

# Are mental disorders illnesses?

## The boundary between psychiatry and general medicine

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**Abstract.** Are mental and physical disorders meaningfully comparable? Are we entitled to characterize psychiatric disorders in terms of illnesses? Traditionally, most attempts to define what counts as an illness rely on some notion of *normal functioning* that has been altered or disturbed, where the “norm” is established from an evolutionary (Wakefield 1992; De Block 2008) or statistical perspective (Boorse 1977). In this sense, the substantial distinction between somatic and mental disorders may just reflect different stages of development within medical disciplines. In general medicine, clinicians have a clear idea of how organs normally function and thus can detect illnesses smoothly or with a small margin of error. The psychiatric case looks *prima facie* different: we currently lack an ideal model of brain functioning and the high variability among patients renders the diagnostic process particularly tricky. This argument reduces the distinction between psychiatry and general medicine to a *practical* matter. On this view, the high rates of misdiagnosis and disagreement among experts in the classification of mental disorders simply derive from a lack of knowledge about the brain (see Aboraya et al. 2006).

The main goal of this paper is to assess the argument above by showing that it stems from an overly simplistic conception of medical practice. On one hand, the diagnostic process in *general medicine* is not as straightforward as it initially appears, as some interesting studies on error and cognitive bias have recently shown. On the other, the core distinction between *psychiatry* and general medicine does not simply rest on practical issues: rather, the former exhibits some methodological peculiarities that are rejected by other disciplines within the medical field.

The paper is divided in four sections: in §1 I motivate the need for more theoretical precision in defining the notion of illness, making the case particularly compelling for psychiatry. In §2 I discuss some recent empirical studies on diagnostic error and cognitive biases in general medicine, and in §3 I evaluate whether these results can be meaningfully applied to psychiatry. Finally, in §4 I outline a *medical model* that aims at encompassing both somatic and mental disorders: in particular, I argue that in order to incorporate psychiatry within general medicine we need to adopt a *multi-level, holistic and dimensional* approach to illness.

### 1 THE NEED FOR THEORETICAL PRECISION

Within philosophy of psychiatry, the attempts to gain clarity from current definitions of *mental illness* have encountered a common difficulty. Psychiatry is a branch of medicine and thus a practical discipline whose main goals are to treat patients and alleviate suffering. As a result, not much work has been done to define concepts with theoretical precision, as suggested by the heated debate around classification and the DSM’s new edition (see Cooper 2004 and Frances 2012). Consequently, among clinicians the question: “Is X a disease?” is often used as a shortcut for: “Should the person affected by X be subject to medical treatment?” This approach seems immediately problematic because doctors recognize that some conditions do not qualify as illnesses despite being treated (e.g. pregnancy or circumcision). Thus, the crude conditional: “If X needs to be treated, then X is a disease” should be discarded, at least because it does not reflect the common practice within medical sciences.

However, any attempt to define *mental illness* rests on having some conception of what counts as an illness in general: in this sense, the analogy between somatic and mental disorders becomes of paramount importance. On one hand, the two classes should be similar enough to be subsumed under the common label of “illness”; on the other, they should be different enough to motivate a principled distinction between the two sub-groups (see Brülde & Radovic 2006 and Brülde 2010). This network of similarities and differences between somatic and mental disorders has been extensively discussed both in the philosophical and psychiatric literature. For example, Culver & Gert (1982) attempt to draw the line by arguing that physical pain is “always *localized* to some part of the body” whereas mental suffering “is experienced by the *whole person*” (p. 89. *Italics mine*). Other authors – such as Boorse (1975) – adopt a more skeptical attitude by calling into question the validity of the analogy itself: “It seems an open question whether current applications of the health vocabulary to mental conditions have any justification at all” (p. 50). At the extreme of this spectrum, Szasz (1974) completely rejects the medicalization of mental disorders and argues that psychiatry should rather be concerned with “problems of living” – e.g. behaviors deviating from socio-cultural, moral or political norms.

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Despite the difficulty to devise a precise definition, there are – at least – two reasons for advocating a more rigorous characterization of psychiatric illness:

- a) The *social consequences* connected to a diagnosis of mental illness dramatically differ with respect to the ones connected to somatic ailments. Indeed, being classified as somatically ill presents a mixture of harmful and beneficial consequences for the patient (e.g. distress but also sympathy or support) whereas most mental disorders are still associated with various forms of stigma (e.g. shame, exclusion, discrimination). Since the personal and social implications of a psychiatric diagnosis may be highly disruptive for the patient, the highest level of precision would be needed in defining mental illness. This consideration becomes especially important in the light of Szasz's concerns about social control. For instance, equating "illness" with "in need of treatment" could allow psychiatrists to categorize all deviant beliefs and behaviors as mentally ill and thereby exercise some sort of coercive power over patients (see also Foucault 1964).
- b) The identification of mental disorders also presents *legal* and *ethical* implications. For instance, most criminal systems do not rely on strict liability and thereby allow for excusing conditions (e.g. insanity). In the US, the *M'Naghten Rule* states that in order to successfully establish a defense on the grounds of insanity the party accused has to prove that – at the time of the crime – s/he was either not knowing the nature and quality of the act or s/he was not knowing that the act was wrong. Such a principle strongly connects legal and moral responsibility by acknowledging that no one should be punished for an action that was not committed voluntarily, but rather resulted from a "defect of reason" or a "disease of the mind" (see *M'Naghten Rule*). Again, these cases demand the highest level of precision: a sloppy characterization of mental illness runs the risk of unjustly punishing someone who should have been excused or applying the rule to someone who should have been convicted.

What a) and b) illustrate is that although instances of misdiagnosis in general medicine may have disruptive consequences (e.g. death of the patient), a lack of theoretical precision in psychiatry harbors implications that extend to the social, legal and ethical realm. Therefore, a more rigorous definition of illness that would comprise mental disorders is both desirable and called for.

## 2 DETECTING ILLNESS IN GENERAL MEDICINE: DIAGNOSTIC ERRORS AND COGNITIVE BIASES

From the discovery of bacteria to more recent microscopic and post-mortem techniques, diseases have come to be characterized in terms of "deranged biophysical structures, genes and molecules" (Kendell 1975, p. 306.). To this day, the most straightforward way to define somatic illness is by appealing to

some form of *lesion* or structural *damage* of the body. This standard view raises three main issues: first, it relies on some notion of normal functioning that needs to be spelled out more or less precisely (e.g. prototypes). Second, it needs to account for individual variation while at the same time drawing a line to establish "where normality ends and abnormality begins" (Ibid., p. 308). Third, since not all deviations from the norm would be harmful – e.g. exceptionally high IQ – a distinction between positive, neutral and negative variations is needed.

Despite these potential problems with classification, general medicine seems to fare much better than psychiatry in terms of accuracy and reliability. The high rates of misdiagnosis and disagreement among psychiatrists support this point: for example, Kirk, Gomory & Cohen (2013) cite a recent estimate according to which the diagnostic error rate is 38% for ADHD and 21% for Oppositional Defiant Disorder (p. 170). The rationale behind this argument seems to be the following: *reliability* works as an indicator for the *validity* of a medical category, since a sound classification allows practitioners to distinguish between disorders and non-disorders in most circumstances. Due to the proliferation of false positives and false negatives, psychiatry's reliability appears tainted and consequently the whole classification of mental disorders is called into question. Yet, here I argue that the appeal to diagnostic unreliability *per se* fails to draw a meaningful distinction between psychiatry and other branches of medicine. To support this point, I discuss a growing body of literature focused on *error* and *accuracy* in various medical disciplines, showing that the diagnostic process – even for somatic disorders – is far from straightforward. These results are particularly interesting because they show that a complex array of factors – e.g. biases, modes of reasoning – can easily influence diagnosis. More specifically, *cognitive factors* are estimated to be responsible for the majority of errors: for example, in internal medicine 74% of the misdiagnoses appear to have such an origin (see Graber, Franklin & Gordon 2005).

In a recent study, Graber & Berner (2008) confirm that "diagnostic errors exist at non-trivial and sometimes alarming rates" (p. S6). The extent of incorrect diagnoses varies significantly according to the specialty, with perceptual disciplines – such as radiology – scoring lower (2-5%) and clinical ones higher (12-15%). Other important factors seem to be the context of stress or uncertainty that facilitates hasty decisions (e.g. emergency room), whereas the presence of a second opinion tends to increase accuracy. Yet, studies using standardized vignettes to enable comparisons across experts show that clinicians wildly *disagree* with one another, and sometimes "even with themselves when presented again with a case they have previously diagnosed" (p. S5). Another core issue seems to be the *lack of feedback*: most physicians regard diagnosis as a "one-shot deal", [...] a stand alone, discrete episode of judgement" rather than a process that stretches over time and can be refined or amended through multiple interactions with the patient (p. S34). In particular, doctors do not take advantage of autopsies as an opportunity to learn from past mistakes, although – on average – 25% of autopsies reveal new problems that were not suspected clinically (p. S5).

Graber & Berner also present a series of studies on the issue of *overconfidence*, arguing that it may significantly contribute to diagnostic error. The level of overconfidence can be measured through practical indicators such as the clinician's tendency to disregard decision-support resources even when they are available and easy to access (e.g. national clinical guidelines). Cognitive aspects – e.g. arrogance, excessive reliance on expertise – can instead be observed through the failure to elicit complete information from the patient and the biased interpretation of results. Interestingly, all the studies point to a systematic misalignment between the degree of confidence and the degree of correctness: “The level of physician confidence showed no correlation with their ability to predict the accuracy of their clinical diagnosis. [...] The confidence level of the worst performers was actually higher than that of the top performers” (p. S8). Friedman et al. (2005) offer more results in support of the negative impact of overconfidence on diagnostic accuracy. This study measured the tendency to seek for external tools in the diagnostic process (e.g. computer-based support systems, advice from colleagues), finding again a correlation between high levels of confidence and errors. In a nutshell, overconfident physicians seem less likely to look for external sources to back up their decisions, thereby increasing the possibility of error.

Other studies focusing more specifically on *cognitive factors* (e.g. flawed reasoning, faulty data gathering, poor interpretation) have been carried out by Mamede and her collaborators (2008 & 2010). Great part of their work aims at drawing clearer distinctions between the modes of reasoning used by physicians when performing diagnoses. Apparently, doctors tend to switch back and forth between two alternative cognitive styles. On one side, *non-analytical reasoning* based on the recognition of similarities between “illness-prototypes” and the case under review; on the other, *reflective reasoning* based on the effortful and step-by-step analysis of specific features. Mamede et al. (2008) show that factors such as the perceived difficulty of a case can influence the way in which physicians approach diagnosis: for example, it is sufficient to tell them that other colleagues have failed to interpret the situation correctly to trigger the passage from non-analytic to reflective mode. In the experiment two groups of physicians were asked to work on the same case descriptions, but only one of them was primed to see the context as “problematic”: as a result, this group spent more time on the diagnosis and displayed a significant increase in accuracy.

Another possible interpretation of this result – not discussed by Mamede – draws on the overconfidence studies just discussed: when cases are perceived as more difficult, the level of confidence may decrease and then lead to a more accurate assessment of the situation. In other words, knowing that a colleague has already failed in evaluating a case would attenuate overconfidence and force the physician to evaluate the context more carefully – e.g. spending more time on the diagnosis or taking alternative possibilities into consideration. This interpretation is consistent with the data presented by Mamede: in the contexts perceived as “non-problematic” the rate of confidence was higher and the level of diagnostic accuracy lower, whereas in the “problematic” cases the opposite occurred.

A more recent study (Mamede et al. 2010) uncovers the fact that experience with clinical cases similar to one another may trigger inaccuracy: indeed, physicians tend to perceive the diagnoses that come to mind more easily as correct even when they are not (*availability bias*). This bias also seems to get worse as expertise increases, suggesting again either a switch to non-analytical reasoning over time or the development of detrimental overconfidence. Like in the previous study, a combination of both factors might influence the diagnosis, since experience usually correlates with a greater number of cases encountered as well as with an increase in confidence.

These studies show that appealing to reliability to motivate a distinction between psychiatry and general medicine may be misguided. Indeed – contrary to most expectations – alarming rates of misdiagnosis and cognitive biases affect various medical disciplines in a similar way. Therefore, taking reliability *per se* as an indicator for validity does not create a meaningful contrast between psychiatry and other branches of medicine, since they all appear to have serious issues with diagnostic accuracy. Rather, it would be more fruitful to acknowledge that the lack of accuracy can be caused by different *kinds of factors*. Some of them may be mitigated or corrected without having to change the underlying structure of the discipline (e.g. biases, modes of reasoning); others may require a more profound revision of assumptions and methodology (e.g. faulty taxonomy). In this section I have shown that diagnostic issues in general medicine normally arise from factors of the first kind; in the next section I turn to psychiatry and argue that factors of the second kind are more pervasive.

### 3 DETECTING ILLNESS IN PSYCHIATRY: PRACTICING IN A MINEFIELD

The very idea of applying the results on cognitive biases and reasoning errors to psychiatry has generated a good deal of controversy. For example, Groopman's book on medical reasoning – *How Doctors Think* (2007) – purposefully excludes psychiatry from the discussion: “I quickly realized that trying to assess how psychiatrists think was beyond my ability” (p. 7). Moreover, despite the common complaint about the high rates of misdiagnosis in the field, the empirical literature on psychiatric errors is still quite small and the few exceptions tend to focus on other aspects of the practice (e.g. medication errors). Some researchers – such as Crumlish and Kelly (2009) – have attempted to counteract this tendency by arguing that the cognitive style employed by psychiatrists is not “esoteric” or “un-understandable” but rather similar to the one employed in other medical disciplines (p. 72). Others have defended a mixed approach, according to which psychiatric practice may commit errors that are common to other medical specialties but also faces a series of additional issues due to its unique patient population. For example, Cullen, Nath & Marcus (2010) point out that the peculiar features of psychiatric patients may have an impact on the “nature, prevalence and preventability” of the errors affecting them (p. 198). Interestingly, in this study *diagnostic* errors are the least commonly mentioned by

practitioners (9%), whereas *medication* errors account for approximately one-third of the total (34%) and *preventive* errors – e.g. failure to implement safety protocols – stand at the top (40%). Both medication and preventive errors are motivated by factors unique to the psychiatric setting, such as the lack of expertise in dealing with some extreme behavioral manifestations (e.g. violence, resistance to treatment) and various forms of stereotypes and stigma towards patients.

These data show that the topic of diagnostic reliability remains rather unexplored in psychiatry. Yet, the fact that diagnostic errors are both less reported and less investigated may indicate a more substantial difference between psychiatry and other medical disciplines. As Phillips (2014) put it: “You cannot detect error unless you have a reliable, valid method of making diagnoses. Since the diagnostic process is less certain in psychiatry than in general medicine, that will make the detection of error less confident” (p. 75). One asymmetry arises from the fact that psychiatry does not avail itself of laboratory tests or biomarkers, and detects disorders almost entirely through clinical evaluations (e.g. structured interviews). Due to this unavailability of external resources to back up the diagnosis, psychiatry often lacks reliable methods to spot cases of under-reporting or over-reporting. For these reasons, the level of risk and uncertainty already connected to general medicine becomes higher in psychiatric practice, to the point that the diagnostic process “could be likened to a minefield” (Kapur 2000, p. 399). However, at this stage the problem might still be considered *practical*: for instance, the absence of laboratory tests and biomarkers may reflect the current *lack of knowledge* about brain functioning. Yet, reducing the difference between psychiatry and general medicine to a practical matter runs the risk of obscuring other important asymmetries. Most importantly, it assumes that psychiatry and general medicine already adopt a common *methodology* when approaching diagnoses.

According to Murphy (2006), this methodology can be summarized in a *medical model* exhibiting two characteristics: 1) The commitment to a view that sees disorders as *breakdowns* in normal processes of various kinds (e.g. biological, cognitive, affective, etc...). 2) The idea that any taxonomy of disorders should be constructed with the goal of uncovering underlying *causes*. In other words: “Diagnosis is causal. [It] is a matter of uncovering the causal antecedents of visible pathology” (p. 324). While this model accurately reflects what happens in most branches of medicine, in psychiatry neither 1) nor 2) are satisfied. With respect to 1), psychiatric classifications tend to characterize disorders in terms of *distress* or *disability* but do not rely on normal human capacities that have been damaged or disrupted. Consequently, the recent editions of the DSM do not aim at uncovering malfunctioning mechanisms but rather at describing different forms of deviant behavior. As Kirk, Gomory & Cohen repeatedly stress, the symptoms that are supposed to guide clinicians in the diagnosis often re-state in different ways what the disorder is supposed to be about. The criteria for ADHD are a case in point: the attention-deficit part is spelled out in terms of “difficulty to sustain attention” or “easily distracted”, while the hyperactivity part is characterized by

actions such as “often leaves seat” or “often on the go” (2013, p. 167). With respect to 2), the DSM rejects any investigation on the causal underpinnings of mental disorders and advocates a *descriptive* approach that attempts to be “neutral with respect to etiology” (DSM-IV-TR, p. xxvi). In short, the rejection of 1) and 2) brings about a classification of mental disorders that neither focuses on the normal processes that are being *disrupted* nor attempts to understand what *causes* the disruption itself.

Psychiatry’s disavowal of the medical model seems problematic for at least two reasons. First, it renders impossible to bridge the current gap between psychiatry and general medicine because the two disciplines are endorsing radically different *methodologies*. On one hand, the DSM defends a symptom-based approach based on the description of syndromes and completely divorced from theories or hypothesis about underlying causes. On the other, general medicine operates by constructing models of normal functioning and by grouping illnesses together via causal factors. In this sense, the problem appears more *epistemological* than practical: although our current understanding of the brain’s functioning may be limited, the classificatory system in place prevents us from garnering more knowledge about mental disorders. Second, the adoption of a merely descriptive taxonomy creates *paradoxical situations* that become apparent once we re-apply a similar system to general medicine. If diagnoses were based on symptoms only, we would end up grouping together all the patients sharing similar clinical manifestations: “We would classify together everyone who coughs as sufferers from ‘cough disorder’ and thereby miss the fact that someone who coughs may be doing so for a number of very different reasons” (Murphy 2006, p. 312).

#### 4 FITTING PSYCHIATRY INTO THE MEDICAL MODEL

Murphy’s discussion on classification aims at uncovering the fact that psychiatry still remains distant from a full-fledged medical model. Here I expand on his proposal by suggesting a theoretical framework that would facilitate the inclusion of psychiatry within general medicine. In particular, I argue that a characterization of illness able to encompass somatic and mental disorders should be *multi-level*, *holistic* and *dimensional*.

*Multi-level*. The main barrier that prevents psychiatry from adopting a causal taxonomy consists in the fact that we are still quite ignorant with respect to the etiology of mental disorders. Many authors have highlighted the difficulty to reduce mental disorders to *brain pathologies*: for example, Kendell (1975) describes psychiatric patients as “behaving in ways that alarm of affront other people” and “believing things that other people don’t believe” (p. 305). Broome and Bortolotti (2009) stress a similar point: “It does not take an expert to recognize that someone is mentally ill, but how would one decide whether dopamine quantal size, functional MRI activations, or repeats of genetic polymorphism were abnormal in the absence of a disordered person?” (p. 38). These passages point to the fact that – in order to diagnose someone as mentally ill – we often make use of norms that go beyond the somatic sphere to encompass

socio-cultural and epistemic factors. In this sense, most psychiatric explanations would appeal to the disruption of norms on *different levels*: for example, a patient suffering from the Capgras syndrome may present both a neurobiological abnormality (e.g. dopamine dysregulation) and an epistemic one (e.g. abnormal resistance to contrary evidence). Moreover, it would not always be possible to establish the correct level of explanation in advance: whereas for some disorders a fully biological account might suffice (e.g. Huntington's disease), for others we may need to appeal to socio-cultural factors (e.g. anorexia).

A multi-level approach could also be extended to *general medicine*: indeed, somatic illnesses are often the result of a complex array of factors ranging from faulty genes to unhealthy lifestyle. Obvious examples in this sense would be type-2 diabetes or lung cancer, where biological causes interact with environmental ones. Thus, both psychiatry and general medicine could benefit from a multi-level approach to illness. From a diagnostic viewpoint, taking a diverse group of factors into consideration would enhance our understanding of the *causes* behind diseases. For example, the social pressure to resemble women on commercials might matter more than genetic predisposition in the explanation of some eating disorders. Similarly, living in a culture where smoking has a particular social value may put a certain group of people at high risk of developing lung cancer (see Goldade et al. 2012). From a therapeutic viewpoint, a multi-level account allows to abandon a strictly pharmacological approach and to tackle diseases from different perspectives: e.g. cognitive behavioral therapy (CBT) in psychiatry; diet and exercise in general medicine.

*Holistic*. If somatic and mental diseases are the result of multiple factors and can be understood only by appealing to different levels of explanation, it would be important to explore the dynamics between them. For example, some recent studies have suggested a correlation between schizophrenia and dopamine regulation (see Kapur 2003 and 2004), while others have investigated the high incidence of this disorder within specific sub-groups of the population – e.g. immigrants in conditions of social defeat (see Cantor Grae & Selten 2005). By adopting a multi-level approach we grant that both factors may be useful to explain the onset of schizophrenia: on the biological level, a disrupted process of dopamine release; on the environmental level, risk factors such as migration history or adverse social conditions. Yet, the interaction between the two levels remains unspecified: Does the environmental condition of social defeat directly influence dopamine regulation (*state interpretation*)? Or rather, are the individuals already affected by this brain abnormality more likely to develop schizophrenia (*trait interpretation*)? The endorsement of a *holistic* approach takes advantage of both interpretations without having to consider them mutually exclusive. On one hand there is good evidence that social and cultural habits can shape neurological structures in meaningful ways: for example, taxi drivers appears to exhibit enlarged posterior hippocampal regions with respect to controls who are not experienced in spatial navigation tasks (see Maguire et al. 2000). On the other, chemical imbalances in the brain can affect behavioral manifestations in a variety of ways:

the well-known correlation between serotonin levels and depressed mood is just an obvious example.

By adopting a holistic approach, we characterize illness as an emergent phenomenon in which biological and environmental factors are almost invariably influencing one another. More specifically, it may be possible to construct a spectrum indicating the degree of interaction between different kinds of factors in somatic and mental disorders. On one extreme we would find those diseases that emerge almost independently of environmental interaction (e.g. Down syndrome); on the other, those primarily caused by socio-cultural pressures (e.g. bulimia). An interesting consequence of this approach is that the distinction between somatic and mental disorders would somewhat collapse, because the unit of analysis would become the entire organism and its relationship with the environment. This proposal also allows considerable flexibility in classifying a condition as a disease: for example, sickle cell anaemia protects the organism from malaria and thus can be considered an adaptive trait in sub-Saharan Africa, and a serious illness in other environments. In other words, what is functional or dysfunctional cannot be established in a vacuum: "It is difficult to know whether a condition is pathological without considering the environment in which it occurs" (McGuire et al. 1992, p. 93).

*Dimensional*. According to Murphy, psychiatry can fit a medical model only by endorsing a categorical view of illness, where a condition results from multiple interacting causes but still qualifies as "a distinctive destructive process afflicting a system" (2006, p. 357). A couple of observations can be made in response to Murphy: first – although many illnesses are defined categorically – there are also conditions that arise as a consequence of meeting or exceeding a threshold (e.g. hypertension, diabetes or obesity). These processes are more or less "disruptive" but could hardly qualify as "distinctive": thus, sometimes general medicine treats illness as a condition diverging *quantitatively* – rather than qualitatively – from normal functioning. Second, there is good evidence that many psychiatric symptoms are widespread among the non-clinical population. For example, in a study conducted on 586 college students, 30 to 40% report to have experienced auditory hallucinations at least once in their lifetime, and almost half of these even once a month (see Johns & van Os 2001). Delusions are another interesting example, since they seem to lie on a continuum with other utterly irrational beliefs: thinking that your spouse has been replaced by an impostor does not seem distinctively different from believing that breaking a mirror would bring you seven years of bad luck.

Admittedly, regarding many mental disorders as dimensional would mean drawing the line between pathological and non-pathological with a certain degree of arbitrariness. Yet, it also allows a greater degree of flexibility and the opportunity to evaluate the context on a case-by-case basis. For example, we may want to be conservative in setting the threshold for psychopaths, due to the serious legal and ethical implications often connected to this condition. At the same time, we may decide to pay special attention to "high-risk" situations that need to be monitored or acted upon (e.g. students who regularly

experience auditory hallucinations). This last point seems consistent with what happens in dimensional somatic disorders: for example, if my blood tests report high cholesterol or high sugar level – even within the limits – the doctor may suggest a change in diet or life-style to avoid more problematic consequences. Therefore – despite Murphy’s concerns – the endorsement of a dimensional approach sits comfortably with the medical model and promotes a more nuanced view of medical practice. Indeed, it shows that an important part of medicine consists in dealing with *chances* rather than *causes* and that the distinction between pathological and non-pathological may be a matter of degrees (see Gigerenzer 2008).

To sum up, I start by asking whether an analogy between somatic and mental disorders could be meaningfully defended. Then, I appeal to some recent studies on accuracy and cognitive biases to show that the core distinction between psychiatry and general medicine does not rest on the issue of *reliability*. Rather, the *symptom-based* approach currently endorsed in psychiatry is mostly responsible for distancing the discipline from the medical model, creating a gap between the ways in which mental disorders and other illnesses are diagnosed. Finally, I propose a *multi-level, holistic* and *dimensional* approach to illness that encompasses somatic and mental disorders.

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