

Chapter 2

Considering the Economy of DSM Alternatives

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The development and release of DSM-III in 1980 [1] not only ushered in an era of descriptive diagnostic classification, but also ushered in scholarly, critical analyses of diagnostic classification systems and diagnostic practice. The reasons for these states of affairs should not be surprising. In retrospect the DSMs have served as a unique source of mental health policy: encoding the nomenclature and psychopathological constructs for all to consider, whether administrators, payers, educators, researchers, the public, or practicing clinicians [2–4]. DSM concepts have found their way into popular culture, only one of the myriad examples being the discussions of DSM concepts in patient/consumer websites, online blogs, and webforums [5]. The dominance of the DSM as policy reference point and cultural icon has led some commentators to accuse the manuals of being hegemonic for psychiatry and mental health [6].

Remarkably, despite the intense scholarly interest in the DSMs as scientific classifications of psychopathology as well as sociocultural phenomena, little has been written about why the post-DSM-III DSMs have come to dominate American mental health. This chapter provides one historical-explanatory perspective.

The structure of the chapter is straightforward, organized into four sections. After a brief discussion of historical background and context, the second section develops the case for a sociocultural phenomenon called the “mental health medical-industrial complex” (MHMIC). The third section describes my core thesis that the MHMIC is largely responsible for the hegemony of the DSMs, to the degree that the DSMs are indeed hegemonic. The concluding section discusses the ramifications, offers some alternatives, and summarizes conclusions.

For this chapter, my intention is only to address the particular concatenation of economic conditions in the United States. To address other countries, such as

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Europe or even the US near-neighbor, Canada, would require more work than I am capable for a single chapter. Hopefully, our international colleagues will weigh in on the question of a MHMIC in Western industrialized societies.

Historical Context

DSM-III was hugely successful after its release in 1980 [7], having been translated into over a dozen languages, becoming not just hugely influential in US clinical research and clinical practice but also a credible rival to the World Health Organization's (WHO) International Classification of Diseases (ICD), Mental and Behavioural Disorders [8] text. However, the controversies about the DSMs appeared almost immediately, with book-length discussions [3, 4, 9–16] and countless articles appearing through each iteration of the manual since, right up into the present day with DSM-5 and this current volume.

The importance and influence of the DSM have been established elsewhere (see prior references) and will be assumed for this discussion. The nosological dominance of the DSMs, however, has not gone without candidate challengers. The DSM's most serious rival is the series of classifications of mental and behavioral disorders offer by the WHO under the ICD label. Since DSM-III, however, the diagnostic administrative coding for the DSM categories and the ICD coding have agreed, under treaty arrangement, to be compatible and “cross-talk” with each other [7]. The “clinical modification” version of ICD diagnoses dictate numeric codes used in the DSM and in this context remain crucial to administrative and billing uses. The DSM authors have made practical judgments about the right fit between ICD categories and DSM categories, because the two classifications are not identical [17]. In addition to the limited comparability between the two systems, another major difference in the two manuals is the use of elaborate diagnostic criteria in the DSMs. The other substantive difference with the ICD is that it provides not just a system for coding mental and behavioral disorders, but a system of coding for *all* diseases, injuries, and handicaps, extending far beyond the circumscribed domain of mental disorders in the DSMs [8, 18, 19]. In these senses the ICD-CM Manuals are more partners than rivals to the DSMs.

Partly in reaction to dissatisfactions with DSM-II and the early discussions of DSM-III, a Task Force on Descriptive Behavioral Classification, chaired by Dr. Wilbur E. Morley, was formed by the American Psychological Association in 1977 [20] (see also [21, 22]; thanks to Roger Blashfield PhD for the original reference document). The agenda of this psychologist's Task Force, however, never got off the ground, likely due to the diverse membership of the American Psychological Association (not all of whom were even clinicians) and the enormous difficulties in building any consensus among such a large and diverse organization.

A number of investigator-initiated diagnostic systems have been developed before and after the debut of DSM-III in 1980. However, these have had circumscribed, not comprehensive, sets of categories, and while likely influential in the

refinement of DSM categories and criteria, have not posed much of a threat to the overall DSM enterprise [23–25]. More recently, psychiatric geneticists and neurobiologists have explored the notion of “endophenotypes” as intermediate taxa, hopefully linking concepts between neurobiological/genetic processes and the clinical phenomenology of psychopathology [26, 27]. These, however, have not found their way as yet into an independent classification of psychopathology, and their status as criterion items for DSM-5 categories is unknown at this writing.

These latter concepts are a natural transition to the recent debut of the Research Domain Criteria (RDoC) classification promulgated by the leadership of the National Institute of Mental Health (NIMH). Arising out of psychiatric neuroscientists’ dissatisfactions with the DSMs [28–30] and assimilated into the NIMH’s 2008 Strategic Plan [31], the RDoC described a matrix of seven units of analysis (genes, molecules, cells, circuits, physiology, behavior, self-reports) against five domains/constructs (negative valence [emotional] systems, positive valence systems, cognitive systems, social processes, and arousal/regulatory processes) [32]. The significance of this framework for research, as well as clinical practice, has yet to be demonstrated. However, given that it is promulgated by the same institution (NIMH) that provides the greatest amount of grant support for psychiatric research in the world, one might imagine that the RDoC framework will be vigorously supported by NIMH grant-seekers (The robust conflict-of-interest issues raised by this arrangement [33] will be only acknowledged at this point, see more below).

The Military Industrial Complex

In the aftermath of a devastating World War II, and in the shadow of an expansionist Soviet totalitarian empire, US President Dwight D. Eisenhower in 1961 coined what was to be an influential trope, still familiar today. In his farewell speech from the White House, Eisenhower presented his concerns about a “military industrial complex” (see National Public Radio online, <http://www.npr.org/2011/01/17/132942244/ikes-warning-of-military-expansion-50-years-later>). This quote from that speech sums up the concept:

This conjunction of an immense military establishment and a large arms industry is new in the American experience. The **total influence—economic, political, even spiritual**—is felt in every city, every State house, every office of the Federal government. We recognize the imperative need for this development. Yet we **must not fail to comprehend its grave implications**. Our toil, resources and livelihood are all involved; so is the very structure of our society.

In the councils of government, **we must guard against the acquisition of unwarranted influence, whether sought or unsought, by the military industrial complex**. The potential for the disastrous rise of misplaced power exists and will persist.

We must never let the weight of this combination endanger our liberties or democratic processes. We should take nothing for granted. Only an **alert and knowledgeable citizenry** can complete the proper meshing of the huge industrial and military machinery of defense with our peaceful methods and goals, so that security and liberty may prosper together [34] (p. 1035; boldface emphasis added).

The basic idea is that the United States' huge investment and dependence upon a colossal military industry can exert undue influence on the political process. However, such dependence can also transform our thinking, as Eisenhower suggests through his inclusion of "spiritual" influence to his list of concerns. Importantly, he notes that the undue influence of the complex can be intentional or unintended, and only an "alert and knowledgeable citizenry" can provide a check against these influences.

Almost five decades later, a former Chief of the NIMH (1991–1993), Bernadine Healy MD, opined in the *US News & World Report*:

If only we had remembered Eisenhower's less famous second warning: that **"public policy could itself become the captive of a scientific-technological elite"** in which the **"power of money is ever present."** He feared elites would dominate the nation's scholars **by virtue of their federal employment** or **their control over large research grants**. Eisenhower was thinking about the solitary tinkerer overrun by task forces of scientists, but his instincts were prescient [35] (no pages, boldface emphasis added).

Dr. Healy was concerned that a "medical-industrial complex" had arisen. Like the Military Industrial Complex, she claimed our health and scientific policy was unduly influenced by these moneyed "elites" who could frame the very terms of scientific discourse and marginalize all alternative thinkers, whether "solitary tinkers" or small collectives (see also [36]).

Admittedly, these kinds of interpretations of social processes are difficult to establish with a scientific standard of evidence. Nevertheless, the remainder of this paper will argue that Healy's concern was timely and perhaps even more apparent in the fields of psychiatry and mental health. I will provide a descriptive analysis of our current social state of affairs in the United States to defend this idea. I intend that the self-evident nature of Eisenhower's and Healy's vision will manifest through this descriptive analysis.

The Mental Health-Medical-Industrial Complex

The MHMIC is an analogue to the medical-industrial complex described by Healy. However, as the mental health system encompasses its own distinctive domains, only partially overlapping with the medical corpus, I sketch the components of a MHMIC below. Through comprehending the whole through its components and their interactions with each other, one can see the relatively exclusive and exclusionary hold the MHMIC has on not just diagnostic considerations, but the mental health field as a whole.

Regarding the dominance of the DSM, my thesis is simple: The DSM has prevailed because it has, on balance, served its function in the MHMIC, whose monolithic influences on funding, public policy, and the social discourse on mental illness reinforces the DSM's stability and success. This thesis has several corollaries:

Corollary (1): Economic reductionism. Most pertinently to DSM-5, to the degree that DSM-5 conforms to the functional needs (e.g., continued economic dominance) of the

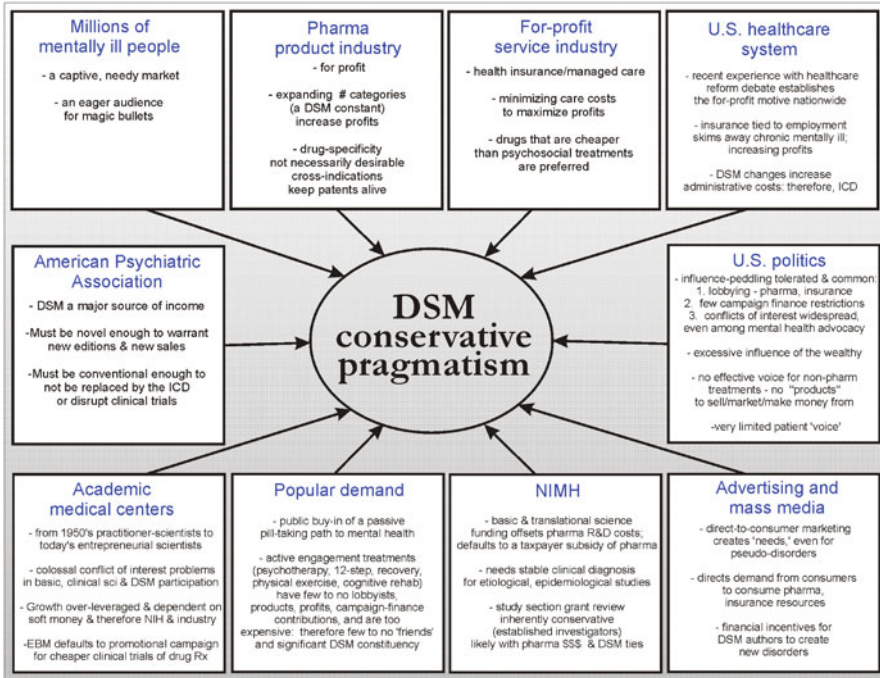


Fig. 2.1 Elements of the MHMIC

MHMIC, the DSMs will continue to flourish and dominate. However, as will be discussed in the concluding section, this is not a foregone conclusion at this moment in DSM-5 development (summer 2012) and before its completion and estimated release in 2013.

Corollary (2): Shaping the scientific frame. Alternatives which do not fit into the MHMIC will be squeezed out (marginalized) by MHMIC-friendly scientific funding, peer review, and publication forces.

Corollary (3): Medicalization. “Medicalization describes a process by which human problems come to be defined and treated as medical problems” [37]. With this understanding, the MHMIC promulgates a de facto mode of thinking where all mental distress, disordered or otherwise, is a technological problem which can be addressed by the development of commercial products and sold to professionals and the public as therapies or solutions (see [38]).

Figure 2.1 sketches ten component-elements of the MHMIC, and I will discuss each of the components, their identity and interactions with other components, as my next step. The frame for this discussion could be called “DSM conservative pragmatism.” Under this rubric, “conservative” means resistant to change in the general sense, not in the political-ideological sense of partisanship [39]. “Pragmatism” means that pragmatic (along with scientific) considerations are the primary reference point for changes to the DSMs. The figure suggests that the elements of the MHMIC “conspire” to stabilize a DSM with minimal changes.

Element 1: Millions of mentally ill people. The business appeal of tens of millions of people needing a product is transparent. However, having tens of millions of

people who are in varying needs of extreme need or *desperation* for those products multiplies said business opportunities and offers an extraordinary market. However, the exceptionalism of the mental healthcare market is further multiplied by the provision of funding through insurance and public assistance so that even people who could not otherwise afford mental health products can obtain them. It should be no surprise that the pharmaceutical and medical device industries are among the biggest businesses in the United States. The 2011 Forbes 500 listing of the largest American companies includes ten pharmaceutical companies (<http://money.cnn.com/magazines/fortune/fortune500/2011/industries/21/index.html>). Five of those (Johnson & Johnson, Pfizer, Eli Lilly, Amgen, and Abbott) are in the *Fortune* magazine 2011 top 50 most profitable companies list (<http://money.cnn.com/magazines/fortune/fortune500/2011/performers/companies/profits/>).

Element 2: Pharmaceutical industry. As one of the most influential and competitive business markets in the United States, the pharmaceutical companies (pharma) are obligated to maximize profits for their shareholders. Not bound by any professional ethics, but only by governmental constraints of a regulated free market and by company duty to stockholders, one component aim of pharma is to expand markets. In that regard, an ongoing commitment from American psychiatry to increase the number of categories of mental disorders is a valuable, perhaps essential, contribution to this expansionist agenda. So far, each revision of the DSM has added new categories and/or subcategories of disorders [4, 7]. Moreover, pharma likely benefits from the “atheoretical” descriptive approach to diagnosis, in that atheoreticism contributes to the potential for cross-indications (cross-indications are use of the same compound for different diagnostic categories, such as using SSRIs for both depression and anxiety disorders). Off-label use (physician prescription of compounds without FDA approval for particular disorders) also contributes to expanding markets for products.

In contrast, the development of theoretically rich, highly specific treatments for singular conditions limit marketability and profits through reducing the potential for cross-indications and perhaps off-label use, in addition to limiting the numbers of treatment-eligible patients. Finally, the DSMs’ trend toward categorizing conditions which overlap with ordinary life experience, like shyness [40] or grief [41] maintains an economic expansionist model from which the pharmaceutical industry (not to overlook psychiatrists) may profit. In these senses the pharmaceutical industry and the DSMs are de facto “partners” [42–44].

Element 3: For-profit service industry. In this setting, I mean the “for-profit service industry” to refer to health insurance and related funding sources of health care, as well as managed care organizations which regulate spending for health care. Because in the United States this industry, which is another huge conglomerate of businesses, is also mostly oriented to maximizing profits, cost controls on the clinical-service delivery side are a preeminent concern. A primary mechanism for maximizing profits is minimizing care costs, as under the insurance model, customers pay-in to a pool of funds from which both services are paid for and profits for the company are generated. Simply put, the less the service industry pays for care, the more money they make.

This incentive to minimize care reaches equilibrium when cost- and care-cutting cross thresholds of clinical adequacy and tolerability with physicians and patients, generating protest, and threatening a loss of market share through moving care contracts elsewhere. Because of the service industry's interests in maximizing value per dollar spent, drug therapy becomes a cheap alternative to psychosocial therapies which are service-intensive and therefore more expensive [45]. DSM categories offer conditions which fit easily into the clinical-trial format, compared to psychosocial treatments, for which meaningful placebo/control groups are difficult and expensive to develop. Hence clinical-trial-friendly DSM categories enter into a mutually reinforcing arrangement where industry supports clinical trials, the service industry gets cheap treatments, and DSM developers can benefit from industry clinical-trial contracts, consulting arrangements, and the like [42–44].

Element 4: US healthcare system. As the recent debate over President Obama's Affordable Care Act has echoed past US failures to provide comprehensive health care for all, the idea of a nonprofit, single-payer US healthcare system has not been politically feasible [46–49]. The reasons for this state of affairs are complex. Alexis de Tocqueville described American individualism (as opposed to European collectivism) in the middle of the nineteenth century in his *Democracy in America* [50]. Scholars have debated the US national character ever since [51]. Blendon and Benson [46] note that over the past 50 years, Americans have generally been satisfied with their personal healthcare arrangements, they are distrustful of the federal government involvement in health care, and consistently oppose single-payer plans. However, the economic and political power of the service industry and pharma alone present an extraordinary lobbying force on US policy [52, 53], compounded recently by changes in campaign-finance regulation (see next section and section on “Advertising and Mass Media”). The degree to which these lobbying and advertising campaigns contributed to public viewpoints is difficult to determine. In any case, US healthcare will likely remain a for-profit business enterprise for the foreseeable future. The role of the DSMs in the US healthcare system per se is largely administrative, and diluted in effect because of the common use of ICD-Clinical Modification coding. However, to the degree that DSM changes are made, this may increase administrative costs, and therefore constitute a demand for relative “conservatism” when DSM revisions are made.

Element 5: US politics. The above vectors interact with aspects of US politics, aspects which in recent years have compounded the power and influence of the MHMIC. US politics maintains the political power of corporate wealth, through the mechanisms of lobbying (see section “Advertising and Mass Media”) and, most recently, campaign financing by the wealthy. The recent upholding of unlimited private funding for election campaigns in the US Supreme Court [54] further strengthens the potential for influence-peddling by the kind of “moneyed elites” that worried Eisenhower and Healy. Writing for the dissenting US Supreme Court *Citizens United* opinion, Justice Stevens summarized: “A democracy cannot function effectively when its constituent members believe laws are being bought and sold” [54]. In concluding, Justice Stevens notes:

At bottom, the Court's opinion is thus a rejection of the common sense of the American people, who have recognized a need to prevent corporations from undermining self-government since the founding, and who have fought against the distinctive corrupting potential of corporate electioneering since the days of Theodore Roosevelt. It is a strange time to repudiate that common sense. While American democracy is imperfect, few outside the majority of this Court would have thought its flaws included a dearth of corporate money in politics [54].

In comparison to the corporate wealth of the healthcare service industries and pharma, the political powers of the mentally ill, their families, and even American psychiatry are feeble at best. Their ability to advocate for themselves is limited, and today in the United States such advocacy is primarily done by “mental health advocacy groups.”

The corrupting potential of corporate money is present even within mental health advocacy groups. In 2009 the *New York Times* noted that the National Alliance for the Mentally Ill's support from pharma was nearly 75% over the past 3 years [55]. NAMI still accepts large pharma donations, as can be seen on its website [56]. For first quarter 2012, 58% of NAMI's support came from pharma [56]. Mental Health America's 2010 Annual Report does not list dollar amounts of corporate gifts, but does list pharmaceutical companies by their financial range of donations. For the highest level, \$100,000 and above, Astra-Zeneca, Bristol-Myers Squibb, Eli Lilly, and Sunovion account for all contributors but one; for their second largest category, \$50,000–99,999, Forest, Merck, and Novartis are three of five contributors [57].

The openness of US politics to influence-peddling diminishes political opportunity for resources for non-pharmacological treatment interventions. Psychosocial treatments like the psychotherapies, recovery-oriented peer interventions, and the like have no commercial product to sell, no corporate donations to politicians, and no lobbyists advocating for them on Capitol Hill. Subsequently, their “voice” in setting treatment, reimbursement, and research priorities is trivial in comparison to the pharmaceutical and medical device industry.

Element 6: Advertising and mass media. The use of advertising and mass media in promoting medical products has reached unprecedented levels over nearly 30 years since the FDA permitted direct-to-consumer marketing of medications and other medical products in the early 1980s [58]. Such advertising, like all medical advertising, is intended to create or divert demand for products that may, or may not be, necessary for health or well-being. In the mental health arena, where the demarcation between normal and pathological experience/behavior is often not sharp, such marketing can create public demand for pseudo-disorders, as discussed in depth by such recent scholarly publications as *The Loss of Sadness: How Psychiatry Transformed Normal Sorrow into Depressive Disorder* by Allan V. Horwitz and Jerome C. Wakefield [41] and Christopher Lane's *Shyness: How Normal Behavior Became a Sickness* [40].

In his eye-opening exposé of the use of public relations in promoting industry interests (*Deadly Spin*), Wendell Potter [59], a former head of communications for health insurance giant CIGNA, details the systematic and extensive mobilization of the medical service industry to lobby for the political defeat of the Affordable Care

Act. Potter paints a picture of a corporate lobby spending millions to defeat “Obamacare” using advertising, obfuscation, and misinformation as its tools. Today Potter runs a website (<http://wendellpotter.com/>) that is a hub for reporting of all kinds of medical influence-peddling. While the actual impact of such clandestine public-relations campaigns is difficult to ascertain, the ubiquity of US political advertising suggests substantial impact.

The massive promotional efforts to the public by industry likely both create public attitudes toward mental health treatment as well as reinforce industry-favorable prejudices, factors that will be discussed in Element 8 below.

Element 7: NIMH. From its beginnings in 1949, the NIMH was authorized and funded by Congress to develop an extramural research grant and intramural research program into the causes of, diagnosis of, and treatments for mental illnesses [60]. In the early years of NIMH, under the leadership of Robert Felix, NIMH also stimulated the development of alternatives to the state hospitals, mostly through the development of community clinics and preventative programs which developed in virtually every state by the mid-1950s. The NIMH also offered training grants to develop competent new clinicians. However, in the ensuing decades the commitment to community, prevention, and training faded, and the contemporary model for the NIMH came to replace it, speeded by the discovery of new psychopharmacological treatments in the 1950s and 1960s [61, 62]. By the 1990s “Decade of the Brain,” the NIMH came to focus primarily upon funding basic neuroscience, genetic, and related research aimed at finding molecules and biomechanisms suitable for development of drug or other biomedical treatments. The NIMH mission of funding clinical trials to establish efficacy—the mission that was largely responsible for the Food & Drug Administration (FDA) approval of lithium therapy for manic-depressive illness—came to be shunted to the pharmaceutical companies, who increasingly funded clinical trials for their own products, both serving the need to establish efficacy for FDA approval purposes, but also to supply marketing rhetoric in the guise of scientific data. The sham nature of many pharma-sponsored clinical trials was exposed in the early 2000s, when the widespread suppression of negative clinical trials was discovered and made public [63–65]. These trends contributed to increased scrutiny of industry-sponsored clinical trials through a mandatory online registry, <http://www.clinicaltrials.gov/>.

Today, NIMH funding is built around individual Institutes and Centers, whose funding is a complex combination of the Director’s whim, Congressional agendas, and the demand of investigators [33]. The de facto arrangement of taxpayer-supported basic science through NIMH with clinical trials referred to the pharmaceutical industry for sponsorship amounts to a taxpayer subsidy of the pharmaceutical industry’s research and development. The NIMH does the basic and translational science, whose results in the public sphere can be appropriated by the pharmaceutical companies in the development of new therapeutic agents. In the meantime, fundamental and important questions regarding health services, psychosocial treatments, conceptual issues, public health, and patient initiatives remain marginally funded [33].

Regarding the NIMH and the DSMs, two additional comments should be made. First, the system of grant review by peer scientists (“study sections”) is an inherently

conservative process. That is, only established and successful (by NIMH funding standards) investigators are invited to serve on grant review committees. Such investigators, having based their careers on DSM categories and criteria, are unlikely to look favorably at truly innovative mechanisms of diagnosis, so entrenched are the DSMs in the clinical research infrastructure over the past 30 years. Indeed, the promulgation of the RDoC concept by the NIMH itself raises questions about an intent to break the hold the DSMs have on clinical/translational extramural research submissions. In a related vein, as Cosgrove and colleagues have suggested through their identification of widespread conflicts of interest among DSM and APA clinical treatment guidelines thought leaders [42–44], pharmaceutical funding of said thought leaders may well further entrench DSM categories as any alternative poses an unproven and unforeseeable risk to pharma interests. The second point is more straightforward: clinical and epidemiological studies, in order to maintain more generalizable findings, need standard and stable sets of diagnostic categories and criteria [66, 67] which also likely contribute to the stability of DSM use among NIMH study sections.

Element 8: Popular demand. Research into “health literacy” (understanding of medicine’s capabilities, limitations, and the role of self-care and prevention) has indicated that for the public, health literacy is low [68–73]. The promulgation of advertisements and promotions of pill-taking as the solution to all ills has resulted in the public buy-in of a passive model of mental health—one need only take a pill to get better [74]. In contrast, mental health treatments that could be characterized as “active” or “engaged” include psychotherapies, 12-step programs, physical exercise, cognitive rehabilitation, to name a few. The irony here is, despite the strong evidence-bases for efficacy for many of them, these active/engaged treatment modalities generally have no lobby, no corporate investment, no potential for profit-generation, no campaign-finance contributions, or other mechanisms to breach the fence of the MHMIC. Moreover, they are generally more expensive than passive, product-based therapies, and therefore have few to no “friends” among the DSM constituencies with their pharma industry support. Descriptive categories suitable to these modalities of treatment may not exist in the DSM approach. These modalities may be tied to their own theoretical formulation and relevant nomenclature.

Element 9: Academic medical centers (AMCs). Reading the history of psychopharmacology provided by David Healy [61, 62] provides a useful window into the history of the physician-investigator in AMCs. In the 1950s and 1960s physician investigators often performed their research in the context of everyday clinical work in clinics and hospitals. We might call this model of clinical research that of the “physician-scientist.” That is, these clinicians performed their research with their own patients, doing studies that today would be called “descriptive studies” or occasional trials of compounds with limited controls. Because the research ethics review (IRB) infrastructure that regulates human subjects research today didn’t exist until the late 1980s, physician-scientists had few constraints in performing their work other than their own consciences. However, over the remaining decades of the twentieth century, clinical research came to be increasingly a part of AMCs: conglomerates of medical schools,

teaching hospitals, and other clinical schools and services. Over decades, a shift in the character of the physician-scientist changed as AMCs changed, both becoming more dependent upon “soft money”—salary support from grants and contracts with distinct startup and completion cycles. This shift became compounded as AMCs expanded their financial bases from state support, donations, and clinical revenues, becoming more and more dependent upon the soft money of grants and contracts [75, 76]. AMCs became highly “leveraged” institutions, unable to support their faculties with hard and reliable sources of support, and vulnerable to budget shortfalls in the case of failed grant-and contract-winning. Bringing in money has come to characterize the successful academic physician, and a more apt description for today’s clinical investigator is “physician-entrepreneur.” This shift from hard to soft money then provided the social background for the huge conflict-of-interest dilemmas that have faced AMCs over the past two decades (see [77] for a detailed review).

From the DSM perspective, concerns have been raised by Lisa Cosgrove and colleagues [42–44] about the financial relationships and undue influence of medical industry on DSM panelists, most of whom are AMC academics, subject to severe soft-money generation pressures. The over-leveraged status of American AMCs makes them beholden to NIH and industry for their very survival; making the potential for compromising their traditional missions (education, patient care, research) equally severe.

The MHMIC influence even extends into movements like evidence-based medicine (EBM) [78, 79], which intends to build into medical practice a more rigorous use of scientific evidence. However, if the scientific evidence is unduly influenced by financial interests, the rigor of the science is questionable and the utility of the evidence is in question. In a 2007 article considering the applicability of EBM to psychiatry, Mona Gupta [80] argues that the particular complexity of mental disorders does not fit the parameters of EBM. Given the difficulty with doing controlled trials of psychosocial treatment interventions, and with clinical trials being the principal EBM criterion of evidence quality, the prospects of psychosocial treatments competing successfully for an “evidence base” are curtailed. Instead, passive treatment modalities like medications become the default prime candidate for evidence-based treatment. Medication treatments dominate EBM reviews not because they are necessarily superior, but because medications have the MHMIC economic support behind them to generate a strong evidence base. In psychiatry, EBM defaults to evidence-based psychopharmacology, and the over-leveraged AMC systems are the platform in which evidence-based psychopharmacology is promulgated, using DSM categories as an essential instrument.

Element 10: American Psychiatric Association. It is widely acknowledged that the DSMs are a source of income to the American Psychiatric Association to the tune of tens of millions of dollars a year [4]. Psychologist Roger Blashfield, in his Taxonomy of Psychopathology blog, estimates that DSM-IV earned between \$5 million and \$6 million dollars a year between 2005 and 2011, based upon APA Treasurer’s reports [81]. Given the size of this financial interest, the promulgation of the DSMs has to be partly motivated by profit interests [4]. The degree to which profitability determines DSM policy remains a secret of the APA leadership.

The financial power of the DSM poses tough decisions for that APA leadership. The manual must be novel enough to warrant new purchases on a regular basis, through new editions, but not be so frequently reissued that sales expectations are diminished through disinterest. However, the DSM must be conventional enough as to not lose its dominant place in market share, as well as not tarnish its relationship with the ICD. Given the substantial amounts of income generated by the manual, perhaps it is fair to say that a proper balance of stability and innovation is important to the APA's financial status. So still another economic incentive serves to maintain the DSM in its powerful position.

Ramifications and Conclusions

A friend and colleague at the APA symposium in which these ideas were introduced noted that my presentation was "depressing." To conclude that the DSM is impossibly corrupt and flawed would be easy, as would be to demonize the MHMIC as an evil to be demolished. That would make as much sense as saying investment in the military industrial complex is wholly evil; and only then if you were an ideologically committed pacifist. I should acknowledge that the MHMIC provides the only credible resource for developing, testing, and promulgating products to help doctors help patients. What concerned Eisenhower and Bernadine Healy was the idea that the "moneyed elites" have profound potential to compromise other important values and missions for the country. Similarly, the moneyed elites have profound potential to corrupt other important values and missions for psychiatry, mental health, and their affiliated institutions.

Personally, I believe that the MHMIC-related compromise of other important mental health values is ongoing and increased in recent years, making for the most severe negative compromises I have witnessed in my lifetime. For instance, the withholding of negative clinical trials by pharma in past decades has thrown much, perhaps most, synthetic wisdom about psychopharmacological efficacy into question. Knowing, with a reasonable amount of certainty, what drugs work in psychiatry is an overwhelming task suitable only to an investigative scholar with open access to government, private enterprise, the scientific literature, and huge amounts of time and money. In an earlier paper challenging the NIMH/NIH investment in psychiatric molecular genetics, I suggested that the hundreds of millions of dollars in research investment in the field are questionable given the many research questions that, if answered with funding, could make an impact on mental health care immediately. These research questions, however, have to do with psychosocial treatments, patient attitudes, conceptual issues, and access to care questions that don't have products attached and therefore have little to no political influence [33]. The MHMIC machine that seeks magic bullets to cure psychiatric illness has been given much more than its due. The magic-bullet approach to psychiatric treatment has continued to be vigorously funded with mediocre results as measured in terms of actual improvements in care, even according to the scientists that perform this research, as well as the NIMH [31, 33]. I agree that we "must guard against the

acquisition of unwarranted influence” but that unwarranted influence is already in historically established play. American psychiatry is behind the curve in guarding against unwarranted influence.

Regarding the DSM, what surprised me in my analysis for this chapter was that I came in agreeing with many critics about the “hegemony” of the DSMs, and that somehow the APA and the DSM architects were invested in maintaining that hegemony. While the latter may or may not be true, I now perceive the DSMs as simply cogs in a much bigger economic machine, the MHMIC, whose drivers and self-interested incentives lock-in many of the features that make the DSM “hegemonic.”

What to do is easy to list in the abstract, and could be addressed for each of my ten elements of influence. What can be easily listed, however, is tremendously difficult to execute. For Element 1, millions of mentally ill people, education efforts to address the contributions and limitations of somatic treatments could be helpful. Equal effort for education about psychosocial and peer-delivered care would also be valuable. Partnering with advocacy groups might be a natural step in these regards. As noted above under Element 8, Popular Demand, general efforts to improve (mental) health literacy might be helpful; the public should know about the value of active-engagement treatments in addition to passive ones.

The coupling of Element 2 and 9, pharma/product industry and AMCs respectively, is an issue that is already being debated and partly addressed within pharma as well as in AMCs, through discussions and policy around conflicts of interest, appropriate access of marketing efforts to doctors, and the responsible use of pharma-supported clinical research data. This discussion is likely to go on for some time, as the issues are complicated—we don’t want to stifle creativity and new drug treatments, nor do we want to have undue influence of pharma.

As Cosgrove and Krimsky [44] have recently argued, simple disclosure of industry relationships is not sufficient to manage the conflicts of interest manifested in DSM committee service. The problem is complex, because many, perhaps most, recognized experts on this or that disorder have been demonstrated by Cosgrove’s group to be highly dependent on industry support. Moreover, temporary divestiture of pharma financial interests during a DSM-development period is more symbolic than substantive in managing the potential for undue influence. Such a skewing of expertise on DSM committees seems likely to skew the nosological vision for past and current DSM efforts, a skewing that favors fewer changes and categories that lend themselves to pharmacological clinical trials and perhaps disorder concepts with more robust marketing potential. So in my view the issue of pharma influence is not just ethical-practical (e.g., bias toward pharma interests), but epistemological (pharma interests influence how DSM committee members think about diagnosis) [4].

This epistemological power of pharma extends, as discussed earlier, not just into DSM committees (Element 10, APA), but also into research study section members (Element 7, NIMH) whose history, funding, and research interests may be unduly DSM-loyal. I should not overlook Element 1 (millions of mentally ill people) and Element 8 (Popular Demand) shaped by advertising, media coverage, and DSM category names which enter into the pop-culture parlance [4, 5]. I believe the issue of conceptual bias described here for the DSMs could be corrected, rather simply,

by rethinking the appointments to the DSM Task Forces and Work Groups, and as suggested in the earlier Kendler et al. [82], a more dedicated and direct effort to incorporate the literature on conceptual/philosophical issues into a DSM Work Group which would have actionable input into DSM categories, but also the discussion of diagnostic concepts across broad categories of disorder. I also believe that the divesting of industry funding, at least for the period immediately preceding and following DSM committee work, offers at least a gesture toward a minimally adequate approach to conflict of interest, and may be the wave of the future, if NIH's recent tightening of AMCs' conflict-of-interest rules are an indication [83]. However, as noted earlier, a return to pharma funding outside of DSM activities may well undermine any return to objectivity regarding pharma interests and the DSMs. The definitive solution would be to constitute DSM committees with economically diverse members, and conscientiously correct the over-representation of members who have had any substantive pharma interests over the course of their careers.

Regarding the triumvirate of US politics (Element 5), the US healthcare system (Element 4) and the Service Industry (Element 3), my hopes for reform here are much less optimistic [84]. In the US culture where politics may never have been more polarized and antagonistic, where opportunities for influence-peddling by the most wealthy may be unprecedented, and advertising spending and efforts (Element 6) seem much more important to winning elections than comprehensive policy vision and competence in governing, the outlook is grim for more regulation of the MHMIC, or opening up of opportunity for groups outside of the MHMIC at the Federal or national level. Even more concerning is the seeming preference of the majority of American citizens for 45 million uninsured people rather than some form of adequate health care for them, a problem that has remained unsolved in the United States since its inception. Because NIH (and therefore NIMH) answers directly to Congress, funding priorities there seem to be unlikely to change much until lawmakers decide there is a medical-industrial complex problem, or decide that taxpayers' investment in research in psychiatry is not paying off and decide to reduce funds overall (a terrifying but real possibility).

More optimistically, the potential for universal, regulated health care is still present for the United States, attainable through arduous political steps. One can hope for comprehensive campaign-finance reform as the American people tire of, or even are repelled by, attack ads on television. The growing movement for recovery and patient empowerment, even endorsed by NIMH to some degree [85], could contribute to reform through addressing the aforementioned psychosocial, access to care, conceptual, and patient involvement issues [86].

Regarding the DSM, many possibilities for change are possible. The DSM-5 Task Force promised a manual with big changes when in the early stages of work, but current trends seem to suggest backpedaling on innovations, perhaps in response to outcries of protest [87]. Perhaps NIMH's interest in the RDoC idea signals a new responsiveness to other and more alternatives to the DSM. Perhaps the DSM-5 idea about a "living document" may lead to support for "open source" classifications of disorder, subject to testing and modifications by anyone with a panel of patients who is interested. Only time will tell.

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