

# Philosophy *of* Medicine

Original Research

## Death Sentences Criminalization, Medicalization, and the Nature of Disease

Stephen John<sup>1</sup>

<sup>1</sup> Department of History and Philosophy of Science, University of Cambridge, Cambridge, United Kingdom.

Email: [sdj22@cam.ac.uk](mailto:sdj22@cam.ac.uk)

### Abstract

---

There are many analogies between medical and judicial practice. This article explores one such analogy, between “medicalization” and “criminalization.” Specifically, drawing on an analogy between a judge’s speech act of delivering a verdict and a physician’s speech act of giving a diagnosis, it suggests a novel account of the phenomenon of “overdiagnosis.” Using this approach, we can make some headway in understanding debates over the early detection of cancer. The final section outlines the relationship between this approach and familiar debates in philosophy of medicine on the nature of disease and in philosophy of science on the “value-free ideal.”

---

### 1. Introduction

The relationship between crime and disease is complex. Some epidemiologists argue that social problems such as the use of illicit drugs, typically viewed as criminal behavior, should instead be viewed through a public health lens (Volkow et al. 2017). The development of psychiatry has been intimately linked to debates in criminal law over responsibility and culpability (McMillan and Malatesti 2010). Sociologists have explored the similarities between prisons and hospitals as totalizing institutions (Goffman 1961). We talk of “epidemics” of crime and describe medical diagnoses as “death sentences.” This article takes the latter metaphor seriously. I argue that we can best understand a cluster of problems around medicalization, overdiagnosis, and the nature of disease by an analogy between legal verdicts and medical diagnoses.

In section 2, I set up my discussion by outlining a very general account of the possible relationships between medicalization and criminalization, arguing that any account of these phenomena must start from the fact that legal verdicts and diagnoses both describe the world and change defendants’ and patients’ normative powers. In section 3, I outline a general problem in philosophy of medicine—the definition of overdiagnosis, focusing on cancer screening. Section 4 applies the approach developed in section 2 to the case of overdiagnosis of cancer. Finally, I discuss the relationships between my arguments and debates on the nature of disease, and on the value-free ideal for science.



This work is published by [Pitt Open Library Publishing](#) and is licensed under a [Creative Commons Attribution 4.0 International License](#). © The Author(s).



## 2. Doing Things with Diagnoses

Consider debates over policies that aim to lower crime by identifying people deemed to be at high risk of committing serious offenses and intervening in such cases. Critics worry that such policies involve misdescribing risk factors for criminal behavior as criminal behavior, and, as such, involve an inappropriate overstretching of the juridical gaze (Harcourt 2007). These debates mirror concerns that “risk factors” for disease are misdescribed as diseases (Aronowitz 2009), and that overdiagnosis or overtreatment of disease is an instance of medicalization, where medical authority reaches out of its proper domain into other areas of social life (Conrad 1992). In this section, prompted by these parallels, I suggest we can model the act of diagnosis on the notion of a judicial verdict.

Central to discussions of criminal law is the notion of a verdict: the speech act whereby some official, such as a judge, declares that a defendant is guilty of committing a crime. Just as we might think that a diagnosis can be correct or incorrect, so, too, we can judge whether a verdict is correct; most obviously, when we overturn a previous conviction. However, there is an important difference between different ways in which a verdict can be incorrect. To see this distinction, consider a highly simplified example: in a jurisdiction where sex between men is illegal, a judge hears evidence and rules that a defendant is guilty of that crime. First, we might object that the judge’s verdict is wrong in the sense that it is factually incorrect, and the defendant did not in fact have sex with another man. Second, we might claim that the judge’s verdict is wrong in the sense that sex between men ought not to be a crime at all. The second concern is compatible with thinking that the judge’s ruling was factually and legally correct, *given the laws as they stand*. You might hold, then, that there is both a sense in which the judge *ought* to have found the defendant guilty—that is what the law and the facts imply—and a sense in which she *ought not* to have found the defendant guilty—the law is wrong to criminalize same-sex relations.

In articulating these concerns, we can distinguish three things: first, the judge’s speech act of uttering her verdict; second, the laws as they are; and third, the laws as they ought to be. The first of these phenomena is central to thinking about the second and third. The judge’s speech act does two things: it both represents the world (it states that a defendant performed some action contrary to the law) and, simultaneously, it intervenes in the world by changing the defendant’s normative status (making him liable to punishment). It is a paradigm case of an “assertive declaration,” where an authority figure changes the world by declaring that something is the case (Searle 1979, 19–20). In turn, when we articulate an ethical concern about the law and argue that sex between men ought not be a crime, our concern is primarily about whether the judge should have the normative power to change individuals’ normative standing on the basis of their sexual behavior. We care about what the law is and about what it ought to be precisely because laws enable status-changing speech. To put it another way, if no one took judges seriously—if their verdicts were routinely ignored—we would not care anywhere near so much about changing the law.

Using J.L. Austin’s terminology, the judge’s *illocutionary* act simply makes it the case that the defendant gains a new social, normative status, in this case “being guilty” (Austin 1962). This kind of illocutionary consequence is separate from, and prior to, any further *perlocutionary* effects of her speech; say, upset for the defendant’s family. In turn, note that we cannot understand the perlocutionary consequences of the judge’s speech act without paying attention to its illocutionary status: the defendant’s family is upset not just because the judge made some factual claim but because she has changed the defendant’s normative

status, making him liable to punishment, social shaming, and so on. In subsequent sections, I suggest that this feature of judicial verdicts is central to thinking through criminalization. First, however, I want to make a suggestion that we can understand the notion of a diagnosis along the lines of a judge's verdict.

It is tempting to think of a physician's diagnosis as if it were simply an assertion about the world: this patient has this disease.<sup>1</sup> Of course, such an assertion might have ethically relevant consequences—for example, a patient might choose to be treated—but the relevant report would not automatically have such consequences; they are downstream of the report. However, the comments above imply a different way of thinking about the speech act of diagnosis, as *both* reporting some (putative) fact *and* simultaneously changing a patient's normative status, by enabling her to make new normative claims on others—for example, on the state for healthcare, or her employers for time off work. In turn, we can think of these normative changes as central to the further perlocutionary effects of diagnosis; what enables diagnostic categories to have their further effects—say, on treatment—is that they primarily function to move people into the category of “potential patient.”

Before going on, it is worth noting an obvious worry about my proposal that we should understand diagnosis as a declarative, which changes patients' normative status, rather than as a factual assertion; that all sorts of people can diagnose others without thereby changing their normative status. For example, a historian might diagnose a long-dead king as having suffered from cancer, or an individual might self-diagnose as having flu. Plausibly, such claims can straightforwardly be true or false but it is not clear that they have the illocutionary effect of changing normative status. So, it seems, diagnosis is not an inherently normative act.

In response, first, even lay diagnoses have *some* normative connotations: the historian's judgment may make us reassess the king's decisions, my self-diagnosed flu may excuse me from doing the shopping. Second, more generally, we can distinguish between diagnosis proper and the use of diagnostic categories to describe the world. Only a medical professional can engage in diagnosis proper because only they have the authority to use a diagnostic category to change others' normative status. Nonetheless, others can use the descriptive component of diagnosis to explain and predict the world.

This may seem a cheat but the legal analogy is suggestive. We can and do use legal categories outside the courtroom. Watching a documentary about an unsolved murder, I might say, “Jones is guilty.” This speech act resembles a judge's verdict but, even if I am right and Jones is guilty, there is an important difference between me shouting at the screen and the judge uttering the same sentence in court. I cannot make Jones liable for punishment. Even if the judge and I perform the same locutionary act, we perform different illocutionary acts (Austin 1962). In turn, because of this difference, our acts will have different perlocutionary effects. My key suggestion is that practices such as me shouting at the screen are parasitic on the courtroom; we cannot make sense of the former without the latter. Something similar is true, I suggest, of diagnostic categories. Once diagnostic categories are part of medical practice, used by medical practitioners to change patients'

---

<sup>1</sup> I note here that by “diagnosis” I mean the act of uttering a diagnosis to a patient, rather than the complex epistemic process leading up to that moment. Clearly, we often use “diagnosis” to refer to the latter, which would, in my example, be analogous to the legal process of trying someone in court. In stressing the *normative* dimensions of making a diagnosis, I do not mean to deny that the act of diagnosing is guided by all sorts of epistemic norms, as I explain later.

normative status, other members of society can “borrow” the descriptive aspects of these categories for their own purposes. Still, my suggestion is that we should have a “diagnosis-first” perspective on medical categories: we should recognize that their primary function is to be used in contexts that involve changing individuals’ normative status.<sup>2</sup>

### 3. Overdiagnosis or Overtreatment

In this section, I place the machinery outlined in the previous section to set up a very general problem: how best to characterize some of the harms associated with the early detection of cancer. I argue that approaches to this topic can best be understood as debates over whether we should adopt a “realist” or “instrumentalist” perspective on disease categories.

The “war on cancer” is notoriously long running. One reason is that, typically, by the time cancerous growths are symptomatic, they are very hard to treat—indeed, they may already have metastasized. Therefore, since the 1920s, an influential tradition has stressed the importance of early detection of cancer, most notably, through screening of asymptomatic “at-risk” individuals (Löwy 2010). The reasoning is seductive: the sooner we intervene on cancerous growths, the more likely our treatments will be successful. However, evidence for this strategy’s effectiveness is less compelling (Welch and Black 2010). There are ongoing disputes about whether mass-screening programs have significant effects on cancer-related morbidity and mortality. Certainly, for most cancer-screening programs, it is hard to detect any effect on all-cause mortality (Saquib, Saquib, and Ioannidis 2015).

How do we detect many more cancers, intervene more often, but fail to save more lives? This is a contentious question. However, there is widespread agreement that part of the answer is that some of the cancerous growths detected via screening would not have gone on to cause symptoms or premature mortality had they not been detected; for example, because they were growing very slowly (Welch and Black 2010). Archie Bleyer and H. Gilbert Welch (2012) estimate that, out of approximately 220,000 women diagnosed with breast cancer annually in the United States, 70,000 are told that they have breast cancer, when those cancers will not go on to be life threatening. In detecting early, we risk intervening unnecessarily. In turn, these interventions are not costless, either for the healthcare system or, more importantly, for patients (Marmot et al. 2013). A preventive mastectomy, for example, may lead to significant medical and psychological harms.

Note that the problem here is not with false positives in testing.<sup>3</sup> Consider a simplified example: as part of routine screening, an asymptomatic woman is diagnosed with ductal carcinoma in situ (DCIS), a condition often understood as an early stage of invasive breast cancer. She chooses to have a lumpectomy, followed by radiation therapy. Clearly, the resultant treatment would be problematic were the doctor just *wrong* in interpreting the mammography; say, she mistook a shadow on the image for a carcinoma. My concern, though, is with cases where the physician is correct—the patient really does have DCIS—but the intervention was objectively unnecessary because the carcinoma would never have developed further.<sup>4</sup> This is no idle example: although routinely diagnosed via screening, the

---

<sup>2</sup> Whitbeck (1981) also suggests that diagnosis is not the identification of an entity but has a practical element; however, he understands the practical element solely in terms of orienting action.

<sup>3</sup> See Biddle (2016) for a fuller discussion.

<sup>4</sup> Note that this is different from whether the intervention seemed necessary to the physician, given her evidence; that is, whether it was “subjectively unnecessary”—for discussion of some of the complexities of the term “unnecessary” routinely used in these debates, see John and Wu (2022).

twenty-year breast cancer specific mortality rate following DCIS detection is estimated at 3.3 percent (Narod et al. 2015).

No one denies that early detection of cancer can lead us to intervene on growths that would not otherwise have caused problems. However, everything else about this phenomenon—including how best to name it, even—is contested. Broadly, we can distinguish four debates. First, sociological debates over the drivers of this phenomenon: as reflecting the rise of risk-factor epidemiology, as a result of commercial pressures, and so on (Aronowitz 2009). Second, epistemological debates concerning the extent of this phenomenon and how to measure it (Marmot et al. 2013). Third, broadly ethical debates concerning how to balance the harms and benefits of population screening, particularly given widespread public misunderstanding of the risks involved (Plutynski 2012). Fourth, conceptual debates: for example, how the phenomenon relates to the distinction between “individual” and “population” perspectives in public health (Hofmann 2018). Although these topics interrelate, I focus on one aspect of the conceptual debate: the relationship between “overdiagnosis” and “overtreatment.”

Consider the example of the unnecessary lumpectomy to treat DCIS. Although the notion of a harm is complex here, there is a clear sense in which undergoing objectively unnecessary invasive procedures is bad for patients, regardless of whether they are aware that it is bad. Quacks or charlatans who peddle worthless treatments harm patients even if the patients never learn the truth (John and Wu 2022). How, though, should we describe the underlying causes of these harms?

Broadly, we can distinguish two ways of thinking about that question. On one model, the problem is not with the doctor’s diagnosis but the actions taken on their basis; the diagnosis was correct, and the problem is one of *overtreatment*. On a second model, the problem is one of *overdiagnosis*; we went wrong by including something as a cancer that was not, in fact, a cancer—in some sense, our categories did not latch onto a genuine problem.<sup>5</sup>

Of course, overdiagnosis is problematic only insofar as it leads to treatment but there is still a distinction to be drawn here. To see why, imagine we discover that someone with late-stage lung cancer also has hugely elevated blood pressure. Treating this patient would be pointless, perhaps even harmful but, presumably, it is still true that he has coronary heart disease. We should not treat the patient but the diagnosis would still be correct. By contrast, imagine a case where the diagnostic criteria for coronary heart disease are extended to include people with ever so slightly elevated blood pressure (Aronowitz 2009). This change to diagnostic practices only leads to harm if physicians *act* on that diagnosis. Still, it seems that the problem in this case is not just that people are *overtreated* but that there is something wrong with the *diagnosis*. It is not only that it would be a bad idea to intervene on these ill people but that they are not even ill in the first place. Similarly, in a case such as unnecessary treatment of DCIS it makes sense to ask whether the problem is best understood in terms of unnecessary interventions made on the basis of (correct) diagnoses—*overtreatment*—or a problem with the diagnostic category itself—*overdiagnosis*.

It can be easy to miss this distinction because both approaches might seem to justify similar policies—for example, that we should stop diagnosing women with DCIS—but for

---

<sup>5</sup> Reid (2017) draws a similar distinction in terms of two ways of understanding “overdiagnosis.” I prefer my terminology as a way of making the contrast clearer.

different reasons. On the overdiagnosis account, we should stop diagnosing DCIS as a breast cancer because such claims are incorrect; DCIS is *not* a cancer. On the overtreatment account, we know that offering even true diagnoses of DCIS tends to lead to overtreatment; so, we have a good practical reason not to make these (correct) diagnoses, as a way of avoiding unnecessary interventions. Despite these overlaps, the distinction is important. Consider, for example, ethical debates over paternalism and withholding information. If we think that the problem with DCIS diagnoses is that they are correct but often misunderstood, leading to overtreatment, we might worry that it is paternalistic to hide these diagnoses. If, by contrast, we think that the diagnostic category is itself improper, it seems fine not to report findings to patients. How, then, should we characterize cases such as DCIS?

Interestingly, a parallel choice arises in a more familiar, broader debate in the philosophy of medicine concerning the proper definition of disease. Standardly, that debate is divided into two camps: naturalists, who (to simplify) understand diseases solely in biological terms; and normativists, who (equally crudely) think that disease concepts are essentially evaluative. A common objection to naturalist theories is that they wrongly classify various conditions as diseases; for example, Michael Ruse (1997) objects that Christopher Boorse's highly influential naturalism classifies homosexuality as a disease. One naturalist response is to accuse their opponents of a confusion: they implicitly confuse the "theoretical" concept of health with a "practical" concept of things that ought to be treated (Boorse 1975). On this strategy, as long as we distinguish the factual question of whether some condition *is* a disease from the normative question of whether to *treat* that condition, we can explain away the apparently worrying implications of such claims as that homosexuality is a disease. In adopting this response, Boorse looks similar to someone who thinks that the question of whether DCIS *is* a disease is separate from the question of whether it is a good idea to *treat* DCIS.

These comments may seem to imply that there is some sort of simple mapping, where defenders of naturalism will prefer "overtreatment" interpretations and defenders of normativism will prefer "overdiagnosis" interpretations. However, there is no straightforward equivalence. First, naturalists can have excellent reasons to worry that certain conditions are overdiagnosed. For example, Peter Schwartz (2014b) draws on a broadly Boorsean account of disease to argue that, properly, DCIS is a risk factor for cancer, rather than itself being a cancer, on the grounds that DCIS is too common to count as "dysfunctional." Second, normativism does not necessarily imply that cases where diagnostic categories lead to harmful treatment *must* count as overdiagnosis. Typically, normativists hold that diseases are, in part, constituted by whether they are harmful or disvalued. It is entirely possible to think that DCIS is properly "disvalued" but it would be a bad idea to treat the condition.

The more interesting distinction for thinking about the overdiagnosis/overtreatment distinction is, I suggest, between what I call a "realist" and an "instrumentalist" understanding of diagnostic categories. Schwartz's approach is realist; he assumes there is a fact of the matter as to whether DCIS is a dysfunction or not; the fact that "treating" DCIS typically does little good is *evidence* it is not. Still, on his approach, it is possible that DCIS might be a dysfunction but one that it is pointless or harmful to treat. There is a gap between whether the concept actually picks out a disease and the consequences of using that concept. By contrast, Justin Biddle presents an instrumentalist account of overdiagnosis, according

to which decisions about how narrowly or broadly to define disease categories should be guided by the “costs of living with the condition.” (Biddle 2016, 200). *Both* the realist and the instrumentalist might agree that DCIS involves overdiagnosis, rather than overtreatment. The core difference, however, is in how they interpret the fact that acting on diagnostic categories can often lead to unnecessary treatment. On the realist approach, these outcomes may be *evidence* that a diagnostic category is too broad. On an instrumentalist approach, these outcomes partially *constitute* the fact that the categories are too broad.

I have suggested that there is an intuitive, ethically relevant, difference between thinking about cases such as the unnecessary treatment of DCIS sufferers as stemming from *overdiagnosis* and as stemming from *overtreatment*. This debate is philosophically complicated because, even when authors might seem to agree—say, that DCIS involves “overdiagnosis”—they might reach those conclusions on the basis of different ways of thinking about the correctness of diagnostic categories. The realist thinks there is a fact of the matter as to whether diagnostic categories are correct, independent of their consequences. There is something odd about this move, though, because diagnostic categories are clearly intended to orient action. On the other hand, the instrumentalist interpretation, which appeals to the consequences of diagnosis as reasons to reject a diagnostic category, seems to threaten the intuitive distinction between an individual being diseased and it being a good thing to say that the individual is diseased. The next section argues that the theoretical machinery introduced in section 2 can break this impasse.

#### 4. Applying the Diagnosis-First Account

The previous section argued that the interesting philosophical question in thinking about early detection of cancer is whether we treat the bad consequences of using some diagnostic category as *evidence* the category is misguided, as the “realist” suggests, or as (partly) constitutive of the fact that the category is misguided, as the “instrumentalist” suggests. The approach I sketched in section 2 suggests that in resolving these debates, we should start from the fact that the act of diagnosing *is* the act of changing an individual’s normative status; a key part of that change is that we make it proper or legitimate to treat the patient using medical interventions, should any exist. (Remember, though, a *key*, but not the *only* change—the patient also now gains a different social status more generally; more on the this below.) This approach seems to favor a more instrumentalist way of thinking about cases such as DCIS because it suggests that there is a strong connection between whether a condition is correctly diagnosed and whether it ought to be treated.<sup>6</sup> In this section, I clarify and develop this thought, showing how my approach can capture the important insights of instrumentalism, while avoiding some significant pitfalls.

I suggest that we cannot separate assessment of the propriety of a diagnostic category from assessment of the consequences of using that category; the fact that use of the diagnostic category DCIS causes harm is not just *evidence* that DCIS is not a genuine dysfunction but also partly constitutive of the fact that it is an incorrect category. Before moving on, it is important to clarify that this approach does not conflate diagnosis and

---

<sup>6</sup> Note that Schwartz (2014a) argues that some of the normative functions of a disease concept should lead us toward an account of disease in value-free “biostatistical” terms. Where I differ from Schwartz is that I think he overlooks the very wide range of ways in which ascriptions of disease change our social roles and normative status. This should become clear as this section progresses.

treatment. It would be ridiculous to think that diagnoses *must* lead to treatment. There are times when it makes perfect sense to say, “You have cancer but we should not do anything about it.” My claim is not that treatment *must* follow from diagnosis but, rather, that a key function of diagnosis talk is to move people into the category of *properly treatable*. As such, we should take account of the normal or average effects of treating some condition when deciding on diagnostic categories (compare Hofmann 2018). The legal analogy is helpful here: a judge can declare a defendant guilty but decide to show leniency and rule that punishment is inappropriate *in this case*. Still, in deciding whether to classify behavior as criminal, our key concern should be with whether, in general, certain behaviors should render individuals liable for punishment.

One important corollary of my view is that it has important implications for thinking about the relationship between diagnosis and patients’ response to diagnosis. In discussions of early detection, it is common to read that patients tend to “overreact” to diagnoses by seeking treatment, even when this is not necessarily in their best interests (Hwang, Thompson, and Wesseling 2020). In general, we can think of such claims as a way of explaining the harms associated with early detection as stemming from *overtreatment*, rather than from *overdiagnosis*. Specifically, this form of explanation locates the problem not so much in physicians’ diagnoses but in patients’ responses to being diagnosed. As such, it seems to be a strategy which, to a certain extent, lets physicians off the hook for harms resulting from practices such as diagnosing DCIS. The arguments above suggest we should be careful about such claims, insofar as they overlook the fact that diagnosis is *not* simply a report of the world but an action whereby a physician places someone into a position where they are now a *possible subject* of medical intervention. It is hardly a surprise if people who are brought into the domain of medical authority assume that they *should* have the available treatment.

So, a focus on diagnosis as moving people into the category of “properly treatable” implies that concerns about the ethical consequences of using diagnostic categories should play a central role in deciding on those categories’ propriety. In this regard, it provides support for Biddle’s “instrumentalist” stance. However, as I briefly noted in section 3, there is a problem with “instrumentalist” approaches to thinking about disease categories, in that they seem to collapse the distinction between whether a claim is true and whether we ought to report that claim. This is an intuitive distinction: it might be insensitive and inappropriate to say that I look silly in my new shirt but it is still true that I look silly. In turn, this distinction between truth and consequences is clearly important in many medical debates. For example, consider the question of whether it is ethical not to tell people that they have the gene for Huntington’s disease. Central to such debates are worries that reporting such diagnoses might cause upset for no obvious gain. Even those who think that the diagnoses have negative consequences do not, though, think the diagnoses are therefore *false*. Indeed, the ethical conundrums arise precisely because the diagnoses are (we suppose) true. Instrumentalism threatens to collapse this intuitively compelling, and ethically important, distinction.

Furthermore, the act of diagnosis is guided by facts about the world and governed by familiar epistemic norms, and a huge range of scientific knowledge—from biochemistry to evolutionary biology to epidemiology—contributes to our understanding of the nature and causes of disease. Again, this makes it seem odd to say that diagnostic categories should be



guided by ethical concerns, as the instrumentalist suggests. So, can the diagnosis-first approach avoid these challenges?

First, consider the act of diagnosis. Above, I argued that we should distinguish the question of whether a diagnosis is correct from the question of whether it is helpful or useful to assert that diagnosis. The “diagnosis-first” account of overdiagnosis retains that distinction. It holds that concerns about the normal consequences of the speech act of diagnosis are central to deciding on the propriety of diagnostic categories. However, this is different from holding that the correctness of any *particular* diagnosis is a function of its consequences. Rather, when some diagnostic category is fixed, the question of whether some individual has the relevant disease is an empirical matter, regardless of further value considerations.

Consider, again, the legal analogy: whether sex between men ought to be a crime involves value considerations. Nonetheless, it is a factual question as to whether two men have had sex, and investigating that question is subject to epistemic norms. If two men have had sex in a jurisdiction where such sex is criminalized, they are guilty of committing a crime. It might be ethically best not to act on the basis of that judgment—to spare the defendant from jail—but, given the categories in use and the facts, that is a separate question. Similarly, although we may dispute whether DCIS is a proper diagnostic category, if we treat it as one, the question of whether a diagnosis of DCIS would be correct depends on whether a woman has abnormal cells growing in her milk ducts. Within the normatively fixed framework of diagnosis, it is still true that the patient has a disease, even if it would be a very bad idea to treat this disease. Although the diagnosis-first approach allows us to reject diagnostic categories on the basis of the ethical consequences of using those categories, it does not thereby collapse the distinction between a diagnosis being true, relative to some framework, and the consequences of acting on that diagnosis.

Indeed, it is worth noting that, for everything I have said so far, it is entirely possible that, on balance, the consequences of using the category DCIS are positive, and we should retain it as a diagnostic category. Still, if we do so, there may well be *specific* cases where it is both correct that a woman has DCIS *and* correct that we should not intervene (say, because it would be harmful in this case). So, we do not need to deny that, within a diagnostic framework, there remains a distinction between questions about the truth of a diagnosis and questions about whether we should make that diagnosis or act on it. In turn, my proposed approach certainly would not imply that every case where use of a diagnostic category leads to harm would have to count as a case of overdiagnosis, rather than one of overtreatment. Rather, the distinctive feature of the approach is how it makes us think about the role of ethical concerns at the level of fixing our diagnostic categories in the first place.<sup>7</sup>

What, though, is the role of broadly empirical consideration in debates over diagnostic categories themselves? On the picture above, the propriety of a diagnostic category turns on a distinctively ethical judgment: whether possession of some set of physical characteristics

---

<sup>7</sup> Note that there is an interesting further corollary to my arguments here: that the speech-act approach might help us think through cases of *underdiagnosis*. Although less well explored in the literature, one might, in principle, think that our diagnostic categories ought to be “stretched” in some cases. Again, my approach suggests a way of thinking about how to assess such claims: in terms of the overall balance of costs and benefits of “stretching.” A nice feature of my account, though, is that in noting the issue of how diagnosis changes social status it also explains why we might think that we sometimes have reasons of justice to recognize conditions that are more common in marginalized groups; this is a way of recognizing past failures to accord moral standing. I hope to explore this topic more in future work.

warrants changing an individual's normative status. As Biddle (2016) argues, answering this question turns on our best estimates of the likely effects of treating these characteristics as diseases (that is, as properly treatable), and these estimates should be guided by our best empirical knowledge. Both our mechanistic knowledge of carcinogenesis and our epidemiological knowledge of the population-level effects of screening are important inputs to establishing the likely effects of using DCIS as a diagnosis. DCIS is a relatively stable biological phenomenon, which can be studied, and this knowledge is relevant to our normative decisions. Furthermore, plausibly there are important biological similarities between the different conditions we recognize as diseases. Given that humans have evolved through a process of evolution by natural selection, it is plausible the physical conditions we classify as diseases have some similar evolutionary history. As such, decisions about classification may track biologically interesting features of the world, and knowing more about those biological facts may well help us in thinking through treatment.

Again, the legal analogy is helpful in understanding these comments. No one denies that concerns about the ethical consequences of criminalizing some behavior are relevant to whether we should criminalize that behavior. In that sense, legal categories are “value laden.”<sup>8</sup> Still, it does not follow that we cannot do all sorts of studies that will help us to better understand which legal categories we should use, nor does it follow that there can be no meaningful generalizations about crime or criminal behavior. (Although, of course, there is always a danger in doing criminology that we accidentally treat value-laden categories as *if* they had some sort of trans-historical or trans-cultural reach which, in fact, they lack. This, however, is a general danger of using any sort of “mixed claim” in social science [Alexandrova 2017].)

So, the diagnosis-first approach does not render empirical knowledge and claims superfluous to debate; rather, it helps us to understand why they are important. Finally, I suggest that the general “diagnosis-first” account I have sketched so far—and, specifically, the legal analogy—can help to explain one of the most puzzling but underexplored features of debates around overdiagnosis: the importance often attributed to differentiating disease and risk factors.

To explain, a recurrent theme in overdiagnosis debates is that we confuse risk factors for disease with disease. For example, Schwartz's (2014b) concern about DCIS is that it is a risk factor for cancer, rather than cancer. More generally, writers such as Robert Aronowitz (2009) have claimed that a distinctive and problematic aspect of modern medicine is a blurring of the boundaries between risk factors and disease. In turn, this phenomenon is often linked to concerns about the medicalization of everyday life.

It is clear why, from a broadly realist position, we might draw a distinction between risk factors for disease and disease itself; if our terms are supposed to map onto the world, we

---

<sup>8</sup> These claims may seem too fast, as there is a long-standing debate in philosophy of law, between legal positivists, who hold that the authority of the law stems from the existence of certain kinds of authority, regardless of ethical considerations, and a range of critics, from natural law theorists to various Dworkin-inspired forms of realism (Hart 1955; Green 2008; Dworkin 1986). However, while this is an important debate, note that it is not central to the analysis offered here, because the legal positivist does not deny the *factual* claim that ethical values can and do play an important role in shaping the law; rather, what she denies is that the *authority* of the law requires that the relevant ethical values be correct. Indeed, it is hard to see how or why the legal positivist would deny that normative values play some role in shaping legal categories, given that law is a normative system. All that is required for my analogy between legal and medical cases is the fact everyone agrees on in the legal case: that laws can be shaped by ethical values. The further question of how this shaping bears on the authority of law is beyond the scope of this article.

should not confuse causes of, or evidence for, or typical precursors of, a phenomenon with the phenomenon itself. On an instrumentalist perspective, by contrast, this distinction's relevance is unclear: we can have practical reasons to intervene on "risk factors" even when they are not diseases, and reasons not to intervene on some conditions even when they are diseases (John 2009). For example, cigarette smoking is a risk factor for lung cancer, rather than a disease, but we still have extremely strong reasons to intervene on smoking behavior. Of course, whether we describe a condition as a risk factor or as a disease makes an important difference to patients' preferences for treatment, so we should be careful about the terms we use. However, it is not clear what to make of this phenomenon because patients' preferences seem to track something more fundamental: a sense that it really does matter whether some condition is a "risk factor" or a disease.

These comments imply a puzzle for the instrumentalist: either she must give up on the sense that it is important to distinguish risk factors from diseases, or she must construct an account of why this distinction is so important. The "diagnosis-first" approach provides one way of following the second strategy. If all we are concerned about is reducing overall population suffering, there may be no good reason to distinguish "risk factors" and "diseases": both are levers we can pull to attain valuable ends.<sup>9</sup> However, diagnosis does more than merely signal "intervene here" but *also* changes individuals' normative relationships. So, for example, consider a diagnosis such as "chronic fatigue syndrome": even if we do not have treatments for such a "disease," the use of the diagnosis still *does* something important because it moves patients into a new social category. A patient with "chronic fatigue syndrome" can, for example, demand time off work in a way in which someone who is merely exhausted cannot; in turn, because of the change in her social identity, a patient's sense of herself may be deeply altered in a way that it would not be altered by a friend remarking she is often very tired.

In deciding, then, on the *kinds* of consequences relevant to thinking about whether we should use some diagnostic category such as DCIS, we should not concern ourselves solely with medical consequences narrowly construed. Rather, we should also ask ourselves whether we want it to be the case that already powerful members of society—physicians—should gain further powers to take other members of society and transfer them into the normative category of "potential patient." In making that assessment, we must, of course, look to whether the possession of such powers brings medical gains or losses. However, we should also look more generally at how such powers might reconfigure relationships between physicians and patients, and change patients' self-understanding. On the approach I have sketched above, these sorts of concerns are not some "extra" add-on to hard-nosed questions about quality-adjusted life-year (QALY) gains or losses; rather, given that diagnosis primarily functions to change patients' normative status, they are central to thinking through diagnostic categorization.

At the start of section 2, I noted an apparent analogy between concerns about criminalization and medicalization. The comments above allow us to draw those links more fully. Sometimes, we have evidence that certain sorts of currently legal behavior—say, mild forms of antisocial behavior—are often precursors to later criminal behavior. One response to this kind of knowledge is to "criminalize" the currently legal behavior. Let us assume, for

---

<sup>9</sup> Vickers, Basch, and Kattan (2008) argue that the ultimate goals of preventing ill-health and premature mortality would be better served by entirely dropping the notion of diagnosis in favor of making risk predictions for patients; in a way, their approach takes the second horn of my dilemma.

the sake of argument, that such “criminalization” is *effective*, in the specific sense that the “benefits” to the community far outweigh any “costs.” Clearly, even if this is true, we might be very wary of such programs. One obvious reason for such wariness is that decisions about which sorts of behavior should count as “criminal” are not exhausted by questions about the overall social (dis-)utility of “criminalization.” Rather, when we think about these questions, we also think in richer terms of the social meanings of concepts such as “guilt” or “responsibility.” Someone who defends the criminalization of some form of behavior solely on the basis of the crime-related consequences of using that category is missing something important: there is a distinctive social meaning attached to being the sort of person who has been declared “guilty” by a judge.

My thought here is that something very similar is true of the case of “medicalization.” What worries us about confusing “risk factors” and “diseases” is not just that such a conflation *might* lead to net negative outcomes but, more fundamentally, that declaring someone a “potential patient” is an ethically weighty activity. A realist approach to overdiagnosis debates cannot capture this distinctive set of concerns; nor, however, can a purely instrumentalist account. By contrast, if we adopt the “diagnosis-first” approach, which centers our understanding of overdiagnosis debates around the medical equivalent of declaring people “guilty,” we can grasp why it may be so bad to confuse “risk factors” and “diseases.” Of course, this is not an argument that we *must* adopt my proposed perspective. However, it is a good reason to think that diagnosis is not simply a report on the world, nor just a tool for changing the world but, rather, a complex speech act, which both represents individuals as having a condition and simultaneously changes their normative status.

## 5. Broader Perspectives

So far, I have developed an extended analogy between the courtroom and the clinic as a way into thinking about “realist” and “instrumentalist” ways of thinking about overdiagnosis. As I noted in section 3, these debates relate to debates over the nature of disease. Furthermore, both the concept of overdiagnosis and debates over disease are related to arguments in philosophy of science over the “value-free ideal” (Biddle 2016). In this section, I set out how my approach fits into these more familiar debates.

I have presented an account of one important consideration in *deciding* which *diagnostic categories* to use, rather than a definition of disease or pathology. In principle, one might hold that there are diseases, characterized in naturalistic terms, and that what I am explicating is a different concept, such as “therapeutic normality” (Boorse 1997). I have focused on my question, rather than “what is disease?” because I am skeptical that we can provide necessary and sufficient conditions for “disease” (Schwartz 2014a), and I suspect that, even if we can, nothing much follows from such a definitional exercise. Still, my general approach has much in common with normativism insofar as it holds that the propriety of

diagnostic categories is necessarily related to evaluative concerns.<sup>10</sup> Two features of my approach may, then, be relevant to the more traditional debate.<sup>11</sup>

First, the general picture outlined above provides a useful way of defusing one standard objection to normativism. The normativist holds that disease kinds are necessarily evaluative: how, then, can she account for the fact that we clearly use “health” and “disease” as “theoretical” terms within scientific endeavors (Boorse 1975)? On the diagnosis-first account, the existence of epidemiology is no more or less mysterious than criminology. It is clearly possible to hold both that the reference of terms like “murder” is fixed, at least in part, by evaluative concerns but we can still study things like the rate of murder, the causes of murder, and so on. Similarly, we can hold that the reference of kinds such as “late-stage cancer” is fixed, in part, by evaluative considerations but we can still study the causes of cancer in a value-free way.

Second, the “diagnosis-first” approach may be helpful for thinking about broader debates, by providing a distinctive account of the “harm” aspect of disease. To explain: most “normativists” are more properly thought of as holding a “hybrid” theory, according to which diseases are biological states that are somehow normatively or evaluatively relevant. My approach suggests a distinctive way of thinking about this “normative” aspect, where the key question is not whether a biological state is or is not harmful or dis-valued but, rather, whether it is ethically proper to *label* some state as a disease.<sup>12</sup> This may seem a subtle difference but it picks up on the fact that diagnostic categories are not merely ways of describing the world but ways of changing it, by bringing people into the medical ambit. In this regard, it resembles Rachel Cooper’s interesting proposal that diseases must be “potentially medically treatable” (Cooper 2002). However, while I agree with Cooper that notions of disease are tied up with medical practice, my approach stresses that the doctor’s interventions stretch beyond treatment to encompass other changes to our normative status. Even if the doctor cannot *cure* me, diagnosing me may help (or harm) me, by changing my relationships.

Finally, I want to note the relationship between my proposals in this article and arguments about the “value-free ideal” for science. A recent wave of work in philosophy of science has argued that scientific justification must be influenced by nonepistemic value

---

<sup>10</sup> The “necessarily” is here because there are complex questions about how a naturalist should think about cases of objective vagueness. A naturalist could hold that natural categories are vague, in either an ontological or an epistemological sense. In turn, the literature on vagueness suggests that precisification of vague terms can properly rely on broadly practical concerns. Plausibly, many of the cases where we worry about overdiagnosis/overtreatment involve vagueness: a clump of four cancerous cells is not a tumor, whereas a stage 4 growth is; DCIS sits in between. However, we may have practical reasons to classify it as cancerous or not. So, on this sort of account, one can concede that some condition is a disease but reflect concerns that treatment of the disease is inappropriate through resolving vagueness problems in ways which minimize harm. Therefore, a sophisticated naturalist can hold that, in many contexts, the precise contours of our disease concepts must be decided by ethical considerations (Walker and Rogers 2017; Rogers and Walker 2017). An interesting question for further study would be how my approach relates to these arguments; I suspect that the approach I develop is broadly compatible with these arguments, as it can help explain *why* the line-drawing problem is so important, by stressing the illocutionary function of diagnosis. However, a fuller analysis of this overlap is beyond the scope of this article.

<sup>11</sup> My general strategy here resembles Reid’s (2017) argument that close study of diagnostic practice creates problems for pathophysiological accounts of disease. However, Reid’s focus is on how physicians reason to a conclusion, whereas mine is about the nature of giving a diagnosis. So, the two arguments can be seen as complementary.

<sup>12</sup> This distinction is orthogonal to the one Broadbent (2019) draws between “objectivist” and “nonobjectivist” accounts of the value judgments implicit in (broadly) “normativist” theories—that is, I do not take a stance on whether these judgments about the value of a label are “objective.”

considerations. There are many resonances between my arguments and this literature but I focus on just one: the relationship between communication and justification. The most influential recent work on values in science has drawn on concerns about (transient) underdetermination. Heather Douglas (2009) suggests that because hypotheses are always underdetermined by the evidence, decisions to accept hypotheses always involve “inductive risk” and scientists have a moral obligation to consider the nonepistemic consequences of different kinds of error in setting thresholds for acceptance. Other writers have extended Douglas’s general strategy to other choices, such as choice of ontology (Ludwig 2016), leading to a more general interest in how scientists handle “epistemic risk” (Biddle 2016).

One theme in these debates has been the importance of science communication. As Paul Franco (2017) has explored, Douglas’s arguments focus on scientists’ responsibilities for the consequences of their speech acts. Conversely, I have argued elsewhere that we can reconstruct the “value-free ideal” if we distinguish between accepting and asserting claims (John 2019). In a similar vein, Torsten Wilholt (2013) has suggested that Douglas’s proposals may run into problems when we take account of issues around trust and communication.

This article fits within this communicative turn within debates over the role of values in science. However, it also seeks to complicate those moves. Standardly, discussion has focused on scientists’ responsibility for the effects of asserting claims. In this context, the relevant effects are what Austin (1962) called “perlocutionary” consequences; that is, consequences of our speech, distinct from the speech act itself. However, clearly assertions are not the only kind of speech act, and perlocutionary effects are not the only sorts of effects a speech act can have. Rather, speech acts can also have illocutionary effects, at least when performed by socially authorized speakers (as in the priest’s “I declare you man and wife”). I have stressed that diagnoses are not merely assertions, stating facts about the world but also declaratives that change others’ normative status. In turn, I have argued that we need to think about diagnosis in ways that take account of both illocutionary and perlocutionary effects of our speech.

Strictly, then, my arguments are independent of the more familiar debates around how foreknowledge of the perlocutionary consequences of assertion should affect justification. You could buy my argument for why our choice of diagnostic categories must be guided by non-epistemic values based on the illocutionary profile of diagnosis without buying, say, Douglas’s argument against value-freedom, which appeals to the perlocutionary effects of assertion. However, these distinctions may be tricky because categorization schemes can “travel” to underlie different kinds of speech acts, as, for example, when I self-diagnose. I cannot explore these issues fully here but suggest a general lesson: we cannot assess claims about value-free science without asking what is being done with scientific words.

## 6. Conclusion

In this article, I have drawn an analogy between the role of verdicts in debates over criminalization and the role of diagnosis in debates over medicalization to argue that we may treat the consequences of using a diagnostic category as grounds for using or rejecting that category. But lots of people already think that we should judge a diagnostic category such as DCIS on the basis of its consequences. So, why go to all that trouble?

Because there is something puzzling about treating the consequences of a diagnosis as a reason to question the diagnosis: you have cancer, regardless of whether there is any point

telling you. If we want to pick our way through the conceptual minefield of overdiagnosis debates, and larger debates in philosophy of medicine and philosophy of science, we need to recognize the dual nature of diagnosis: as both a representation and an intervention.

### Acknowledgments

A previous version of this article was presented at the Society for Philosophy in Science conference in Ghent in 2019. Thanks to the audience there for useful comments. Thanks also to Alexander Bird, Polly Mitchell, Lottie Elton, and Lynette Reid for useful discussion of related topics. My primary thanks, however, are to the three cohorts of students on the MPhil program in Health, Medicine, and Society, who have had to suffer me trying to clarify the thoughts in this article, and who unfailingly provided useful feedback.

### Disclosure Statement

No competing interest was reported by the author.

### References

- Alexandrova, Anna. 2017. *A Philosophy for the Science of Well-Being*. Oxford: Oxford University Press.
- Aronowitz, Robert A. 2009. "The Converged Experience of Risk and Disease." *The Milbank Quarterly* 87, no. 2: 417–442. <https://dx.doi.org/10.1111%2Fj.1468-0009.2009.00563.x>.
- Austin, J.L. 1962. *How to Do Things with Words*. Oxford: Clarendon Press.
- Biddle, Justin B. 2016. "Inductive Risk, Epistemic Risk, and Overdiagnosis of Disease." *Perspectives on Science* 24, no. 2: 192–205. [https://doi.org/10.1162/POSC\\_a\\_00200](https://doi.org/10.1162/POSC_a_00200).
- Bleyer, Archie and H. Gilbert Welch. 2012. "Effect of Three Decades of Screening Mammography on Breast-Cancer Incidence." *New England Journal of Medicine* 367, no. 21: 1998–2005. <https://doi.org/10.1056/nejmoa1206809>.
- Boorse, Christopher. 1975. "On the Distinction between Disease and Illness." *Philosophy & Public Affairs* 5, no. 1: 49–68. <https://www.jstor.org/stable/2265020>.
- . 1997. "A Rebuttal on Health." In *What Is Disease?*, edited by James M. Humber and Robert F. Almeder, 1–134. Totowa, NJ: Humana Press.
- Broadbent, Alex. 2019. "Health as a Secondary Property." *The British Journal for Philosophy of Science* 70, no. 2: 609–627. <https://doi.org/10.1093/bjps/axx014>.
- Conrad, Peter. 1992. "Medicalization and Social Control." *Annual Review of Sociology* 18, no. 1: 209–232. <https://doi.org/10.1146/annurev.so.18.080192.001233>.
- Cooper, Rachel. 2002. "Disease." *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences* 33, no. 2: 263–282. [http://dx.doi.org/10.1016/S0039-3681\(02\)00018-3](http://dx.doi.org/10.1016/S0039-3681(02)00018-3).
- Douglas, Heather. 2009. *Science, Policy, and the Value-Free Ideal*. Pittsburgh: University of Pittsburgh Press.
- Dworkin, Ronald. 1986. *Law's Empire*. Cambridge, MA: Harvard University Press.

- Franco, Paul L. 2017. "Assertion, Nonepistemic Values, and Scientific Practice." *Philosophy of Science* 84, no. 1: 160–180. <https://doi.org/10.1086/688939>.
- Goffman, Erving. 1961. *Asylums: Essays on the Social Situation of Mental Patients and Other Inmates*. New York: Anchor Books.
- Green, Leslie. 2008. "Positivism and the Inseparability of Law and Morals." *New York University Law Review* 83, no. 4: 1035–1058. <https://www.nyulawreview.org/wp-content/uploads/2018/08/NYULawReview-83-4-Green.pdf>.
- Harcourt, Bernard. 2007. *Against Prediction: Profiling, Policing, and Punishing in an Actuarial Age*. Chicago: University of Chicago Press.
- Hart, H.L.A. 1955. "Are There Any Natural Rights?" *The Philosophical Review* 64, no. 2: 175–191. <https://doi.org/10.2307/2182586>.
- Hofmann, Bjørn. 2018. "Getting Personal on Overdiagnosis: On Defining Overdiagnosis from the Perspective of the Individual Person." *Journal of Evaluation in Clinical Practice* 24, no. 5: 983–987. <https://doi.org/10.1111/jep.13005>.
- Hwang, E. Shelley, Alastair M. Thompson, and Jelle Wesseling. 2020. "De-Escalating Breast Cancer Surgery for Low-Risk Ductal Carcinoma in Situ." *JAMA Oncology* 6, no. 7: 1117–1118. <https://doi.org/10.1001/jamaoncol.2020.0816>.
- John, Stephen. 2009. "Why 'Health' Is Not a Central Category for Public Health Policy." *Journal of Applied Philosophy* 26, no. 2: 129–143. <https://doi.org/10.1111/j.1468-5930.2009.00437.x>.
- . 2019. "Science, Truth and Dictatorship: Wishful Thinking or Wishful Speaking?" *Studies in History and Philosophy of Science Part A* 78: 64–72. <https://doi.org/10.1016/j.shpsa.2018.12.003>.
- John, Stephen and Joseph Wu. (2022). "First, Do No Harm? Non-maleficence, Population Health and the Ethics of Risk." *Social Theory and Practice*. Online first: [https://www.pdcnet.org/soctheorpract/content/soctheorpract\\_2022\\_0999\\_2\\_18\\_152](https://www.pdcnet.org/soctheorpract/content/soctheorpract_2022_0999_2_18_152).
- Löwy, Illana. 2010. *Preventive Strikes: Women, Precancer, and Prophylactic Surgery*. Baltimore: Johns Hopkins University Press.
- Ludwig, David. 2016. "Ontological Choices and the Value-Free Ideal." *Erkenntnis* 81, no. 6: 1253–1272. <https://doi.org/10.1007/s10670-015-9793-3>.
- Marmot, M.G., D.G. Altman, D.A. Cameron, J.A. Dewar, S.G. Thompson, M. Wilcox, and the Independent UK Panel on Breast Cancer Screening. 2013. "The Benefits and Harms of Breast Cancer Screening: An Independent Review." *British Journal of Cancer* 108, no. 11: 2205–2240. <https://dx.doi.org/10.1038%2Fbjc.2013.177>.
- McMillan, John and Luca Malatesti. 2010. "Introduction: Interfacing Law, Philosophy, and Psychiatry." In *Responsibility and Psychopathy: Interfacing Law, Philosophy and Psychiatry*, edited by John McMillan and Luca Malatesti, 1–6. Oxford: Oxford University Press.
- Narod, Steven A., Javaid Iqbal, Vasily Giannakeas, Victoria Sopik, and Ping Sun. 2015. "Breast Cancer Mortality after a Diagnosis of Ductal Carcinoma in Situ." *JAMA Oncology* 1, no. 7: 888–896. <https://doi.org/10.1001/jamaoncol.2015.2510>.
- Plutynski, Anya. 2012. "Ethical Issues in Cancer Screening and Prevention." *Journal of Medicine and Philosophy* 37, no. 3: 310–323. <https://doi.org/10.1093/jmp/jhs017>.



- Reid, Lynette. 2017. "Truth or Spin? Disease Definition in Cancer Screening." *Journal of Medicine and Philosophy* 42, no. 4: 385–404. <https://doi.org/10.1093/jmp/jhx006>.
- Rogers, Wendy A. and Mary Jean Walker. 2017. "The Line-Drawing Problem in Disease Definition." *Journal of Medicine and Philosophy* 42, no. 4: 405–423. <https://doi.org/10.1093/jmp/jhx010>.
- Ruse, Michael. 1997. "Defining Disease." In *What Is Disease?*, edited by James M. Humber and Robert F. Almeder, 135–171. New York: Springer.
- Saquib, Nazmus, Juliann Saquib, and John Ioannidis. 2015. "Does Screening for Disease Save Lives in Asymptomatic Adults? Systematic Review of Meta-analyses and Randomized Trials." *International Journal of Epidemiology* 44, no. 1: 264–277. <https://doi.org/10.1093/ije/dyu140>.
- Schwartz, Peter H. 2014a. "Reframing the Disease Debate and Defending the Biostatistical Theory." *Journal of Medicine and Philosophy* 39, no. 6: 572–589. <https://doi.org/10.1093/jmp/jhu039>.
- . 2014b. "Small Tumors as Risk Factors Not Disease." *Philosophy of Science* 81, no. 5: 986–998. <https://doi.org/10.1086/678280>.
- Searle, John R. 1979. "A Taxonomy of Illocutionary Acts." In *Expression and Meaning: Studies in the Theory of Speech Acts*, 344–369. Cambridge: Cambridge University Press.
- Vickers, Andrew J., Ethan Basch, and Michael W. Kattan. 2008. "Against Diagnosis." *Annals of Internal Medicine* 149, no. 3: 200–203. <http://dx.doi.org/10.7326/0003-4819-149-3-200808050-00010>.
- Volkow, Nora D., Vladimir Poznyak, Shekhar Saxena, Gilberto Gerra, and UNODC-WHO Informal International Scientific Network. 2017. "Drug Use Disorders: Impact of a Public Health Rather Than a Criminal Justice Approach." *World Psychiatry* 16, no. 2: 213–214. <https://dx.doi.org/10.1002%2Fwps.20428>.
- Walker, Mary Jean and Wendy Rogers. 2017. "Defining Disease in the Context of Overdiagnosis." *Medicine, Health Care and Philosophy* 20, no. 2: 269–280. <https://doi.org/10.1007/s11019-016-9748-8>.
- Welch, H. Gilbert and William C. Black. 2010. "Overdiagnosis in Cancer." *Journal of the National Cancer Institute* 102, no. 9: 605–613. <https://doi.org/10.1093/jnci/djq099>.
- Whitbeck, Caroline. 1981. "What Is Diagnosis? Some Critical Reflections." *Metamedicine* 2, no. 3: 319–329. <https://doi.org/10.1007/BF00882078>.
- Wilholt, Torsten. 2013. "Epistemic Trust in Science." *The British Journal for the Philosophy of Science* 64, no. 2: 233–253. <http://dx.doi.org/10.1093/bjps/axs007>.