



CONFERENCE REPORT

## Interdisciplinary workshop in the philosophy of medicine: bodies and minds in medicine

Marion Godman BA MA PhilLic PhD<sup>1</sup> and Elselijn Kingma Msc (Medicine) MSc (Psychology) MPhil PhD<sup>2,3</sup>

<sup>1</sup>Postdoctoral Researcher, Finnish Centre of Excellence in Philosophy of the Social Sciences, Department of Politics and Economic Studies, Helsinki University, Helsinki, Finland

<sup>2</sup>Research and Teaching Associate, Department of History and Philosophy of Science, University of Cambridge, Cambridge, UK

<sup>3</sup>Socrates Professor in Philosophy and Technology and the Humanist Tradition, Technical University Eindhoven, Eindhoven, The Netherlands

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### Correspondence

Dr Marion Godman  
Department of Politics and Economic Studies  
Helsinki University  
Helsinki 00014  
Finland  
E-mail: marion.godman@helsinki.fi

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## Introduction

On a Friday, 19 October 2012, the Centre for the Humanities and Health at King's College London hosted a 1-day interdisciplinary workshop on bodies and minds in medicine.<sup>1</sup> The aims of this workshop were (1) to facilitate communication and generate real cross-disciplinary exchange between health care professionals and philosophers; and (2) to identify and increase understanding of the key issues and interdisciplinary commonalities in discussions on minds, bodies and their relationship, in medicine and philosophy.

This workshop was the fourth in a series of five workshops whose aim was to provide a new model for high-quality open interdisciplinary engagement between medical professionals and philosophers. The first (September 2010) focused on 'concepts of health and disease' [1], the second (March 2011) on 'personhood and identity in medicine' [2] and the third (December 2011) on 'death' [3]. A final workshop is planned for October 2013.

Over the course of organizing the workshop series, much effort has gone into methodological aspects of these events, and we have now settled on a methodology that works well. It has the following six characteristics: (1) more time devoted to plenary discussion than to introductory speakers; (2) matched multidisciplinary introductions providing two point of views on each topic, with the philosopher following on from, and commenting on, the health care professional; (3) equal participation of all participants in a plenary chaired discussion – that is not merely a question/answer session – facilitated by preparatory reading and a rotating chair;

(4) a physical roundtable format and strict limits on the numbers of participants; (5) a diverse and balanced group of participants where there is strong continuity among participants in the different workshops of the series; and (6) the use of the following discussion conventions: the 'Canberra rules' (a method for differentiating comments that introduce a new topic for discussion and comments that are on an existing line of discussion) and 'pink jargon/clarification card' (signalling the use of disciplinary jargon in need of clarification) [1,2]. We believe these features are central to the success of the workshops and provide a model that can be transferred to other settings in which interdisciplinary dialogue is to be facilitated (e.g. hospital ethics rounds).

Nearly 40 participants attended the workshop. The great interest and number of participants pushed the physical limitations of the roundtable format – especially given that we had no microphones – but did not otherwise hamper discussion or participation, proving the strength of the methodology. Over half of the participants had attended at least one of the previous workshops, and the group presented a healthy balance of disciplines, ages, genders and nationalities. This paper reports the contents of the workshop's introductory papers and subsequent discussion. Two papers based on introductions at this workshop are also included in this issue [4,5].

## Introductory remarks: metaphysics of body and mind

Professor David Papineau, Professor of Philosophy of Science, Department of Philosophy, King's College London, opened the meeting by laying some philosophical groundwork for the day's questions. He outlined four positions you might take with respect

<sup>1</sup> <http://www.kcl.ac.uk/research/groups/chh/> The workshop was planned and organized by Dr Elselijn Kingma, Professor MM McCabe and Professor David Papineau.

to what the mind, body and their relationship are. These are, first, *Interactionist Cartesian Dualism* [6], which states that the mind and body are separate ontological entities – different kinds of substances – capable of interacting with one another; second, *Epiphenomenalism* [7], which claims that mental events exist and are caused by the workings of the brain, but do not themselves have any causal or ontological role. Instead, they are like the puffs of smoke from a factory: signs of the factory's inner workings, but not themselves part of or even influencing what happens in the factory; third, *Eliminativist materialism* [8], which contends that only brains and brain states exist and that we should, at least in future science, not have to invoke 'mental events' or 'minds', but stick to speaking and explaining in terms of brain states (just like we might have once thought we needed to invoke spirits to explain magnetism, but can now explain such phenomenon in physical terms without invoking spirits); fourth and finally, *Materialism or Physicalism* [9] according to which mental events exist, but are not of a different kind or substance than physical events: mental events just are (a type of) physical event, and as such have causal roles to play in our world.

Papineau differentiated these metaphysical positions from the main subject matter of the workshop. The workshop is not about the metaphysical question of what bodies and minds are made of, but rather about the question of how what we think of as 'the mental' or 'the conscious' interacts with those brain and bodily processes that are not themselves conscious. All four metaphysical positions (except perhaps a radical eliminative materialism) allow that we have some states that are conscious, and other states that are not conscious, and are interested in the question how the two kinds of states interact causally. Given this, we do not have to resolve decisively the metaphysical questions about minds and bodies to address and the topic of this workshop.

## Session one: mental, physical and psychosomatic disorder

In the first talk of the session, Professor Peter White, Professor of Psychological Medicine, Barts and the London School of Medicine, Queen Mary University, London, argued that the time has passed where we can draw a clear line between physical disorders and mental disorders and regard mental illness as 'all in the mind'. First of all, he claimed, such a distinction is dangerous as it perpetuates a myth about mental disorders being within the individual's control. This myth often plays an important role in delegitimizing, stigmatizing and dismissing the suffering of people with 'mental' illnesses. But many illnesses conceived of as mental are not in fact within the individual's control – whereas, by contrast, some illnesses conceived of as physical in fact are – and so getting rid of a false distinction between the two can contribute to a legitimization and recognition of human suffering. This latter point was revisited several times during the workshop, particularly in the discussion and in the session on addiction.

In support of his argument against a rigid distinction between mental and physical disorders, White first examined several examples of conditions traditionally thought to be psychosomatic, such as chronic fatigue syndrome and fibromyalgia, to show that their pathology, which is well known to be both physical and psychological, can be integrated into a biopsychosocial model of understanding. He argued that from research on these

conditions, we have gained an increased understanding about the bidirectional mechanisms that mediate the conscious mental aspects and the bodily symptoms of such disorders. One example is central sensitization that occurs in fibromyalgia. Here, neural receptors in the spinal cord become sensitized by peripheral tissue damage or inflammation, and existing sensitized pain pathways within the brain itself further augment this effect. This process is thought to be strongly linked to the mental phenomena of heightened pain perception associated with fibromyalgia and other chronic pain disorders. In such cases, White argued, it does not make sense to talk about the disorder being primarily mental or physical.

White went on to argue that in all mental disorders, there exists a physiological correlate of the mental phenomena; that is, corresponding effects on physical levels such as the autonomic nervous system and the central nervous system (CNS – which includes the brain). On the neural level of the mental disorder, he argued that functional and structural changes related to the CNS are abundant. This undermines the idea that something could be 'all in the mind' and not in the brain/body. Rather, what is in the mind is *also* in the brain. White concluded by suggesting that in view of alleviating stigma, aiding legitimization of suffering as well as respecting our current understanding of both the relationship between mental and physical phenomena involved in these disorders, what we now think of separately as neurological and mental/psychiatric disorders should both be reclassified according to the primary organ affected. In both cases, this organ is predominantly going to be the brain or CNS at large [10].

Dr Natalie Banner, Wellcome Postdoctoral Research Fellow, Centre for Humanities and Health, King's College London, challenged White's conclusion, while agreeing with his diagnosis of the stigma and delegitimization attached to mental disorders and accepting the intimate relationship between mental and physical phenomena [10]. Banner's core point against White was that, unlike (some) neurological disorders, it is *not* the brain or the nervous system that is the affected organ in mental disorders. Rather, these are disorders of the *person*. Banner did not deny that there will always be some neurophysiological correlates of mental disorders, but argued that reducing the mental disorder to a disorder of the brain or nervous system is not a useful way to proceed if we want to understand the nature of mental disorders.

In adopting this position, Banner aligned herself with Lisa Bortolotti and Matthew Broome's *psychological realism* [11]. One motivation for this position concerns how mental disorders are identified. What is salient in a mental disorder, such as depression, is a breakdown of normal mental well-being or a breach of epistemic and rational norms of thinking, and such interpretation and identification lies at the level of the person, not her brain. In contrast, Banner claimed neurobiology alone is typically not helpful in the identification of mental disorders – although she accepted that it is useful to acquire knowledge about neurobiological circuits, such as serotonin levels associated with depression. Similarly, although we may at least in some cases be able to identify genetic causes or other physical triggers for the disorder, we should not regard these as the grounds for classification, as it is only once the norm deviation or transgression is detected at the personal level that we recognize the mental disorder *qua* disorder. According to Banner, we should not classify disorders by how they are caused, but by what they affect.

Although many at the meeting noted their sympathies with both White's and Banner's accounts, several additional considerations were raised about whether the physical (or neurological) and mental distinction of disorders is justified, and about the correct level of identifying disorders related to the brain. Contra Banner, several people pointed out that conditions like diabetes and heart disease also affect persons as well as bodies, and are – or at least can – often be identified by means of attending to the specific psychological symptoms of the person. Some suggested that maybe this meant that we should start thinking of the person as the 'organ' affected in all of medicine. Others took the opposite route arguing that such examples show that we do not stop thinking of disorder like heart disease primarily as a physical disorder affecting a bodily organ just because it is first identified at the level of the person, so why should we not approach mental disorders in the same way? Similarly, we tend to regard the scientific uncovering of the infectious processes responsible for syphilis as warranting a reclassification of that disease from 'mental', or person-affecting, to 'physical', or brain-affecting, so why not apply the same principle to at least some mental disorders?

In response, Banner admitted that there was indeed an issue to be explored and that where both the person and body organs are clearly affected, it may not always be clear what the right classification is. She suggested that the person level remains an important *primary* level of identification for at least some disorders, and more importantly that merely replacing 'person' with 'brain' as the locus of the disorder leaves out an important epistemic level, and accomplishes little that is of use to patients and clinicians.

White's view that all mental disorders should be understood as disorders of the brain or CNS was also challenged. The view seemed to imply that every, or at least most, mental disorders will indeed turn out to have a distinct corresponding neurobiological process or pattern that can be used for purposes of identification and classification. It was suggested that this view might be premature because it is possible that at least some mental disorders will not correspond to distinctive neurobiological processes or patterns. If we strip away the person-related features of a diagnosis, will we not then be left empty-handed for diagnostic practice? In agreement with Banner, it was pointed out that merely knowing changes in brain states or processes is not sufficient for the identification of a disorder. What we need to identify at the brain level is not just that there is a change, but that there is a *disorder*-type change. This presupposes a complete account of the ordered or normal brain – and it is highly questionable whether neuroimaging can provide us with such an account.

White made clear, in response to the latter point, that indeed he thought psychological criteria might remain useful for some identification and classification purposes. He also granted that current neuroimaging techniques do not provide us with much detail in terms of understanding the underlying neurobiology of the disorders, but at best leave us with functional statistical descriptions. Still, White maintained that these techniques provide sufficient evidence for appointing the brain as the main organ of mental disorders.

Another central point in the discussion was the issue of stigmatization associated with mental disorders. Both White and Banner were pressed on exactly how their respective models might assist with these issues. According to Banner's psychological realist model, the main means of legitimization was educating the public

about the nature of psychiatric disorders, and specifically about how it does *not* entail that the person affected is responsible for the symptoms. On White's account, it was suggested that the legitimization would be achieved by undermining the myths that mental disorder was 'all in the mind'. In practice, he suggested that this might be achieved by public figures with mental disorders speaking out about their experiences.

At that point, several people urged that the points made by Banner and White neglected the social context and power structures surrounding mental and physical illnesses and their classification. First, focusing on either the person or the brain as the organ affected undervalues and perhaps even obscures the social causes of many disorders, such as social inequalities and class that are implicated in mental – and as we are increasingly realizing, physical – illnesses. Second, while the aim to destigmatize is laudable, it was pointed out that the real point of classification lies within the organizational structure of the health care system, where classifications are used to achieve a variety of different purposes for patients and clinicians. From this horizon, it is important to remember that classifications are not only a means of stigmatization, but also of liberation.

## Session two: pain and pleasure

In the first talk of the session, Dr Mick Thacker, Lecturer at Centre of Human and Aerospace Physiological Sciences, King's College London, argued that our experience of pain is influenced by more than physiological parameters; it is an interpretative process that is affected by socio-culturally influenced expectations of the pain experience. This aspect of pain is not currently acknowledged in the International Association for the Study of Pain (IASP) definition of pain as 'an unpleasant sensory and emotional experience associated with actual or potential tissue damage or described in terms of such damage' [12].

First, Thacker pointed out that even what we might think of as the bare-bone physiological or tissue-damage related aspects of pain are not at all straightforward. As White had noted, neural receptors can become sensitized or desensitized, which means they respond differently to similar stimuli. Thacker also discussed the example of a burn, where nociceptors become hypersensitive to heat in the burn site, but not next to the burn site, whereas sensitivity to mechanical pains increases both in and around the burn site. Second, these physiological signals do not, themselves, generate the pain experience; they are interpreted by the person – though quite possibly at an unconscious or semi-conscious level – in the context of her personal and cultural beliefs and expectations.

One way to tap into the interpretative aspects of the pain experience is the rubber hand acupuncture illusion. Here, people are first subjected to the rubber hand illusion (RHI); they see a rubber hand while their own hand is hidden from view. The rubber hand and their own unseen hand are subjected to similar sensations, such as stroking. After a while people start to feel that the rubber hand is their own. Then, the rubber hand – but not their own hand – is visibly exposed to acupuncture. It turns out that subjects of the RHI also experience pain relief, albeit to different degrees following actual acupuncture. Subjects also used descriptors traditionally thought to indicate a therapeutic acupuncture experience.

Thacker argued that such a result could easily be, and is often, dismissed as a placebo response, but that this is the wrong

response. Beliefs, expectations and interpretations are an integral part of *any* pain experience; therefore, the type of response subjects have in rubber hand acupuncture is simply an informative way of highlighting an inherent component of the pain experience; a component just as inherent as, say, peripheral neuronal firings in response to tissue damage. It is therefore important to view pain, and recognize it, first and foremost as an experience. Pain, Thacker concluded, should be seen as the embodied element of suffering, which can and legitimately does exist whether or not it is associated with – or even described in terms of – tissue damage.

Dr Nicholas Shea, Reader in Philosophy, King's College London, drew upon philosophical views of meaning to emphasize and explore an interesting aspect of pain and pleasure as mental states, which complemented Thacker's exposition. Shea made a distinction between two kinds of mental content: *indicative content*, indicating a state of affairs (e.g. 'The door is shut.'). and *imperative content*, commanding or requesting that a state of affairs occur (e.g. 'Shut the door!'). These two types of content have different 'directions of fit' [13]: indicative content fails when the mental state does not track the world; if I believe or say, 'the door is shut' when the door is in fact open, my belief is false. Imperative content, by contrast, fails when the world does not conform to my belief; when I say 'shut the door' and the door remains open because you are ignoring me, then something has failed in the world (you did not do as I said) – not in the content of desire, intention or instruction.

Applying this to pain, Shea argued that these mental states could possess the interesting feature of simultaneously incorporating both types of mental content and thereby having two 'directions of fit'. They have both *indicative content* that tracks bodily changes, such as tissue damage, and *imperative content* demanding that the world changes, for example 'move the leg this way and don't move it that way'. If pain states do have both directions of fit at once, it follows that they have both truth conditions (for their indicative content) and success conditions (for their imperative content). And, as a consequence, pain states could fail in both respects: they can indicate tissue damage when in fact there is none; and they can call for certain changes to the body where these ends fail to be achieved.

Shea suggested that this model could accommodate the culturally influenced anticipations affecting pain experience, as described by Thacker. These become part of the content of pain states, for instance by biasing interpretations of bodily changes but also by detailing what will or can lead to pain *and* pain relief. The imperative aspect of pain is instructive, which means that it makes sense for us to start feeling pain and/or pleasure in anticipation of events: this gives us useful information about what to do. The indicative and imperative content of mental states, thus, become jointly tuneable as a result of exposure to different cultural norms and prior experiences.

The discussion after the talks proceeded to explore the clinical relevance of the mental preconditions of pain. Thacker's explicit emphasis on socio-cultural expectations and experiences as an integral and legitimate aspect of the pain experience was widely welcomed. It was noted in particular – and several examples were given – of how specific physically and/or emotionally painful events in an individual's life history could influence the content of pain experiences and trigger pain sensitivity throughout that individual's life. For example, someone speculated that about half of

the patients with Irritable Bowel Syndrome have a history of sexual abuse. This would suggest the need for extensive and in-depth history-taking as part of pain consultations, including patients' first-person perspective on relevant earlier events. It was also felt that Thacker's pain model might help explain why the telling of history itself – the 'telling of one's story' – can help alleviate the pain experience because it can modify and possibly even improve how the pain is experienced.

At the same time, it was acknowledged that, often, such historical knowledge might be difficult to obtain and/or that the individual might be unwilling to offer it. There are also problems for the communication of such life histories between doctors: what one doctor has been told in trust may not necessarily be revealed to a different doctor. Finally, without endorsing the view, many accepted that such practice would often be considered too costly and time-consuming (at least in the short term) to be generally implemented, and also thought that our current medical discourse did not yet allow for a smooth incorporation of Thacker's insights on pain.

Many also queried whether Thacker's account truly offered an alternative to the popular existing biopsychosocial model of pain. This model already allows that treatment can differ along the three dimensions, although, at least in practice, there might be some bias towards biomedical treatment. Although Thacker agreed that the biopsychosocial model goes some way to acknowledge the psychological and social elements of pain, he contended that his account tries to better explain the way in which social and psychological features *interact* to produce pain – especially in cases where there is no bodily damage present. Moreover, he suggested that his account also goes beyond three dimensions in giving an important role to culture in informing our pain expectations.

Shea's suggestion that a pain state can 'fail' in its indicative content (e.g. indicating tissue damage when there is none) was seen as controversial. But it might not be as worrying as it first seems. First, all that fails in that case is the indicative content – there is no tissue damage – but that leaves the *imperative* content ('stop this') intact. Shea's suggestion, therefore, does not prevent us – in keeping with Thacker's view – from considering the state to be real pain, taking the pain seriously and trying to alleviate it. Second, a person's pain might have an indicative content that differs from its medical classification, such as when abdominal pain does not indicate current tissue damage, but a past violation. This clearly connects up with the importance placed on taking an individual's life history when considering their pain experience.

Another question raised was the issue of 'coping' as opposed to relief. Not all pains straightforwardly call for relief, and even if they do, we might ignore those calls. In athletic endeavours, for example, we might seek to suffer *more* pain in order to better achieve an aim: be faster than an opponent. In childbirth as well as in other areas of medicine, many people choose not to take pain relief for various reasons, by coping with the pain in other ways. Because we neither can nor do always want to relieve pain, this raises an interesting question about what *coping* as opposed to *relief* is. Coping with pain is certainly not the same as taking the pain away. But it might instead have something to do with taking active control of and/or moderating the interpretative aspects of pain. It might also have something to do with yielding an imperative content of endurance rather than of relief for the pain. Such pain content is certainly likely to be influenced by socio-cultural



norms, beliefs and expectations. Both Thacker's and Shea's models were thus seen as providing interesting perspectives on this important and yet frequently overlooked question of coping versus relief – particularly if we think about the management of chronic pain, which nearly always involves coping aspects as well as relief aspects.

### Session three: consciousness of our bodies

Dr Manos Tsakiris, Reader in Neuropsychology at Royal Holloway, opened the session by presenting research on our interoceptive ability and arguing that interoceptive ability is the main ground for our awareness of a continuing self over time (analogous to personal identity [2]). He began by distinguishing interoception from exteroceptive perception of our own body. Whereas the latter describes our ability to perceive our body just as we perceive any other bodies – from our senses, such as vision and touch – the former describes our perceptions of our body from the inside – how it feels to us. To illustrate the distinction and to give everyone present an opportunity to gauge their interoceptive ability, Tsakiris asked people at the workshop to count our own heartbeat during a prescribed period of time interoceptively; that is, not by feeling for our own pulse, but rather by sensing our hearts beating from the inside. The variation in responses among participants was much greater than what one might have predicted based on standard exteroceptive measures.

Tsakiris and colleagues' research shows considerable variation in people's interoceptive abilities and that the degree of interoceptive sensitivity predicts one's response in the RHI described in the previous session. In RHI, multiple senses are manipulated into thinking that a rubber hand in front of the subject is really her own. The results suggest that people with high interoceptive sensitivity experience less of an illusion of ownership in the RHI than those with low interoceptive sensitivity [14]. Moreover, low interoceptive awareness predicts that people are likely to adopt a more exteroceptively informed awareness of their body. It has even been suggested that such interoceptive deficits may be associated with a greater vulnerability to eating disorders [15]. Interoception has also been reliably linked to a specific brain region in the right anterior insula (part of the insular cortex). Tsakiris took the role of interoceptive awareness to be the integration of multi-sensory body perceptions; as such, he argued, interoception forms the basis of experienced self-awareness and continuity.

Dr Lucy O'Brien, Reader, University College London, responded to Tsakiris' conclusion by challenging the close relationship between interoceptive body awareness on the one hand, and experience of 'self' or 'mine', on the other. First, she made a distinction between how we sometimes conceptualize and talk about our body as a possession – as 'mine' – and sometimes conceptualize and talk about our body as being ourselves – as 'me'. This difference between conceptualizations of something as a mere possession versus something that I am embodied in or that I am, is not just something that we display with respect to our bodies – we might also display it with respect to our clothes, children or ancestors. This raises the question of what it means for something to be 'me' or 'part of me' rather than to be 'mine' in terms of being a possession. O'Brien thought that interoceptive body awareness may well be important for a sense of self, but not necessary.

A first argument for it not being necessary is that we can imagine someone with plastic body parts who retains a sense of self-continuity despite having no conscious interoception. Then, there is the real case of Ian Waterman who suffered from sensory neuropathy and, as a result, lost his proprioceptive abilities – that is, his interoceptive ability to locate the relative position of various limbs. Waterman was initially unable to initiate any motor commands, but after a long and demanding learning process involving visual – exteroceptive – feedback on what his body did, he was able to find ways to compensate for his proprioceptive loss. O'Brien concluded that this case raised doubts to whether a systematic loss of proprioceptive or related interoceptive abilities would be important enough to knock out our sense of self. O'Brien generalized this point suggesting that a good test for locating the basis of the experience of self or 'me' is to knock out the ability to see if the sense of self is lost.

Finally, O'Brien raised some doubts as to whether interoception was sufficient for a sense of self. Even with a fully functioning body, which included full interoceptive access, there are cases such as asomatonosia or Body Identity Disorder where one typically experiences alienation from the body or estrangement from certain limbs. In these cases, O'Brien conjectured that interoception alone would not be enough to determine whether the relevant body parts were truly 'me' or not. This suggests that there are multiple ways of feeling a body to be either yours or you – and that our interoceptive ability is only one of these.

The idea that interoception might not be so intimately connected to a sense of self, as Tsakiris argued, was further explored in discussion. One example, which seemed to run counter to Tsakiris' proposal, was individuals who have been physically or psychologically violated (or both) and who feel alienated from their body yet whose interoception is intact or even highly sensitized. Tsakiris replied that interoception is the baseline component for the development of a self-continuity but several other features can influence the experience of self-continuity. For instance, carers who contextualize and explain an infant's crying can bolster the infant's connection between interoception and body ownership, whereas the violation of physical boundaries can, in contrast, undermine the integrity and authority of interoception. O'Brien interjected that this still does not account for the scenario where interoceptive sensitivity develops in the opposite direction from the experience of 'mine', such as the case of illness, which involves strong interoceptive tracking but a lack of control over and identification with body states. Tsakiris resisted the description of the scenario by expressing doubts as to whether anyone, even in such cases, is completely alienated from their body.

This discussion turned to the issue of whether in fact the contextualization was doing all the important work in developing a sense of 'self' and 'mine', leaving less of a role for interoception itself. Tsakiris thought that, in the future, one might develop more robust means of measuring the activities of the right anterior insula and so better judge the degree of contribution of interoception to the experience of one's body being 'mine'. One participant offered the following slogan of support: *No man is an island, he is his insular.*

O'Brien's criticism of Tsakiris was also debated. First, it was pointed out that even if there is some drift or slippage between talking about our bodies and clothes being 'mine' or 'me', they do not have completely parallel use. We do not hear people complain

about their rucksack not feeling like ‘ourselves’, whereas people do complain about their bodies not feeling like their selves. Another participant pointed out that there might be a practical reason for this. You can take off a rucksack and leave it behind when it does not feel like your possession or part of yourself, but you cannot throw a leg out of your bed merely because it no longer feels like yours (this is not just a fanciful example, but something that people have described trying to do in the aftermath of a stroke, usually unsuccessfully or falling out of the bed as a result).

Someone asked whether O’Brien’s argument that a sense of ‘mine’ can survive, for example, an arm being replaced with a prosthetic arm, did not presuppose that in many cases, one does in fact think of the prosthetic body part as mine? Individuals might experience their prosthesis as a tool or an aid rather than their own body part, and some people reject their prosthesis precisely because it never feels like part of them or within their control. O’Brien replied that her claim merely requires that there are at least *some* cases where, say, a prosthetic leg, is perceived as ‘my leg’, in the same way as a non-prosthetic leg, and where this experience does not rely on interoception.

Several other cases were discussed where interoception and sense of self interact in interesting ways. One was the experience of a phantom limb where amputees experience the existence of having a limb where there no longer is one. Someone noted that not just amputees have this experience: apparently 10% of children, who are born without a limb, still have phantom limb sensations and representations. On the other hand, an anaesthetologist present described how some people experience alienation of limbs under local anaesthesia, and really do not like it. Some participants immediately backed this up: local anaesthesia at the dentist can be enough to create the sensation of having ‘weird rubbery bits’ in one’s mouth that we, ordinarily, recognize as part of ourselves or our cheek.

Finally, participants asked whether there were gender differences in interoceptive and pain perception. Dr Thacker answered that women in general have a lower pain threshold – that is, they are more sensitive to pain – but are also less likely to complain about pain. Dr Tsakiris, however, had found no differences in his research although others had, but suggested that there are many confounding variables to sort out in such research.

## Session four: addiction

The first speaker of the session was Professor David Nutt, Edmund J Safra Professor of Neuropsychopharmacology, and Director of the Centre for Neuropsychopharmacology, Imperial College London. He argued against the singling out of drug addiction as special, and in favour of an approach to addiction that was neutral with respect to the object of one’s addiction, that is whether the addiction concerned gambling, drugs, shopping or even the person of one’s infatuation [5]. All these addictions have costs on the social and personal level. Insofar as drug addictions are different, this is only because of the specific and additional harmful effects of the mood-altering or psycho-active effects of the drugs in question. But, Nutt pointed out that in many cases, these harmful effects specific to drugs are negligible in relation to the addiction’s overall harm to one’s personal and social life – or, occasionally, the benefits of the drug. And these harms of addictions to personal and

social lives are often heavily mediated, if not created, by the policies we choose to install, for example the criminalization of drugs.

Nutt argued that the same general moral goes for the motivations behind addictions, that is they are best understood as being neutral as to whether one is addicted to, for example, horse-riding, gambling, drugs or sex. Motivations for engaging in addictive behaviour can be many and include pleasure-seeking, biases from positive memories, compulsions and habits, avoiding withdrawal, self-medication of undiagnosed or ill-treated conditions such as attention deficit-hyperactivity disorder (ADHD) and the quest for meaning in one’s life. Most addictive pursuits are pleasurable on first use – with the possible exception of alcohol and nicotine. The pleasurable effects of drugs are determined by the dose and method (speed) of taking the drug, and their withdrawal effects are determined by the duration of use and normal dose and the speed of clearance. Both the pleasurable effects and the withdrawal are mediated by individual differences with a particular marked role for genetic variation in liver function.

Nutt argued that there is a biological basis for his proposed object-neutral construal of addiction. People prone to addictive behaviour have pathways in the brain that are remarkably similar regardless of the substance or object of their addictions. They have, among others, more opioid receptors. These pathways are still in place after periods of absence. Hence, even so-called ‘recovered addicts’ are still vulnerable and responsive to specific addiction-related cues as these open the door to old learning curves – raising the question of whether one can ever truly recover from an addiction. Nutt finally questioned abstinence as the only route for managing addictions and suggested a role for a more managed approach. He also strongly rejected a politically motivated construal of addiction as a ‘lifestyle choice’, which in accordance with his account, fundamentally misrepresents the condition and only obstructs the possibility for treatment.

Dr Maria Alvarez, Reader in Philosophy, King’s College London, explored to what extent Nutt’s research and conclusions on addiction could be accommodated within traditional conceptions of desires in philosophy. At the most general level, the traditional view is that desires are goal-directed states that are guided by cognition. According to Alvarez, desires can be divided into two main types, ‘animal’ and ‘rational’ desires. Paradigm cases of the former are hunger and thirst. These are desires we share with other animals, they have their own phenomenology (unpleasant sensations, etc.) and are typically linked to physiological needs. ‘Rational desires’, such as the desire for money or creative fulfilment, require the capacity to use abstract concepts. She suggested that addictions involve desires that have affinities with animal desires; for instance, their satisfaction brings pleasurable sensations and/or the assuaging of pain or unpleasant sensations. But they differ in that addiction-related desires are acquired, often through habituation, and typically lead to some form of harm. In line with the model, Alvarez suggested that recovery from an addiction requires countering habituation and providing strong motivations or reasons for changing one’s behaviour, that is, countering the addictive desire with a rational desire.

Alvarez explored the character of addiction-related desires in connection to the suggestion, often found in the philosophical literature, that these are typically ‘irresistible’. She challenged the usefulness of this idea arguing that it is not possible to provide a

robust criterion for the alleged irresistibility of desires. She suggested that a more promising way of thinking about addictive desire is to regard their resultant actions, as acting ‘under duress’ – where the agent is still capable of choice with respect to whether and how to act, but the action is severely constrained (accordant with the research mentioned by Nutt).

This way of understanding desires has consequences both for views about the potential recovery and responsibility for addictive-related behaviour and its consequences. Alvarez was sceptical towards a philosophically popular option of deferring to a hierarchy of desires in accounting for addictions. According to such a view, the agent’s behaviour can be properly attributed to her only to the extent that she has a second-order desire to act on a first-order desire. Alvarez pointed out that such a view is unhelpful because in fact, one might well feel alienated from the second-order desires that, according to this view, one is supposed to identify with.

The discussion began with the suggestion that the concept of willpower might do a better job than higher-order desires in accounting for the road towards the recovery of addicts. Nutt was unfamiliar with the concept and was sceptical about its usefulness. The closest examples of determined recovery he could think of were more analogous to the case of ‘reinforced motivation’, where someone is told forcefully to abstain from the object of their addiction. Alvarez was also doubtful about the use of the concept. She claimed that even if one accepts that willpower can be effective in constructing and sticking to plans towards recovery, it still presupposes that the agent has formed the desire to begin with and, as such, it does not help explain how one begins the path towards recovery. This was backed up by several health care professionals in the audience who shared their experience of addicted patients. In their experience, mere willpower – granted that there is such a thing – was not sufficient because it does not deal with the fact that, often, the object of an addiction provides something to the patient that he or she needs, for example the alleviation of pain or the modification of difficult personality traits or memories. This made their inability to stop not a case of lacking the willpower, but rather one of lacking the desire – and for good reason; all things considered, the patient would judge that substance use was better for them.

It was further suggested that ‘willpower’ might itself be impaired by the addictive substance or addiction in many of the relevant cases. Alcohol use certainly undermines willpower in the short run; and many long-term uses of drugs might do some damage to relevant areas of the brain, as well as to the social and personal resources that might help sustain willpower. The presence of willpower has a complicated connection with addictive personalities. For instance, people with anorexia can be characterized as having habitual and compulsive personalities similar to addicts, yet they do not lack willpower. On the contrary, it is the extreme determination to lose weight and the willpower or the strength of resolve in these individuals to achieve that aim, which can be a core part of the problem.

Other issues raised in discussion included the role of doctors in treating addiction. If Nutt is right and the problems with addictions are not limited to, or even dominated by, the mood-altering or psychoactive results because of drugs, should doctors have a dominant role to play in treatment? Nutt did think there was a role for doctors as most addictions lead to medical complications at some

level and doctors were needed to prescribe pharmacology that helps the individual cope with these effects. He also stressed that doctors were needed in their role in caring for the person with the addiction. Another issue that was raised by both Nutt’s object-neutral account of addictions and Alvarez’s account of addictions as analogous to animal desires was *why* we are so addictive. In other words, why is addiction associated with a basic animal drive? Nutt speculated that the neural pathways present in addiction might have been useful in facilitating social and romantic bonds among individuals. Another suggestion was that at least some addictions grow out of rational desires that become pathological over time because of their association with pleasure (or pain reduction) and so are explained by their general relationship to neural circuits for habit formation.

## Concluding remarks

As we hope the report illustrates, the Bodies and Minds workshop was a great success, showcasing how interdisciplinary interaction can proceed productively. The first session revealed a considerable shared concern among speakers and participants, philosophers and health professionals, who not only want to overcome the stigmatization of mental illness, but also dispel myths about distinctions between mind and body, or mind and brain, that are both biomedically and philosophically unsound. While different people proposed different solutions – reclassifying all mental and neurological disorders as disorders of the brain or CNS versus *psychological realism*, that is, the retaining of the person level as a distinct level of identification, order and organization – the session was a clear demonstration of the importance of a good methodology to promote fruitful and cooperative interdisciplinary discussion. This helped identify large areas of interpersonal and transdisciplinary agreement that already exist. These are very often overlooked or underestimated, needlessly creating barriers for interdisciplinary communication and exchange. On the other hand, the discussion also helped single out and offer resources to resolve in a non-antagonistic and non-polarizing manner remaining points of disagreement – again, a real virtue in interdisciplinary engagement that is not easily achieved.

The discussion process, particularly in the first and third session, was good at revealing further layers of complexity to the initial questions, which single disciplines might easily miss. This probably left participants with more questions than answers, but certainly with an increased overall understanding. The second session showed how the resources of philosophers and scientists could come together to illuminate questions in distinct yet remarkably complementary ways, while also making room for the practical, social and political aspects of practicing medicine.

At many points during the day, including in the fourth session, it was poignant how ‘on the ground’ experience and examples of practicing health care professionals aligned with, helped to illuminate and exemplify, or simply informed the thoughts of those spending the majority of their time in more research-oriented environments. The workshop was not just a display of successful interdisciplinary engagement, it was also effective in bridging gaps between the abstract and the concrete, the academic and the practical, the visionary and the messy reality of socio-culturally, politically influenced practices and people.

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