central & Peripheral Nervous System Disorders:** Headache (24% and 17%); Paresthesia (2% and 1%). **Gastrointestinal Disorders:** Nausea (18% and 8%); Diarrhea (8% and 6%); Constipation (5% and 4%); Indigestion (3% and 2%); Vomiting (3% and 1%); Abdominal Pain (2% and 1%); Flatulence (2% and 1%); Toothache (2% and 0%). **General:** Fatigue (8% and 2%); Influenza-like symptoms (5% and 4%). **Musculoskeletal:** Neck/Shoulder Pain (3% and 1%). **Psychiatric Disorders:** Somnolence (13% and 7%); Insomnia (12% and 6%); Libido Decreased (7% and 2%); Dreaming Abnormal (3% and 2%); Appetite Decreased (3% and 1%); Lethargy (3% and 1%); Yawning (2% and 1%). **Urogenital:** Ejaculation Disorder[‡] (14% and 2%); Anorgasmia[§] (6% and <1%); Menstrual Disorder (2% and 1%). *Events reported by at least 2% of patients treated with Lexapro are reported, except for the following events which had an incidence on placebo ≥ Lexapro: inflicted injury, dizziness, back pain, upper respiratory tract infection, rhinitis, pharyngitis. †Primarily ejaculatory delay. ‡Denominator used was for males only (N=182 Lexapro; N=195 placebo). §Denominator used was for females only (N=247 Lexapro; N=232 placebo). **Dose Dependency of Adverse Events** The potential dose dependency of common adverse events (defined as an incidence rate of ≥5% in either the 10 mg or 20 mg Lexapro groups) was examined on the basis of the combined incidence of adverse events in two fixed-dose trials. The overall incidence rates of adverse events in 10 mg Lexapro-treated patients (66%) was similar to that of the placebo-treated patients (61%), while the incidence rate in 20 mg/day Lexapro-treated patients was greater (86%). **Table 4** shows common adverse events that occurred in the 20 mg/day Lexapro group with an incidence that was approximately twice that of the 10 mg/day Lexapro group and approximately twice that of the placebo group. **TABLE 4: Incidence of Common Adverse Events* in Patients with Major Depressive Disorder Receiving Placebo (N=311), 10 mg/day Lexapro (N=310), 20 mg/day Lexapro (N=125):** Insomnia (4%, 7%, 14%); Diarrhea (5%, 6%, 14%); Dry Mouth (3%, 4%, 9%); Somnolence (1%, 4%, 9%); Dizziness (2%, 4%, 7%); Sweating Increased (<1%, 3%, 8%); Constipation (1%, 3%, 6%); Fatigue (2%, 2%, 6%); Indigestion (1%, 2%, 6%). *Adverse events with an incidence rate of at least 5% in either of the Lexapro groups and with an incidence rate in the 20 mg/day Lexapro group that was approximately twice that of the 10 mg/day Lexapro group and the placebo group. **Male and Female Sexual Dysfunction with SSRIs** Although changes in sexual desire, sexual performance, and sexual satisfaction often occur as manifestations of a psychiatric disorder, they may also be a consequence of pharmacologic treatment. In particular, some evidence suggests that SSRIs can cause such untoward sexual experiences. Reliable estimates of the incidence and severity of untoward experiences involving sexual desire, performance, and satisfaction are difficult to obtain, however, in part because patients and physicians may be reluctant to discuss them. Accordingly, estimates of the incidence of untoward sexual experience and performance cited in product labeling are likely to underestimate their actual incidence. **Table 5** shows the incidence rates of sexual side effects in patients with major depressive disorder and GAD in placebo-controlled trials. **TABLE 5: Incidence of Sexual Side Effects in Placebo-Controlled Clinical Trials (in Males Only: Lexapro (N=407) and Placebo (N=383); Ejaculation Disorder (primarily ejaculatory delay) (12% and 1%); Libido Decreased (6% and 2%); Impotence (2% and <1%). (in Females Only: Lexapro (N=737) and Placebo (N=636):** Libido Decreased (3% and 1%); Anorgasmia (3% and <1%) There are no adequately designed studies examining sexual dysfunction with escitalopram treatment. Priapism has been reported with all SSRIs. While it is difficult to know the precise risk of sexual dysfunction associated with the use of SSRIs, physicians should routinely inquire about such possible side effects. **Vital Sign Changes** Lexapro and placebo groups were compared with respect to (1) mean change from baseline in vital signs (pulse, systolic blood pressure, and diastolic blood pressure) and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses did not reveal any clinically important changes in vital signs associated with Lexapro treatment. In addition, a comparison of supine and standing vital sign measures in subjects receiving Lexapro indicated that Lexapro treatment is not associated with orthostatic changes. **Weight Changes** Patients treated with Lexapro in controlled trials did not differ from placebo-treated patients with regard to clinically important change in body weight. **Laboratory Changes** Lexapro and placebo groups were compared with respect to (1) mean change from baseline in various serum chemistry, hematology, and urinalysis variables, and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses revealed no clinically important changes in laboratory test parameters associated with Lexapro treatment. **ECG Changes** Electrocardiograms from Lexapro (N=625), racemic citalopram (N=351), and placebo (N=527) groups were compared with respect to (1) mean change from baseline in various ECG parameters and (2) the incidence of patients meeting criteria for potentially clinically significant changes from baseline in these variables. These analyses revealed (1) a decrease in heart rate of 2.2 bpm for Lexapro and 2.7 bpm for racemic citalopram, compared to an increase of 0.3 bpm for placebo and (2) an increase in QTc interval of 3.9 msec for Lexapro and 3.7 msec for racemic citalopram, compared to 0.5 msec for placebo. Neither Lexapro nor racemic citalopram were associated with the development of clinically significant ECG abnormalities. **Other Events Observed During the Premarketing Evaluation of Lexapro** Following is a list of WHO terms that reflect treatment-emergent adverse events, as defined in the introduction to the **ADVERSE REACTIONS** section, reported by the 1428 patients treated with Lexapro for periods of up to one year in double-blind or open-label clinical trials during their premarketing evaluation. All reported events are included except those already listed in **Tables 2 & 3**, those occurring in only one patient, event terms that are so general as to be uninformative, and those that are unlikely to be drug related. It is important to emphasize that, although the events reported occurred during treatment with Lexapro, they were not necessarily caused by it. Events are further categorized by body system and listed in order of decreasing frequency according to the following definitions: frequent adverse events are those occurring on one or more occasions in at least 1/100 patients; infrequent adverse events are those occurring in less than 1/100 patients but at least 1/1000 patients. **Cardiovascular** - Frequent: palpitation, hypertension. **Infrequent:** bradycardia, tachycardia. ECG abnormal, flushing, varicose vein. **Central and Peripheral Nervous System Disorders** - Frequent: light-headed feeling, migraine. **Infrequent:** tremor, vertigo, restless legs, shaking, twitching, dysequilibrium, tics, carpal tunnel syndrome, muscle contractions involuntary, sluggishness, co-ordination abnormal, faintness, hyperreflexia, muscular tone increased. **Gastrointestinal Disorders** - Frequent: heartburn, abdominal cramp, gastroenteritis. **Infrequent:** gastroesophageal reflux, bloating, abdominal discomfort, dyspepsia, increased stool frequency, belching, gastritis, hemorrhoids, gagging, polyposis gastric, swallowing difficult. **General** - Frequent: allergy, pain in limb, fever, hot flushes, chest pain. **Infrequent:** edema of extremities, chills, tightness of chest, leg pain, asthenia, syncope, malaise, anaphylaxis, fall. **Hemic and Lymphatic Disorders** - Infrequent: bruise, anemia, nosebleed, hematoma, lymphadenopathy cervical. **Metabolic and Nutritional Disorders** - Frequent: increased weight. **Infrequent:** decreased weight, hyperglycemia, thirst, bilirubin increased, hepatic enzymes increased, gout, hypercholesterolemia. **Musculoskeletal System Disorders** - Frequent: arthralgia, myalgia. **Infrequent:** jaw stiffness, muscle cramp, muscle stiffness, arthritis, muscle weakness, back discomfort, arthropathy, jaw pain, joint stiffness. **Psychiatric Disorders** - Frequent: appetite increased, lethargy, irritability, concentration impaired. **Infrequent:** jitteriness, panic reaction, agitation, apathy, forgetfulness, depression aggravated, nervousness, restlessness aggravated, suicide attempt, amnesia, anxiety attack, bruxism, carbohydrate craving, confusion, depersonalization, disorientation, emotional lability, feeling unreal, tremulousness nervous, crying abnormal, depression, excitability, auditory hallucination, suicidal tendency. **Reproductive Disorders/Female** - Frequent: menstrual cramps, menstrual disorder. **Infrequent:** menorrhagia, breast neoplasm, pelvic inflammation, premenstrual syndrome, spotting between menses. *% based on female subjects only; N= 905 **Respiratory System Disorders** - Frequent: bronchitis, sinus congestion, coughing, nasal congestion, sinus headache. **Infrequent:** asthma, breath shortness, laryngitis, pneumonia, tracheitis. **Skin and Appendages Disorders** - Frequent: rash. **Infrequent:** pruritus, acne, alopecia, eczema, dermatitis, dry skin, folliculitis, lipoma, furunculosis, dry lips, skin nodule. **Special Senses** - Frequent: vision blurred, tinnitus. **Infrequent:** taste alteration, earache, conjunctivitis, vision abnormal, dry eyes, eye irritation, visual disturbance, eye infection, pupils dilated, metallic taste. **Urinary System Disorders** - Frequent: urinary frequency, urinary tract infection. **Infrequent:** urinary urgency, kidney stone, dysuria, blood in urine. **Events Reported Subsequent to the Marketing of Escitalopram** - Although no causal relationship to escitalopram treatment has been found, the following adverse events have been reported to have occurred in patients and to be temporally associated with escitalopram treatment during post marketing experience and were not observed during the premarketing evaluation of escitalopram: abnormal gait, acute renal failure, aggression, akathisia, allergic reaction, anger, angioedema, atrial fibrillation, choreoathetosis, delirium, delusion, diplopia, dysarthria, dyskinesia, dystonia, ecchymosis, erythema multiforme, extrapyramidal disorders, fulminant hepatitis, hepatic failure, hypoaesthesia, hypoglycemia, hypokalemia, INR increased, gastrointestinal hemorrhage, glaucoma, grand mal seizures (or convulsions), hemolytic anemia, hepatic necrosis, hepatitis, hypotension, leucopenia, myocardial infarction, myoclonus, neuroleptic malignant syndrome, nightmare, nystagmus, orthostatic hypotension, pancreatitis, paranoia, photosensitivity reaction, priapism, prolactinemia, prothrombin decreased, pulmonary embolism, QT prolongation, rhabdomyolysis, seizures, serotonin syndrome, SIADH, spontaneous abortion, Stevens Johnson Syndrome, tardive dyskinesia, thrombocytopenia, thrombosis, torsade de pointes, toxic epidermal necrolysis, ventricular arrhythmia, ventricular tachycardia and visual hallucinations. Licensed from H. Lundbeck A/S Rev. 05/07 © 2007 Forest Laboratories, Inc.

consider the availability heuristic, in which the ease with which diagnostic factors are called to mind¹⁶ affects a clinician’s judgment. Vividness and ease of recognition of a symptom can easily result in its being given undue weight. Similarly, a “recency” effect can influence availability and thus lend unnecessary importance to the last items in sequential presentation.¹⁶ (Although the recency heuristic seems to run counter to the tendency to over-value “first impressions,” people do regularly employ both, separately or together.) As has been suggested, a weighting of symptoms in the DSM might be helpful in preventing these pitfalls.³¹

It seems clear that the DSM was constructed without sufficient regard for humans’ natural irrationality, allowing clinicians’ biases to run unchecked. In order to curb these biases, we propose that caveats be written in the DSM where appropriate. Boldface notes placed alongside the bullet boldfaced boxes containing the criteria can be helpful. Thus a note such as “clinicians must be careful to give the following symptoms equal weight (or different weights) when considering a diagnosis of “x” disorder in “y” setting” can, when properly placed within the DSM bullets, serve as natural correctives for reader biases.

Dimensional versus Categorical Structure

It is an open question whether the advantages of the categorical approach of the current DSM continue to outweigh those of a dimensional approach to psychiatric disease, which consists of a continuous scale of psychological distress with no cut-point to designate a threshold between those with and without a presumed illness.³² In this context, the American Psychiatric Institute for Research and Education (APIRE), which is an affiliated 501(c)(3) corporation of the American Psychiatric Association, recently held a conference to critically evaluate dimensional approaches to psychiatric diagnosis and to devise ways of integrating dimensional components into the current categorical system.³³ This growth of interest in dimensional diagnostic systems is further reflected in the recent publication of the dimensionally-based *Psychodynamic Diagnostic Manual*,³⁴ a collaborative effort of the American Psychoanalytic Association, the International Psychoanalytical Association Division of Psychoanalysis, the American Psychological Association, the American Academy of Psychoanalysis, and the Dynamic Psychiatry National Membership Committee on Psychoanalysis in Clinical Social Work.

Such innovations indicate that the time has come to incorporate the dimensional approach into residency training in psychiatry. This need becomes more apparent when viewed in light of the shortcomings of the categorical system, which are perhaps best exemplified in the context of Axis II diagnoses. Research indicates that the majority of patients with personality pathology significant enough to warrant clinical psychotherapeutic attention are currently undiagnosable on Axis II.³⁵ These results have been bolstered by findings documenting the difficulties of trainees in making Axis II diagnoses.³⁶

Further research is needed to determine if the dimensional approach is less susceptible to misuse than the current categorical system, with its associated reader heuristics and biases. The goals stated at the APIRE conference suggest that the best answer may not be either a strictly dimensionally- or categorically-based DSM, but rather a system that incorporates the strengths of both approaches. This might be accomplished by preserving traditional categorical

The idea of using carefully constructed yet vivid composite cases as prototypes of narrations to refer to in the DSM has its dangers, because case examples might not fit neatly into any diagnostic category. But these dangers can also serve as strengths, by reminding DSM users of the spectrum nature of diagnosis, its irreducible ambiguity, yet its practical usefulness and reliability, and validity. Additionally, it may be more useful in clinical training and

together the strengths of the categorical and dimensional diagnostic structures, and providing meaningful narrative-based threads for reference in the body of the text. Additionally, a helpful transitional measure may be to post portions of the DSM-IV-TR on the internet with hyperlinks to case examples and reminders of potential pitfalls. This would encourage feedback from clinicians on various trial drafts designed to increase user-friendliness.



Further research is needed to determine if the dimensional approach is less susceptible to misuse than the current categorical system, with its associated reader heuristics and biases.

diagnostic definitions but adding a dimensional component that would be reflective of and directly referable to the categorical definitions.³⁷

The Need for Narratives

Although heuristic approaches and their pitfalls seem to be properties of the mind,¹³ the categorical structure of the DSM tends to amplify biases and errors by simplifying complexity.³ Narrative-based examples could counterbalance this simplification by modeling the inherent ambiguity of psychiatric illness. Such narrative threads would be no panacea as, even there, heuristics, biases, and diagnostic errors would have a role. They would, however, indicate the importance of making contact with the individual patient and acknowledging and sharing the uncertainty associated with the patient's suffering. Clinical experts often employ case- and exemplar-based clinical reasoning in order to arrive at a correct diagnosis.³⁸ In this sense, narrative examples in the DSM could help foster the case-based reasoning that is the hallmark of expert thinking.

courtroom testifying to approach a patient's suffering in terms of its similarity to prototypical cases rather than its fulfillment of any one category's criteria.^{39,40} Judgments of similarity have their own paradoxes and pitfalls,^{41,42} but they carry less pseudo-certainty than categorical judgments. Well-written, narrative-based case examples placed in the text can thus temper the DSM's categorical rigidity and help both trainees and testifying experts understand and communicate the individuality of psychiatric diagnosis.

CONCLUSION

We have identified a number of ways in which the current structure of the DSM has magnified the characteristic pitfalls of diagnostic reasoning. We have offered several remedies for consideration in the development of the DSM-V, including moving reminders of potential pitfalls from the preface to the main body of the text, expanding cautionary warnings to include reminders of common pitfalls of heuristics use, weaving

Our analysis is intended to encourage further exploration of the ways in which the current DSM can be improved. With the construction of the new DSM-V upon us, we now have the opportunity to reduce the risk that common pitfalls of heuristics will be magnified in clinical training and courtroom testimony by the categorical structure and organization of the DSM.

"I can think of no better expression to characterise these similarities than 'family resemblances'; for the various resemblances between members of a family: build, features, colour of eyes, gait, temperament, etc., etc., overlap and crisscross in the same way ... And for instance the kinds of number form a family in the same way ... And we extend our concept of number as in spinning a thread we twist fibre on fibre. And the strength of the thread does not reside in the fact that some one fibre runs through its whole length, but in the overlapping of many fibres."

— *Ludwig Wittgenstein, from Philosophical Investigations, Part I, section 67*

REFERENCES

1. American Psychiatric Association. *Diagnostic and Statistical Manual of Mental Disorders*. 4th ed, text revision. Washington, DC: American Psychiatric Publishing; 2000.
2. Janis IL, Mann L. *Decision Making: A Psychological Analysis of Conflict Choice and Commitment*. New York: The Free Press; 1977.
3. Tufte ER. *The Cognitive Style of PowerPoint*. Cheshire, CT: Graphics Press LLC; 2003.
4. Gigerenzer G, Todd PM, Research Group A. *Simple Heuristics that Make Us Smart*. Oxford, UK: Oxford University Press; 1999.
5. Strous RD, Weiss M, Felsen I, et al. Video testimony of long-term hospitalized psychiatrically ill Holocaust survivors. *Am J Psychiatry*. 2005;162(12):2287-2294.
6. Cosgrove L, Krinsky S, Vijayaraghavan M, Schneider L. Financial ties between DSM-IV panel members and the pharmaceutical industry. *Psychother Psychosom*. 2006;75(3):154-160.
7. Hamm RM, Clark RM, Bursztajn HJ. Psychiatrists' thorny judgments: describing and improving decision-making processes. *Medical Decision Making*. 1984;4:425-447.
8. Bursztajn HJ, Feinbloom RI, Hamm RM, Brodsky A. *Medical Choices, Medical Chances: How Patients, Families, and Physicians Can Cope with Uncertainty*. New York: Routledge, Chapman, and Hall; 1990.
9. Hogarth R. *Judgment and Choice: The Psychology of Decisions*. New York: Wiley; 1980.
10. Bursztajn HJ, Hamm RM. Medical maxims: two views of science. *Yale J Biol Med*. 1979;52(5):483-486.
11. Havens L. *Approaches to the Mind: Movement of Psychiatric Schools from Sects Toward Science*. Boston: Little Brown; 1973.
12. Chanowitz B, Langer EJ. Premature cognitive commitment. *J Pers Soc Psychol*. 1981;41(6):1051-1063.
13. Larrick RP. Debiasing. In: *Blackwell's Handbook of Judgment and Decision Making*. Koehler DJ, Harvey N, eds. Oxford, England: Blackwell; 2004.
14. Appelbaum P, Gutheil TG. *Clinical Handbook of Psychiatry and the Law*. 4th ed. Baltimore, MD: Lippincott Williams and Wilkins; 2007.
15. Gutheil TG, Bursztajn H, Hamm RM, Brodsky A. Subjective data and suicide assessment in the light of recent legal developments. Part I: Malpractice prevention and the use of subjective data. *Int J Law Psychiatry*. 1983;6(3-4):317-329.
16. Bursztajn HJ, Gutheil TG, Hamm RM, Brodsky A. Subjective data and suicide assessment in the light of recent legal developments. Part II: Clinical uses of legal standards in the interpretation of subjective data. *Int J Law Psychiatry*. 1983;6(3-4):331-350.
17. Graber M, Gordon R, Franklin N. Reducing diagnostic errors in medicine: what's the goal? *Acad Med*. 2002;77(10):981-992.
18. Elstein AS. Heuristics and biases: selected errors in clinical reasoning. *Acad Med*. 1999;74(7):791-794.
19. Croskerry P. Achieving quality in clinical decision making: cognitive strategies and detection of bias. *Acad Emerg Med*. 2002;9(11):1184-1204.
20. Janis IL. *Crucial Decisions: Leadership in Policymaking and Crisis Management*. New York: Free Press; 1989.
21. Strohmer D, Shivy V. Bias in counselor hypothesis testing: testing the robustness of counselor or confirmatory bias. *Journal of Counseling and Development*. 1994;73:191-197.
22. Greenhalgh T. Narrative based medicine: narrative based medicine in an evidence based world. *BMJ*. 1999;318(7179):323-325.
23. Daubert v Merrell Dow Pharmaceuticals, Inc., 509 US 579 (1993).
24. Bursztajn HJ, Brodsky A. Ethical and effective testimony during direct examination and cross examination post-Daubert. In: *The Mental Health Practitioner and the Law*. Lifson LE, Simon RI, eds. Cambridge, MA: Harvard University Press; 1998:262-280.
25. Zinberg NE. *Drug, Set, and Setting*. New Haven, CT: Yale University Press; 1984.
26. Abernathy CM, Hamm RM. *Surgical Intuition*. Philadelphia, PA: Hanley and Belfus; 1995.
27. Bursztajn HJ, Gutheil TG, Brodsky A. Ethics and the triage model in managed care hospital psychiatry. *Psychiatric Times*. 1998;15(9):33-40.
28. First MB, Frances A. *DSM-IV Handbook of Differential Diagnosis*. Washington, DC: American Psychiatric Publishing; 1994.
29. Othmer E, Othmer SC. *The Clinical Interview Using DSM-IV-TR, Vol. 1: Fundamentals*. Washington, DC: American Psychiatric Publishing; 2002.
30. Othmer E, Othmer SC. *The Clinical Interview Using DSM-IV-TR, Vol. 2: The Difficult Patient*. Washington, DC: American Psychiatric Publishing; 2002.
31. Fauman MA. Defining a DSM Infrastructure. *Am J Psychiatry*. 2006;163(11):1873-1874.
32. Kessler RC. The categorical versus dimensional assessment controversy in the sociology of mental illness. *J Health Soc Behav*. 2002;43(2):171-188.
33. First MB. Dimensional approaches in diagnostic classification: a critical appraisal. In: *The Future of Psychiatric Diagnosis: Refining the Research Agenda*. Bethesda, MD: 2006.
34. *Psychodynamic Diagnostic Manual*. Alliance of Psychoanalytic Organizations; 2006.
35. Westen D, Arkowitz-Westen L. Limitations of axis II in diagnosing personality pathology in clinical practice. *Am J Psychiatry*. 1998;155(12):1767-1771.
36. Luhmann T. *Of Two Minds: An Anthropologist Looks at American Psychiatry*. Colchester, UK: Vintage Books; 2001.
37. Helzer JE, Kraemer HC, Krueger RF. The feasibility and need for dimensional psychiatric diagnoses. *Psychol Med*. 2006;36(12):1671-1680.
38. Klein GA. A recognition-primed decision (RPD) model of rapid decision making. In: *Decision Making in Action: Models and Methods*. Klein GA, Orasunu J, Calderwood R, Zsombok CE. Norwood, NJ, eds. Greenwich, CT: Ablex Publishing Corporation; 1993:138-147.
39. Cantor N, French R, Smith E, Mezzich J. Psychiatric diagnosis as prototype organization. *J Abnorm Psychol*. 1980; 89(2):181-193.
40. Horowitz L, French R, Wallis K, Post D, Siegelman E. The prototype as a construct in abnormal psychology: 2. clarifying disagreement in psychiatric judgments. *J Abnorm Psychol*. 1981;90(6):575-585.
41. Wittgenstein L. *Philosophical Investigations*. Malden, MA: Blackwell Publishing; 2001.
42. Tversky A. Features of similarity. *Psychological Review*. 1977;84(4):327-352.