Mistaking the map for the territory: biomedical ontology and hermeneutical injustice

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> *On Prozac, Sisyphus might well push the boulder back up the mountain with more enthusiasm and creativity. I do not want to deny the benefits of psychoactive medication [… But to] see him as a patient with a mental health problem is to ignore certain larger aspects of his predicament connected to boulders, mountains, and eternity.*[1]

Introduction

How ought we explain the misery of Sisyphus' predicament (assuming, *pace* Camus, we fail to imagine Sisyphus happy)? And how should such explanations guide our future action? Elliott's point, I take it, is clear; while we can point to Sisyphus' psychology – and some presumed biological substrate – as explanatory, to do so would be to neglect completely what we would intuitively consider to be some salient environmental factors contributing to his condition.

Elliott's point recurs frequently throughout the literature on 'medicalisation' of mental health and illness (though usually made with rather less nuance and significantly less wit). I use medicalisation as a general term to describe "the process by which medical definitions and practices are applied to behaviors, psychological phenomena, and somatic experiences not previously within the conceptual or therapeutic scope of medicine."[2] Elliott, and many both before and after him, propose that by medicalising in this sense certain human experiences – in this case perhaps low mood, apathy, anhedonia – we thereby exclude from consideration other interpretations of those experiences that describe them with reference to environmental, social, or political processes.

Medicalisation, it is alleged, shapes the collective hermeneutical resources through which we interpret our experiences; but since certain aspects of these experiences are not readily described in medicalised vocabulary, we thereby lose the ability to understand or articulate them adequately. In the terminology of contemporary epistemology, such medicalisation comprises a *hermeneutical injustice*.

In this paper, I seek to explore what we do when we present a 'biomedical model' of something – when we call some human phenomenon 'disease', and construct an explanation of how that

phenomenon arises and can be manipulated in somatic or psychological terms. In doing so, I aim to demonstrate that this form of medicalisation should not be seen as exclusive of other understandings of these phenomena and as such should not perpetrate hermeneutical injustice. Medical diagnoses – and the disease models underlying them – are tools measured against specific epistemic standards and intended to serve specific practical purposes. There will be other practical purposes to which medical models will be spectacularly ill-suited and other descriptions helpful to those ends. Problems – and the potential for hermeneutical injustice – arise when we privilege one single description as wholly representative of the underlying reality and so expropriate it from its originally intended domain and functions to serve other roles.

Hermeneutical injustice

The basic definition of epistemic injustice in general, and hermeneutical injustice in particular, has already been discussed, so I shall not elaborate the theoretical framework in detail. As a brief paraphrase, epistemic injustice is the wrong of having some aspect of one's experience rendered unintelligible or uncommunicable due to inadequate conceptual resources. Asserting an instance of hermeneutical injustice involves three distinct claims: (1) the existence of a hermeneutical marginalisation (equivalently, the existence of an unwarranted hermeneutical privilege) that (2) obscures from understanding or impairs communication of some significant realm of social experience in a fashion that (3) systematically disadvantages hermeneutically marginalised group(s).

We can parse the Sisyphus critique as hermeneutical injustice as follows: (1) an unwarranted epistemic privilege is afforded to descriptions of Sisyphus' mental state in terms of mental illness; (2) this prevents us talking about 'boulders, mountains, and eternity'; and (3) this disadvantages Sisyphus insofar as we concentrate on remedying his condition with Prozac rather than dealing with the boulders, mountains, and/or eternity. My focus today is on premise (2): what does viewing a phenomenon in medical terms say (or not say) about other ways of viewing that phenomenon? Specifically, is a medicalised description of a phenomenon exclusive of other descriptions of that phenomenon?

Medicine's promiscuous, constructive, or anti-realism

Consider the case of Amlodipine. Amlodipine is a blood-pressure lowering agent, in a class of drugs known as calcium channel blockers (CCBs) – for the simple reason that they block channels within cell membranes that permit passage of calcium into or out of the cell. It is one of the most commonly-prescribed drugs in the UK. If I were to suggest to a patient with high blood pressure that we try amlodipine, the explanation would run something like this: blood vessels are lined with rings of muscle

– when these contract, the vessels narrow, and when they're relaxed, the vessels dilate. Your blood pressure is determined in large part by the resistance your blood vessels give to the flow of blood from the heart. Dilated blood vessels offer less resistance than contracted ones; so if we dilate blood vessels, we reduce resistance and so lower blood pressure. Contraction of the rings of muscle in the blood vessels is governed by flow of calcium into the muscle cells. Blocking that flow blocks the contraction, dilates the vessels, reduces resistance and lowers blood pressure.

More formally, we can state that vascular resistance is governed by the Hagen-Poiseuille Law:

$$R = \frac{8\mu L}{\pi r^4} \tag{1}$$

Where: R is the resistance; μ dynamic viscosity of the fluid; L length of the vessel; and r vessel radius. Equation (1) is valid for laminar flow of incompressible Newtonian fluids.

We agree that amlodipine is the way to go for this person's high blood pressure. A few weeks later, however, they come back complaining of swollen legs. Sure enough, there's bilateral pitting oedema to mid-calf level – this usually indicates fluid accumulation in the tissues, a common side-effect of amlodipine. The explanation as to why this happens would run thus: amlodipine dilates the arteries (blood vessels going from the heart) a lot more than the veins (vessels carrying blood back from the tissues to the heart) because there's a lot more muscle in the walls of the arteries. This means that there's high flow (aided by gravity) down the legs from the heart, but slower flow back up (against gravity) towards the heart. This leads to increased pressure at the capillaries – the transition point from the arterial to venous circulation. Fluid can move out of these capillaries into the surrounding tissues, determined by the hydrostatic (fluid column) and oncotic (amount of stuff driving osmosis) pressures in the capillaries and the surrounding tissue. The increased capillary hydrostatic pressure caused by the arterial dilation squeezes fluid out of the capillaries, causing the leg swelling.

Again, to be a little more fancy, we might say that the rate of transendothelial fluid filtration is governed by the Starling Equation:

$$J = L_p S([P_c - P_i] - \sigma[\pi_c - \pi_i]) \tag{2}$$

Where: J is transendothelial fluid filtration rate; L_p the hydraulic conductivity of the membrane; S the surface area for filtration; σ the reflection coefficient; $P_{c,I}$ the capillary and interstitial hydrostatic pressures; and $\pi_{c,I}$ the capillary and interstitial oncotic pressures.

They stop the amlodipine and switch to a different agent. The swelling resolves briefly but then, after a long journey, returns in one leg. This time however it's painful and red. In fact, it looks like they've experienced deep vein thrombosis (DVT) – a clot in one of the leg veins. To explain this, we have to

look to one of three things: change in the proteins that cause clots circulating in the blood; change in the walls of the blood vessel; and stasis of blood in the veins. In this patient's case, we can say: blood contains proteins that cause clots to form, to help stop us bleeding when vessels are damaged. These are being activated and de-activated all the time, but normally remain balanced so blood doesn't clot within the vessels. However, this balance relies on: an intact vessel wall (as the material under the wall activates clotting); continuous movement of blood (as when it pools this concentrates the clotting proteins); and maintaining the same proportion of proteins, cells and fluids in the blood. During the long journey, you probably became a bit dehydrated – concentrating the blood – and weren't moving – causing blood to pool in your veins. This has resulted in a clot within one of the veins, blocking it – causing inflammation and swelling.

The three factors discussed here are known as Virchow's Triad, and each component of the triad can be fleshed out in finer-grained detail (Fig. 1).

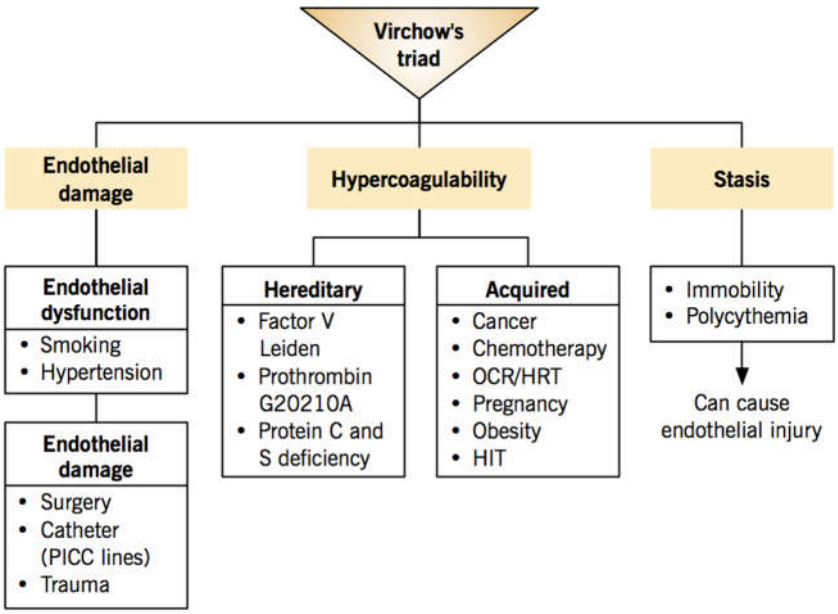

Figure 1. Virchow's Triad.[3]

Here we have three standard medical models of common bodily phenomena that are frequently used to guide treatment, predict prognosis, and provide the foundations for ongoing biomedical research. They are applied to closely-related phenomena occurring in the same person over a short period of time. They are also mutually inconsistent. Equation (1) models blood flow as laminar flow of an incompressible fluid through an impermeable tube – assumptions straightforwardly violated by equation (2), which describes filtration through permeable vessels. Fig.1 complicates the situation still

further, replacing the picture of blood as a homogeneous fluid with a continuously-shifting balance of different interacting constituents, constantly changing its micro-state and macroscopic properties.

Why talk at length about blood pressure and leg swelling in this context? Because it serves to illustrate some important points about biomedical modelling, and what it means to view, describe, and treat some phenomenon as a 'medical' problem. While it would be of limited benefit to explore in detail the extensive literature on the roles of models and mechanisms in the biomedical sciences and medical practice, the above example I hope serves to motivate acceptance of a few widely-endorsed propositions on this subject. Models in medicine are ubiquitous and central to the explanation of symptoms, prediction of course, and guiding of treatment.[4–6] The range of modelling techniques employed is vast and flexible, including the mathematical and computational models of the physical sciences (e.g. equations (1) and (2)) but also looser qualitative descriptions (e.g. fig.1), employing analogical or comparative reasoning.[6] The choice to individuate particular entities and describe them in particular fashions is context-dependent and inherently bound up with the purposes to which such descriptions are being put.[7–9] If the medical image describes any kind of ontology, it is thus a "promiscuous" one, whereby the same or related phenomena may be described in multiple overlapping and potentially inconsistent ways.[10]

So what does this tell us about the function of individual acts of diagnosis, or medicalisation of a given condition? Whatever else it might be, it cannot be to provide a single, exclusive, privileged description of the phenomenon in question – since 'medicalisation' of that phenomenon may comprise multiple distinct and inconsistent models of it. Medical models do not 'carve nature at the joints' as per the Platonic metaphor, they serve to represent certain phenomena in certain ways that are useful for the practical and scientific ends of medical research and practice.[5] As Jeremy Simon puts it:

> *When a physician tells a patient "You have cystic fibrosis," or when a researcher says "I am conducting a study of a new cystic fibrosis therapy," what do they mean? In the first case, the physician is really saying that the patient's current condition can be successfully represented by the cystic fibrosis model. In the latter case, the researcher is saying "Based on my understanding of the cystic fibrosis model, I believe that people who are similar to the model in the specified respects to the specified degrees will respond to a particular therapeutic intervention in a specific, beneficial, way. I am now testing that belief empirically.*[11]

Medical models serve to represent human phenomena *in certain respects* and *for certain purposes*. Again, the nature of that representation relation is a subject of a voluminous literature, the specifics of which are largely orthogonal to our purposes here;[12,13] it suffices to say that, however that relation is described, it cannot be in terms of direct correspondence to a unique underlying metaphysical reality – since, as our leg swelling example above illustrates, there is not a single privileged description even within medicine that would be a candidate to enter into such a relation.

So, returning to Sisyphus: what are we doing when we "see him as a patient with a mental health problem"? Analogous to Simon's parsing of the act of diagnosis above, we are saying that: Sisyphus' mental state is similar to our model of some mental health condition in certain important respects, to the extent that we believe that certain interventions (e.g. Prozac) may change his experience in certain ways he may deem beneficial. We are not directly saying anything about boulders, mountains, or eternity, it is true; but we are also not ignoring them, or precluding discussion of them in relation to Sisyphus' experience. Rather, the tools and methods of medical practice are poorly-suited to doing much about boulders, mountains, or eternity – and so they are less relevant to the specific purposes of medicine. This does nothing to argue that others cannot or should not talk about, or do something to intervene in, the ways in which boulders, mountains, or eternity may also contribute to Sisyphus' condition. It's just that medics probably aren't the best people to do so.

Mistaking the map for the territory

This understanding of the epistemic, ontological and pragmatic status of medical models, however, should invite us to view with a great deal of suspicion a wide range of uses to which such models are put. As George Szmukler observes, diagnoses are hugely "overworked tools."[14] Consider the following examples (many more of which could be provided).

Diminished responsibility

In English and Welsh law, a person should not be convicted of murder (but rather manslaughter) on the grounds of 'diminished responsibility' where at the time of the offence they were "suffering from an abnormality of mental functioning" which *arose from a medical condition* that impaired their ability to understand their conduct, judge rationally, or exercise self-control, and this impairment explains their offence.[15] Here the diagnosis and accompanying medical explanation is used to determine the status of a person's offence and the corresponding treatment, the justification being that their *legal responsibility* is determined by their *medical condition*. But if the preceding is correct, then the existence of an explanation of conduct in medical terms does not preclude other, complementary explanations; and concepts like legal or moral responsibility are not the kind of entity that enters into

medical modelling at all – they tend to remain silent on the topic.[a] Futhermore, why should 'recognised medical conditions' represent a special category when it comes to such adjudications of behaviour?

Medically unexplained symptoms

40-49% of patients in primary care have at least one symptom that medical practitioners feel is 'medically unexplained'[16] 'Medically unexplained' here is a piece of jargon meaning not simply that the explanation has not been found; rather, that the practitioner feels its underlying cause is not best understood in terms of any structural physiological disturbance, but *e.g.* instead in terms of psychological or social processes creating distress that is experienced in somatic terms. This diagnosis, however, is a commonly-disputed one; and people experiencing these phenomena will often choose to describe them in ostensibly 'medical' terms, and some press for their treatment with 'medical' interventions (*e.g.* prolonged courses of antibiotics or steroids). The ways in which such concepts or diagnoses are used in these circumstances, however, and the intended function of its uses, differs markedly from the purposes intended by medical practitioners as described by Whitbeck and Simon above.

The authors of one study involving hundreds of people with MUS in the UK concluded that "biomedical terms and ideas did not provide a useful way of categorising patients' accounts. Instead, biomedical terms were mostly used to elaborate well-recognised, cross-cultural explanatory themes."[17(p563)] What is sought from care is often not medical means of relieving, or even palliating, a condition.[17] The greater concern appears to be over how medical concepts are used to interpret and explain their experiences; as one author puts it, the "one overwhelming finding … [is that] patients seek legitimacy for their problems."[18]

Thus medical explanation is sought, but not for the procedural means by which such explanations are generated or the success of interventions intended to ameliorate a condition premised on such a model. Rather, what is desirable is an 'empowering' explanation of symptoms – one that legitimises suffering, removes blame from the patient, and provides an alliance between doctor and patient.[19] Another qualitative study in a group of 'self-medicalising' patients found that the importance of medicalisation is to demonstrate the reality of the pain produced by the social or environmental conditions deemed responsible; "the medicalized sign becomes proof of the pathogenic nature of this environment."[20] Others report that individuals with functional conditions often feel they have to work

[a] Note this is distinct from *medics* remaining silent on questions of responsibility – unfortunately too many are too often all too vocal on such issues, particularly around responsibility for 'individual' (note scare quotes) behaviours that affect medical conditions adversely.

to ensure they 'look ill', and when meeting health workers "they made their outward appearance harmonise with their internal experience of pain."[21] Here there is even a conscious effort to ensure suffering appears straightforwardly 'medical', rendering it a candidate for just such explanation.

Again, while experiences that are usefully described as medical conditions are commonly also those that experientially produce human suffering, it would be an obvious error to identify 'suffering' with 'disease'. But the wishes of those who report MUS or choose to describe their adverse experience in self-medicalised terms seem to suggest that, to render their suffering intelligible to others, they are forced to use a medicalised frame – medicine is taken to have a monopoly on legitimate suffering.

The same mechanic is played out repeatedly in many other controversial medicalisation cases. In each, the conceptual tools of medicine are applied to domains where they do not straightforwardly have any obvious use. Medicine's map of human experience is mistaken for the territory in its whole – and as such important features of the landscape are obscured from view. Thus if we mistake the map for the territory – if we reify a single privileged description from amongst medicine's pluralistic ontology – we risk producing hermeneutical injustice.

Conclusion

The question posed at the beginning was: by medicalising Sisyphus' condition, do we thereby perpetrate hermeneutical injustice by preventing him or us speaking about boulders, mountains, or eternity? The answer I've suggested here is: no, *qua* medicalisation – looking at Sisyphus' condition through the medical lens may help us to understand some of his experience at the biological/psychological level, and predict what psychological or biological interventions may alter that experience in potentially desirable ways.

Problems – and potential hermeneutical injustice – may arise, however, if we forget that the medical lens only represents Sisyphus' experience to some extent and for some purposes – it does not describe it in its entirety. If we thus divorce our chosen representation from the ends to which it is to serve – if we mistake the map for the territory - we do risk obscuring from our collective hermeneutical resources some important ideas about boulders, mountains, and eternity. But note that the converse is true – if we deny the utility or value of medical models for fear of missing out on 'boulders, mountains, or eternity' – then we likewise may obscure from view some aspects of our experience that medicine actually does serve to highlight. We should neither uncritically endorse, or categorically reject, the medical model of the Sisyphean plight – rather we need to ask what aspects of his condition

is the model intended to represent, to what extent is such a representation successful, and what actions might we reasonably take based on that representation.

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