

The mystery and the paradox of scientific medicine

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Scientific medicine has advanced by regarding our illnesses as the afflictions of organisms, and so minimising the distances between ourselves and other animals, and yet the huge and growing corpus of medical knowledge is itself dramatic evidence of how remote we are from all other organisms. It is possible that this, the paradox in my title, has something to do with another paradox of which we are all uncomfortably aware: that medicine, which has delivered increased life, health and comfort expectancy beyond our wildest dreams, is subject to criticism as never before.^{1,2} The mystery in the title is the mystery of knowledge and its 'unreasonable effectiveness' in helping us to live longer, healthier and more comfortably.

Knowledge

Karl Popper described human knowledge as 'the greatest miracle in the universe'.³ This is no exaggeration and yet we tend rather to take it for granted. What is extraordinary about knowledge is that it proposes the existence of objects, events or states of affairs that exceed our sense experiences.

Even the seemingly most straightforward objects of knowledge – material objects – transcend the experiences we have of them. Supposing I see an object over there. What do I see? I see a cup. I see something that has a front, a back, an interior, an exterior, a weight, a density, a tensile strength and so on. But what do I actually see? All that is given to me in vision is a visible surface. The back, the inside, its interior, its weight, its density, its tensile strength, and so on are all inferred from my present experiences. And while I can check these things out by further exploration – by touch, for example, or measurement – a material object always has a residue that is not checked out against, exhausted by, or cashed out as experience. As the American philosopher Barry Stroud stated, our knowledge of objects is underdetermined by the sense experiences.⁴ The objects of knowledge transcend their sensory basis. Or, to put this another way, knowledge transcends the body or organism. The mystery of knowledge is that it is effective as a guide to action, even though it has only the loosest connection with immediate experience.

There is another important feature of knowledge. If knowledge transcends the sensory experience of indi-

viduals, this is not merely because it is more than piled up sentience. It is also because it is something that belongs to, is constructed in, what Donald Davidson has called 'a community of minds'.⁵ This is obvious even in the case of an isolated fact – for example 'The Royal College of Physicians is in London' – which is cast in the language of the community.

Knowledge reaches beyond the individual body, the organism, in two respects: it transcends sense experience; and it is a matter for a community of minds, not an individual. No one can share my sensations but we can all share the same fact and that fact is a product of a shared world of understanding. Nothing could be more striking than the contrast between the solitude of sentience and the community of knowledge; between for example animal suffering of hunger and the collectivisation of the possibility of such suffering in the notion of 'scarcity' and all the shared activities of human beings aimed at heading off such an eventuality.

Knowledge, unlike sentience, is unique to humans. Contrary to what anthropomorphising ethologists and Disney lovers might say, animals do not have even the lowest tier of knowledge. By the lowest tier, I mean the sense that there are continuous, relatively stable, objects existing independently of our sense experiences, with an intrinsic nature hidden from us. Recent work by Daniel Povinelli and others has demonstrated that even chimpanzees, our nearest cognitive rivals, do not have this notion.⁶ Their folk physics is remarkably deficient. Chimpanzees not only lack the sense of intrinsic objects, but also the intuition of causal relationships within nature, or of the agency that would exploit such causal relationships and bring them about. Their cue-driven or accident-driven behaviour is not informed by the notion of causes as intermediate handles on the world. While they may interact with each other through sounds and movements that act as symbols, they do not exchange facts. Nor, unlike us, do they carry within them a massive world of abstract and concrete possibility beyond the bounds of their sensory field. Of course they find their way through the world but they are guided by experience – they follow their noses – and not by knowledge that transcends experience. They have no sense of what is beyond or hidden from immediate experience.

The reason why humans alone have knowledge is not fully understood but I have argued elsewhere that



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it is connected with the fact that human are embodied subjects with a fully developed sense of their own existence rather than merely being conscious organisms given over to the successive moments of their experiences.⁷ Their explicit sense of self is connected with their explicit sense of objects that are other than themselves. Embodied subjects, unlike mere conscious organisms, are present in and to their world, to themselves, to each other, and to material objects.

Whatever the reason, humans, unlike any other living creatures, are immersed in a boundless sea of knowledge, and relate to the culture sustained by a community of minds, rather than being wired in directly to nature. In emphasising this difference, I am going against the tendency of science-based medicine, which tends to see humans in organic or biological terms, and to narrow, overlook, or bypass the gap between ourselves and non-human animals.

Medical knowledge

Man, uniquely the knowing animal, is also uniquely the medicine-taking animal. The care we take of our own bodies is mediated through a set of beliefs and a body of knowledge. The gap between the dog that licks a wounded paw, or a chimp that rubs leaves on a sore, and the human who books into an outpatient clinic, hardly needs spelling out. Medicine has inserted ever longer chains of argument, knowledge and expertise between the body and its care for itself. Medical science has transformed the self-consciousness of the hominid body into a vast corpus of mediated understanding. Most of this has been opened up in the last 10,000 years, a mere eye blink in the history of *Homo sapiens*.

We should not be surprised at the late development of medicine and the biological knowledge upon which it is founded, that astronomy was for many years more advanced than physics, and that we knew more about planetary motion than about the circulation of the blood round our own toes. For knowledge of the body is knowledge taken to its own place of origin. No wonder it had to be approached by indirection; that it had to see itself in a mirror, and a distant one at that.

The first port of call was to see illness in supernatural terms and it is possible to think of reasons why this might be so. In the West, it was Hippocrates, a mere 2,500 years ago, who more than anyone emphasised that the body and its diseases belonged to nature. Roy Porter summed up Hippocrates' contribution as follows:

as with everything, health and disease are capable of explanation by reasoning about nature, independently of supernatural interference. Man is governed by the same physical laws as the cosmos, hence medicine must be an understanding, empirical and rational, of the workings of the body in its natural environment.

The desecralisation of illness, reinserting the human body into the natural world, was the first step in a long journey towards a fully naturalistic account of disease, most of which has taken place since the 16th century, and which eventually led to European medicine becoming, on account of its singular efficacy, world medicine.¹

In the middle of the 17th century, the idea of the body as a

carnal machine emerged as an intellectual framework for a systematic investigation of its component mechanisms, greatly assisted by a Cartesian dualism that saw us as ghosts in bodily machines: the mind, that which was human in us, was separated from the body. The development of physics and chemistry from the 17th century onwards furnished the concepts, insights and facts necessary to translate general ideas about bodily mechanisms into specific accounts of how various parts – organs, systems, cellular components – ‘worked’. (The verb is itself illuminating.) Metaphors from the technology of the time – mechanical, hydrodynamic, and later electrical – fed into the modelling process.

While it was accepted, long before Darwin, that human health and disease could be illuminated by studies and experiments performed on animals, *The origin of species* provided blanket justification, if one was needed, of extrapolation from animals to humans. Since *Homo sapiens* were the product of the same processes as other species, there could be no principled limit to the applicability of animal research to human beings. While there were differences between species, similarities were more important. Biomedical sciences, which could progress faster on the basis of animal experiments, envisaged human beings as organisms like any other. The physiological or biochemical parameters that signified sickness or health were similar in monkeys and monarchs.

This was supported by another intellectual trend: that of progressive deanimation of organisms. Underpinning ‘deanimation’ was the discrediting of the vitalist belief that living tissues and non-living matter belonged to irreducibly different orders of being. The human body was relocated not merely in the animal kingdom, but in the material world. Illness, which could ultimately be understood in biochemical, chemical or even physical terms, was not only impersonal but in a sense inanimate. The component mechanisms were remote from the living, breathing, animate whole organism, and even more remote from the suffering endured by the whole person.

The paradox of biomedical understanding of illness

The consequences of this transformation in our understanding of our own bodies have been enormous. Perhaps surprisingly, they have included not only treatments that are effective to a degree unimaginable by our predecessors but also the humanisation of medical care. And yet if we look back at this long journey, we see that it is riven with paradox. The treatment of human illness is predicated on the notion that at the heart of illness is a disordered animal organism; and yet nothing could be more remote from the animal organism than the generation and use of biomedical knowledge – knowledge brought to bear on itself.

The paradox, in short, is that the effectiveness of scientific medicine depends upon treatments that see the illness as an affliction of a carnal machine, an unknowing animal made of insentient materials; and yet the growing body of knowledge upon which medical science is based demonstrates how far we are from being animals. As knowers, we are remote from organ-

isms and as scientific knowers even more so; and yet biomedical knowledge reveals us as organisms.

It might be objected that there isn't really a paradox, so long as the object of knowledge is separated from the subject of knowledge: the knower from the known; the knowing mind evident in medical discourses and the body they endeavour to understand. This, however, is precisely what is at issue with medical knowledge as it is applied to the ill person. In the case of the embodied subject that is a living, conscious human being, the body as object of scientific knowledge and the body as subject can be separated only when the body in question is not my, or someone's body; so long as it is the ownerless body of a person seen as an organism.

When the object of knowledge is our own body, object and subject are not quite separate. The facts about our body are knowledge that encroaches upon us. My body is something that in some inescapable sense I am and this identification is particularly close in a society where secular world pictures predominate. While we find it acceptable to treat the human body in general as an organism, it is less acceptable when the body in question is ours, the basis of the knowing subject who is himself far from being identical with his body seen through the eyes of biological and biomedical science.

The medical gaze

This reduction of our ill body to its status as an organism, or even as material object, brings profound psychological discomforts. We feel diminished by what the sociologists and historians of medicine call 'the medical gaze'.⁹ It strips us naked; indeed more than naked, as it looks through our flesh to the skull and bones beneath the skin, and it looks inside us and examines, biopsies, removes bits of us. This gaze is all the more penetrating for being quantified: our bodies and their sorrows are digitised, subjected to the same mathematisation that has comprehended and tamed the material world. The process begins when we are asked to take off our clothes – those complex statements of who we are – and become the 'what', the organism upon which our 'who' has to found itself.

In submitting to examination, investigation and treatment, we pass through a process in which we seem to give up our personhood, our voices, our essential selves as denizens of a community of minds. We become our bodies, collections of biological (and ultimately physical) mechanisms and thus are pushed a little back towards the solitude of sentient beasts.

This is not, of course, the fault of medical treatment. The primary depersonalisation is down to the illness. In illness we are reminded that, as Philip Larkin says, 'our flesh surrounds us with its own decisions'¹⁰ and that our identity as persons is incubated in, sustained in, and precariously hangs on in, a pre-personal, impersonal body. Most of the things our bodies do occur without our consultation and much of our own body – all of it seen at a certain level – is alien to us. In illness, that which is alien, pre- or inhuman irrupts to the surface: it is a savage reminder of the impersonal, organic nature of our bodies; of the distance between the living tissue of which we are made and the

personal lives we lead; between living matter and a life that is led; between the processes in the organism and the contents of the biography.

If the treatment seems also to depersonalise us, to distance us a little from the community of minds which is the locus of our lives (though the community of minds permeates every aspect of care) it is because, in order to be effective, it must meet the illness on its own (organic, material) terms. The situation can be summarised in the following paradox: if the aim of medicine is to combat the inhumanity in the human body, it does so most effectively by the use of knowledge based upon recognition that the human body, not only in illness but in every living moment, is inhuman.

Relevance to current discontents

The objectification of the human body, and its reduction in the eye of science to an organism or, indeed, a material object, particularly in illness, is not new. So why suggest that it might have something to do with the contemporary discontents of medicine, the little paradox, whereby medicine is subjected to unprecedented criticism when it has been so successful?^{1,2}

It may have something to do with the way our daily lives in health are becoming increasingly remote from bodily activity and organic experience.¹¹ Just think what has happened to work for most people in advanced societies: it is less and less about an interaction of our bodies with the material world and physical effort and more and more with the interaction of our minds with symbols. The keyboard has displaced the plough, the pick and the shovel, mental and physical effort. And we are less exposed to the elements experienced directly by the body: cold, heat, hunger, thirst. And play, too, is somewhat abstract and spectatorial. With the advent of the electronic era, life has become ever lighter: our existence is 'e-tenuated'. In short, our lives for an increasing proportion of the time are somewhat 'discarnate', remote from organic reality, and given over to a community of minds.

To the individual used to inhabiting an odourless, weightless, temperate world the irruption of the sick body into daily life is all the more shocking an intrusion and the means by which these unwelcome intrusions are dealt with are themselves more shocking and intrusive.

And there is another aspect to this: the difficulty of being the facts of one's medical case. We are known to knowledge that is remote from us. The little forms containing pathology/laboratory results, the dials monitoring various parameters relevant to my health, the graphs tracking my progress – essential to effective medicine – insert a great wedge between me as a suffering human being and the scientific truth about the body whose suffering I am required to be. The suffering engulfs me and yet the facts about it are remote. They are about my body but my body unhaunted by me; my body as an organism, in turn seen as a piece of matter. In short, biomedical science has placed ever-increasing distances between the (subjective) experience of illness and the (objective) truth about it. There is a profound discrepancy between the experience, the narrative of illness, and the objective truth about it. As

ill people, we are left separated not only from our comfort but also from the networks of meanings that sustain us in ordinary life.

This is not grounds for taking anything back of scientific medicine. Nevertheless, it may go some way to explaining the continuing dissatisfaction with medicine, despite the fact that in every respect – understanding of disease, diagnosis, treatment, broader aspects of management, delivery of services and communication – things become ever more satisfactory.

It may also account for some of the attractiveness of ineffective alternative therapies, especially when the patient has an incurable or fatal disease. Alternative medicine does not merely offer unfounded hope of cure: it offers meaning to someone who may feel that the scientific facts of their case do not translate into personal meanings, and who feel their illness, their suffering, indeed themselves, caught in the stony, unreciprocating ‘gaze from nowhere’¹² that is created by the ever more abstract and complex discourse of the community of scientific minds.

Medical science is rooted in, and is therefore a reminder of, the fact that the human body was not made with our timetabled lives in mind; that it is largely inhuman. Effective medicine must conclude with that inhumanity in order to deliver on its profoundly humane ends. At a time when life is increasingly discarnate, medicine shares the power of illness to shock.

In medical institutions that carry huge expectations of success, and rapid throughput, to ensure that such medical treatment does not deal wounds of its own making, those who deliver medical care require superhuman tact to reconcile the needs of the dysfunctioning organism and the ill person; to help the patient deal with the profound discrepancy between the experience, the narrative, of illness and the scientific truth about it.

This may be more difficult in a society such as ours that does not value those who provide hands-on care or reward those

immeasurable things, such as kindness, compassion and imagination, that are needed to help the patient in the grip of the inhumanity of his body not to feel that his humanity also is being impugned. But that is another story.

References

- 1 Tallis R. *Hippocratic oaths: medicine and its discontents*. London: Atlantic, 2004.
- 2 Royal College of Physicians. *Doctors and society: medical professionalism in a changing world*. Report of a working party. London: RCP, 2005.
- 3 Popper K. Introduction. In: *Objective knowledge*. Oxford: Oxford University Press, 1972.
- 4 Stroud B. *Understanding human knowledge. Philosophical essays*. Oxford: Oxford University Press, 2000:6.
- 5 Davidson D. Three varieties of knowledge. In: Griffiths AP (ed), *A.J. Ayer: memorial essays*. Cambridge: Cambridge University Press, 1991:164.
- 6 Povinelli D. *Folk physics for apes: the chimpanzee's theory to how the world works*. Oxford: Oxford University Press, 2000.
- 7 Tallis R. *The knowing animal. A philosophical inquiry into knowledge and truth*. Edinburgh: Edinburgh University Press, 2005.
- 8 Porter R. *The greatest benefit to mankind. A medical history of humanity from antiquity to the present*. London: HarperCollins, 1997:56.
- 9 Kevles B. *Naked to the bone. Medical imaging in the twentieth century*. New Brunswick, NJ: Rutgers University Press, 1997.
- 10 Larkin P. Ignorance. In: *The Whitsun weddings*. London: Faber, 1964.
- 11 Tallis R. The work of art in an age of mechanical reproduction. In: *Theorrhoea and after*. London: Macmillan, 1999.
- 12 The phrase echoes the title of Thomas Nagel's *The view from nowhere*. Oxford: Oxford University Press, 1986.