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Revision of the DSM and Conceptual Expansion of Mental Illness: An Exploratory Analysis of Diagnostic Criteria

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The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) contains the official diagnostic criteria for recognized mental illnesses. Some have asserted that DSM revisions have caused the boundaries of specific disorders to expand to include more behaviors, but no previous research has examined if such expansion is isolated or endemic. The current research consisted of an exploration of revisions to diagnostic criteria for 81 disorders. Each change between editions of the DSM was conceptually analyzed as making the disorder more exclusive or more inclusive in terms of the number of people who could theoretically meet the criteria. Results indicated that 63% of disorders moved toward inclusivity, that each edition of the DSM moved toward inclusivity, and that most types of revisions increase inclusivity.

Keywords: DSM disorders, diagnostic bracket creep, mental illness

The *Diagnostic and Statistical Manual of Mental Disorders* (DSM) is a foundational document in the study of psychopathology because it provides definitions for the currently acknowledged examples of mental illness. Defining mental illness is an ongoing process that is reflected in the multiple editions of the DSM. The first and second editions of the DSM had limited importance for clinicians and researchers, but the DSM-III was revolutionary both in terms of its definitional approach and its impact (Mayes and Horwitz, 2005). Central features of the DSM-III, such as multiaxil diagnosis and symptom-based definitions, have remained unrevised across the DSM-III-R (American Psychiatric Association [APA], 1987), DSM-IV (APA, 1994), and DSM-IV-TR (APA, 2000). However, revisions have included many new diagnostic labels, and the new disorders have caused concern about expansion of the concept of mental illness (Follette and Houts, 1996; Pincus,

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Frances, Davis, First, and Widiger, 1992; Wakefield, 1999). A related area of concern centers on what has been called conceptual bracket creep (McNally, 2004). Bracket creep refers to the broadening of definitions of mental disorders to be more inclusive, allowing more people to meet the criteria. Although researchers have discussed bracket creep with regard to specific disorders, there has never been an investigation of expansion of the DSM as a whole. As such, the current exploratory study consists of a conceptual analysis of revisions to diagnostic criteria to determine if mental disorders have become more exclusive or more inclusive overall. Such an analysis is particularly relevant given the current DSM revision process and recent controversy surrounding fears of diagnostic expansion in the forthcoming DSM-5 (Francis, 2009, 2010; "Open Letter to the DSM-5," 2012).

Expansion of the DSM

Increasing Diagnostic Categories

A traditional method of defining mental illness is to conceptualize it as statistically deviant behavior (Wakefield, 1992), but current prevalence rates indicate that mental illness is no longer statistically aberrant. Epidemiological research indicates that the lifetime prevalence of mental disorders is nearly 50% (Kessler et al., 1994; Kessler, Chiu, Demler, and Walters, 2005). Such results are particularly stunning considering the fact that epidemiological studies only assess for a sample of the total disorders in the DSM. The implication is that most of the population will have a diagnosable mental illness in their lifetime — it is normal to have a mental illness. Such findings have provoked questions about the validity of the concept of mental disorder and assertions that the DSM has expanded into diagnosing normal behaviors. Some criticism has focused on single disorders (e.g., Horwitz and Wakefield, 2007), but others have offered indictments of the entire diagnostic system (Boysen, 2007; Kutchins and Kirk, 1997).

The number of diagnoses in the DSM has expanded greatly since the first edition was published in 1952. There was a 300% increase in the number of diagnoses from the first to fourth edition, and the number of diagnoses increased by 100 just between the DSM-III and DSM-IV (Houts, 2002). There are several causes for the expansion. Robert Spitzer (2001), one of the main framers of the modern DSM, stated that the approach taken in DSM revisions is one of splitting disorders apart into new diagnoses as opposed to lumping them together. Indeed, much of the increase in diagnostic labels represents creation of disorder subtypes from parent disorders (Wakefield, 1999). Examples include substance abuse and substance dependence, which are parent categories that have nearly a dozen substance-specific subdisorders (APA, 2000). The argument for splitting stems

from the broader medical practice of creating new illnesses by dividing up a preexisting illness into subcategories as scientific knowledge increases. Smaller, more coherent subcategories are thought to increase validity by providing greater precision (Spitzer, 2001).

Another way that new disorders enter the DSM is as signs of risk for preexisting disorders. Some individuals who do not meet the full criteria for a mental disorder, nonetheless, have clear distress or impairment that predicts later mental health problems. Recognizing the potential benefit of identifying and treating these individuals, the framers of the DSM have created new disorders to reflect risk. One of the more controversial risk-based disorders is Acute Stress Disorder (Harvey and Bryant, 2002). Immediate, strong reactions to trauma are an important predictor of Post Traumatic Stress Disorder; thus, Acute Stress Disorder was created as a way to provide early assistance to traumatized individuals (Marshall, Spitzer, and Liebowitz, 1999). Disagreement currently surrounds the potential addition of a schizophrenia risk syndrome into the DSM-5 (David, 2011; Yung, Wood, McGorry, and Pantelis, 2011). Researchers have identified subtle, nonpsychotic cognitive impairments that predict later schizophrenia, and these signs may become the criteria for a mental disorder designed to identify individuals before they have psychotic breaks. The central argument against such a risk syndrome is that it represents expansion into territory outside of mental illness (David, 2011). However, the standard response to such criticism is that diagnosis of risk is an accepted practice for physical disorders. Diagnosis of individuals as pre-diabetic or pre-hypertensive occurs in physical medicine, and analogous psychiatric risk syndromes, valid or not, are part of the DSM expansion.

Some have rejected the notion that increases in diagnostic categories represents scientific advancement. Houts (2002) offered several practical and social factors as alternatives. For example, having a label for problematic behavior attenuates distress for people exhibiting the behavior and their care providers. Also, there are experts who specialize in the research or treatment of specific syndromes; as such, these experts base their professional identity on those syndromes and are likely to lobby for their official recognition in the DSM. Finally, adding disorders to the DSM translates into financial gains for the medical industry and the publishers of DSM materials. Although explanations diverge, there is agreement that the number of diagnostic categories has increased. It is important to note, however, that the DSM has expanded in more ways than just the number of disorders.

Bracket Creep

Expansion of the DSM by the inclusion of new disorders is a frequent topic of debate, but a less-discussed phenomenon is the expansion of the diagnostic

criteria for already existing disorders. One way to fill in diagnostic gaps is to create new disorders. Alternatively, deletion of criteria, alteration of symptom descriptions, and other changes to the definitions of disorders can allow a broader set of symptoms to be diagnosed; this is the process of conceptual bracket creep (McNally, 2004). The psychopathology literature contains few articles on bracket creep, and those that do exist tend to focus on single disorders. Post Traumatic Stress Disorder stands out as the most discussed case of bracket creep (McNally, 2004; Rosen, 2004; Spitzer, First, and Wakefield, 2007). Central to the discussion is the evolving definition of trauma in the DSM. The DSM-III defined trauma as "a recognizable stressor that would evoke significant symptoms of distress in almost everyone" (APA, 1980, p. 238). However, DSM-IV revisions altered the definition of trauma to an event that a person "experienced, witnessed, or was confronted with" that caused "intense fear, hopelessness, or horror" (APA, 1994, pp. 427–428). Critics maintain that being "confronted" with a trauma encompasses such a broad spectrum of events that anything that causes fear, hopelessness, or horror might be included (McNally, 2004). Thus, less extreme traumas can lead to diagnosis, and more individuals can meet the disorder criteria.

A more complex example of bracket creep can be seen Attention Deficit/Hyperactivity Disorder. Early definitions of the disorder focused on children, but the disorder has gradually expanded to include adults (Conrad and Potter, 2000). For example, DSM-III criteria emphasized childhood settings with symptoms such as "has difficulty concentrating on schoolwork" (APA, 1980, p. 43) and "frequently calls out in class" (APA, 1980, p. 44). Furthermore, the in-text description of the disorder was unambiguous in its specificity to childhood. With subsequent editions of the DSM, however, the symptoms became less specific to childhood settings. Calling out in class became "blurts out answers before the question is completed" (APA, 2000, p. 92). In addition, whereas school and home were the only settings initially included in the criteria, workplace impairment was eventually included as well. Over the span of a decade or so, these subtle types of bracket creep changed what was once considered a childhood disorder to one that is applicable to all ages.

Autism is yet another disorder with boundaries that have systematically crept toward inclusiveness (Gernsbacher, Dawson, and Goldsmith, 2005). To begin, the DSM-III required that six specific criteria be met for Autism to be diagnosed, but the diagnostic criteria in the DSM-III-R switched to a list of optional symptoms. Having symptom options rather than specific requirements allowed a broader spectrum of symptom presentations to meet the definition of Autism. Changes also occurred in the severity of the symptoms. For example, the DSM-III required "gross deficits" in language (APA, 1980, p. 89), but revisions allowed a "delay in" language development to be sufficient for diagnosis (APA, 2000, p. 75). Although such revisions may seem trivial, changes in the inclusivity of diagnostic criteria are a likely causal factor in the increased number

of children being diagnosed with Autism (Gernsbacher et al., 2005). Autism is not unique in this sense because seemingly small changes in the definitions of disorders can have significant effects on the number of people who meet the diagnostic criteria.

Diagnostic Criteria and Disorder Prevalence

Several areas of research illustrate the impact that changes to diagnostic criteria can have on prevalence rates for disorders. Epidemiological research often documents prevalence rates, and it provides the best illustration of the impact of small changes in the definition of disorders. Large-scale epidemiological studies produce significantly different lifetime prevalence rates based on the use of different survey techniques and editions of the DSM (Regier et al., 1998). For example, the Epidemiological Catchment Area Study, using the DSM-III, and the National Comorbidity Survey, using the DSM-IV, produced lifetime prevalence rates for mood disorders that differed by over 10% (Regier et al., 1998). In a particularly illustrative epidemiological study, researchers examined the effect slight wording changes had on the number of individuals who assented to symptoms of social phobia (Pélissolo, André, Moutard–Martin, Wittchen, and Lépine, 2000). Results indicated that the addition of more symptom options consistently increased the number of people who assented to criteria. For example, the symptom "fear or avoidance most or some of the time" had a 10% lower prevalence rate than when it was followed by the additional option of "or lifetime avoidance always or frequently" (p. 27). Changing the number of symptoms needed to meet the minimal diagnostic criteria had an even more pronounced effect: 10% of people meet the requirement of having two somatic symptoms, but 28% meet the requirement when it was reduced to one symptom.

Reducing the number of symptoms required or the severity of diagnostic criteria results in what is often referred to as a subthreshold disorder. Subthreshold disorders do not meet the standard diagnostic criteria, but that does not mean that they are subclinical (Pincus et al., 1992). Even people diagnosed with the mildest subthreshold disorders have significantly increased risk for subsequent negative health outcomes such as hospitalization, suicide, or serious mental illness (Kessler et al., 2003). For the purposes of this research, however, the point is not the clinical utility of such definitions of mental illness but the definitions' effect on the exclusivity of a diagnosis. Unsurprisingly, altering diagnostic criteria to create subthreshold disorders systematically increases the number of people who can be diagnosed. Research indicates that expanding diagnostic criteria to include subthreshold cases increases the prevalence of diagnoses such as Social Anxiety Disorder (Fehm, Beesdo, Jacobi, and Fielder, 2008), Generalized Anxiety Disorder (Carter, Wittchen, Pfister, and Kessler, 2003; Ruscio et al., 2007), Post Traumatic Stress Disorder (Marshall et al., 2001), Major Depression (Kendler and

Gardner, 1998; Kessler, Zhao, Blazer, and Swartz, 1997), and Bipolar Disorders (Judd and Akiskal, 2003).

It is important to note that there is no inherent reason why diagnostic criteria should increase the number people who can be diagnosed; disorders can also become more exclusive. For example, DSM-IV criteria for Obsessive Compulsive Disorder requires "marked distress" and recognition of symptoms as "excessive and unreasonable" (APA, 1994, p. 423), but these requirements were absent in the DSM-III. Research indicates that these changes are a probable explanation for the higher prevalence rates obtained with DSM-III vs. DSM-IV criteria in epidemiological research (Crino, Slade, and Andrews, 2005). Although disorders can move toward greater exclusivity, the key issue in the current research is if revisions to the DSM are systematically biased toward exclusivity or inclusivity.

Types of Revisions Affecting Exclusivity

Before examining actual changes made to the DSM it is important to consider the numerous ways in which diagnostic criteria for mental disorders can be revised and if the revisions decrease the number of people who can be diagnosed (i.e., greater exclusivity) or increase the number of people who can be diagnosed (i.e., greater inclusivity). Revisions include changes in (a) the number of required symptoms, (b) the number of symptom options available, (c) the number of criteria, (d) the duration of symptoms, (e) the frequency of symptoms, (f) age requirements, (g) the use of criteria vs. symptoms lists, (h) the requirement of mental acts vs. behavioral acts, (i) the requirement of self-reported vs. observed symptoms, and (j) the severity of wording. As outlined below, each of these changes can theoretically lead to increased exclusivity or inclusivity of diagnostic criteria.

Some of the most common revisions in the DSM affect the number of symptoms or criteria. Criteria in the DSM are labeled with sequential letters. Each criterion can require a subset of symptoms. Thus, symptoms and criteria can change independently. One of the most obvious changes is the number of symptoms required, which can increase or decrease. For example, Oppositional Defiant Disorder's *required* symptoms increased from two to five between the DSM-III and DSM-III-R but then decreased to four in the DSM-IV. All things being equal, adding required symptoms increases exclusivity because there are more conditions to be meet, and removing required symptoms increases inclusivity because there are fewer conditions to be met. Frequently, a change in the number of *available* symptoms occurs simultaneously with a change to the number of required symptoms. Considering Oppositional Defiant Disorder once again, the number of symptom options increased from five to nine between the DSM-III and DSM-III-R and decreased to eight in the DSM-IV. Individual symptoms can be changed to add more options as well. To illustrate, DSM-IV revisions changed the definitions of paraphilias so that fantasies or urges qualified a per-

son for the disorder whereas the previous definition required both fantasies and urges; this functionally splits a single symptom option into two symptom options. As opposed to the number of symptoms *required*, having fewer *available* symptoms increases exclusivity because the behavior in question must be more specific, and having more available symptoms increases inclusivity because more behaviors can meet the definition.

The number of criteria required follows the same pattern as the number of symptoms required. To illustrate, revisions to the DSM-III-R added a criterion to Specific Phobia requiring that the phobic object cause an immediate anxiety response; added criteria such as this increases exclusivity because there are more specific requirements. In contrast, revisions of Pain Disorder in DSM-III-R deleted the requirement that the pain symptoms be inconsistent with the actual functioning of the nervous system. Deleting criteria increases inclusivity because fewer specific characteristics are required.

DSM revisions also sometimes lead to changes in the required frequency and duration of symptoms. Frequency of symptoms can increase as illustrated by Enurisis in which the number of required incidents increased from two per month to two per week between the DSM-III and DSM-III-R. In contrast, the definition of Panic Disorder functionally reduced the frequency requirement to one panic attack per month in the DSM-III-R by altering the wording to reflect a requirement of "one or more attacks" followed by a month of worry (APA, 1987, p. 239). In addition to changes in established frequency requirements, revised criteria can include new frequency requirements such as the DSM-III-R stipulation that tics in Transient Tic Disorder must occur every day. Such additions are the same as adding a criterion to the definition of a disorder and, thus, increase exclusivity. The duration of disorders functions analogously to frequency. For example, the previously mentioned revision of Transient Tic Disorder also included a reduction in the required duration of the disorder from one month to two weeks. In contrast, the DSM-III requirement that Substance Abuse last one month was changed in the DSM-III-R to symptoms occurring recurrently any time in a year, and this meant that the duration was reduced because symptoms could be recurrent over the span of less than one month. In general, stipulating that symptoms be more frequent or of greater duration increases exclusivity because fewer people will exhibit symptoms to that extreme. Also, adding or deleting a frequency or duration requirement functions analogously to adding or deleting a criterion.

Age requirements for disorders also may increase or decrease exclusivity. Adding or deleting an age requirement functions like adding or deleting a *required* diagnostic criterion and increases or decreases exclusivity, respectively. To illustrate, DSM-III-R revisions stipulated that Generalized Anxiety Disorder be diagnosed only in adults, but revisions also deleted the age requirement for Oppositional Defiant Disorder; thus, fewer people could meet the criteria for

Generalized Anxiety Disorder and more could meet the criteria for Oppositional Defiant Disorder. Existing age requirements can also be constricted, such as with Tourette's Disorder for which the age of onset decreased from 21 to 18 in the DSM-III-R, or expanded, such as with Reactive Attachment Disorder, which originally only applied to infants but was expanded to all of childhood in the DSM-III-R. Restricting the possible ages of people with a disorder makes the disorder more exclusive because fewer people can meet the criteria, and expanding the possible ages makes the disorder more inclusive for the opposite reason.

Another way that definitions of disorders can be altered is in the use of required criteria vs. symptom lists. Some disorders have a set list of criteria that must all be met for diagnosis to occur (i.e., a monothetic classification), and other disorders have a list of symptoms from which a certain number must be present for a diagnosis to occur (i.e., a polythetic classification). For example, current DSM definitions of personality disorders use lists of five to nine symptoms, of which three to five must be present for diagnosis. However, the DSM-III did not consistently use the symptom list approach, and disorders such as Schizoid Personality were defined by set criteria that all had to be met. Having set criteria is the more exclusive of the definitional approaches because the characteristics of the disorder must occur in one way. Symptom lists are more inclusive because there are more ways symptoms can manifest and still meet the disorder's definition. The best illustration of the flexibility of symptom lists is Obsessive Compulsive Personality Disorder, which requires four symptoms be present out of a list of eight; thus, two people diagnosed with the disorder may not share a single symptom.

Acceptable types of symptoms also change in revisions of the DSM. For some disorders symptoms must be observable behaviors, but mental behaviors are acceptable for other disorders. Allowing only observable behaviors is more exclusive because it reduces subjectivity and ambiguity in diagnosis. Also, engaging in an abnormal behavior is more extreme than having an abnormal thought. Furthermore, allowing thoughts and behaviors increases the number of potential symptoms in relation to allowing only behaviors. The best example of this type of change occurred with Paraphilias in the DSM-III-R. Many of the Paraphilias switched from requiring a person to act on fantasies and urges to allowing fantasies and urges to be sufficient for diagnosis. In contrast, the option that subjective evaluations of low excitement be sufficient for diagnosis was deleted for both Female Sexual Arousal Disorder and Male Erectile Disorder in the DSM-IV, and this made the disorders more exclusive because arousal actually had to be low rather than just subjectively low. The type of behavior required for diagnosis can also be restricted to self-report, or observations by others can be allowed. Dysthymic Disorder has always required low mood, but revisions to the DSM-III-R allowed for the low mood to be documented by "subjective account" or by "observations by others" (APA, 1987, p. 232). Allowing

both self-report and observation of the symptoms increased the ways in which they can be identified and, thus, increases inclusivity.

The final type of change includes revisions in the severity of disorders. As disorders become more severe they also become more exclusive because the behaviors in question are less common. Some of the previous changes overlap with severity; for example, longer durations and increased frequencies would be more severe than shorter durations and reduced frequencies. The type of severity in question here, however, focuses on the wording of symptoms and criteria. To illustrate, Pathological Gambling was originally defined as "chronic" and "progressive" in DSM-III and then simply "maladaptive" in DSM-III-R, which represented a decrease in severity. Another example is the subtle word changes in the definition of Vaginismus. The disorder was defined as "recurrent and persistent" in the DSM-III (APA, 1980, p. 280) and "recurrent or persistent" in the DSM-III-R (APA, 1987, p. 295), which decreased its severity because both negative descriptions did not need to be met. Individual symptoms can also change in their severity. An example is an Autism symptom that required "no mode of communication" in the DSM-III-R (APA, 1987, p. 38) but only required a "delay in" language development in the DSM-IV (APA, 1994, p. 70). In contrast, an increase in severity occurred between the DSM-III and DSM-III-R for the symptoms of Conduct Disorder required as part of the diagnosis of Antisocial Personality Disorder. The DSM-III listed symptoms such as fighting and casual sex, but the DSM-III-R symptoms increased the severity by including symptoms such as using weapons in fights and forcing sex.

Potential Bias in DSM Revisions

Clearly, there are many types of changes that can occur during DSM revisions, and each of them can theoretically lead to an increase or decrease in disorders' exclusivity. Logically then, there are only three possible outcomes of the DSM revision process. One, revision might be a completely neutral process with no net effect on exclusivity. Revisions have the potential to make disorders more or less exclusive. If the end goal is a valid diagnosis, neither exclusivity nor inclusivity should be favored in the revision process because there is no reason to assume a set level of exclusivity or inclusivity for disorders. Two, revision may be biased toward exclusivity. Scientific progress should allow for increased diagnostic precision. Advances in knowledge about disorders should produce greater differentiation; after all, this is the explanation offered for the splitting of large categories of disorder into smaller subcategories (Spitzer, 2001). Making finer distinctions between disorders would shrink rather than expand the disorders' respective areas of explanation. Three, revision may be biased toward inclusiveness. Social, professional, and personal influences could bias decision makers toward accommodating a wider spectrum of symptom presentations with

each subsequent edition of the DSM. Overall, the DSM revision process may be biased or unbiased, and only an examination of diagnostic criteria across disorders and editions of the manual will determine the effect revision has had on exclusivity and inclusivity.

Although expansion of the total number of disorders in the DSM has been a topic of previous research (Houts, 2002), no study has explored the expansion of the individual diagnostic criteria across a broad spectrum of disorders. In order to fill this gap in the literature, I coded revisions to diagnostic criteria in the DSM as conceptually increasing disorders' exclusivity or inclusivity. Coding occurred for 81 disorders that remained in the manual from the DSM-III to the DSM-IV-TR. As such, conceptual changes in exclusivity could be examined for individual disorders, editions of the DSM, types of revisions, and revisions overall. The results of the coding will help to determine if the DSM revision process is biased toward exclusivity, biased toward inclusivity, or unbiased.

Method

The review focused on revisions of diagnostic criteria for mental disorders from the DSM-III through the DSM-IV-TR. As such, an inclusion criterion was that disorders be present across all four editions of the DSM. In addition, the review focused on mental disorders, and this led to the exclusion of conditions primarily caused by substances or medical illnesses. Finally, disorders that are identically defined subcategories of a larger category received only one code. Specifically, Substance Abuse and Substance Dependence received only one code, and the male/female sexual dysfunctions with analogous criteria received only one code. These methods led to the inclusion of 81 disorders (see Table 1). It is important to note that the purpose of the DSM-IV-TR revision was only to update the text descriptions of the disorders with new research; thus, only four disorder criteria received revisions that could be coded.

Coding occurred for changes made to each edition of the DSM starting with the DSM-III. Each edition was only compared to the immediately succeeding edition (e.g., DSM-III and DSM-III-R). Coding included ten types of revisions: (a) the number of required symptoms, (b) the number of symptom options available, (c) the number of criteria, (d) the duration of symptoms, (e) the frequency of symptoms, (f) age requirements, (g) the use of criteria vs. symptoms lists, (h) required mental acts vs. behavioral acts, (i) the requirement of symptoms self-report vs. observation, and (j) the severity of wording. Disorders received a score for each change corresponding to one of the ten revision types; negative scores reflected revisions that led to increased exclusivity, and positive scores reflected increased inclusivity. Specific changes received only one code and could not count toward multiple categories. For example, the addition of an age requirement as a separate

criterion counted as an age requirement but did not also count as a change to the number of criteria. Changes that affected both exclusivity and inclusivity for the same type of revision canceled each other out. For example, if an extra symptom option was added to one criterion and one symptom was subtracted from another criterion, the net score for number of symptoms available would be zero. Disorders sometimes include the diagnostic criteria for other disorders as part their own criteria, and coding included both sets of criteria in these situations. For example, coding for Antisocial Personality Disorder in the DSM-IV also reflected changes in the diagnostic criteria for Conduct Disorder, which is required as part of the former's definition.

The focus of this research was on the symptoms that uniquely define disorders in the DSM, and for that reason two types of diagnostic criteria did not receive codes: standardized clinical significance criteria and exclusion criteria. Many disorders in the DSM have a separate clinical significance criterion stating that "The symptoms cause clinically significant distress or impairment in social, occupational, or other areas of functioning." The addition or deletion of this specific stock criterion did not receive a code. These identical statements were added en masse to disorders as part of the DSM-IV revisions. Thus, the main reason for their exclusion from the coding system is that they do not actually contribute to the unique definitions of disorders. In fact, the clinical significance criteria are often redundant with the specific symptoms of disorders, which already define the associated distress or dysfunction (Spitzer and Wakefield, 1999). In general, the clinical significance criterion is not definitional itself, it is merely a tautological reminder to clinicians "that only disorders should be diagnosed as disorders" (Spitzer and Wakefield, 1999, p. 1859). Exclusion criteria were left out of the coding scheme for similar reasons as clinical significance criteria. The DSM's exclusion criteria state that the disorder being defined is not caused by substances, medical illness, or other mental disorders. Thus, rather than defining the disorder, exclusion criteria make explicit the assumption that the disorder does not have a better explanation. Furthermore, the main function of exclusion criteria is to prevent comorbidity. Overall, these two criteria did not receive codes because they do not add or remove precision to the actual symptom-based definitions of disorders; in fact, their inclusion in the DSM is simply an indication of the current inability to accurately define the disorders using their specific symptoms.

Coding of the revisions resulted in assignment of scores of −1 to changes that increased exclusivity and assignment of scores of +1 to changes that increased inclusivity. Analysis of the results included simple addition of assigned scores across relevant domains to yield a net score. For example, addition of scores for a single disorder across editions of the DSM yielded a net score for that disorder (e.g., the net change score for Schizophrenia from DSM-III through DSM-IV-

TR). Or, the sum of codes for one revision type across disorders and editions of the DSM would indicate if changes of that type moved disorders toward exclusivity or inclusivity overall.

Results

The first analysis examined net changes in exclusivity for the diagnostic criteria of individual disorders across editions of the DSM (see Table 1; a more detailed table outlining specific ratings for each disorder is available from the author). For example, the analysis examined if changes in the criteria for Adjustment Disorder resulted in a net move toward exclusivity across the DSM-III-R, DSM-IV, and DSM-IV-TR. Of the 81 disorders, 51 had net changes toward inclusivity, 13 had net changes toward exclusivity, and 17 showed no net change. Thus, disorders showed a majority trend toward inclusivity across editions of the DSM.

Next, the analyses examined net changes in exclusivity for the revisions made to each edition of the DSM. Revisions in the DSM-III-R moved 43 diagnostic criteria toward inclusivity and 10 toward exclusivity. DSM-IV revisions moved 26 diagnostic criteria toward inclusivity and 15 toward exclusivity. All four diagnostic criteria changes in the DSM-IV-TR moved toward inclusivity. Thus, the total number of revised criteria that moved toward inclusivity (73) was nearly triple the number of revised criteria that moved toward exclusivity (25).

The next analysis examined how different types of revisions affected exclusivity. Net changes can be seen in Table 2. Several important trends are worth noting. First, seven out of ten types of revisions had a positive net score indicating that most types of revisions move the DSM toward greater inclusivity. Second, revisions to the number of symptoms and severity resulted in the most net change, and both revisions moved the DSM toward increased inclusivity. In fact, the net change toward inclusivity of either one of those types of revisions was larger than the total net change toward exclusivity. Third, the only prominent negative net change was in duration, which illustrated a definitive trend toward exclusivity in stipulating the lengths of disorders. Fourth, looking at net changes for each edition of the DSM it becomes clear that the revisions associated with the DSM-III-R led to the largest shift toward inclusiveness.

A potential criticism of these results is that they do not take into account exclusion or clinical significance criteria. Although this research is primarily about symptoms that specifically define disorders in the DSM, the addition of exclusion and clinical significance criteria are extremely common DSM revisions that are technically part of definitions. As such, I coded the addition and subtraction of those criteria as a supplementary analysis. The only type of revision affected by this coding was number of criteria. To begin, changes to the number of criteria resulted in a positive net score of 4 across all disorders during the initial coding

(see Table 2), but the net score was –28 after the recoding, which means that revisions to the number of criteria moved disorders toward exclusivity. When considering net changes to the 81 disorders across the DSM editions, 35 became more inclusive, 21 became more exclusive, and 25 showed no change. Revisions in the DSM-III-R moved 42 diagnostic criteria toward inclusivity and 11 toward exclusivity, DSM-IV revisions moved 18 diagnostic criteria toward inclusivity and 28 toward exclusivity, and the DSM-IV-TR results remained the same. Clearly, results for the DSM-IV changed the most with recoding, and the major cause was the addition of a generic clinical significance criterion to many disorders in the DSM-IV. Nonetheless, the total number of criteria that moved toward inclusivity (64) remained higher than the total number of criteria that moved toward exclusivity (39). Overall, consideration of exclusion and clinical significance criteria makes the DSM movement toward inclusiveness less dramatic, but the effect remains even with this more stringent standard.

Discussion

The results of this exploratory review clearly support the notion that the DSM has been conceptually expanding over time. Inclusivity increased across every metric considered. At the level of individual disorders, 63% of disorders had a net move toward inclusivity between the DSM-III and DSM-IV-TR. The trend toward expansion was also consistent across editions of the manual. Although the largest move toward inclusivity occurred in the DSM-III-R, each revision of the DSM yielded more changes toward inclusivity than exclusivity. Finally, seven out of ten types of revisions resulted in net moves toward inclusivity.

Results indicative of increased conceptual inclusivity of diagnostic criteria are consistent with several other areas of research. Critics have pointed out that the number of disorders in the DSM has grown well beyond the scientific knowledge supporting the validity of such disorders (Houts, 2002). Apparently, filling in diagnostic gaps with new disorders occurs simultaneously with expansion of existing disorders' boundaries. The current research is also consistent with existing concerns about diagnostic bracket creep. Analysis of individual disorders such as Post Traumatic Stress Disorder (McNally, 2004) and Autism (Gernsbacher et al., 2005) have suggested that DSM criteria sometimes change to become more inclusive. With this review, however, there is now evidence that most disorders show evidence of similar diagnostic bracket creep. Reductions in severity were the second most common revision leading to increased inclusivity. Such a finding fits perfectly with the inclusion of risk syndromes such as Acute Stress Disorder (Harvey and Bryant, 2002) in the DSM and ongoing interest in mild and subclinical disorders (e.g., Kessler et al., 2003). Overall, all evidence points to expansion of the DSM, the concept of mental disorder, and the types of behaviors that qualify as symptoms of mental disorder.

Table 1

Net Changes in Mental Disorders Inclusivity and Exclusivity Across Editions of the DSM

Disorder	DSM-III-R	DSM-IV	DSM-IV-TR
Adjustment Disorder		1	
Agoraphobia	2		
Anorexia Nervosa		1	
Antisocial Personality Disorder		1	
Attention–Deficit/Hyperactivity	–1		
Autism	2		
Avoidant Personality Disorder	1	1	
Borderline Personality Disorder	1	2	
Brief Psychotic Disorder	1		
Bulimia Nervosa	–4	1	
Chronic Motor or Vocal Tic Disorder	1	–2	
Conduct Disorder	2	2	
Conversion Disorder		–1	
Cyclothymia		1	
Delusional Disorder		1	
Dependent Personality Disorder	1		
Depersonalization			
Depression	1		
Dissociative Amnesia		1	
Dissociative Fugue		1	
Dissociative Identity Disorder	2	–1	
Dyspareunia	2	–1	
Dysthymic Disorder			
Encopresis	–2	1	
Enuresis		–1	
Exhibitionism	1		2
Expressive Language Disorder	1		
Factitious Disorder			
Fetishism	1		
Gender Identity Disorder	1	2	
Generalized Anxiety Disorder			
Histrionic Personality Disorder	1	–1	
Hypoactive Sexual Desire Disorder	1		
Hypochondriasis	–1	1	
Intermittent Explosive Disorder		1	
Kleptomania		1	
Male/Female Orgasmic Disorder	1		
Male/Female Sexual Arousal/ Erectile Disorder	4	–2	
Mania		–1	
Mathematics Disorder	1		
Mental Retardation	1	1	
Narcissistic Personality Disorder	1	2	

Table 1 — Continued

Net Changes in Mental Disorders Inclusivity and Exclusivity Across Editions of the DSM

Disorder	DSM-III-R	DSM-IV	DSM-IV-TR
Obsessive Compulsive Disorder	1		
Obsessive Compulsive Personality Disorder			
Oppositional Defiant Disorder	1		
Pain Disorder	1	–1	
Panic Disorder	1	1	
Paranoid Personality Disorder	2		
Pathological Gambling	2	–1	
Pedophilia			2
Phonological Disorder	1	1	
Pica		–2	
Post Traumatic Stress Disorder	–1	1	
Premature Ejaculation	2		
Pyromania	1		
Reactive Attachment Disorder	3		
Reading Disorder	1		
Rumination Disorder		1	
Schizoid Personality Disorder	1		
Schizoaffective Disorder			
Schizophrenia	–1		
Schizophreniform Disorder			
Schizotypal Personality Disorder			
Selective Mutism	1	–1	
Separation Anxiety Disorder		–2	
Sexual Masochism			
Sexual Sadism			2
Shared Psychotic Disorder	2		
Sleep Terror Disorder	–2	2	
Sleepwalking			
Social Phobia	–1		
Somatoform Disorder		1	
Specific Phobia	–1		
Stuttering	–2	2	
Substance Abuse	2	1	
Substance Dependence	1		
Tourette's Disorder	3	–1	
Transient Tic Disorder	3	–2	
Transvestic Fetishism	1		
Vaginismuss	1		
Voyeurism	2		2

Note. Positive scores indicate net change in criteria toward inclusivity and negative scores indicate net change toward exclusivity. Although mania is not a diagnosable disorder, it is included here for simplicity because it functions as the minimal requirements for Bipolar I.

The most common types of changes to diagnostic criteria provide some insight into the DSM revision process. Increased symptom options and reduced severity were by far the two most prevalent revisions resulting in greater inclusiveness. Both of these revisions are fairly subtle; they typically represent alterations in already existing criteria or wording. Thus, expansion of diagnostic criteria occurs incrementally. DSM task force members appear to change criteria just enough to allow for broader symptoms presentations or borderline cases. Several examples are worth considering. The DSM-III-R Social Phobia criteria required fear of social situations that result in scrutiny from others, but the DSM-IV added alternative options so that the fear could also center on performance situations and unfamiliar people. Such a change seems to indicate a desire to accommodate diagnosis of people who have social anxiety that manifests in situations just outside of the disorder's original boundary. In terms of changes to severity, all of the Paraphilias had their severity reduced in the DSM-III-R by the deletion of the requirement that the abnormal sexual behavior be the "preferred or exclusive" source of sexual excitement. The change allowed the basic behavior in question to remain the same, but it also broadened the disorder to include people who are simply disturbed by their sexual behavior or whose sexual behavior causes them problems. Overall, the most common changes causing increased inclusivity tend to broaden the scope of diagnoses without significantly altering the underlying concept.

In contrast to the subtle changes toward inclusivity, revisions that cause an increase in exclusivity are more straightforward. Changes to symptom duration,

Table 2

Net Changes in DSM Revisions by Revision Type and DSM Edition

Revision Type	DSM-III-R	DSM-IV	DSM-IV-TR	Total
Symptoms available	17	18	0	35
Severity	21	8	4	33
Behavior type	7	0	0	7
Set criteria vs. options	8	–2	0	6
Symptoms required	0	0	4	4
Number of criteria	4	0	0	4
Report type	2	1	0	3
Duration	–14	–6	0	–20
Frequency	–1	–3	0	–4
Age	3	–4	0	–1

Note. Positive scores indicate net change in criteria toward inclusivity and negative scores indicate net change toward exclusivity.

symptom frequency, and age were the only revisions that had a net move toward exclusivity, but duration changes were by far the most prevalent. The most common way in which these revisions occurred was through the simple addition of a new requirement. For example, six month duration became part of the Paraphilias' criteria in the DSM-III-R. Addition of duration requirements seems to be the only example in which DSM revisions show a clear impetus toward increasing exclusivity. A duration requirement does not change the symptomology of the disorder, but it does reduce the likelihood that people exhibiting those symptoms can be diagnosed with a disorder. It is interesting to consider that the net change toward exclusivity for age requirements seems to be an artifact. Revisions to the minimum onset age for Tourette's Disorder, Chronic Tic Disorder, and Transient Tic Disorder dropped from 21 to 18 in the DSM-IV in order to align them with the International Classification of Diseases (APA, 1994). Such a change seems to reflect arbitrary shifts in the definition of childhood rather than scientific advancement or a desire to allow fewer people to meet the disorders' criteria, and without those changes the age revisions would have moved toward inclusivity rather than exclusivity.

Conceptual expansion of mental disorders is problematic for the validity of the DSM and for the validity of research based on the DSM. In terms of the validity of the manual itself, the DSM includes so many varied behaviors that one concept of mental illness cannot possibly encompass them all in a meaningful way; this is especially true considering the fact that the manual undoubtedly includes some normal behaviors that have been misclassified as abnormal (Boysen, 2007). In addition to its role as a tool for clinical classification, the DSM also functions as a source of research stimulation, and these roles conflict in a way that is problematic for research validity. As an instrument of clinical diagnosis, the DSM is quite tentative; the Introduction of the DSM explicitly states that the manual does not assume that disorders are categorical entities with discrete boundaries, nor does it assume that disorders represent a clear concept of mental illness that is precisely separated from normality. These cautious statements are difficult to recognize in the work of researchers who, with good reason, use DSM diagnostic criteria as operational definitions. Researchers often use the diagnostic criteria as the foundation of research programs focused on finding the biological underpinnings of disorders. Such efforts are unlikely to be fruitful if the DSM criteria change unscientifically according to social pressures and if the criteria are inherently designed to account for heterogeneous behaviors not reflective of any underlying essential concept.

Anecdotal evidence suggests that members of DSM task forces are well aware of the power of small changes and consider the exclusiveness or inclusiveness of diagnostic criteria when making revisions. For example, the committee considering revision of the trauma requirement for the DSM-IV definition of Post Traumatic Stress Disorder disagreed over the criteria's stringency. Some felt

that it should be expanded so that people in need could receive treatment, and others felt it should be restricted so as to avoid over-diagnosis (McNally, 2004). Another example concerns the definition of Pedophilia. The task force in charge of revising this disorder, worried that Pedophilia was too exclusive and could not be diagnosed if a person was not distressed by the behavior, added the option to diagnose the Pedophilia if the Paraphilic desires were acted upon with a nonconsenting person (First and Frances, 2008).

Considering DSM task force members' apparent awareness of the impact of small changes, what is to be made of the overwhelming trend toward making diagnostic criteria more inclusive? It seems unlikely that there is a general, purposeful effort to expand definitions of disorders in the DSM. The explicit reason for changes is often pragmatic. For example, increasing clinical utility is often cited as a justification for DSM revisions (First et al., 2004). In contrast, Houts (2002) maintains that implicit social and practical factors are the largest reason for expansion. In addition to serving as a clinical diagnostic manual, the DSM facilitates insurance reimbursements for treatment. Clinicians find it easier to receive payment for services if those services are for diagnosable mental illnesses and expanding disorder criteria eases this process. Similarly, pharmaceutical companies create and promote drugs for specific diagnoses; more diagnoses and expanded criteria translate into a larger market. Researchers face expansion pressures as well. Having an official diagnostic label for the phenomena being studied increases the legitimacy of a research program and makes it more attractive to funding agencies and publication outlets. Overall, the forces pushing the DSM toward expansion are numerous, and aside from the occasional published criticism (e.g., David, 2011; Pincus et al., 1992), there has not been strong social or practical forces opposing diagnostic expansion. Thus, the accumulation of many individual efforts to increase the utility and legitimacy of specific diagnoses leads to expansion across the entire manual. However, the existence of strong public criticism of proposed revisions to the DSM-5 could theoretically shift the balance of forces pushing toward expansion.

Although the revised manual is far from finalized, DSM-5 task force members have shared drafts of new criteria on the website dsm5.org; this has led to unprecedented scrutiny and controversy surrounding diagnostic expansion. The most prominent critic of the DSM-5 revision process has been Allen Francis (2009, 2010), and he has special insight and clout in the debate due to his former position as the Chair of the DSM-IV Taskforce. Although Francis's (2010) concerns are numerous, chief among them are the inclusion of new diagnoses that are likely to have high incidence in the general population and alterations to disorder criteria that will move the diagnostic threshold closer to normality. The Society for Humanistic Psychology, a division of the American Psychological Association, has published a petition outlining problems with proposed revisions ("Open Letter to the DSM-5," 2012). First among their

concerns is the "lowering of diagnostic thresholds." Currently, several dozen international organizations of psychologists have endorsed the petition, and over 10,000 people have added their signatures online. Nothing in the DSM-5 is finalized. As such, it is impossible to tell what effect the public backlash will have on the DSM, but public criticism appears to be an increasing force opposing expansion.

The major limitation of the current research is that it cannot actually demonstrate how many people may be diagnosed using any given diagnostic criteria. Analysis of the diagnostic criteria occurred only at the conceptual level, and that makes the results of this study purely exploratory and theoretical. Only epidemiological research can demonstrate changes in the prevalence of disorders. Unfortunately, it is difficult to say exactly what overall result the revisions of the DSM have had on actual prevalence rates. Researchers seem to reify diagnostic criteria and behave as if there is an actual mental disorder entity in nature that can be accurately measured. As such, variations in prevalence rates are treated as a nuisance variable to be controlled in epidemiological research rather than a topic of legitimate concern (e.g., Regier et al., 1998). A more accurate analysis is that mental disorder criteria are social constructs and that prevalence rates will always be affected by their evolving definitions.

DSM revisions are purportedly based on scientific advances in the study of psychopathology; however, the current research illustrates a flaw in this presumption. If there are indeed underlying essential concepts to be measured as forms of mental illness, increased knowledge should lead to increased diagnostic precision, and this should be independent from the number of people who fit a diagnosis. In contrast, the DSM revision process appears to be systematically biased toward allowing more people to fit diagnostic criteria. Furthermore, ostensive movements toward precision, such as stipulations of symptom duration, are arbitrary, and the dramatic increase in exclusionary and clinical significance criteria is simply a sign that the definitions of disorders are inadequate. Overall, the DSM is indeed informed by science, but the current research suggests that use of that science seems to be biased toward a creating an expanded concept of mental illness.

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