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Special Interest Group for Philosophy and Ethics

Suffering and Science

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Introduction

In the flier for this conference I posed the question of whether science could throw light on the mystery of suffering which we had grappled with in the context of religion last year. The reader will judge for themselves our degree of success in finding answers: it could perhaps be said that although we may have failed to come up with a unifying theory of everything, we discovered many useful and illuminating insights. It was while thinking about this that I came upon the following in an article by Jonathan Glancey about the Large Hadron Collider at Cern, and the parallels struck me as very apposite despite the colossal difference in scale of the problems.

'Here is a place of mystery and imagination as well as mathematics, physics and engineering which promises to take us into the realm of the spiritual as well as the purely scientific and rational... Will the origin and structure of the universe prove to be the product of some divine being , a colossal figment of our imagination, a mirror of a parallel universe , or a quintessence of stardust, ultimately unknowable and incomprehensible even as we hold it in the palm of our hands? Ultimately, Cern's scientists may come up against a truly mysterious nothingness – the very opposite of solid architecture – and discover that we cannot ever truly understand or come to terms with the elusive core and generator of the universe.'

This was in some ways perhaps the most difficult of the subjects we have tackled over the years. The discourse was of necessity sometimes dense and complex, and challenging to follow for those of us without a formal education in philosophy. One might at times have been tempted to echo Omar Khayam in his *Rubaiyat*:

*Myself when young did eagerly frequent
Doctor and Saint, and heard great Argument
About it and about: but evermore
Came out by the same Door as in I went.*

Nevertheless there were 'AHA!' moments when understanding seemed to break through. Transcribing the recording has been immensely rewarding and has multiplied these moments many times for me, and I hope that readers will find a similar experience in these pages.

Peter Wemyss-Gorman

Suffering, mind and the brain:

Neuroimaging of religion-based coping

Katja Wiech

I decided to talk about the problems we had with this study as it has been one of the most difficult we have ever done, not because of the pain but because it seems very political and we had lots of problems with publishing it, and not because of the quality but because people were very frightened of the subject.

One of the major realisations in the psychology of pain and suffering in recent years has been that it is not so much the pain that bothers people as everything that goes with it. I am particularly interested in what happens to people when they lose control – when for instance they start to worry about going out because they can't do anything to prevent the pain starting, or can't do anything to make it less troublesome. Nothing – none of the many medications they have tried – really helps.

Perceiving and processing pain

The problem of loss of control was the basis of the study I did before I moved to Oxford and I want to tell you briefly about it before moving on to the religion-based study. It was a very simple study design: I wanted to know how people perceive and process the pain in the brain when they think they can control it versus when they can't control it. Subjects (I excluded people with a history of pain) could either control the pain (electrical stimuli to the hand) by pressing a button which would stop it immediately, or (probably more realistically) were subjected two other conditions where they couldn't control the pain. In the first of these they were told that there was another person outside the room who could stop the pain when they wanted to (I didn't tell them if it was a woman or a man) and in the other they were told that the pain was controlled by a computer which no-one was controlling. In fact the 'uncontrolled stimulus' was stopped after precisely the same length of time as the patients had endured it when they had control. In our pilot study we discovered that there was a huge difference between men and women: men were extremely bad at dealing with uncontrollable pain, particularly when they were told it was another person sitting outside controlling the stimulus, so I used women only for the neuroimaging study. For this I pooled the two 'uncontrolled' results together. Firstly I looked at the behavioural effects and whether people perceived the pain differently. The results were quite different when there was related anxiety about loss of control although the physical stimulus was identical. (And different again depending on whether they imagined it was a man or a woman controlling it! – if they thought they were cruel they were perceived as male and if gentle as a woman.)

Psychological resources for pain control

What we were particularly interested in was not so much what happens when people think their pain is externally controlled as the resources they use when they think they can control it (rather different to the usual approach to neuroimaging in pain which is more concerned with what goes wrong in chronic pain – where do we see upregulation or sensitisation etc.) in the hope that we can identify resources that can be enhanced by psychological training etc.

[picture shown] These are the areas that come up when people thought the pain was self-controlled, compared to the externally controlled condition; these are areas that we know very well from cognitive controls and are involved whenever higher level brain areas have to organise lower areas. They are not so much involved in

sensory processing but more in governing other areas, so there are structures which are involved in putting the things in place and so to speak leaving the pain outside, or 'keeping the pain out of the mind'. We wanted to know if these areas were related to the pursuit of pain intensity, and there was a tiny little area that came up in the right prefrontal region negatively correlated with pain intensity so the stronger the activation of this the less people experienced the pain. We know this area well – it hadn't featured much in pain studies but more in anxiety studies and had featured in a previous study on anxiety I had done with a colleague; so when we teach people to disengage from something which is threatening by suggesting that although they are going to get a little electric shock everything is fine and they can safely distance themselves from what is happening, this little area lights up.

Religion-based coping

When we think about perceived control we think it is obvious that whenever you lose control it is bad for you. It is very much part of our culture that we always want to maintain control over things: you have to be very active in your job and your private life and it is hard if you lose control over them. We wanted to know how this is different for people who have an external rather than an internal locus of control, but something without a negative connotation. This is how we came to the idea of doing something on religion and pain. At first the reaction was that this is something rather exotic, but what we wanted to see was whether the little area in the prefrontal cortex which we call the 'safety' area is involved in coping based on religion. We spent ages in the preparation for this study worrying that we would find something non-specific, not related to religion, or that would vary a lot between different denominations, and what we came up with was this: we took groups of twelve devout Roman Catholics and a group of twelve avowed atheists and showed them these pictures: one of the Virgin Mary and a control image which was pretty similar in terms of drawing style etc without religious connotations (*The lady with the Ermine* by da Vinci). When we first presented this to the ethics committee they asked: why not use a picture of Jesus on the Cross? – but in accordance with our perception of perceived control we wanted something feminine and less obviously associated with suffering, and something more similar to the control image. We asked both groups to just look at the picture for 30 seconds without any specific instructions – we didn't tell them to meditate or anything like that – and then after a warning signal the pain started as they continued to look at the picture. What we wanted to see was whether the religious group could cope with the pain any better if they were looking at an image of Mary.

[At this point there was a prolonged audience diversion into doubts as to the apparent neutrality of the images with a variety of subjective responses expressed. It was noted that the choice of Roman Catholicism reflected the iconic nature of that faith.]

The effects of imagery on pain intensity

The pain intensities reported while people were looking at the images were very interesting. The religious group reported a reduction in pain intensity which was exactly what we hoped for and the non-religious group didn't report any change. We also asked them about effectiveness – 'how much did you like the picture?' 'Did it induce a positive or negative response in you?' They had to rate it between each trial on a scale of +50 to -50. We found of course that the religious people liked the Virgin Mary image much better and the non-religious group liked the other image better. We only observed a significant effect on pain intensity in the religious group. It seemed

however that it was not simply a question of liking the picture better, but that there appeared to be something more specific. (The non-religious people registered a slightly negative reaction to the picture of the Virgin mainly because she was so submissive.) We then looked to see which brain areas were specifically activated in the religious people when they looked at pictures of the Virgin. One of them was the tiny area we had seen before in the anxiety studies, and another area that is more related to liking. That was something we didn't like, as we then had to show that it was not just a matter of liking or preferring or a simple attentional or distractional effect but something more specific. Was this something specific to the religious condition? In the religious group we do see activation in both the 'safety' area and the area involved in liking, but in the non-religious group only the 'liking' area is activated, not the safety area. And although they both showed activation of the liking area, only one group experienced modulation of pain associated with activation of the safety area. That is something specific going beyond simple distraction.

What the participants thought

When we want to find out what is behind all that, we can't just look at the images. To find out what it means you have to go back to the people and ask them. As with imaging of pain in general, people imagine that at some point in the future you won't need to ask people if they are in pain – you will just have to pop them in the scanner and you can see it straight away and detect if they are lying or not, but this is still very far in the future and in fact will probably – and hopefully – never happen. It will always be crucial to ask people; and they will come back if they are in pain even if the imaging suggests there is no pain. So here we did a very detailed interview with them afterwards to find out what they actually think. The religious group gave a very interesting and detailed account of what they felt when they looked at the Virgin Mary: how peaceful and 'taken care of' they felt – something 'motherly'. 'We knew that she had gone through something really difficult in losing her son' and they could identify with her suffering. They felt safe, supported and the object of her compassion. In contrast, when they looked at the non-religious image, or the non-religious group looked at either, their reactions were very much characterised by aesthetic considerations: 'she looked attractive' - 'I liked her necklace' – 'she looked smug!' without any connotation of a supporting figure.

In the end, that was the evidence that helped us when we were trying to find out what was going on and something we would like to do more studies on: do people use reappraisal and reinterpretation of what is going on when they have the material and the resources to support that? We know from other contexts that we can actually reinterpret even something very unpleasant if we can find the key to it, and religion seems to be one such key. We don't make any claim that it is the most powerful or that one denomination is better than another – that's not what we wanted to show and we didn't test for that: we just wanted to demonstrate that there is a mechanism which seems to be very powerful and we would like to find out what it is.

Discussion

Did you ask people what they thought of the experiment?

We did ask them later on as we wanted to rule out the possibility that they were just trying to please the experimenter. We had had to tell them that they had been recruited on the basis that they were either religious or atheist, but we told them that it was not a test of their faith – they didn't have to stand the pain to show how strong it was... That was something the ethics committee insisted on.

Did anyone feel they had been treated unfairly or express any anger at the experiment?

No.

Did they know that the others were non-religious? Yes. Because there were some studies done by Chapman in the 60's that demonstrated that it was particularly effective for Jewish people if they were told that they were tested as to who had the greater pain responses – the Jews actually increased whereas others didn't.

We stated explicitly that it was not a matter of comparison but we were trying as scientifically as possible to look for mechanisms. There wasn't for instance much difference in threshold – the difference was in intensity.

The pain you subjected them to was a very tiddly pain. What about the chronic pain that goes on forever? Are you intending to do something on that line? It seems to me to be rather more important.

Of course that's true. It's always the problem with experimental pain which is short lasting that it may not have any value for understanding chronic pain. We don't have any plans at the moment. It would be interesting but we would have to use an experimental model that we could switch on and off, otherwise we couldn't use the scanner.

Are you saying that when humans want to cope with pain they need an image? Did the others have an image for coping which wasn't shown – a place they could go to deal with anxiety? Does the mind need a picture - how would that work for people who are blind?

I used to do a list which involved repeated anaesthetics in children (70 or 80 laser treatments for port wine stains. They became very anxious including four nightmare patients. Then someone suggested getting them to choose a picture which would be in the anaesthetic room watching over them. They mostly chose Disney princesses which we hung in this horrible anaesthetic room and it changed things completely – 'There's my princess watching over me'. It would be very interesting to get the people who didn't have the religious one chosen for them to pick their own image.

It was suggested that we might have looked at whether a pornographic image would have the same effect! We really don't know the best material to use to enter this state of mind. It might be visual – this depends on the person - but perhaps not.

I am reminded of another study which involved not so much religiosity as culture. A group of sociologists from California started to look at death anxiety (what they called 'mortality salience') and the value of culture as a support and helping mechanism. They got about 200 students and told them they were just going to fill in one of two questionnaires, but one of these was structured in a way that reminded them that they were mortal and that one day they would die. They were then given the task of retrieving something but in order to do this they had to cut through a flag of the US. The people who had been reminded of their own mortality could not do it, but those who weren't were able to. So as religion helps us to recruit a coping mechanism, so does culture.

That was why we chose religion which involved a long-term exposure to a cultural influence.

Because what you're testing is not the image – it's the belief behind it – it's what it means.

Interestingly two of the subjects in the pilot study were lapsed Catholics, and they responded even though they maintained it no longer meant anything to them! I think that shows that there are some interesting mechanisms which still need to be explored....

What part of the brain is activated in hypnosis?

That depends... there have been studies done in hypnosis and pain which clearly show that these are prefrontal 'higher' areas and when you see down-modulation of pain related structures associated with psychological mechanisms you usually see pre-frontal areas up-modulated.

Are the 'liking' area and the 'disliking' areas close?

The liking area which we can show with things like preferring taste is quite low in the midbrain – bordering the pons. We aren't sure if there is a distinct disliking area or if it is a question of up-regulating or down-regulating the same area – it's more a matter of scales of liking rather than liking or disliking. The other hypothesis we have relates to reward: if people see an image they like they also find it in some way rewarding.

Did you look at autonomic responses?

We did measure heart rate in the pilot study: the religious group did demonstrate a slowing when they looked at the religious image and generally had a slower heart rate.

I'm going to be looking at the polyvagal theory tomorrow which would probably fit in very well with this.

You said you had difficulty in publishing this – was it the findings people had a problem with or the content?

We sent it to *Science* and we sent it to *Nature* and although it was carefully written so as not to be specific to religion but using religion as a cultural influence they said 'it's too specific'. But we were also told by other Journals including *Pain* that it's highly political, and we have to make sure that we don't get into the corner of comparing religious denominations, that it's bordering extremism (people are prepared to blow up buses because they're not afraid of pain). But we explicitly didn't make any such claims. People seemed to be afraid of the subject – I've never seen such careful letters from editors.

A lot of pain patients seem to rely on prayer to cope with pain – we've just done study where we ask people what strategy correlated with the number of stimuli they could bear and the only thing that came out positively was prayer – so you can't ignore it but you have to approach it as scientifically as possible.

You can get very similar results with non-religious meditations

Yes of course - this isn't specific at all – quite the contrary.

Is the same brain area involved in the deep relaxation response?

Yes – and by the way it is the same area that features in placebo studies – that is perhaps something for our next study – to see if placebo has something to do with perceived control: it's not the substance but the meaning attributed to it to it.

In evolutionary terms people talk about placebos somehow facilitating mechanisms about feeling that something is being done – to sort of unite the body's resources so either you're properly ill or properly better and placebo kind of provides that switch, and I like the idea of a safety area rather than control, which is a very tricky thing psychologically.

As we found out in the first study, what we think is very positive is that people with a high sense of control were particularly bad when they couldn't control things.

This often comes up in anxiety things. In a lot of circumstances external control is more realistic. It's also very class-related – whether control is an advantage.

There's a new pill being marketed which has been getting a lot of press which is advertised as being for 'when your child needs more than a cuddle'. It's a placebo which is being marketed with all the razzmatazz of a pain-killer. I'd be interested to see what it did in the parents' brain!

The whole subject of placebo and what goes on in the brain is so fascinating. One thing we would like to do is a study where we tell people 'this is a powerful painkiller' and when they've shown a placebo response we tell them 'it was just a placebo response but you can do it – now do it again', can they? I think they can't because they need this idea of an external agent – to give us this tiny spin that...will make us feel safe...that there is something we can do...

I think you may be surprised and find you have patients who will understand the difference – that they may be able to cope the second time round because they have learned that they were able to the first time. I have used this in practice – for instance they can control a pain until they have finished a task, but the pain they can't understand.

It will be interesting to see who benefits. We need predictors.

Can we tease this out: when I look at the Virgin Mary is it just that I go to my safety area, which seems more passive, or do I expect benefit, which seems more active?

That would be very interesting – to find out if people use her as an external agent – 'she will make me better' – or whether they identify with her suffering, and don't feel alone.

Catholics do apply to Mary for relief, for her to do something...

It would be interesting to do in-depth interviews alongside this stuff and perhaps relate some of the themes from these to different patterns.

Some controlled trials of praying have shown that just thinking you are being prayed for helps...

In the context of the general theme of the meeting, can you think of anything from your work which will help us to answer peoples' questions about why they've got pain especially where there is no obvious physical diagnosis?

It doesn't really answer the question of why they've got pain – only mechanisms for dealing with it. I think the next step is how we can teach people to use these if we know how they work. When you talk to imaging people they suggest how you can up-regulate this or that area; you can use online feedback – but that is a very mechanistic way of seeing things. Psychological interventions do this already and we would like to show that they really target these mechanisms; in the end it shows you what goes wrong if people can't use these mechanisms, perhaps because they've been frustrated so many times they can't activate it.

There was a paper a few years ago looking at fMRI following acupuncture comparing superficial with deep tender point acupuncture and showed that the deep turned off parietal responses: is it that all these treatments – psychological, acupuncture – even drugs – are all working on different parts of the brain, and it's just a question of getting the right combination of things in an individual?

That's exactly what I'm going to do in the next five years! I want to know if it's using the same structures differently – using the available structures in different combinations or whether there are actually two different systems for upregulation and downregulation. We don't know. There are always very likely candidates which usually pop up in the context of psychological modulation of pain – it's always the DPFC, not much the APFC which appears to be more specific – but I would like to find out the hierarchy – what is the source of the modulation which triggers the whole cascade? Another question is do we always see a modulation of the pain matrix or can we bypass it? We've just written a little review in *Trends in Cognitive Sciences* on psychological modulation of pain and imaging.

So we'll invite you back in five years time!!

Can we ‘Face’ the pain?

Levinasian phenomenology and pain

Alex Cahana

You are going to have one of three responses to this. Some of you may think ‘he is expressing eloquently what I have been feeling the last ten years’. Another group will say ‘if he’s right we’re in trouble’ and the rest will respond ‘this is all a bunch of baloney.’ So don’t feel bad whatever you feel!

Some of the bibliography is very dense and difficult and not accessible to common language – that’s what philosophy is all about – less means more, more means less, up means down etc etc.

So first I will talk about the insufficiency of the Cartesian explanation – the Cartesian danglers – the ‘scientific’ explanation of things. Why do we separate pain and suffering? Why do we still talk about mind and body although they are the same? I will say something about phenomenology and why we have a phenomenological stance (you’re all phenomenologists even though you’re not aware of that!). I shall talk about Levinas who wrote about the phenomenology of the ‘Other’ using many technical terms like ‘Face’ and ‘Other’. I will also talk about REpresentation and REsponsibility (RE- is always about the ‘Other’) – and what are the philosophical problems with this whole imaging business (I’m very worried about this morning’s discussion of this); about recognition, and re-humanising our dialogue with patients.

I am going to start with a clinical example because I am a clinician. I do hard core things like putting in (spinal cord) stimulators and pumps which is why I get worried that every week I see at least ten patients who have chronic back pain who are a little anxious and depressed – what is there to do? And we have the Ayatollahs of evidence-based medicine who say there’s no evidence for anything – and then OK *that* helped a lot – so I decided to do outcome studies. One is good and five is bad and I look at a thousand patients and their pain, depression and anxiety and whether they’ve got back to work, and it looks as if they all came very bad and left a little bit better but really not a lot. So, I can’t justify the dollars and even if I look at the numerics maximally I do no change. So we feel stuck. The basic science tells us nothing about what is going on; the epidemiological studies discourage us from doing anything and we live every day thinking I am doing something good for these patients but I am unable to prove it. What is the evidence?

The ‘problem of the other mind’

The problem is really very simple: the patient can complain of pain without having pain, or the patient can have pain without complaining. This is called in philosophy ‘the problem of the other mind’: how can I prove *my* pain? This is what patients come up to us with: ‘Doctor, believe me, my pain is *real*’. So there is something that is completely evident, self-evident to the patient, and completely transparent, but for me it is completely opaque. So the patient has to engage in certain things to show me; he limps, he grimaces, he shows me an fMRI, he does something. And the second problem is that it is a contingent, not a necessary truth. A necessary truth is true all the time e.g. every triangle has three sides and everything with three sides is a triangle. So how do I take something which is absolutely true from a first-person point of view, which we call subjective, to a third-person, objective point of view. What do we think is true? We think the objective is true, but I hope I will convince you by the end of the talk that it’s exactly the other way round. The problem is: are these people in pain, are they pretending to be in pain, or are they seeing people in pain and activating the mirror neurones like Macaque monkeys, and showing us that they are

in pain? So I need to say again that the way this world *is* (ontology), the way we explain the world (epistemology) and the way we think the world is experienced (phenomenology) are all very closely linked.

Our paradigm...

If there is one thing I want you to understand from this talk, it is the interdependence between these elements which modulate our paradigm – the way we think. A paradigm is a common share of beliefs and presuppositions that are our own. It doesn't mean that it is necessarily true, but this is what we believe. We develop a private language that is our own which we call a jargon. So when we go to a patient and say 'I have good news – everything is negative' or bad news 'you're HIV positive', this is our language – our paradigm. Our paradigm is this: the ways we view the world are basically two. One is basically empiricist - all knowledge is based on experience and anything that is not based on experience is not part of what I'm doing – it's more into spirituality and away from here - but I am only looking at the things that I can observe and that I can test and verify. The way we think we know things is based on linearity: that every effect has a cause which is fixed and stable, so every pneumonia is caused by a bug and this bug can be killed by something. And we believe that the system is closed so that I can look at something, manipulate it and then measure it but I'm outside it and don't interfere. Physicists understand that this is not true. A physicist can explain to me that sometimes a cause is after an effect, not before, because time is simply an arrow which we have arbitrarily decided is going one way. But we don't remember what the Second Law of Thermodynamics is, and assume the past is there and the future there... we'll talk about this later. And as we learn from quantum mechanics any time you look at something you alter it. We know that every day: if I am in a hurry to get to a meeting in Hawaii, it's Friday afternoon and there is a patient that needs a stimulator they won't get it. They will get tender loving care and it was a good thing they came on a Friday as otherwise I would have put something expensive in her back.

Phenomenology is the science of how do we experience experiences. Our phenomenology is reductionist: if I understand this thingy then I understand that thingy, so all I have to do is to reduce this thing to a small thing. Each phenomenon can be reduced to its constituents. Which is true for a complicated system like an expensive watch but not for a complex system, such as a chocolate cake: however many times I cut that cake I will not get the flour eggs and butter – it's gone. Once they were mixed together something else emerged – there is no sense in trying to reducing it again because it's over. So David Chalmers can get a Nobel Prize by saying scientific knowledge is proven knowledge; that scientific theories are derived in a rigorous way from experience by observation. Science is based upon what we hear, see and touch, it is objective and this is our paradigm, and is part of the talk I give on why do doctors think like doctors (which replaced my previous one on why do doctors think like idiots...) So I hope I have been able to convince you that we are all rationalist positivist ontologists, and that our reductionism influences the way we accept the causality of illness. Though everybody in their first year of philosophy has refuted dualism since the late fifties we are still incapable of not talking like dualists. We think that the biopsychosocial model of how everybody reacts to disease is infallible, regular, predictable and linear, and this is why we are doing what we are doing. This is what Morris calls blind intelligence. We are in a paradigm of simplification; we have talked about fMRI, we can talk about A and C-fibres, about Dorsal Root Ganglions – it doesn't matter philosophically, it's all the same thing. We like simplification because it is elegant and we don't like chaos, we don't like fractals, we don't like non-linear open systems (and don't understand them).

...and an alternative to it

Now we will talk a little about the ‘Sufficient’ because this isn’t about bashing what we’re doing – it’s about presenting something alternative. When phenomenology started near the beginning of the 20th Century it was not instead of science. It arose out of the understanding of Husserl, the father of phenomenology, who wanted to find a way to do philosophy and science together because they were not divorced at the time (that came post-war). It was not intended to denigrate science – science alone as the bearer of Truth – it’s not anti-science or scientism or anything like that. But what Husserl says is that to know the real scientifically one must begin at the beginning, to ‘the things themselves’, (zu den Sachen Selbst) without the interference of prejudices, without any presuppositions whatsoever. Knowledge of the real can only be presuppositionless; science can be only pure if it is based on intuition (meaning) rather than experience. (*Cartesian meditations*) (He also wrote *The crisis of European Sciences* in 1932 which is an evidence based medicine-bashing book which he got to way before us.) Phenomenology says there is no substitute for the individual’s seeing. When a patient says they have pain they have pain. We cannot convince them that this is the special feeling of orgasm they have simply because they are seeing Dr Cahana in his office. So the phenomenology purports to be presuppositionless: if we understand the structure of consciousness we can locate reality, and it is always intentional, there is always a meaning – we are always conscious of something. It’s always a pain *from* something; it’s not ‘yeah... I’m conscious....pain...’. The meaning is always intuitive or self evident. It demands its own method which I want to share with you.

Becoming scientific phenomenologists

You do it intuitively but there are rigorous ways of doing it. So when I talk about a pre-given world it is the world that we see. We think we live in a world that is part of us, that we think is correct, even though we’ve never checked it. So each and every one of you here thinks that they are a little bit above the average. From a phenomenological stance part of the feeling of agency is to feel that you are a little above average. So there is an *I* – that is the subject, and an object and I have a relationship with that object. All that I have to do is to investigate this relationship. This is called a *nomato-noetic analysis* – that’s not important but what is important is that we are investigating the meaning. When we name a common object like a microphone everyone knows what we are talking about but none of us sees the same object. There are hidden facets of the object that we don’t see; nevertheless it does not bother us to understand the about-ness of this object. So in order to investigate the meaning of a microphone we might have to say what it is for, and nearly all of us would come up with a similar answer. So this is a given object, (remember that there is the given world and the pre-given world). But then patients come to us and say they have pain, and pain is non-given. So the whole investigation is how do we make that non-given into something given? That is called the phenomenological reduction, and involves suspension of my beliefs (for example now when I see patients I don’t open their records). I’m going into that situation with no presuppositions and trying to understand the mode of given-ness. Is it full, is it partially full, is it empty, is it pre-given (in German *fülle*)? In the meaning the relation to the object is constituted: what is the relationship of the patient to their pain? And since we are scientists and since we are interested in promoting knowledge it’s not just about knowing the one patient, but knowing all the patients. So we do the same thing for many patients in order to find the invariant property that make that object what it is. That is the science behind phenomenology. The very existence of the intentional object is irrelevant: I can fake the pain or I can be stoic about the pain, but when I feel the pain I do not think of

nothing. That's the difference between phenomenology and science: science thinks that pink elephants are rubbish and don't exist – it's not interesting, it's not science and I don't want it published. Phenomenology says even if I just imagine something that is still as important as it is. So for instance patients if have the real object *pain* and you investigate with them the intended object, you can create a universal eye which will explain the essence of why does pain hurt.

Can you imagine pain?

Yes – but the question is what do you mean when you say imagine? Cartesians will say imagine is not real but a phenomenologist will say imagination is as real as real.

But pain is not the same kind of object as a microphone.....

Correct – I'm coming to that later. I'm just trying to explain what phenomenology seeks to do.

Levinas and the phenomenology of the 'Other'

So if we now understand that phenomenology is a suspension with no presuppositions and what we are looking for is the invariant essence of pain, let's talk about Levinas. Levinas was not interested in pain or patients. He was born and died in the 20th Century in Europe and his life follows up what was happening. He was born in Russia to a Jewish family and converted to Protestantism at the age of 25. He moved to Germany, learned with Husserl, then to France where he introduced the Germanophone culture and helped other people develop phenomenologies. He taught the phenomenology of the 'Other', of politics and of interpretation. With Heidegger he taught about the phenomenology of being and how we experience experiences. Levinas said phenomenology explains what things mean. He wanted it to be more than just a mathematical science – he wanted it to be a human endeavour. That's why he was interested in the 'Other' – the 'Other' as an object, and what that other means to us. He didn't like what other philosophers talked about which he called the ontology of the same. For example if I ask 'who is Willy?' – I say Willy is who I think he is – there is that little image that I have in my head of who he is. But no – that's not true: even if I know all Willy's DNA he's still more than that. He is something you just cannot reduce in terms of biology and science. But Levinas goes further and says: not only is Willy not what I think he is but I am who Willy thinks I am. We are much more dependent on the other than we would like to admit. We talk about autonomy and responsibility – I do this and that and I decide this and that – but in fact this is not true. We are all reflections of what the 'Others' are. And so as opposed to Husserl who says what I want to do is to say everything is the same, and reduce the 'Other' to the sameness of myself, Levinas wants to guard that human uniqueness in each and every one. And that 'Other' he called the 'Face' – not in a literal sense but as everything that is not me. It is interesting how this will influence our way of speaking. First of all he speaks of the '*Call of the Other*'. He gives the example of seeing someone in the street pushing over a garbage can. You may or may not pick it up – there are all kinds of reasoning you bring to bear: I am/am not in a hurry, I don't care if it's dirty/think it has to be cleaned up – that's your ethical reasoning. But if you see someone pushed in front of you and that person looks at you, in that millisecond before you have to think about what I have to do – before you have time to think I'm important and in a hurry, you have that call from the other and you answer that. *And that answering is the essence of ethics.* Ethics cannot be contemplated alone in a room where I think of all these things which should or should not be done, but is always contextual with a relationship with other human beings. He

talks about passivity: not the passivity of someone who is asking for help – you see how unintuitive he is – it's not the other one who fell so I have to help him – it is *us*: I don't have that decision . Before I have time to decide I don't have time, before the evil is born, I have to answer. So we are the weak, the passive, the dependent and the vulnerable. It puts in question all the question of autonomy. This is a very different way of looking at things. Remember our ontology, remember how we say I am autonomous, the patient is vulnerable, the patient is passive, but Levinas turns things all the way round. So we have a *response-ability* to respond to the 'Other' and if we don't have it then we are not responsible. And he not only talks about subjectivity but about the inter-subjectivity which adds even more layers of complexity. So we are inter-es-ted where es is the essence between people. This is the therapeutic dialogue.

Understanding 'the whole'

The problem is that the minute I start to talk about this I get the response 'oh yeah, he wants me to be nice but I'm a scientist, I want to know real things'. So let's talk about real things. Take imaging: how does a scientist study objectively something that appears subjective like pain? We need something that explains, not describes – not a circular explanation like opium puts us to sleep by its dormitive powers. So we're so excited when we see a picture that shows prefrontal cortex undergoing apoptosis and atrophy in chronic low-back pain (and think that explains why all our patients are idiots)and now we understand that it's the affective but not the discriminative components of pain that are activated during empathy... and why I like my wife and I like women... and we have all these mirror neurones and we know that the brain activity increases when we get to know a person up to what we call emotional contagion... and we feel very smart and scientific. But is this true? This is very worrying. It is called a mereological fallacy. Mereology is the study of the relation of the parts to the whole. It says that you cannot attribute a characteristic of the part to the whole and vice versa. So I cannot say – the left side wants and the right side thinks... it's the man and the woman with the left and right side that wants and thinks etc. So we mix up the way we talk with the way truth is. This is very important: a recent article related regional brain activity to the way the author felt about Obama, McCain, Clinton and Ahminejad but this is not science – this is nonsense. This is the modern equivalent of phrenology.

Levinas talks about *understanding the whole*. This has two important aspects: one is the ethics and the other is the science. In our Cartesian way of looking at ethics, if a problematic event was not caused by A he is not responsible so deserves sympathy; or if it was caused by A it was intentional so he should be blamed and punished. But Levinas talks about the call of the 'Other' – the *response-ability* – beyond saying should or should I not help. Re-flexion talks about Re-ligion – the allegiance to the 'Other' – that is in the 'Face' of the 'Other'. If I look up and not look at the 'Other' that is not religion. He talks about circularity and says how foolish it is not to see the 'Face' of the 'Other'. He says 'here I am for you before I am for me'. So in the clinic I translate that as 'tell me in your own words what you think I need to know, so I can help'. That is hospitality, it is welcoming, but it is also substitution. I can substitute myself for him but I cannot be my patient. It is not about empathy: it is what Levinas calls difference with an "a", which is the complete, everything I am not. I cannot imagine what it is to have chronic pain all the time; I could play a game by walking around all day with a pebble in my shoe and gage my reactions and behaviour; I can project but I cannot actually be the 'Other'. And so Levinas talks about that and how our Cartesian life has divided pain and suffering; and there are Aristotelians and neo- Aristotelians who regard pain and suffering as the same. The trace of pain is not what is said but the *saying* – the intentionality behind it.

How does this change our dialogue?

We are very much into cognition but not re-cognition; we have sophisticated ways of saying A comes to B and this goes off to C, and the only mistake Descartes made was to say it was the pineal gland but now we know its other places. But we didn't change our philosophy. We know about specificity and summation and duality but this is not important – it is predicated to Wall and Melzack and the gate theory and this is how we accept papers for publication based on these paradigms. We talk about unpleasant sensory and emotional experience and we look at these things in a biosociopsychological paradigm. And we use these words learned helplessness and operant conditioning – this is still how we think. But does this explain anything? So if you're suffering from a parasympathetic cervicosacral musculoskeletal radiculopathy (and the patient says 'now I know why my pain is silent!'), does this explain why does pain hurt? The problem is that we are just looking at the organisational closure of the nervous system, at sensory-motor coupling, at the dynamics of the nervous system, and we recognise that there are environmental interactions and this is all very sophisticated. *But*, we are not looking at the whole emergence of selfhood – yes, there is an operational closure – but from that emerges an identity. It is this identity that entails interactions, and from these interactions emerges the significance and the value of what we are doing. And so our subjectivity is not just any subjectivity but an embodied subjectivity. I have a two-year old, and when she falls over she stands up and says "yeah bravo!" because we have taught her to do this and she has to whack her head very hard against the wall to get the pain out. So she knows how to differentiate between pain as an alarm system and pain as communication (that I am unhappy with my life or my wife or my job – that I am suffering).

So when Merleau Ponty talks about embodiment he says there's a reason why I say up is good and down is bad (instead of the other way round). The subjectivity is embodied - the perception of the world is connected with this body. The embodiment is complex, so that tickling myself is not the same as being tickled by someone else. When we talk about aesthetics, and look at a self-portrait by Frida Kahlo (the Mexican-born painter who had a terrible accident while a medical student and suffered severe chronic pain all her life) you see depression, nociceptive pain, neuropathic pain, psychosocial isolation – and you are still thinking like Cartesians even after all this time! We can't get out of it! Instead of just looking at the how we are as in the deconstructionism of Picasso.

Phenomenology enriching the therapeutic dialogue

So let me finish this talk to make it much more practical. Here is a patient that I asked to ride a bike and he didn't do what I said – how dare he not! I discovered that he knew he had a 'torn' disc; (discs he understood as 'things in his back that made him walk') thought he had only two, so that if he rode a bike he might tear the other one and never walk again. Now who was stupid – him for not knowing what intervertebral discs are objectively, or me for not realising that subjectively his discs have such a meaning to him? Which is more important for the therapeutic act? Jean-Baptista Vicco back in the 18th Century wrote '*empathic knowledge of self and the other will remain different ways of knowing ... but the establishment of the biology of reasoning, will, I hope, include first, second and third person perspectives.*' But no-one knew what he was talking about so they stuck with Descartes. The reason we need phenomenology is to understand the difference between transitive body

sensations ('I felt the warmth of his hand' – I felt the pressure of the stethoscope) and intransitive body sensations ('*my* right foot hurts' – 'There is pain in *my* thigh')

So in conclusion, the biopsychosocial model has difficulties in explaining pain and predicting response to therapy (the patient wouldn't ride a bike because his prefrontal cortex was cooked, he is an idiot, I remind him of his father whom he hates, or he's on workers compensation – that's the ridiculous science we are giving to our patients). It doesn't explain success or failure – why I am the best doctor in the world for some patients and no use at all to others. Phenomenology is a method we should start to embrace. I think you should all start to read a little about it, and to reflect that Husserl was interested in investigating *meaning* (which can be translated into subject developed scales and phenomenological clusters) It will help us to understand how pain is perceived, and teach us to be very careful with the heuristics and the interpretation of fMRI's and genetics. It can lead us into the art of 'simplicity'; we don't like complexity and although we may perhaps need sophisticated assessment tools and intelligent mathematics it will help us to keep it simple. We need phenomenological investigation, and you can do it in your clinic – you're probably doing it already but you just don't realise it! But above all, phenomenology can help to enrich the therapeutic dialogue.

Discussion

How do you convince your CEO that this will do your hospital any good?

It's a different paradigm so it's a different language. My CEO who is a reasonable man says I have these resources that I have to divide among different people who all think what they are doing is important. So I say what don't you like about us? Firstly he says we don't give a coherent message. The patients go to one doctor who always says 'treat with Methadone' – the other says 'no that's crazy, you gotta put in a stim'. So until we start to speak the same language this fragmentation of our world keeps us weak. One thing I'm trying to do as Chief of the Division which looks over five hospitals and ten programmes is to institute a common message of what pain is. The second question is what is our research agenda? What are we trying to prove? Bonica wrote in the first edition of his book in 1952 that pain is an undertreated disease. After half a century – and a gazillion dollars and a gazillion people – pain is still an undertreated disease. What's the problem? I think it is that we speak a private language between ourselves. We don't outreach either to patients or GP's. We have this idea that because we're nice guys and want to treat everything, we can. But we can't. So maybe instead of trying to treat all the pain in the world we should be trying to empower people and teach them how to treat pain. So we are working with the State of Washington on an education course for GP's and we need to teach the general public. We could teach children in schools: anti-smoking and sex education programmes have had a huge impact not only on the kids but also on their parents and we can do the same. In the US people are overmedicated and over-operated, so that simple problems become medical conditions, and suffering becomes medicalised. Education, starting with children, can make a difference.

I work in palliative care and I tried to get into schools but one thing no-one would take on-board was normal dying.

This private language goes far beyond what you're saying – it takes us into major politico-financial territory. There are all these groups of people who have their own vested interests, their own boundaries and territories and say they have the right answers, and we are irrevocably financially wedded to the scientific method and in the UK at least we're not going to get CEO's on board.

One way to convince the scientific community is to say we need to communicate with other disciplines. And we need to communicate with business academics who understand much better than we do that we live in a world that is hypercompetitive. This means that we don't have enemies or friends but we are all 'frenemies'. We need to find alliances within the business community.

[Inaudible question]

I'd like to answer that from personal experience. Part of my pre-given world is that I have to *do* something. After reading Levinas I realise that sometimes *not* doing is in fact doing. For instance I saw a patient recently who had a knee replacement ten years ago and still has pain and the surgeon is looking for some high-tech treatment. What do I do? – I just listen to her for 59 minutes and the end of which I say 'we've got to finish but before you go I just want you to answer one question in your own words: why do you think you have pain – why would a piece of metal cause pain?' She says 'do you mean that this is the memory of my old knee? Do I have to say goodbye to it?' I say 'maybe?' She shakes my hand and leaves. Next day the surgeon calls and says 'you're a sorcerer! Everything is fine! She feels great!' It was just a question of bringing the patient to that moment of 'AHA'!

Do you accept that she might have gone back to the surgeon and said that you were absolutely useless, because that's what can happen in the real world?

I'm not trying to prove anything is right or wrong. All I'm saying is that there are conceptual flaws in the way we approach pain. We're mixing description with explanation, private and public language and trying to reduce complex systems instead of trying to understand the whole.

[Partly inaudible question regarding fiction, narrative and changing the patient's role]

I think that's correct. There is a very good book just out called *Fiction of the Brain* that talks about the biology of confabulation. What is important to understand is that the subjectivity is not just narrative, it's embodied. That's why it's important to do tests, nerve blocks: medical acts, because the patients are waiting for this as well. I'm not trying to present one kind of world that has to be done as opposed to another. Husserl was as against psychologism and Freud just as much as he was against Galileo. We understand that the subjectivity is vehicled by our body – any change in perception will be translated into a difference in meaning that may have a therapeutic effect. Many times when I have done a nerve block which relieves pain about I admit that there is nothing I can do to sustain that effect the patient says – that's fine – at least I know it's not in my head.

Why pain?

A psychological and evolutionary perspective

Amanda Williams

I've been interested in this subject for a number of years. When you look in neurological and psychological journals there is very little discussion of what the function of pain is. That's how we often come up with rather disembodied models and contextual models. I hope our discussions will come to an end-point of what we say to patients when they ask why they have pain. Not just 'why me?', but also 'why pain?' – why can it happen?

Pain promoting healing

'Suffering offers us the best protection for survival' (Domasio 1995) Pain always grabs our attention – it's difficult to prevent it. It prioritises escape – it's very motivating and pre-motor, and motor areas are among the first to show activation with pain. We think of the message going up to the brain and the brain thinking about it and deciding on and executing a course of action but all that is happening in a much more integrated way. Then in the longer term it promotes recovery and healing. There are amazingly few descriptions of injured animals (although in fact, Pat Wall wrote some nice ones) and there is very little in the primate literature about pain but even the veterinary schools are starting to engage with this. Pain has a very useful function in promoting healing by going into an energy conserving mode, which of course has common ground with other things, most notably depression. And it teaches us very powerfully – and we learn - to avoid it in future and to be vigilant about things that have hurt us. It has a social element as it generates signals of need for help. What happens if we don't have pain? Congenital insensitivity to pain usually causes death in childhood but in those who survive there is always severe and widespread damage to joints, bones and limbs, eyes and tongues and loss of digits. They also have a lot of behavioural and social problems which may be part of the whole genetic picture; and of course their parents have terrible problems in looking after them and controlling them – clearly physical punishment is no use. What we call pain is a response to noxious stimuli that we see throughout the animal kingdom.

In most of the literature about emotion pain is seen as the prototype of all the emotions, and yet a lot of psychological literature doesn't mention pain and some of the theorists deny that pain and emotion have anything to do with one another.

The sea slug has a very simple nervous system consisting of a ring of neurones around its body and no centralised brain. If you give it a shock to one side of its body you get a response. If the next day you stimulate both sides you get a different response on the side shocked before, so you are seeing learning in the simplest collection of neurones, and something emerging about pain in very simple organisms. People think about evolution in a horrible way that it's all about things killing each other. But it produces some very extraordinary things because they work in a particular environment. We also tend to think of evolution working on individuals but of course it works on genes. Genes go on to the next generation if they promoted survival and effective breeding of the vehicle they were in. A male Peacock has a very heavy tail which makes it difficult to escape from predators, but it's also an advertisement which is effective for mating so his genes get into the next generation. There are loads of genes which weren't successful so those have gone, but some hang around because they don't make a difference one way or the other. It's not just a question of survival of the individual in social insects like bees where the workers don't breed themselves but ensure survival of genes by looking after the queen. The

Meercat 'sentry' has the worst chance of getting caught by a predator as it's the last back to the burrow, but it promotes the survival of the group's genes.

Pain demands attention

The interruption model is a very useful one: constant pain demands constant interruption; repeated pain interrupts repeatedly however familiar it is. It demands action or inaction: escape from danger, or towards mitigation of pain we can't escape, such as visceral and head pain by stopping and trying to look after ourselves. Pain compels an animal to tend a wound by sparing and protecting the wounded part by reducing all other activities, and this takes priority of all other needs except survival. Attention ensures that we learn to avoid cues associated with the pain. So pain is there to promote our immediate and long-term wellbeing.

These are things that characterise chronic pain patients. We are looking at some pretty fundamental behaviours which are of course influenced by social response. There is some interesting archaeological evidence of healed major fractures (usually of the femur) in early hominids who must have been very disabled for a while and reliant on people to look after them.

We get very hung up on the proportionality between pain intensity and extent of tissue damage but if you look at the function of pain as attention grabbing etc there is really no need for any connection between them. The important thing is that pain is powerfully aversive so that it dominates attention and creates vigilance in order to generate action and learning. And we keep needing to be reminded that pain really does feel awful. Patients reveal fears if you let them talk like 'I'm terrified that I'm going to wake up paralysed'; or like a typical patient of mine with visceral pain of five years' duration convinced they have a tumour – OK they've had several scans in the past but 'the last one was six months ago and this pain is different'. Or this account by Julian Clary of waking up in the night with chest pain: '*I told my boyfriend.*

'Whatever' he muttered and I swear I saw him and the dog rolling their eyes in a simultaneous display of indifference. I was aghast but boyfriend quickly went back to sleep. I lay there in the dark monitoring my symptoms. My breathing had become shallow and laboured. The pain was definitely spreading up to my shoulders and neck. It became more intense even causing the occasional involuntary whimper but evidently not loud enough to disturb dog or boyfriend. I lay there offering God a deal: 'take the pain away and I'll never pretend to be ill for dramatic effect again'.

So why is pain so aversive?

Like all emotions it can be characterised as one of the ways get our goals sorted. At any one moment we have a vast amount of information coming in and therefore vast numbers of decisions to make. The emotions help to sort the information into: this matters – that matters – this matters most – that matters least – chuck the rest and keep what's important. Emotions set priorities so we can make important choices in less than a second. Emotions focus our top-down attention but of course attention is also focussed by stimuli coming in, so there is this matching/mismatching all the time between what we expect and the information coming in. We're not disturbed by the matches but it's the mismatches that grab our attention, particularly if they are about anything important.

In other areas we're very good at saying that these are universal ways of behaving and we don't doubt them. But people seem to get very suspicious of extending this beyond a few things like attachment (which we all accept, along with imprinting, and accounts of goslings following humans – a very simple and effective mechanism for protecting survival, which can even work across species). There isn't much literature about pain in animals but there are some interesting new ways of defining pain: the

validity of interpreting facial and behavioural expression of pain in newborn lambs being castrated without anaesthesia can be tested by seeing if it is reversed by analgesia, and of course the ewe certainly understands it.

So pain has meaning for all of us: meaning at a survival, high priority level. It's not something we can change by wishing it to be otherwise or by understanding it, although these things can make some difference.

Responses to another's pain

Pain also has a communicative aspect and showing other people pain can elicit help. There are verbal signals, protective behaviours and facial expressions, and the latter are the only specific ones – the others are pretty powerful but can express other things, which is why it's difficult to detect pain in babies and cognitively impaired people and to be sure that you know what you are dealing with. (There has been some interesting work on distinguishing facial expression of pain from that of other negative facial expressions using hospital doctors and nurses which showed that we are pretty good at this. The Australian Pain Society has published guidelines to help nurses and others recognise pain in elderly people)

Thinking in evolutionary terms, there is an advantage to the observer who sees someone else in pain which may warn them of danger, just as it is useful to detect fear in another. I've talked about behaviours promoting the wellbeing of kin because their genes go on but there is also non-kin altruism. People help one another for all sorts of reasons. It might be that they are related to them (not necessarily consciously); it may be because they are part of our close social group – we tend to reciprocate so if someone benefits us we repay with benefit (not necessarily the next moment – it could be over a long time-scale) and repay harm with harm. But we also do things for people when they will never be in a position to reciprocate. Reciprocity also works by reputation (*A helps B, B helps C, C helps A, D E and F were also watching A B & C*) Being known to be fair and being trusted is also advantageous. (There is some very interesting work going on at present on trust and deceit using evolution-derived hypotheses.)

Seeing someone else in pain provokes responses in the observer in the facial muscles, and the pre-motor areas (similar to that which is seen when intentionally imitating a pain face). There is autonomic arousal and activity in mirror neurones in the Anterior Cingulate Cortex. Empathy is partly built on mirror neurones and having a similar motor as well as emotional experience of what's going on in someone else (and is common in social animals) People actually feel distress when they see another person in pain. But a load of social things modulate this including your relationship with the other person (who for many of you will be a patient). A study in mice showed that if one was shocked in the presence of a litter-mate the latter responded much more to a subsequent shock – seeing its littermate in pain had made it hypersensitive. The response was much less in non-related mice. In humans, subjects were asked to observe an actor, whom they thought was another subject. They were all asked to say a little bit about themselves. The actor was asked to describe a recent event in such a way that it would elicit either pity and empathy, or disapproval. The actor received a pain stimulus and all subjects judged it similarly. But when the subjects were given a pain stimulus themselves, those who felt empathic towards the actor experienced pain as more intense and unpleasant than those who didn't feel empathic. This seemed to be a direct effect of empathy.

So we are responsive to one another's pain in all sorts of ways, often those we are not at all conscious of. We had a look at people estimating the intensity of pain in other peoples' faces. Of course one would never expect that by looking at a face you could have anything like the same experience as the person with the pain, but there are some groups, health professions among them, who systematically underestimate

other peoples' pain. Some chronic neuropathic pain patients allowed us to make their pain acutely worse and photograph them in this state. The subjects saw pictures of them while they were in the scanner but didn't have to respond or do anything. Once they were out they saw the pictures again and estimated the pain intensity shown in their faces. Their estimate of pain intensity was related to activation of pain processing areas by seeing someone else's pain, and empathy scores.

Influencing the experience of pain

So what do we say to patients? I find myself saying things like pain is a mechanism which warns us of danger and helps us avoid it. And although acute pain is very useful, in chronic pain the system has effectively gone wrong. I may tell them that people who don't feel pain rarely survive, and never without severe disability. I talk about alarm systems: a lot of people understand the overreaction of the immune system to quite innocuous substances and so by analogy they can understand overreaction of the pain system to things like touch in neuropathic pain or movement in musculoskeletal pain. A good alarm system has to be set so as to produce false alarms rather than to miss real threats. But it is important to acknowledge that like any complex system it is prone to going wrong and that there is lots we don't know, otherwise we cannot convince patients that it is not always a sign of danger. And I say that with understanding and training we can be less disturbed by it (the acceptance and mindfulness model) and with even more training we can turn it down to some extent. Some of you may have seen a paper about a guy they put in the scanner who was a lifelong practitioner of many Yogic techniques, and there was no response at all in the usual areas to quite strong pain stimuli. That's clearly too much to expect to teach individual patients but clearly we can influence the experience of pain in a number of ways and how we feel about it. So I think that is the message of hope that we can give people.

Discussion

One of the attributes of chronic pain that is usually quoted in distinguishing it from acute pain is that it is useless and purposeless, but in your session on evolutionary biology at an ASM a few years ago it was suggested by Bill Macrae that it isn't useless, and that part of the definition didn't hold true.

I think to an extent we were all speculating. Certainly in cancer pain which isn't 'standard' chronic pain there is usually a relationship between pain and disease progression. I do remember having discussions with Bill about this and I'm still not entirely convinced about its usefulness. But I'm sure there are ways in which both of us are right: I don't think it's one or the other.

On that point of cancer pain: we have been running a lot of patients with intrathecal catheters and can control their pain quite happily at home. What is noticeable over the last two years is that they seem to be living longer, and we don't know if this is because their pain is controlled or because there is less depression of their immune systems by morphine.

There are so many things we don't understand about global wellbeing that we don't understand, and being at home and in control are two more things that might help this. In a holistic way that makes sense.

Years ago even though all we had were systemic opiates we often used to find that when patients were admitted to the hospice with a prognosis of a week or two, six

months later they were off to bingo – and that seemed to be correlated with the quality of their symptom control rather than what you did it with.

I think it's partly to do with our rather simple representation of mean time of survival. Stephen Jager wrote about looking up survival time in his cancer and realising that although the mean time was very short there was a very long 'tail'; and perhaps it was just his good fortune that he lived a long time. But perhaps it was also partly because of his belief that he wasn't doomed.

Most of us are fascinated by what happens when acute pain becomes chronic. We don't really understand what the switch is. One of the things I'm impressed by is the amount of fear my patients have. They're terrified that if they move their back it's going to break or something. If you can get them over that it's amazing how much better the pain gets.

I think we're looking at chronic pain in the wrong way and you actually did that just then in saying that their pain gets better – but it's not that their pain gets better – they're still chronic pain patients - but rather that its intrusiveness becomes less and they're able to function.

The patient will say of course I've got a bad back but now I get on with my life. It's not a question of when an acute pain becomes chronic but when a chronic pain becomes so intrusive that they consult. The majority of chronic pain patients out there are - thank God – not coming to our clinics.

Fearful patients often have fascinating beliefs like Alex's chap with the two discs which are better unpicked and corrected. I remember a patient who was much more hopeless after seeing her scan 'because all my discs were black – they are dead'. It's just astounding the power of that kind of hopeless belief. I think the simplistic way doctors present the body as 'fixable' and medicalise things encourages this sort of thing. One of the things I have noticed about torture survivors is that they do have a very different notion of suffering being part of life.

One problem is that we don't see ourselves as part of that complaint that we are facing. We have had two examples featuring X-rays. No doubt you or your colleague wanted to help by getting the X-ray or MRI but when the patient rings back to ask about it you say 'it's all clear', they respond 'so what about my pain?' The medical person coming into this scenario is a very important factor because they can send someone off on the wrong track. As a doctor I have to learn to stop and before acting reflexively (as a response to my empathy) to think 'what is my reaction to this?'

As Alex says we're failing to address what the pain means to the patient.

But if you ask the patient what you can do for them they will say I need an X-ray!

This discussion has turned to intentionality and meaning and a lot of the things that you have shown images what Levinas said about the dependence of the other – we do things always in the context of embodied subjectivity – and not just our body. When my daughter falls the first thing she does is to look at me and how I respond. I would offer another definition of suffering by Eric Emmanuel Schmidt who says it can be expressed by two words: unfulfilled promise. He illustrates this with the kid who comes home from school and asks his father to play ball but is told he has to tidy his room and do his homework and eat his dinner first. All the time he is doing this he is thinking about the promise but when he is at last finished and asks his father to play he's told it's bedtime – it's too late. When patients come to us we say everything is

going to be OK because we're going to do something. The surgeon says I'm going to do a tiny operation... and then there we are left with this huge disappointment; nobody addresses it; the object is not given and that creates that sediment of human suffering. And a lot of the things that Katja and you have shown from a biological evolutionary point of view is voiced in what I have found in the phenomenological literature.

At the end of the day it's all about meaning and if we don't address the hurt – why does pain hurt? – then we won't help the patients. We can do all the science and stuff but it's only the moment when the patient says 'AHA!' however we get to it – will we have achieved anything.

That 'AHA!' moment can come when they see the X-ray. I've had a patient say 'that looks really strong' and start walking better straight away. There is going to be a different thing for each person, and there isn't enough time given to exploring the meaning for the patient and their fears. It has been said that the pain which is seen to be controllable – if you think the person you are consulting can fix it – is the pain which is unbearable.

A lot of the way we address the medical issue as a patient is the same – that if we do things and behave in a certain way we will get our treat which is the cure – and the more times we don't get it the more we're likely to expect suffering.

Another thing which is interesting – and I don't know if you've tried to talk to your colleagues about this – is passivity, because of the effect of the 'Other'. As clinicians we are being passive because of our expected role and the suffering being expressed from the 'Other'. How if you reflect that to your colleagues do they react if they realise they are caught in a very tight role dictated by their interpretation of the other, rather than being able to get into the moment to actually understand what is going on?

When we talk about these issues of object and subject and what is truth most people really don't get it. This is a whole different language – it's a linguistic as well as a conceptual reconstruction. It's difficult because it really puts into question our role as physicians – what are we there for? My short impression since I've been working in the States is that it's not only a matter of what patients expect from doctors but what we expect of each other. We are wedded into the life of science so how do we translate that into science? When we are talking about authority, objectivity and subjectivity we go very fast into a touchy-feely discussion and people say I'm a scientist and I don't want to talk about that sort of thing. So we are years away from talking about inter-subjectivity and recognising that it's not only the subjectivity of the patient, it's the embodied subjectivity of the patient and not only this but the inter-embodied subjectivity of myself visa vi that patient. Now it is possible to analyse this but it is far away conceptually from the pressures where I have to see the patient in X minutes and have to produce things which are tangible or worthy. I do that myself by explaining to the patient and to colleagues why I do not open the medical record, why I sometimes don't do a physical examination.

Surely what we're doing to help patients make their meaning is we're seeking to reframe their narrative in an inter-subjective space which makes sense to them and us and our colleagues.

In a situation where the whole doctor-patient dialogue is completely different it's very difficult to introduce new ideas because before accepting the need for change people have to acknowledge that there is a problem. Communication comes from the Latin word 'communicare' which means to share – so if there's no sharing going on how can there be any inter-subjective exchange?

Consciousness Studies and Understanding Pain: Reciprocal Lessons

Ron Chrisley

One of my recent research areas is in this field of consciousness studies and I wanted to talk today about what pain looks like from this perspective. As with pain so with this talk, *Expectation Management* is key. As will become painfully obvious I'm not a pain expert but I wanted to let you know what my field of study does think pain is and the theories we've developed to try to understand conscious experience in general and pain experience in particular. So my purpose is first and foremost for you to inform me rather than the other way round, and to provoke discussion.

The mind as part of the physical world

The central goal of cognitive science is to explain how it can be possible for the mind to be part of the physical world – assuming from the outset a naturalistic world-view where there are no fundamental dualisms. Everything is at root one thing and everything can be seen as different aspects, different modes of description and discourse about that one thing. I'm not saying that that one reality is say, physics. Physics is just one means of discourse. But what we want to understand is how all these different modes of discourse can be true and about the same thing even when they are so different from one another. One of them is psychological discourse: experiential discourse or pain talk. We're rejecting dualism but not by eliminating, for instance, the experience of pain. We're not saying the only thing that exists is matter which we can talk about with physics; we're acknowledging that pain exists, but asking how it can be that both these discourses are legitimate. We're not trying to reduce one into the other – not trying to say that all pain talk is about physical states. Some of the theories of examining are reductionistic. I'm not necessarily endorsing them but just letting you know about some of the theories of pain which are present in my field. I think there are ways of avoiding being a crass reductionist. The viewpoint I'm assuming is a kind of naturalism, making it intelligible how pain talk can be a correct way of talking about the same world as physics talk, neuroscience talk, etc.

In cognitive science the big conceptual tool – the big idea – is *Computationalism* and related to that *Functionalism*. To put it into its simplest and most basic form, the central idea is that of a computer. So how is it that physical things can also be mental things? The idea is that we can look at these devices that have come on the scene in the last 70 years or so and learn a lesson about how something can be both a physical object, as clearly computers are, but can also understand them as having goals and beliefs and intentions etc. Not in a literal sense; no-one thinks that a computer has a mind. But the point is that we can understand how the computer can model aspects, or have certain structural features of beliefs and desires etc. and also understand how it is a physical thing. That's the central contribution of cognitive science: it seems that we can understand how reason - at least in some senses – can be mechanised and how a physical process can ape rational processes.

I've always thought computers were a bad model because they use linear logic; humans guess and test and if we only used linear logic we'd never get anywhere.

There aren't too many people who think the architecture of what's going on in a PC is a very good model for what's going on in the brain – the point I am trying to make is not addressed at that level. It's a kind of 'in principle' argument. Some people did try

to take the computer model far too literally and there are too many dead ends that way, but at least we have an idea of how something can be understandable from the mental-intentional-belief/desire talk perspective as well as the physical perspective, and we don't find it a mystery. Human beings are still a mystery – how we can be both mental and physical things, but computers are not a mystery. We know exactly how a chess-playing computer is interpretable and predictable if you regard it as chess player which understands the rules and is trying to beat you etc. But for a physicist to predict what it's going to do from its processors and circuitry may be possible in principle but is impossible in practice. So we now understand how something can be a quite complex physical system but nevertheless just happens to be interpretable from our 'folk-psychological' point of view. Even if we don't have this kind of hardware architecture nevertheless the general idea is that maybe by virtue of having certain abstract formal functional states and by identifying that level of analysis you will be able to be able to understand how something with those states could be interpretable as having a mind, and also be physically realised. That is really the big insight of cognitive science.

The focus in giving this cognitive science explanation is on what are known as propositional attitudes: that is states such as beliefs, desires, having goals, memory and intentions etc.; cognitive states in a more traditional sense that are more third-personal. The challenge for cognitive science more recently has been to explain those states in their first-person aspect – such as visual experience or indeed pain. Can you generalise this approach whose main strength has been to explain cognitive states to account for mentality in all its rich glory? Can we have a naturalistic understanding of pain from this perspective?

Pain and identity theory

Let's take a little detour and look at some other ideas about how pain can be part of the natural world. One is an *identity* theory. You can just say that pains are identical with brain states for certain types of neural activity. There is usually thought to be two problems with that: firstly how pains *feel* doesn't seem to be explained by this identity – it seems that brain states aren't stabbing etc. – the kind of reports people give about their pain experience doesn't seem to apply to brain states. Brain states are associated with these microscopic neurones, grey matter is grey and wet, and doesn't seem to have the same properties as pain so how can it be the same thing? My brain is located in my head but pain doesn't feel as if it is in my head – it feels like it is in my foot or wherever. But if you instead try to resolve the location problem by trying to identify pain with different events in say where the pain starts - if you identify pain in the hand with something in the hand, that's not going to work either because we know there can be phantom limb pain: it can't be in the hand because there is no hand, but it can't be in the head because there is no hand in the head. A simple identity is just a confusion. A lot of philosophers generally agree that conscious experience – the way people feel – has four characteristics: first it is *private* – only I am aware of how my experiences feel to me. Someone else can find out by inferring from my behaviour or talking to me but only I can know that directly. That's also related to the immediacy and directness of my awareness; it's not by virtue of reasoning or looking at myself that I'm aware of how my pain feels. It's also *ineffable*: you can't give that experience to somebody else by coming up with some words – unlike say the belief that Paris is the capital of France, which we can share, and share a mental state regarding it. So there are problems with identity theory.

I made this detour as if you're going to continue to use the computer metaphor you can say – well, I can understand how we might have this abstract computational functional organisation in the brain but I don't see why it feels anything to be that thing. And also, why does that computational state in my brain have anything to do

with my hand or my foot? Usually when people give a computational analysis of the mind they don't include the foot. It's part of the important physical state that's involved with pain experience. So identity theory also confronts an orthodox scientific explanation.

A different explanation

But you may be pleased to hear that that kind of trivial, simplistic cognitive science theory of pain isn't the only thing that's available. There has been a turn to *representationalist* theory. To explain what this means you need a little background. The motivation for the representationalist explanation of pain comes from the shortcomings of theories of perception in general. For example what is it to have a visual experience? There is a naïve theory which says that seeing is a matter of being related to an object, so if I see this chair I'm related to the chair in a particular way. That can take you pretty far but has some problems, for instance what about illusions? When I see things that aren't there, there is no object to be related to, so we can't understand seeing in this way unless we postulate non-existent objects, and the naturalist philosopher gets a little concerned. Indirect theories of perception tried to solve the problem of illusion by saying we're not directly related to an object when we see something; we are related to an object but it's not just the object in the world, it's some kind of mental particular, some sense datum, and that's the thing we see. I don't see the chair directly but there's some kind of image that has some of the same properties – colour, shape etc - as the chair and that's what I'm seeing, and I can be related to that mental particular even if there's no chair there. And we can get things wrong – the chair is green but we can perceive it as another colour due to a trick of the light or something. So the indirect theoreticians tried to address the problem of illusion but they did so at the price of introducing these ghostly mental intermediaries which we are seeing and are directly aware. And so we are normally only indirectly aware of the world, and that opens up a vale of deception – the possibility of scepticism, that we never really make contact with the world; we only make contact with our private particulars. And that is a generally unattractive view to most philosophers.

So we are looking for an alternative approach to understanding perception that can be applied to pain. Representationalism is supposed to overcome the problems of both the naïve theory and the intermediate perception theory, and handle the case of illusion without postulating ghostly mental particulars. Representationalism says to have a visual experience is to be in some state that represents the world to be in a particular way. So it might represent the world in the sense that there is a green chair-like object in front of me: I'm not looking at this object, it's not a mental particular; it's rather that I am in a state which does represent the world in that way, and because I am in that state I have an experience of the world being that way. When the representations are correct, when the world really *is* as the state is representing the world as being, then I have successful perception and I really am seeing the object. When my representation is incorrect, when I'm representing the world as having a chair there that isn't there, then I don't have successful perception. I merely have a visual experience of that particular character, the same as the experience you have when there really is a chair there; but by hypothesis in this weird case I'm not experiencing the world, but I am having an experience which is given by the representational content of the state I'm in.

So this solves the problem of illusion without having to introduce something in between the world that you're looking at – that you're aware of – you're not aware of these representations but they constitute you. They are a way of characterising your experience, but you don't look at your experiences, you have them. However, you don't get something for nothing and the price you pay is that you have to have some

kind of naturalistic theory of representation. What is it for a physical state to represent the world? OK, maybe if I could understand how a brain state could represent the world then I could tell this whole story about representational analysis of perception. People do give theories about how brain states can represent the world. We already have an intuition using computer metaphor: it seems very plausible to say that British Airways computers have a representation of flights and passengers, and when those representations are wrong bad things happen and when they are right things work smoother; and we can use that ‘in principle’ intuition of how these things manage to represent the world to provide some insight into how the brain represents the world. You could say that these “sub-personal” aspects of my brain which aren’t at the level of experience – the representational properties – produce the personal level experiential properties. So with the right kind of sub-personal brain state that represents a chair as being in front of me in the right kind of conditions, I will have an experience of the chair.

Other theories include causal theories which say that a state represents that which caused it, which is nice and simple but has problems I’m not going to go into, and finally evolutionary theories. These say that a state in a biological system represents those conditions that it was evolved to represent in the ancestors of this organism.

How can we apply this to pain?

This has been a long detour to provide some background. The idea here is that pain experiences are perceptual experiences; like visual experiences they represent the world in a particular way. In the same way that the representational approach to visual experience solved problems for that, we also have the representational approach to pain solving similar problems for pain experience. Take pain location: how is it that pain can be located in an arm when the patient doesn’t have an arm? How can pain be located in a foot when we also think it is located in the head? Representationalism solves those problems: it says – look, you have to make a distinction between the location of the representation, and the location that the representation is a representation of. Think of the sentence: ‘the Nile is long’. In this instance that representation [of the sentence] is located on [this] screen, but it’s about a river in Egypt. Similarly you can have a representation, a brain state that represents the world being in a particular way. The part of the world that it is representing is in this part of the world, but the experience – the representation that is responsible for the character of the experience – is not located there but possibly somewhere in the brain. Something is being represented as painful but what is it that is being represented? In the case of the veridical perception of the chair, there is a representation of a green object that is really there, but what about pain? In representational theory, the idea is that pains are perceptions and therefore perceptions of something, and those things are being perceived in a particular way. So it’s tissue damage or bodily disorder that is being perceived, and those things are being perceived in a painful way, the same as the chair is perceived in a green way.

The problem that this way of looking at pain faces is that it might work well for these kinds of dispassionate, non-affective cognitive states like visual perception – that I’m not going to get excited about or motivated by – but how can it capture the awfulness of pain which seems to go beyond the facts of a matter like the colour and shape of a chair – it’s ‘hot’ cognition, not ‘cold’ and has an affective character. How can a representational theory handle that? One can try to divide and conquer here and say let’s be a little less simplistic in our analysis, and note that there can be a dissociation between the sensory qualities and the awfulness of pain, as is reported to be the case after lobotomy, or in the common experience after morphine administration that ‘the pain is still there but I don’t mind it’. So maybe those sensory qualities that can be dissociated from the awfulness are like the green-ness of the

chair and can be understood in terms of representational content. But we still have the residue of awfulness which doesn't seem to be amenable to this kind of explanation. Representing something as awful is different from it's being awful, and this seems one level too removed from the actual experience – indeed this is a regress: it seems just passing the buck and deferring explanation to try explain feeling awful as simply representing the world as being awful.

One might try to resolve this problem with a type of hybrid theory where you take the advantages of the representational account and combine it with the advantages of a functional account. The former could give a satisfactory account of the sensory properties of pain and its location, and functionalism could deal with the awfulness. You could say that the awfulness is a result of its being a negative functional state. This is a state that one tries to get out of. In a sense we are unifying two senses of the word functional: both the biological sense as in the purpose of pain from an evolutionary standpoint, but the more obscure meaning of the word as describing abstract formal causal states (which we talked about earlier in the context of computer metaphor) – which are such that they tend to make themselves less likely and tend to make the system get out of that state. We're not talking here of the personal – of the subject trying to get out of this state but at the sub-personal level. How the brain is built and how this state causes mechanisms to operate that make this state less likely. Negative functional states are those that cause the activation of mechanisms that have the function of getting the system out of that state, or states for which there are standing mechanisms that have the function of preventing the state or making it less likely. So the idea is that we can combine this idea of negative functional states with the representationalist account we had before, which handles the aspects of pain other than its awfulness. So the experience of awfulness is because it is a state that the organism which you are tries to get out of. One problem is that there are many negative states that are not pain states that the organism tries to get out of or correct, from hunger to simply being off balance; negative functional states are not themselves pain states, but where a negative functional state is combined with a state that represents tissue damage and locates that state somewhere in the body, those two things together might be an account of pain.

Some philosophers look at our confused notions of pain and instead of an analysis like this one they try to come up with a solution. They throw up their hands and say perhaps there's nothing which corresponds with our everyday conception of pain; they also have problems with certain ways of understanding consciousness which they find equally incoherent. So they suggest that we should eliminate this from scientific or even every day discourse and just say that there is nothing that is private or ineffable or perceived immediately by the subject – if anything even met those definitions this is something we could never talk about in a coherent way – and the subject should go the same way as phlogiston, witches and mermaids: all notions we thought at one time referred to something real but now know they didn't. But I think philosophers who think this way are missing the trick. There is a little bit of truth in what they say but they are obviously throwing out the baby with the bathwater. First of all there is the obvious question: what are you going to replace pain talk with? Instead of going into that I want to emphasise that the historical examples they often give are not analogous. Phlogiston was a theoretical posit and mermaids etc. were never things we had such direct awareness of as pain. The fact that we might be wrong about the nature of pain doesn't mean that it should be eliminated. The causal theory of reference says that terms are about whatever caused them, independently of what is believed about that term. So for instance even if the ancients had a lot of false beliefs about gold we don't say they talked about nothing – they talked about gold. And even if we have false or incoherent beliefs about pain that doesn't mean we're talking about nothing; there is something called pain.

Discussion

Metaphorically speaking, both scientists and philosophers seem to begin with and stick with mental models which are overly restricted - in a sense using only three colours to make mental maps and models. This is why no real success has ensued over the past 100 years. The example is similar to finding how many different colours are necessary so to create meaningful, geographical maps. Mathematically we know that the minimum number of colours necessary to adequately differentiate countries upon a map is four. So by analogy, it would seem that creating useful and meaningful models for understanding the mind-brain will also require consideration of at least one more new concept – e.g. four or five categories - to be sufficiently complete. If we continue to work with less information than the system needs (an insufficient number of equations and variables) we'll never solve the problem. A good example is the success of the five factor model of Chinese medicine. The model works even though it is logically incorrect, but the dimensions for characterization are sufficiently large.

It seems when we're talking about representationalism, our situation is analogous to that of the colour-map problem. To explain our mental images of our body and its surroundings and how these come into existence has not been adequately answered to date. I think we need to begin to see that our mental images and the objects creating them (actual or illusionary) are meaningless when considered as two independent events rather than as a complementary pair. And so when we talk about our perceptions of the world, yes, a Cartesian theatre comes into being, not within the mind-brain, but co-local with the actual objects of the world. Our mental image is back-projected and the Cartesian theatre is outside where things actually are. Our body knows where our body is and unless we are deluded we know that the chair is there or is not there. It's like quantum physics – there are very few physicists that have actually taken the time to understand what's going on ... they say that a photon is neither and is both a particle and a wave - and they wring their hands and say it's an unsolvable position. They are not willing to actually 'sit down' and work out how a quantum goes from here to there so they throw away everything because they aren't willing to address the issue directly that maybe there is an image - there is actually one thing but it always has to be seen from two perspectives.

But if you follow that through you end up with the Cartesian theatre surely...

No, Cartesian theatre is not a bad model, as long as we understand that our mental image is not inside the brain, but is back-projected out onto the external objects stimulating its production – I can touch this chair and know it is present (assuming normal mental status) because the image created by my mind-brain is made co-local with the objects outside my brain. Because the image is co-local, there's no Cartesian problem – there's no problem with having a world image.

I respectfully completely disagree with that. You're back with all the problems of dualism. You've now got two chairs: light bounced off chair one and hit my retina, and then I have this experience and project a phenomenal chair out into the world which is located in the same place as the real chair but we have one too many chairs here. You don't want to have to say therefore there must be an object: the phenomenological chair that I am related to - how do you see the phenomenological chair? Does light bounce off it and hit my retina? Am I able to be wrong about the phenomenological chair or am I always guaranteed to be right about it. This is where we came in – we want to get rid of the ghostly objects and say all there is here is one

world and say that some parts of the world can be representations of other parts of the world – it isn't an extra-phenomenal thing: its non-phenomenal things reacting and representing each other and giving an experience.

I think we are ignoring the basic tenets of quantum mechanics. Complementarity is not the same as dualism – complementarity states that even though each quantum likely exists as a singleness, everything which we observe must be understood and expressed (macroscopically speaking) from two viewpoints since we do not have the proper language to directly describe quantum mechanical events as yet. I'm not saying this statement is inherently correct, but cognitive science continues to fail to explain anything using classical concepts and viewpoints. Mind versus brain is not reasonable; cognitive science must begin to consider a complementary brain-mind or mind-brain. The problem is that, in actuality, there are no entities which exist as independent objects and particles - all is simply geometry and vibrations.

I'm not eliminating the mental – I'm saying that the mental can be understood as... I'm agreeing with your dual aspect theory – if you look at this physical interaction in the right way you will understand that it's a case of this subject experiencing that thing. We don't need to say that there are two ontologies – a phenomenal chair and a physical chair – you can keep the ontology all physical and just say we can look at the very same physical events with a different language. Cognitive science doesn't want to put itself out of a job: it doesn't want to say there is no cognition, but I don't think mental images are the kind of thing that there is a subject looking at. I think they are a way of characterising how I look at this chair.

There is some evidence showing uniformity in awfulness to come out of fMRI studies showing complementarity between images of the brain suffering pain and a brain suffering emotion such as bereavement, which lend support to what you have been saying.

Thank you – some people have a conception of philosophy as a completely abstract enterprise and if you take into account physical fact or have implications about empirical facts then you're not doing philosophy, you're doing science – but I'm very happy to hear of supportive data.

I'm very grateful of this discussion for two reasons: one is because it shows that mine wasn't the most opaque and complex, and the second that you really took upon yourself a daunting task to talk about a subject that we are completely uneducated about. I'm not sure that everybody in the audience really appreciated what you were saying about things like strong and weak artificial intelligence, or the inverted spectra and other big things in the philosophy of the mind – but this was a summary of over fifty years of very smart cookies thinking about it and a high order of thought. My question is a very practical one for us as clinicians: I'm not trying to shoot anything down but you have talked about the hard problem of pain as if it were the hard problem of consciousness. The hard problem of consciousness is why would any biological physical process create an experience? – something we have been trying to answer for at least two or three decades. Common attitudes are either to say there's not a problem, or to try to close the gap by reducing things, or reductio ad absurdum, which like the Cartesian theory doesn't work. But there are things that do work like functional MRI – and maybe you are saying that there's a third way of combining hybrids of the good stuff like weak AI and indirect representation. So my question is: because of all this can we start to look at pain as a paradigm to research consciousness? Because if so, suddenly the importance of pain becomes very "up there" in trying to look at what's going on, and the way basic scientists are dealing

with it is not good; and the whole neural correlate of consciousness is something we have to rethink. Is it your case that you are using pain and consciousness interchangeably because it is worthy? How different is hybrid theory from the enactment theory of saying that because of the way I am I experience the world the way it is, and also because the world is the way it is I experience it the way I am?

That reminds me of Putnam's saying '*the mind and the world together make up the mind and the world.*' I don't think I understand enactment theory well enough to know more than you have already said.

Anyway my first question was can pain be the model? Can we say that thanks to us we can at last answer the hard problem?!

I do think we need to pay more attention to the special case of pain. Philosophers tend to focus on certain aspects of experience more than others. Pain does get a good look in every now and then but it's a very austere philosopher's notion of pain – it's not real pain – real experiences of people who are in pain. Philosophers have tried to address some of the data but you would find it quite superficial – only some aspects of pain and some of the wealth of neurophysiological data.

On the other hand I do think some mistakes are made in interpreting this data: I think philosophers should be giving more help in this. For instance I think in particular that mirror neurones and their implications for empathy etc. are misunderstood in general.

It might be a bit of a fudge but if we assume a naturalistic world view as given, and then try to reconcile the apparently conflicting manifestations of that, it does seem to tie up with what Alex was saying this morning that we're all coming from different places; and without having to have crass reductionism, and without having to try to reduce one theory into another, we can recognize that they may all be partial manifestations of one world view and all acceptable to piece together to make a whole. And that seems to me to be a much more fruitful way to move forward – it gets away from this territorialism.

I'm happy with that despite any impression I might have given to the contrary. But there's one thing that stops me being a pluralist. The pluralist is content to say that there are all sorts of ways of looking at the world and leave it at that. But I say – no, it's incumbent on us to try to understand that these are all ways of trying to understand the same things and we don't just not communicate, or fail to look for ways in which two things can be both true; pluralism is a great start but we have to understand how they might all be coherent views of the same world – although some might have to be rejected as they don't fit in with the rest.

What about the sort of approach that physicists use when they are looking for a universal theory: admitting that there might not be one. Or in an atlas of the world you can't have single map of the world but you have to have a whole set of maps (physical, political etc.) to describe different aspects of it.

I don't think it's a theory of everything that we're looking at. We're saying as clinicians or basic scientists we have a very sloppy way of thinking and interpreting things. Our heuristics are very poor – we confuse explanations with descriptions. I hope after this meeting we will start to talk to people with interdisciplinary backgrounds in philosophy, computational linguistics, in artificial intelligence, not expecting to explain everything but just to start to explain – instead of just describing; like Molière said 'opium puts us to sleep by its dormative powers.'

The point about consciousness fascinates me. Amanda talked about children with congenital absence of pain this morning who bite their fingers off. That suggests to me that you need pain for recognition of the body itself. They have nociception – they feel touch but no pain.

This is a classic philosophical conundrum. We know they don't exhibit aversive behaviour, but do we say that they have the pain but don't respond to it properly, or do they not have pain at all? Dennet, who wrote a lot about elimination, thinks this question can possibly be resolved physiologically but never phenomenologically. He just gives up, but I was hoping to say that the puzzle has reappeared but maybe we can through this multi-discourse analysis and come up with an intelligible way of resolving the issue. It might be that it depends on your purposes: instead of asking is there pain or not, we might have to distinguish between behaviourally expressed pain vs. reportable pain vs. sense pain. I was at a conference where a member of the audience asked me what question about consciousness would I most like to be answered in my lifetime and after some thought I replied that what I would really like is to know what the right questions are! The concepts we are using to resolve these perceptual conundrums were evolved for one purpose like psychological communication with one another about pain or whatever and when we want to go beyond that and come up with sophisticated therapies or scientific answers to the hard problem we may have to recognize that we will need to use successor concepts that are more suited to the task. We don't see the 'promised land' yet but we need to know what steps we need to take to see it, let alone get there.

What are the implications for pain therapies? The primary relevance of philosophy is indirect – the truth is the good. But I would like to offer some speculative suggestions. Might there be some relevance of representationalism to therapy? How would it affect pain experience for patients to conceive of their pains as representational or therapists to think of patients' pain as representational?

Could therapies be improved by careful study of *how* the tissue damage is represented? Might functionalism be useful therapeutically? If the functional state of pain can be made to be desirable (as in classical conditioning/ associative learning), might its negative affect be decreased? If we can understand the difference between the functional states underlying pain and merely undesirable experiences (negative functional states) in general, might we be able to turn the former into the latter?

Suffering: Is it just matter and its transformations or are we missing something?

Alan Lannigan

My interest in pain stretches back about 20 years to the time when I first did a Registrar job in A&E and found out that there were a lot of people with severe pain who didn't seem to have suffered a significant amount of tissue damage. For a while I followed the standard way out when confronted with this problem: blame the patient, categorize them as hysterical, having low pain threshold, or simply wimps. But it was soon obvious that you could have real, severe pain and no pathology and that there was no explanation for it. Conversely I have seen patients with serious injuries and little or no pain. Initially I thought science would provide me with an answer but it didn't. It's still the case that none of the books deal with severe acute pain in the absence of significant pathology. While recognising that science provides a part of the puzzle the scientific aspect waned in my affections. So my reading gradually extended from traditional science to chaos, complexity and fuzzy logic and then to mythology and philosophy of the mind. For a few years I've been stuck with the same feelings about the analytic, reductive nature of science and gradually come to believe that a synthesis of all available knowledge is a better way forward than a purely scientific view.

Science only provides some of the answers

I work as a full time A&E Consultant seeing all sorts of medical and trauma patients. The kind of people who come back to my clinics usually don't have pathology which needs anything done about it. If I want to get them to recover, plasters and physio etc. only get in the way. By and large they need explanation, encouragement, motivation, advice on how to exercise and sometimes a bit of 'cruel to be kind' pushing. Ultimately I want to prevent them getting to a pain clinic and have a good record of early discharge and recovery without complicated interventions.

With experience some of the mystery has disappeared from my view of pain. I don't get baffled as often as before. In my work I generally know how to approach difficult acute pain even if I can't always juggle all the balls that need to be kept in the air simultaneously. This talk is about promoting the idea that science can only provide some of the answers and cannot provide a system or framework or context in which all the individuals with pain are understandable. However, I do believe that Mother Nature or God or the guiding principle or logos, call it what you will, is using simple ideas to produce huge complexity and that within any situation there are a small number of facts which make it understandable. I've had a good trawl through lots of explanations from pre-Socratic philosophers and mythologies through Newtonian physics, Einstein, Chaos, Complexity, and philosophy. What I came up with as an alternative to traditional views of Materialism is what follows. For the purposes of this talk I'm using images and terminology that I'm hoping will maintain interest but won't have strict academic validity.

I'm a fan of having a system which helps me to understand something and like a good few others with the same idea I like the machine explanation particularly if it involves cars. Suppose you have a car with a problem and you want to fix it. It is a difficult problem and you have to look at many parts and they way they work. Science will help you even as far as knowing engine operation in great detail, acceleration, corrosion, energy release from fuel etc. In the end you may know the workings of a car in great detail and there is nothing of importance missing. I tend to think in terms of cars when posing a mechanistic problem and believe that to understand anything you need to have a model of its operation or a system. Understanding from a model

is different from knowing. Many people know how to drive a car without understanding how it works or how it may go wrong.

The model I have for understanding a car is based on Newtonian type physics. This means that when a problem arises I can use understanding to work it out rather than having to know every fact. It can be taken apart and put it back together and everything is fine.

Scientific explanation isn't the whole explanation

We all grew up with a fairly mechanical concept of how the world works, but unfortunately you can't do this with pain or with a patient with a difficult pain problem. You can't solve a pain problem by taking it to pieces and putting it back together again.

What is missing from the science here that makes a problem like suffering so difficult? A naive view of science would make you think that pain has to do with chemicals, nerve pathways, synapses, receptors and so on but you don't experience pain as receptor stimulation, nerve impulses, and a web of cerebral neuron activity. It's pain and it's not reducible. Knowing the science of pain doesn't mean you understand what is happening. Scientific explanation isn't the whole explanation. There are some key differences between systems that can be explained via science and others like pain that can not. Facts are not all that is required for a description of something.

If you had been born with monochrome vision or raised in a monochrome world, you would never be able to understand what it is to see red even if you knew all the scientific facts about redness. There's something about redness that can't be described by wave frequency, its part in the spectrum or associations with blood or tomatoes.

In the same way there is something missing from a scientific description of pain and that is the feeling of pain and what has gone into making of that feeling. Science is just not a discipline that is structured in a way that could admit the validity of a subjective feeling. I'm not going to argue that there is a way of experiencing red if you have monochrome vision or that there is a way to access someone's subjective life but there is a way to admit its validity.

What are we missing?

The classic definition of pain (unpleasant, sensory, emotional, subjective experience expressed in terms of tissue damage etc.) doesn't tell you much about what science could contribute to it – there's no scientific definition of unpleasantness. Science could probably fudge an explanation of sensory things but not subjectivity. There are a few other things which have emerged about pain in recent years such as plasticity and the way it has evolved as a protective mechanism, and despite its limitations science is useful for some things and can give us some answers.

There is very little about matter in the philosophy of science; most of this is about the mechanism for doing science rather than explaining what matter is or what transformation is. Materialism is taken to be about Matter and its Transformations but philosophers seem to have left study of these to the scientists. When we encounter a problem that seems too complicated we break it down into smaller more easily understandable pieces in the process called reduction. The danger here is that we may reduce to the point where we miss the big picture. We think we have a fairly clear idea of what matter is about from everyday experience and Newtonian science but when we get to the point when complex things arise it's a bit of a mystery. So are we missing something about matter or is it the transformations that we have failed to

explain? I would say that it is transformation that we don't understand and I'd like to suggest reasons why and also have a stab at filling the intellectual gap.

An alternative to Newton's second law

Given our intellectual human background as materialists I think it's reasonable to start with stuff, the physical stuff. Physics is based on just three things – mass, distance and time. Simple well known equations like $E=mc^2$, $F=ma$, $KE = \frac{1}{2}mv^2$, speed, acceleration, force, energy are all derivations of these three. Newton's second law (Force = mass x acceleration, which can also be expressed as $F=kg\cdot m/s^2$) is the scientific basis of much of what has happened in the last couple of hundred years, and I want to look at some of the background that has made its use so successful. It is an equation which gives you some kind of basis of operation – a way of using some facts to produce something else. It contains an idea of something happening, of action or change. There is some basic stuff involved. These things are all part of a relationship: force is proportional to mass, and inversely proportional to time squared. When you run the equation, something changes but some basic things don't change; there is conservation of mass so even though time and position change some fundamental properties don't. If you apply this to the real world the application of force to a mass produces something new i.e. acceleration. Acceleration and force can be explained in terms of the basic three elements but is not present in any of them. These six features (stuff, change, relationship, plan, balance and new phenomenon) I'll expand on later.

Some equations, however, are not soluble. You don't get an answer – what happens is that you get an answer that feeds itself back in, i.e. the answer becomes the starting point for repeating the equation. Take the recursive equation $r = rx(1-x)$ which describes theoretical populations with limited food supply. For some values of r ($r < 2$ and > 0) it is a linear equation like $F=ma$ and has an answer. Anything that operates within this range of values works mechanically and is acceptable in science. For other values above 2 it oscillates between high and low values and for a narrow range of values it is chaotic. In the chaotic range this means that there are an infinite number of answers from a small starting point. Instead of having a fixed answer you have infinite variability (and the opportunity to choose whatever answer you want if you have the means to isolate it).

Where chaos or oscillation is the outcome scientists have shunned these equations as unhelpful as they cannot be used for prediction and would lead to unstable mechanics. The same happens if you have multiple variables. Once you have three or more variables which interfere with one another you lose the ability to operate mechanically or like clockwork.

(Just to give an example where you can find linearity, oscillation and chaos. If you blow gently into any wind instrument you'll get linear air flow and no noise. Blow a bit harder and you get a note which is regular oscillation. Blow harder still and you get white noise / hiss which is chaotic. In a reed instrument you get a coarse chaotic noise from which the instrument isolates notes).

Each cycle of the equation is different from the last. So one of the features is that the rules change by playing the game and a very simple system like that is plastic. The things we have been saying about pain seem to be more akin to this kind of system, than to a Newtonian system with only one answer. How many natural occurrences in biology are mechanistic? Think of animal populations, respiratory rate, drug requirements – and for that matter weather. Biological systems are like this: pick any variable in an organic system and look at the number of other things which affect it – take pulse rate as an example, which involves sympathetic and parasympathetic nerves, circulating catecholamines, temperature, ion concentrations, internal flow of electricity, and arousal etc.

So instead of looking to mechanistic principles to answer our questions about pain and plasticity might chaotic systems give us a clue to how biological variables work?

The main features of these systems that I want to develop are activity, in cycles, self organisation, similarity over scales and the idea of the attractor. Some chaotic systems can be visualised as a point moving around an area on a graph. This central area doesn't have a physical presence but it seems determine the movement of the point. So something with no physical presence does exist and has causal effects.

A commonsense approach

Comparing the science of pain and the experience of suffering brings up several conflicts: linear versus chaotic, empirical versus subjective, reductive versus non-reductive, repeatability versus unique, hard wired versus plastic, manufactured versus evolved, tangible versus intangible.

So if science doesn't have all the answers where else do I look for good concept of suffering or a good concept of consciousness? It needs a commonsense approach – you can't just dive into it. The world has a rational basis – we believe that things happen for a reason and aren't just random events. People in the past believed that pain was punishment from God and completely external but we don't believe that any more. Pain is a biological process, and biology has a structure. Biology / Nature is frugal and the number of original ideas it uses to produce its structure are small. There are things you find all over the natural world such as the fact that DNA is found in all cells. Re-invention is avoided. So is there a simple way of accounting for everything that happens?

When I first started to look at this I took a big piece of paper and tried to list everything that contributes to pain and all the things that are part of the pain process, and draw links between them. I came up with something that looked like alphabetti spaghetti with words and lines everywhere. When you've got such highly complex things you tend not to stand back far enough, and see far too much happening. So I thought I would look to see how other people did it with specific ideas on grouping rather than reduction.

As I did this, there were things I thought we could leave in and things we could leave out. Causality was an early casualty: It's fine when you have a line running from A to B but it can tie you in knots where it goes round and round with feedback and no starting or end point. It's fine for machines but not people. Dualism was next: there's a reasonable amount of support for ignoring dualism on the basis that just counting the types of substance produces problems.

I think everybody agrees that there has to be some matter and stuff and that something is going to have to happen to it which will make changes. There have to be connections between things and the system has to operate according to some kind of plan – it can't just be random. It has to be unitary though with different aspects and facets, but these can't be split off.

In the philosophy of biology things tend to be regarded as being on a hierarchical scale, starting with atoms and working through small molecules like CO₂, H₂O, CH₄, NH₃ to mid sized molecules such as sugars, amino acids, fatty acids, and macro molecules such as carbohydrates, proteins, and fats. Next come organelles, cells, tissues and organisms. Proceeding further up the scale you come to family groups, local societies, and organization on regional, national and continental levels. At the top you have the global / Gaia perspective of the whole planet as a vast self-regulating organism.

A blueprint for matter

So matter is a unitary thing but it has different aspects and scales, as well as properties. You've got stuff, you've got change happening, and connection between things so you have a relationship, a plan or a blueprint. You've got some means of self-organization to keep balance, health and integrity. And you get things that seem to arise out of nowhere: 'spirit' things which are intangible but they are there and they are necessary if you want to understand the whole. None of these are describable except in terms of the others. (For example, to go back to Newton you can't say what mass is without reference to distance and time) None of these can be split off from the others. It's like a magnet with a North and a South Pole. If you divide it you don't get one magnet with a north and another with a south, you get two smaller magnets each with a North and a South Pole. Imagine a magnet that didn't just have two poles but one that had North/South, East/west and Up/Down. No matter what size it is or how much you reduce it you still have all six poles. If you are looking at a biological system it's not just the stuff involved – it's what is happening, it's how this stuff gets related to other stuff, keeping it all together and not flying off into instability. It is "Logos", in the sense of the guiding principle of how the world operates which in some circumstances you might regard as a rule or a law, guide, blueprint or plan. It's putting into the mix that what happens next is dependent on what has been happening.

Taking the features I mentioned in the Newtonian equations and the features of chaotic systems there are six aspects of matter that I want to examine this afternoon: stuff, change, relationship, a plan, self organization and spirit. None of these are describable except in terms of the others. If matter is one thing this has to be the case.

- Stuff is essentially physical matter definable as possessing mass, extension, (and time).
- Change or impetus to change is like energy or force.
- Relationship is the existence of connection and communication between one thing and another, and the nature of the connection is defined by the other five.

A plan, blueprint, rule or guideline, defines the principles of operation, and can be likened to computer software. What has just been happening plus any new introduced factor determines what happens next. The Plan may be similar to the ancient idea of logos, which some writers see as the first principle. But it isn't fixed like in a Newtonian equation. A good example is oxygen binding to haemoglobin and the way the dissociation curve shifts according to other influences.

Maintenance of integrity involves keeping some aspects of any system the same while changing others. It is an example of self organization. There are a lot of other words that describe this business of keeping everything stable, such as homeostasis, harmony, balance, but basically it means that something biological has to keep itself alive and healthy. The idea of balance or stability includes as a necessary concept that in any system with an automatic ability to keep itself stable this occurs via cyclical feedback systems. A cell which produces too much CO₂ will become more acidic and this can down regulate its ability to produce more CO₂.

Nothing in biology occurs in isolation

All living things live in an environment (a Darwinian system) and must maintain an external balance as well as an internal one. If you look at Natural Selection it is sometimes presented that an animal is the best fit if it is able to exploit what is

available in its environment. But it could be over efficient. An animal that is put on a grassy island that breeds quickly and is a very efficient plant eater will quickly eat all the grass and pollute its environment. The one that is best fitted will eat just enough grass and excrete just enough fertilizer to keep things in approximate balance.

Spirit deals with intangible aspects of matter – the ways in which the whole may be more than the sum of its parts. I've stuck with the word spirit because of its connotation of things we recognise as being real but intangible. The religious connotations should perhaps for the most part be left aside, at least in the present context. Spirit and the intangible aspects of things are given different names in different philosophical contexts: emergence, supervenience and epiphenomena; but they are basically the same with different directions of causality. Emergence is the idea that you start off with several known factors, and when you put them together you get something which is predictable but also something you didn't predict – something new which has happened, so that the whole is more than the sum of its parts. Art is not just blobs of colour arranged in a shape nor music nothing but noise. If you think of all the previous things – the mechanical, matter/transformational things – and go up the hierarchies, something new has to come into being at each step upwards for that system to work. This is the link from the bottom to the top. Hydrogen and oxygen produce liquidity in which chemical reactions can take place. A string of amino-acids folds into a receptor with a specific shape into which a unique molecule will bind and a new activity is activated. DNA isn't just a string of smaller molecules it can carry forward the characteristics of the whole cell into a future generation.

To go back once again to Newton's second law, $F=ma$. This is a plan, and something is happening (changing). The stuff is mass, distance, (time) and each has a fixed relationship to the others. Integrity is maintained by preserving of mass and energy. Force is a new phenomenon from the above.

Or to take the simple example of water: you take two Hydrogen and one Oxygen atoms and change this from three atoms to one molecule, joined in accordance with the principles of bonding. What was three things is now one, arranged in a new relationship which is stable, with the emergence of liquidity, a new phenomenon allowing all life process to occur in it.

The same sort of thing applies as you go up the hierarchical scale. If you take the six principles of matter and start at a very low level with building small molecules like water, methane and ammonia (Notice that the numbers you are dealing with are small – only four molecules which are the basis for building up the whole of the natural world.) You take some of them and build slightly bigger molecules like sugars, amino acids and fatty compounds, and you build these into proteins and fats, DNA and large carbohydrates. Further still up the scale you get the cell, and when you get specialization of function in groups of cells you can move up to an organism and so on and so on up. It's quite easy by this means to get somewhere below consciousness and understand roughly what is going on.

Zombies: Behaviours without consciousness

If you start working your way up through hierarchies it is relatively simple to come to a creature which has a fairly sophisticated series of bodily functions, adaptations and behaviours. The brain has sophisticated monitoring and response functions which are not conscious. We can bring all of these together into a kind of inner Zombie which runs our basic bodily functions in a fairly logical way. In philosophy of mind Zombies are big news as they provide an opportunity to talk about behaviours without consciousness. The zombie is an incredibly complex and sophisticated creature which looks just like you and me. It controls all of the necessary bodily functions. It holds a body map which is updated constantly. It filters out the huge

mass of incoming data which would overwhelm consciousness. As far as pain is concerned the zombie has a protective system without some of the emotional or cognitive content which comes from knowledge of consequences. The zombie would have the ability to communicate in a fairly non abstract way and behave similarly. When consciousness is fully absorbed the zombie will sometimes perform strange tasks like pushing a button to open an already open door or switch on the car indicator when going round a bend. Or crank up pain sensitivity when the person is not capable of dealing with any more stressors.

What philosophy of mind calls the hard problem is getting from that kind of level up to consciousness. Consciousness has no clear definition. Consciousness is subjective –lower level zombie functions feed in information from which a perspective is created. It involves awareness, mood, emotion, thoughts and intention. It is not simply becoming aware of sensory input or of cognition. Pain and consciousness are not reducible back to their raw data. They may have different aspects but nothing that can be split off. It has to be unitary. Like $F=ma$, where if you take mass or time out of it you don't have force any more, you can't take the physical bit out of something like pain and still have pain and only pain. And each aspect or facet is only describable in terms of the others.

To get to consciousness from zombie is the ‘holy grail’ in study of mind. My suggestion is that if you’ve got system for working your way up the hierarchy, the same principles could apply to that last leap. Although we don’t really have any idea how you get from brain to consciousness, when you get beyond individual consciousness to small social groups the same principles apply. Paradoxically, we probably have more idea of how individuals are involved in different social groups. In the same way that the ancients had no idea how earth air fire water could be transformed into any of the others we don’t have the sophistication of knowledge to account for that last step from zombie to consciousness, but we can at least perhaps make the assumption that we have a model that is missing some detail. But like causality and dualism, in our fixation with consciousness we may have lumbered ourselves with a concept that we accord more importance than it needs.

So what use is all this?

Firstly, some useful metaphors arise from this. One is that of ‘Basins of attraction’, which is like taking a one-dimensional map and adding dimensions so you get a landscape. If you are a golf-ball rolling around in this you’ll finish up in a deep hollow made from a stable combination of factors; if you’re healthy you may be rolling around the foothills and you’ll be quite stable there. It would take something quite serious to knock you out of that. But something like an injury or a period of mental illness can knock you into a less stable area. If you want to get back to the stable place you have to get over the hump and if you are already unwell you don’t have the energy to do that. Some people get stuck, and their acute pain can become chronic. I spend a lot of time in A&E watching for people who are naturally good at recovery and see what combination of factors they have. What they do is to try to get as close as they can manage to what they were like before they were injured. They find ways of exercising, getting back to work and so on. They effectively try to recreate the factors which produced the stable hollow in which they used to operate. People who are naturally bad at recovery completely change their lives. They get a sprained ankle and sit at home with their foot up expecting to be waited on hand and foot. They have found a new very stable environment which unfortunately may include pain which will not go away.

Consider pain as a complex interaction of various factors produces a stable multidimensional artefact which pulls you down into it. A person’s life experience, their genetics, development, activities, relationships, integration with the outside

world, mood etc are all important factors in the experience of pain. All of these are built from smaller factors, and it's all plastic.

People need to be adaptable to deal with stress. Complex systems have a lot of spare capacity to absorb strains but when that capacity is used up the system may decompensate. Some individuals and groups of people can have stresses thrown at them and they will just soak them up, but others seem to live with little spare capacity and cannot cope with additional stresses.

The zombie body map is the arena in which pains are felt. We're not usually aware that we get information from all our body all of the time.
You become aware when an area:

- a) fails to send the usual information e.g. a numb area from local anaesthesia or
- b) sends information which could be due to tissue damage and then the red light comes on.

The doctrine of Natural Selection suggests that pain is an adaptation that can protect us from harm and promote finding help from a 'Good Samaritan'. But it could exclude us and even kill those disabled by pain. Natural selection doesn't just identify a few individuals who are really good and can procreate to make the species better. In the same way that a few at the top will do well there are a few at the bottom who will do particularly badly. One of the things that has made me reluctant to consider this is the clear implication that pain is part of some system which could be a means at least in a primitive society of alienating and killing people. Could it be the case that Nature is trying to eliminate those with severe chronic pain by making it impossible to get the resources they need to survive and pass genes on to the next generation?

It is possible that there is a naturally selected patient state that will kill people quickly. It was pointed out earlier that good pain control seems to prolong survival in cancer patients, but the opposite is true as well: someone who is left on the slippery slope will go downhill very quickly. It is beneficial to a group of any creatures that if one is going to die, they die quickly to free up resources for the others. However, we live in a society at a higher hierarchical level than blunt evolutionary processes.

As doctors we sit above the natural process of illness and try and help people. The whole of medicine is about trying to save people and reintegrate them into their society.

So what practical uses of this have I found?

I wanted a model, a structure, that I could fit scenarios into, and throw problems at to see what came out of it – and ultimately, to help me deal with patients and their problems. It has helped to make things less mysterious and to accept that a huge range of combinations of factors may conspire to produce (or provide potential for) chronic pain. Two different lives culminating in identical injuries may give totally different perceptions. It helps me look for and identify such problems, and suggest appropriate treatment or advice that will restore people to their stable hollow: for example, people who exercise their injured ankles get better much quicker. I have learnt to accept that if the patient says there is pain there is, and then to try to find out how it came to that. I can use that to explain the stresses under which the CNS process is operating and empower the patient to influence their own pain, emphasising gently that most people will cope and get better. It has encouraged me to ensure that at every level of the hierarchy where pain can be attacked it is: analgesia, movement, encouragement, explanation and a good realistic prognosis.

I am conscious however that there are two things left which are largely unresolved. The first is consciousness and therefore the experience of pain, and secondly subjectivity. I can't say much more about the individual experience of pain

except to make this one suggestion. Your brain isn't a digital computer but imagine for a second that it is. A computer will have a choice of a few operating systems on which a large range of software will run. Because of the plastic nature of brain development and our differing life experiences each one of us has our own unique and ever changing operating system. When you run a programme like the nerve activity pattern over it you inevitably get a huge variety of brain activities. If you want to make the case for finer and finer brain imaging you have to be prepared for similar images to mean different things and also for similar experiences to give different brain images.

Discussion

In pain clinics we deal with patients in whom a conventional approach didn't work. How can you working at the sharp end predict and prevent chronic problems

Any group of patients you see is a self-selecting population. People who come to us are mainly those who already have pain. I have noticed over the years that patients with more pain than should be expected (which is often apparently neuropathic with early signs of CRPS) will do very well if they can be persuaded to work very hard for the first two weeks; if it doesn't settle in two weeks there is a further period up to about three months where it may still settle slowly if they work at it. But if it's still there after three months it will tend to get worse. You are often seeing patients who have gone beyond this three month mark. I usually refer people who still have pain after three weeks to the pain service but given the effectiveness of early mobilisation the numbers are very small.

[Inaudible question, probably 'which patients are at risk of developing chronic pain?']

The majority of them seem to have used up all their stress coping for one reason or another – I have a long list of people who seem to fall into this category, including students at exam times, women in abusive relationships, bullied or abused children, alcoholics, the depressed, people assaulted by neighbours, epileptics and those suffering from other serious illness and indeed all the major life stressors.

Mind-Body Dualism and pain

Barbara Duncan

I often meet mind-body dualism when talking to patients or suggesting approaches to treatment. It can create difficulties when suggesting psychological therapies for pain as patients can be offended. I would like to tell you about a lady whom I'll call Pamela. She's single, in her fifties and very disabled by pain. She came to our Pain Management Centre with scalp pain following an ENT operation. Initially, this pain seemed to be neuropathic. Various medications and treatments either caused intolerable side effects or were ineffective for her pain. Her pain did however respond to acupuncture but it eventually developed into a more widespread muscular pain. She was severely depressed. Having experienced depression in the past she was tipped back into it by the ENT surgeon's explanation of her pain that it was in her mind. This statement echoed her experiences of the medical profession as a child when an orthopaedic surgeon inferred her back pain was psychological in origin. Pamela ended up having spinal surgery after investigation revealed Spina Bifida and she had been incontinent of faeces and urine all her life. Her understanding of that past experience was that the surgeon was wrong to say her back pain was in her mind because she needed surgery. Now we can only speculate about past medical care but this was Pamela's interpretation and that has influenced her whole life and attitude to her health and health care professionals. She felt she was being told her pain was not real, that her pain was imaginary. No one listened, no one understood. She was not believed. Coming to the Pain Management Centre, receiving physical treatment for her pain that actually reduced it helped her to feel accepted and understood. It validated her concept of her pain being physical.

Recognising mind body interaction

Why should we be so distressed by being told we have a psychological problem when we have what is so clearly (to us at least) a physical one? Does it mean that society today tacitly accepts our minds and bodies as being completely separate? Who do we blame for that? The French 17th Century philosopher René Descartes, of course, but should we? Well, he did come to the conclusion that his mind was separate from his body and that his mind could exist without a body. He had not been impressed by the approaches to philosophy he learnt at school. He developed his method of doubt to eliminate all uncertainty eventually coming to only one certainty encapsulated by that well known phrase, originally in French: '*Je pense donc je suis*' but better known in Latin as '*Cogito ergo sum*'. But he also recognised mind body interaction. John Cottingham (1986) has suggested that half-digested remains of previous philosophical theories can become the basis for 'common sense', and what Descartes actually thought and wrote is seen in the following quotations:

'Nature also teaches me...that I am very closely joined and, as it were, intermingled with it (my body), so that I and the body form a unit. If this were not so, I, who am nothing but a thinking thing, would not feel pain when the body was hurt'

'I am not merely present in my body as a sailor is in a ship but I am very closely joined and intermingled with my body to form a unit. If this weren't so I, who am nothing but a thinking thing, would not feel pain when the body was hurt.'

'For these sensations of hunger, thirst, pain and so on are nothing but confused modes of thinking which arise from the union and, as it were, intermingling of the mind with the body.'

'In a similar fashion, when I feel a pain in my foot, physiology tells me that this happens by nerves distributed throughout the foot, and that these nerves are like cords which go from the foot right up to the brain. When the nerves are pulled in the foot, they in turn pull on inner parts of the brain to which they are attached, and produce an inner motion in them; and nature has laid it down that this motion should produce in the mind a sensation of pain, as occurring in the foot.'

Some physicians' thoughts

So actually, Descartes understood that pain felt in the foot was experienced in the mind. He also understood that phantom limb pain was experienced in the mind. He recognised the interaction and mutual influence of mind and body although he saw them as distinct entities.

I'm now going to take a brief look at some physicians' thoughts about mind-body interaction before and after Descartes to see how great his influence really has been. Way back in time, Hippocrates (460-360bc) often quoted as the father of medicine, believed that a patient's confidence in his physician could affect his recovery. He also thought if a patient was emotionally agitated this could lead to a rapid physical deterioration. Galen (129-200AD) recommended music and poetry for their stimulating emotional effects and their positive benefit for physical wellbeing. He also recommended the resumption of sexual relations in the treatment of melancholia (non-specific depressed mood). In the early seventeenth century, Thomas Wright in his treatise Passions of the Mind (1601) echoes Galen's sentiments by claiming that many men have lost their lives through sadness and fear. After Descartes there is evidence that 17th century physicians understood the interplay of mind and body: Friedrich Hoffman wrote '*A tranquil mind is the best medicine to promote longevity*' and the 18th Century physician William Heberden clearly understood that a positive state of mind can aid physical recovery recommending clean bed linen to create a sense of care and comfort to aid healing. He also observed how disturbance of the mind aggravates pain.

Rediscovering the linkages

In the latter half of 20th and beginning of 21st Century we seem to be rediscovering the influence of the mind on the body and the influence of the body on the mind. I want now to take a quick look at our humanity and the effect of pain on us, and to reflect on biological factors, the fear of mental illness and how the medical profession has contributed to mind-body dualism. I shall end with some comments on pain and culture.

Bendelow and Williams, in their description of the body as a lived experience comment that human embodiment (the mind within a body) is naturally ambiguous or dualistic. If we look at spiritual aspects of human existence and consider Christian and aboriginal mythology that developed in isolation from each other for thousands of years, we recognise that Christian mythology accepts the soul as the essence of the person that continues after death. Similarly, aboriginal culture as depicted in David Gulpilil's film '*Ten Canoes*' talks of the soul returning to the tribal waterhole after death to await rebirth. Williams and Bendelow describe how we take our bodies for granted when we're healthy. It's only as we feel bodily torment such as chronic pain that we realise we cannot do what we, in our minds, want to do. Pain cuts self from the body and the body becomes a burden – 'it's my foot that hurts.' Vrancken has

described how '*Pain inevitably creates a split within the individual himself.*' The self or 'I' is trapped in an alien body. Normal life is destroyed. Pain reorganises our lives, our relationships with others and ourselves. Vrancken (1989) also says '*Pain can be depicted as the experience of psychophysical dualism.*' Illness and suffering reinforce separateness of mind and body leading the patient to draw the physician towards the physical nature of the illness and ignore the whole context of pain.

As I've already described in the case history, patients tend to think of physical pain as 'real pain' and any suggestion that it's not physical means that they're imagining or pretending they have pain. In reality, pain is pain regardless of the compounding causes – physical, psychological or social – there is no pain that is not real. Using a biopsychosocial model helps us to understand the patient in pain in a way that avoids pejorative terms like malingering or 'functional'.

The reflex reaction of a doctor faced with someone severely distressed by pain is to focus on finding and treating a physical cause of pain because he or she is trained to diagnose, treat and cure. Despite the best of intentions in caring for patients with chronic pain this biomedical approach only reinforces the focus on the body instead of the whole person.

There is a gender difference in emotional awareness related to pain. It has been observed in one study that men were more likely to understand pain as a purely physical experience but women were more likely to integrate their feelings with physical sensations. The brain's organisation is representative of the separate nature of the sensory and emotional experience of pain. Supraspinally, there are complex neural networks organised into a lateral pain system, relaying sensory-discriminative information to the somatosensory cortex, and a medial pain system connected to the limbic cortices responsible for the motivational-affective and cognitive-evaluative components of pain. Yet, these neural networks are highly interdependent and intimately connected. This structural representation of pain pathways is very like Descartes' concept of a separate mind and body that are nevertheless joined, interactive and interdependent.

The fear of mental illness

Throughout time our society has feared the insane, the mad, those so different to ourselves that they seem to threaten us. This hasn't really changed much in the 21st Century. I'm reminded of this by the people who live in my street in a long term psychiatric home. They look and behave abnormally. Walking with arms straight, eyes fixed, laughing loudly at nothing, pale, yellowed skin – I tend to avoid them. This [century painting of a charitable act] is a pictorial example from 200 years ago of our natural instinct to shun the 'abnormal'. At that time physicians were developing concepts of physical changes in brain tissues as causes of mental illnesses. As a result, incarceration came to be seen by some as inhuman. In my opinion this fear of the insane is inherent in being human and is not a result of Descartes' philosophy.

In the 20th Century doctors' training has focused on normal and abnormal workings of the body with introduction of diseases of the mind incorporated only when studying psychiatry. Normal psychology doesn't seem to figure. Wider dimensions of health embrace psychological, social and political aspects which are largely ignored. Is this Descartes' fault? I think it's just the evolution of understanding physiology and pathology that has led to this reductionist approach to health. Pat Wall clearly states in '*The Science of Suffering*' that the advances of academic medicine can be attributed to '*the insistence on identifying a clearly defined cause for each disease.*' However we should not forget the whole picture in order to relentlessly and indefinitely pursue the search for a cause. Increasing specialization aligned with development of biomedical technology encourages the medical

professional to view the body as an object to be probed and encourages patients to await the latest discovery that will cure all ills.

The medical profession and mind-body dualism

A number of factors seem to encourage doctors to focus on the physical nature of disease and ignore the psychological. As Colleges for different specialities have developed so training becomes more specialized. It has been commented to me by a psychiatrist that the inception of a Royal College of Psychiatry contributed to further splitting of mental health from physical health. Prior to that, psychiatrists were trained as physicians first and could bridge the union of mind and body more easily, and having received less education about physical ill health which may neglect it. It is common practice to conclude that the cause of a disease must be psychological if no physical cause can be found but this is far too simplistic. It's a theory that assumes we know everything there is to know. We may be left working with psychosocial aspects of disease or illness if we cannot establish a physical, treatable cause but we should not always assume that the health problem is totally psychological in origin.

Liaison psychiatrists I've spoken to are convinced of the inextricable intertwining of mind and body. There are physical symptoms of psychological conditions. For example, depression can cause physical symptoms: fatigue, lethargy, weight increase or loss, disturbed sleep patterns and constipation. The number of bodily symptoms in neurotic disorders is endless: tension headaches, trembling, numbness and tingling of hands and feet, palpitation, dry mouth, excessive sweating, stomach churning and chest pain to name a few. Conversely, the psychological aspects of physical ill health are often neglected.

Pain and culture

Pain can be seen as a connection between self and the world. Interaction with a physician can place pain in context and help the sufferer make sense of pain, integrating it into his life. Here, in our contact with patients, is where narrative can help the person in pain create some cohesion between physical, psychological, social and cultural aspects of pain, bringing together the separateness and forging an underlying meaning to the illness relating individual and society. Rita Charon has written: '*The patient must be allowed to spell out the sequelae of pain in detail so as to know them and to have them known by caregivers. The pain sufferer must be allowed to look at and describe the new self – the self with pain - so as to claim this self and to recognize its continuity with the self he or she once had been.*'

I have explored the naturally ambiguous nature of pain and the human response to it. Descartes, I am sure, did not intend us to think of humans as bodies with entirely disconnected minds but as integrated beings. His whole philosophical approach was a comprehensive integration of understanding. To say that Descartes intended us to completely separate mind from body is a fundamental misinterpretation. Nevertheless, he is unfairly blamed for all dualistic understanding of pain. Pamela's response to being told that her pain 'is in her head' is instinctive. It is based on the natural fear of psychological ill health ('being bonkers' and 'different') and the dualistic nature of pain. At the same time, dismissing her pain as being in her head makes her feel unheard, her suffering unacknowledged and her reality ignored. Physical treatment (although not curative) affirms and recognizes her experience of pain. Treating the body alongside her psychological pain offers her more hope.

Unintentionally, through misinterpretation and the ambiguity of his writings, Descartes has added fuel to the dualistic fire. We need to transcend dualistic concepts both in ourselves and patients to offer truly holistic comprehensive care.

Discussion

I too have worries with the way we interpret Descartes. Also we always tend to go back to Aristotle which is in many ways an inductive, pre- Francis bacon approach. We always to look exclusively at Western ideas rather than how people in other cultures have thought about it. And of course Descartes was living in a very different time when things spiritual and things corporeal had to be separate – so I agree that he wasn't as dualistic as we think – he just couldn't say what he really thought. . If you look in England at that time – a very different protestant country – Robert Floud was saying that the state of the mind influenced the way in which sensation was interpreted. We're always ignoring both our own cultural baggage and that of earlier writers. And other cultures were different still, for instance in India mind and body were considered to be entirely inseparable. We continue to make the same mistakes because we ignore our own cultural baggage and fail to why we continue to interpret things in the same way.

It was a little hard for me to fully appreciate your point coming from a 'non-pain' background. From my perspective on mind-body dualism...Descartes was an interactive dualist. So what confused me was when you were giving examples of people who were resisting – who were not Cartesian dualists but said there was interaction between mind and body and how mental attitudes can affect physical wellbeing and vice versa – to a philosopher that's not a counterexample, that's just more interactive dualism. When you said that doctors insisted that there must be a physical cause for a symptom that's continuing to use dualistic language because it suggests that it might have a mental cause, this seems to be suggesting that there is mind and there is body but they react much more than previously people supposed. It's hyper- interactive dualism rather than saying they're really only one thing. I don't quite understand how experience reinforces this illusion of dualism.

The medical profession is very much trained to think of physical causes and it's not acceptable to say that a pain is purely psychogenic.

If you're not a dualist there is no such thing as a non-physical cause. It might be more convenient to describe it in non-physical terms but everything must have physical manifestations. Even supposedly psychogenic causes may have more abstract brain.

I absolutely agree. I do believe the mind has neural substrates but I think the medical profession has fallen into this trap of thinking that pain is physical.

If you're not a dualist it is – you're advocating rejecting dualism but I think a monist would say yes, pain is physical, it's just that it can also be understood in non-physical terms but this doesn't mean it's not at root physical.

The way I would interpret it is as you said earlier on it's a problem involving not only our culture and society but particularly our medical training which teaches rather than physical to say pathological – belonging to tissue. We are limited by that training to look for something which is demonstrably abnormal and put it under a microscope.

The trouble is that the culture we live and work in and our patients do not see that the mind is connected to the body and see it as completely separate.

I think we are now witnessing the difficulty we have that intuitively we are monists; no-one really believes that there is stuff and then the real stuff and then the nebulous

stuff but our language is constructed in such a way that we have to have these Cartesian danglers. For example, we have both neurologists and psychiatrists. Why? Both see their job as the CNS? Isn't it the same profession? No, neurologists are people that deal with real stuff like tremor and psychiatrists are dealing with people telling you. We have these Cartesian danglers sitting on us and we don't know how to express ourselves in a coherent way that will make sense to a non-pain specialist because we don't have a language to express these differences between interactive dualism and monism and so on; and when we talk about pain and the body and when we talk about attentionality. There are different layers, so I am conscious of sitting here and also that I am listening, but at the same time that my daughter is in Seattle. There are different levels of consciousness and what pain does is bring ahead the corporeal sensation. I have to put a ray of attention right now to feel that my bottom is on the chair – normally I don't – but if I were to have a pebble in my shoe all the time that would bring that ray of attention all the time up front. This corporeal obsession we are talking about is not trying to separate the body from the mind but that the focus of that attention is skewed by disease. What I don't like about the biosociomedical model is that we don't talk about the existential and the spiritual and so forth: we don't talk about life plan, the other, how we integrate ourselves with the other; and because it brings the body up front disease ruins all these other aspects – so I can't work, I can't get on with my life. Disease – what we perceive as violation of our wholeness – brings the body up front into our attention. Secondly it's very difficult for us to talk in [appropriate] language because we don't have that. None of that helps.

This is aggravated by surgeons! They always used to say: X-rays clear, there's nothing there, patient's mad, refer to pain clinic. GPs get these kinds of letters from surgeons 'nothing wrong with her back' which don't help the GP explain pain.

This is what I referred to yesterday as a private language. We say 'oh, there's good news,' oh, everything's OK' and tell the patient there's nothing and they react: 'how can there be nothing when I feel something?'

There are a whole range of immune responses which are very often provoked by emotional responses and psychosocial experiences. Patients can accept that their pain can be connected with an imbalance in things that are nothing to do with the physical so if you engage with them on that level – as if the physical were almost incidental – and instead of saying some tablet may or may not relieve their pain, start working with them at a level which actually addresses some of the stimulus they engage very well with that – they acknowledge it very easily. I actually don't think patients are so very primitive in their understanding and don't operate purely at a physical level – and are sometimes ahead of many clinicians in this respect.

We get patients referred from a spinal surgery unit who are very scared because all they have been told is that their tests are negative and others for instance with fibromyalgia who have been referred from GP's that come knowing that it's more than a collection of physical symptoms. Like two different species of patients... victims of their experiences in healthcare.

Did Descartes think soul and mind were separate things? Or did he think the mind was part of the soul?

I'm not sure about that... but the French word 'esprit' means both mind and soul.

I think we have to be clear not so much about definitions of mind, soul and body as what we actually mean when we say these things. Today many of the people who

talk about fMRI and the science of things are actually dualists who have just replaced the word mind with brain – they say the brain does this and that when actually it is the person with the brain that does this and that. We have to more careful not just about words but the meaning we give to them, and the importance of a correct pain talk is to say simply that we want a good explanation like from physics and the neurosciences and not enter into this kind of mysterious ‘oh there’s something there’, like phlogiston and the element X behind it and now I understand everything. OK, one day biopsychosocial will eventually be explicable by the biology chemistry and physics but at this point in time not only is our language is still sticking with dualism because we say that suffering and pain are not the same because pain is real and suffering isn’t, but we’re replacing it with other words with the same stance.

On of the problems is that both medicine and cognitive science are still Newtonian stuff – not quantum mechanics which talks about monism with two separate aspects. We haven’t even yet figured out what this one thing is. It’s easier to talk to patients about mind and brain as two aspects of the same thing but we don’t yet know what it is as this avoids dualism. It’s not disprovable and avoids saying the mind arises form the brain which is just as theoretical. If quantum mechanics is the basis of the universe it can tell us how everything interacts.

It’s difficult for us as doctors to accept quantum because it’s so unintuitive. It’s like you say you’re talking to me and not talking to me at the same time – that there is a parallel universe where I’m not talking. We’re very into cause and effect and empiricism and very difficult for us and for most patients to live in this parallel universe paradigm.

I think very few people think that clearly, and we’re more guided by emotions. To give a couple of examples, someone earlier mentioned auto-immune disease, and very clearly said that there was evidence of connection with emotional states and the like, at least regards exacerbations. Now I have a number of auto-immune problems and I immediately found myself bridling – ‘how dare she say that! Does she think I’m barking mad?’ I couldn’t help myself – the reaction occurred before thought. The other example is of a number of doctors and other professionals I work with (I’m a psychologist) do genuinely attempt to take a holistic perspective on their patients, but when they find someone really difficult and challenging and who doesn’t respond t anything their first reaction is to describe them as mad. For years I argued with them about this and said it’s not very respectful and not even true, but in the end I stopped doing this as I realized it was a self-protecting mechanism and allowed them to put the blame on someone they couldn’t help, and go on doing their clinics. So language has other functions than conveying meaning – it also conveys emotions.

I think you’ve touched on something there similar to what happened to Descartes. He had trouble separating the mind form the body because the way thought was at that time that you had to leave one to the Church and one to the philosophy of men. And in order to remain who you are you have to separate mind and body in order to become cognitive of what you believe your role is. And I think you’ve hit upon what a lot of clinicians do – dualism serves a nice purpose as it enables you to encapsulate what your role is to enable you to continue. If you try to break it down your role changes considerably, and a lot of people aren’t prepared for that.

One tiny counterproposition: I find a lot of patients come who actually want to believe that their problem is in their mind – I do some work with cardiac patients who come and say ‘I think this pain in my chest is just stress’. They want to believe in a psychological explanation.

I've had some patients say to me 'am I doing this to myself?' They think how they react is part of the symptoms. That wouldn't have happened some years ago.

A lot of people are ready to accept the Buddhist idea of mind as one of the six senses and once you accept this it is natural to accept that mind is involved in whatever is happening – there is no dualism then – it's all part of one concept.

Even if we don't believe in dualism we have to use a dualist psychological language to describe things that have mental properties – like mood. If someone says to me my mood is making my pain worse we haven't the language to explain to people why psychological things work at a physical level.

Perhaps we should invent a new language...

I've had three situations recently where the pain is the third person in the room – where there is the patient, the spouse, and the pain.

There has been some interesting work in family therapy recently by Barry Mason on how relationships within a partnership change: instead of their primary relationship with their partner, their primary relationship becomes their pain. The only way to people to move forward is to say let's identify that and learn how to re-identify with the people around you rather than the pain.

I agree that it's difficult to speak in a monistic language given that the language we have is so steeped in dualism – perhaps that is one reason why philosophers are so hard to understand. They're trying to speak correctly from their point of view so they use all these tortuous circumlocutions. It's so much easier to use language a patient can easily understand even if it is inaccurate. There is a trade-off with trying to be more precise. But even if the therapist uses different language to the patient it's important to get things right in their own mind. I was cheered by the comment that psychogenic pain is still manifested physically. Just because you can't scan for that doesn't mean it's non-physical. I think that's getting to the heart of some of the problems the medical profession is facing. Part of our dualistic way of thinking is that there is a physical world which is governed by natural law; I can intervene indirectly in it but don't have automatic control. Whereas in the realm of the mental, I'm in total control and if anything happens in the mind it's me, it's my responsibility, it's freedom, I can do what I want, and therefore if I have a non-physical pain I'm somehow to blame for it and I should be able to turn it off. So seeing it as a mental, non-physical thing could be destructive. But if you can explain to a patient that even if we can't scan for it, psychogenic pain is a physical thing and part of the natural world; it's not something they necessarily can control, and that they're not in some way to blame for it.

To take a simplistic view, if we go down the road of rejecting dualistic separation, and it's a physical thing, as a patient I'm going to say 'well isn't there a fix then? Shouldn't you be going back to the laboratory and doing some more research?'

We have other misconceptions. We think of history as being progressive but we can say to the patient that with respect to this ailment we're in the same position as the mediaeval physicians were regarding diseases we now can cure.

But the implication is that there could be a cure... but we may have to wait a few centuries!

I find it's easier to understand the neurologist dealing with the hardware and the psychologist and the psychiatrist dealing with the software and how it runs ... although they're both physical stuff.

Historically it's only relatively recently we've separated the two – they were formerly both 'nerve specialists'.

Patrick Wall was convinced that there was no such thing as psychosomatic pain, that there was a physical basis for it and that one day we would be able to explain it. He used the very interesting analogy of sight. Hundreds of years ago they thought that there was a different cell for each colour. Then we realized that there weren't that many cells and that the brain was processing the input from these to enable vision. He firmly believed that it's the same for pain: that there is some central processing system that we will one day be able to establish. I too believe that that will indeed happen one day, and the reason we find it so difficult to explain – why we try to explain it in terms of mind and so on – we need the concept as it makes us aware of ourselves. I think there is definitely a physical basis for pain, but how it affects thought and the mind is another matter.

But if you think there will be a cure for the sensation of pain then you will have to wipe out all sensation and you will not be aware of the body – this is at one end of the spectrum of awareness of self and you may lose this if you get rid of pain.

When I was an engineering student I suffered a compression fracture and for about ten years had excruciating pain in my shoulder. Not knowing anything about medicine at the time (or mind/brain) I just thought I had a severe pain, or what to do about it or how to stop it interfering with my life, I decided to regard it as any other sensation. It worked pretty well and after about three months if anyone asked me if my shoulder still hurt I would say yes but if the question was does it bother me the answer was no. This never seemed dualistic – just the same manifested in different ways, and you just have to learn how to deal with it. It still seems a pretty sensible approach which I use a lot with my patients.

Can I take up something Ron [Chrissley] said, something which has come up time and time again, about communication and groups talking to one another. We spend time nowadays teaching medical students how to communicate with patients. We talk a lot of philosophy but is that communication? Are we and the philosophers clearly communicating with each other? And the other thing is about consciousness. Is there any dialogue going on between anaesthetists and philosophers on what is consciousness? What should we be doing about developing a common language?

I just wonder if this is all a big red herring. If we opt not to go down the dualist route then we're left with a physical problem that we just don't know enough about yet, so all the rest of this chat is just a big red herring while we wait to find the answer!

We need to distinguish between two aspects of all this: one is what can we do for the patient today and the other is what kind of thinking do we need to set the agenda for future research. These are two different things. We can talk to patients and use dualist or whatever type of vocabulary they understand and make them feel better without having a clue what we're doing. We don't need to understand the difference between phenomenal consciousness and awake consciousness in order to inject Propofol and put someone to sleep. We are doing a lot and asking for lots of money to do stuff we think will promote the truth and promote our understanding of what pain is all about, without very careful thinking about what we need to do. We have here the hard problem: some people here are saying all we need to do is reduce this

gap so we just need to learn a little more. So do we need to look at things in a different way – perhaps some sort of hybrid approach? So this discussion is important: trying to see what is relevant and irrelevant, and what is the next question we're going to ask for research money to answer so we can make a presentation and say this is what pain is.

On the critically important point of communication: we're talking a lot about what we can do for the patient but perhaps not enough about what we should be encouraging patients to do for themselves [when] the physical world hasn't given us the answers. As for reassuring the patient there is no pathology, that's fine as long as you know who you are talking to, and that you have taken time to find a common language – this is different in every single patient that we speak to. So if you say to a patient 'there is no pathology but we acknowledge your physical symptoms, some patients may react 'that's because you're stupid' or 'because you're not a doctor', and they'll stay on the roundabout and move on to the next person, and unfortunately there is always someone who will provide a pathological explanation; they will show them a scan which has no relevance to their symptoms and tell them how it explains them. You have to listen very hard to find an area where you can communicate. You have to be very careful to avoid having blanket ways of dealing with patients.

I try to do as you say; but then I get a patient who goes away, sees an osteopath, gets a crack and feel better, and comes back and says 'see, you were wrong!' I've looked at them from my perspective of not being a mind-body dualist but I've not got to the place where the patient wants. The patient was looking for something that was different from my clinic where I was wanting to use a more holistic approach but they go away and get something which accords with their current state and they improve. We ain't got all the answers and shouldn't assume that by leading patients into our way of thinking we'll have all the answers to all the people all the time. We are still looking at things from our own perspective.

...We can only strive for the ideal...

...but sometimes we're just as blinkered as the rest of them.

There's a critical difference between finding a common language and just telling people what they want to hear, which is sometimes temptingly easy, especially with manipulative patients – I think I may fall into that trap all too often... .

I think it's important not to be too hard on ourselves – we all make misjudgements. But what I wanted to ask was: how do you know that spending a long time with the patients makes them any better? That's the bottom line.

We don't – but...

So how do you justify taking your salary?

It's doing my best, and giving my patients the opportunity to express their problems, and trying to match up to their expectations given the limited skills that I have.

You can judge from their reactions – I know if I'm getting a positive response or not, and patient will often tell me when I see them again. The important thing is to find out as much about that patient as you can.

I think Alan Lannigan with his twenty years of studying patients has hit upon a solution. We know that chronic pain differs from acute pain. It uses different

neurological mechanisms and there is no longer a pain generator. Thermodynamics demand that systems have to adjust to their environment to maintain their stability. Humans are the same – everything that happens requires an adjustment to the system, but unfortunately humans don't always adjust back. In fact they can probably never adjust back exactly because of biological quantum mechanics. If you look at a patient as a system that has been traumatised and hasn't corrected itself and is out of place and communicate this to them they will understand that you have to put them back to somewhere closer to their natural state. Chronic pain is not a sensory problem, it's a pain memory system with motor outflow that looks the same as the injury so it regenerates and feeds itself back as a memory. If I put people under hypnosis I can tell them – you can have the pain go away and it does; this couldn't happen if there were a physiological generator.

As an outsider I'm gathering the impression that the medical profession needs one way, the correct way, of thinking about it yourselves and a different way you may need to communicate with patients. It seems to me that there might be a case for saying something like – there's no physical pathology but there is a kind of pathology in some brain area but it's kind of abstract and non-physical, but you might not want to put it that way as it might come over as 'you're mentally pathological.' As a philosophy teacher I have the luxury of persuading students to at least consider thinking about things my way but you don't have that. So that's a big challenge.

Sometimes in general practice I have to try not to think how I should think about the patient! I think it's very good to be here and try to unpick the problems but in practice it's still mostly a matter of listening to the patient. If someone comes to you with knee pain but is worried about pancreatic cancer in the family and you send them to the surgeon who puts a new knee in, and you've completely missed the boat, and by the time they come back you've forgotten why they first came to see you – and this is where we create problems.

This discussion [about monism] is going to change the way I think about things. It's not immediately going to change my practice, but I realise that although I think as a monist I have a very dualistic way of talking about things. I am beginning to understand when thinking about the brain and consciousness that the mind is not the brain – on a monist view the mind is the body. It's a really different way for me to think about things which I shall share with colleagues and I hope they will find it helpful as a starting point for changing the way we deal with people.

I don't agree with you. When you interact with patients you have to take it all on their terms, whatever you may think yourself.

We need to distinguish between two things. One is the physician's cap which I think we all feel pretty comfortable with because, after bathing all the time for very long with people who complain, you understand that no discussion with different patients will be the same. I think if someone were to replace us they would intuitively reach the same type of wording with our patients. That is intuitively quite easy and the theoretical discussion behind it quite straightforward. But it becomes tricky when we have the scientific cap on, and this is why I insist upon using phenomenology as a method. Without it, it only remains something here and now between myself and the patient, and then it goes away, and not even I can recapitulate it. What we are interested in is to find universal laws of inference that we will be able to share and use to explain what we are doing. That I think is the real challenge: to use phenomenology to achieve a correct pain talk. If all of us stay in the 'one on one' we will simply be nice people who do a good job – but someone will say 'what's the evidence?' So the real challenge is to find a common language. For that we have to

have a very crisp idea of what constitutes an explanation – not just a description – and what pain is all about. What is our agenda? Not just giving bits and pieces of information and building a whole tower of interpretation and heuristics..

I wonder if in the last few minutes we could have a change of direction and might address the question I posed in the introduction to this meeting as to whether science could displace religion in addressing ‘why’ questions. Last year there was a sort of tacit assumption that science was really only appropriate of describing how things work, but in view of the fact that religion is meaningless for many people, to what extent in the last couple of days have we found that science, and what might be called secular philosophy, have rendered religion redundant in understanding suffering?

Levinas doesn’t talk about secular philosophy but more about morals and ethics. He says that divinity is in the face of the other, and that the other is everything that we are not. We are dependent on that other in ways that we cannot or do not want to admit. So for him, that moment when a person falls and looks at us, that call of the other is what science and religion is all about – it’s precognitive, an awakening. He says to religious people ‘if you are so absorbed in self-things and not look at the other then you miss the point.’ He says to the secular people ‘if you think that the other is not there and the responsibility is all about me and not about my ability to respond, you too miss the point.’ So the truth is in the middle: there are not two mutually exclusive worlds. We have to pursue the truth in a social fabric with the other. I don’t know if that answers the question but there is much in Levinas’ writing on the subject, and the secularists didn’t like him because they thought he was too religious and the religious didn’t like him because they thought he was too secular. It’s very difficult to keep a balanced view but I suspect that we’re making an artificial separation between the two and basically saying the same thing with different words.

...and perhaps being guilty of another kind of mistaken dualism..?

So all pain patients are the divine when they are the people we are responding to..?.

Yes, acknowledging that the word divine is loaded and associated with Judeo-Christian culture. Perhaps using it less in this sense than that associated with oriental religions.

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Placebos and the relief of pain and suffering

Paul Dieppe

To start with let's talk a bit about chronic musculoskeletal pain. There's a lot of it about. Most chronic pain is musculoskeletal, especially as we get older. We tend to think about it anatomically. People have back pain, knee pain, or widespread pain, and depending which clinic we go to it gets called fibromyalgia or chronic fatigue syndrome – which is convenient for classification within our reductionist biomedical thinking but it just doesn't work. It doesn't work because people don't have pain confined to a single region, they have pain elsewhere and a multiplicity of symptoms that interact with and affects their regional pain. There is both qualitative and quantitative data to support this. But we train patients to come with just knee pain or back pain – that's what they think we want to hear about. It takes experience to get them past that and talk about the whole symptom complex

There are loads of risk factors for chronic MSK pain: gender, genetics (which I don't take very seriously), anatomical and physical trauma and psychosocial factors. It is most important to remember that early life psychosocial trauma predisposes to chronic MSK pain. Much of the data is anecdotal but there is a controlled study by Ciccone et al showing that women with fibromyalgia are much more likely to have a history of rape and post traumatic stress disorder than controls. There are many associations with CMSK pain including distress (anxiety and depression), sleep disorders and other symptoms but the one I want to stress is dysautonomia. Disorders of the autonomic nervous system are common features, certainly in FMS, probably in back pain, and possibly in regional pain of the knee, hip etc. although evidence for the latter is not yet conclusive. It is so much a part of FMS that some people have suggested that it is a generalised sympathetic dystrophy.

There used to be an advert years ago that claimed 'nothing works better than Anadin' to which the wag's reply was 'so use nothing then!' That seems to be the best bet for CMSK pain. Most placebo-controlled trials don't have a 'no-intervention' comparison, but of those that do, most show clear evidence of a big placebo effect on pain. The effect size is about 0.6, whereas the effect size for all other interventions (pills, exercise etc.) is about 0.2. So placebos are three times more powerful. So 'nothing' is actually best. This is almost identical to what is seen in depression. So in evidence based medicine we look at the effect of intervention and have a placebo. The only bit you are interested in is the net effect, (the specific effect of the intervention) when you have subtracted the placebo effect, and ignore the latter, which seems rather daft when it is three times more effective.

The 'context effect'

I'm going to stop using the word placebo and switch to 'context effect'. In his recent article *A Historical Perspective on Placebo* Edzat Ernst talks about the supposed specific effect of an intervention and quotes the example of blood-letting which is almost certainly harmful in itself, so the specific effect is negative, but the context effect was probably huge so perhaps overall bloodletting probably had a positive net effect. Then he looks at homeopathy which doesn't do anything so there's hardly any specific effect but a reasonable amount of context effect. Aspirin has some beneficial effects on the heart but makes you bleed so has negative effects as well; it's got a rather modest context effect because of its familiarity so the net effect is a bit positive.

All this assumes that you can separate specific (or characteristic) effects from context (or incidental) effects. This is a central tenet of the randomised trial and the whole evidence based movement which is built on the concept that you can take a

specific biomedical effect on a disease or symptom and separate it from everything else that's going on around the administration of that intervention. This is clearly nonsense. What's going on in the real world is that we have a complex interaction between the specific effects, both positive and negative, of what we do, and context effects; and we've really no idea what's going on or what the net effect really is. So evidence based medicine is built on sand.

Charlotte Patterson and I wrote a paper about this a few years ago and Ernst among others said they were going to publish a refutation of this but I haven't seen it yet. Everyone here believes that the interactions that go on all the time – the sort of thing we have been talking about at this meeting like meaning – are of value. You can't divorce what you are saying to the patient from the pill you are giving them. We try to individualise therapy according to responses and health beliefs and so on. (That's considered completely beyond the pale by the trialists. You can't do that because it destroys a trial's internal validity.) I suspect Allied Health Professionals and complementary practitioners are rather better at it than most doctors. So let's get rid of the religion of evidence based medicine.

What are the components of the context effect? One is the symbolic meaning of the intervention for the individual. Kleinman has written about the importance of ritual from his observations of healers in Vietnam. The second concept I want to try to make sense of is that of a safe environment. I want to suggest that we are quite stunningly bad at that. The third is the relationship between patients and practitioners. Ted Kaptchuk in Boston has done some very elegant work in trying to unpick this in the context of irritable bowel syndrome.

So the question is: why aren't we researching contextual effects particularly in an area like pain where the evidence that it is important is really quite good? The reason is that our research agenda is completely dominated by biomedicine, the search for new drugs and 'boys' toys'. This is what confused me when I first went to medical school and I'm even more confused now. I can't research this area because I can't get any money for it – I'm employed by the MRC and you can't even talk this language with them.

Might the polyvagal theory explain some of this phenomenology?

The final part of this talk is to throw out this idea. Might it be worth working with this to see if we can enhance the contextual healing? This has been developed by Dr Steven Porges, a neurophysiologist working in Chicago. He says that there are three phylogenetic stages in the development of the autonomic nervous system, working up through the animal kingdom. The first he calls the 'shut down' response: if the organism meets a threat it will just shut down. The second stage built into the autonomic NS is the 'fight or flight' response: threat – run away – increased sympathetic activity – increased muscle blood flow and awareness, and all the rest of it. There is a third system that animals must acquire as they climb the phylogenetic tree and become organised in social groups. Porges calls this the 'nurturing' response. Instead of just running away from threat you are sympathetic to another individual. This is hard-wired into the ANS just as the other two reactions are. The system is linked with social communication because the Vagus nerves and other parts of the ANS have links with facial muscles and other body parts that express social interaction, in the same way as they are linked to the heart and the adrenal glands. There are afferent as well as efferent parts of this pathway, and the nerves in this newer part of the system are myelinated and fast conducting. He goes on to extrapolate that the part of the system we normally use, being fairly high up the phylogenetic tree, is the nurturing response. This is characterised in humans as what happens when they look at a newborn baby: they sigh and relax and the heart rate goes down etc.

This is hardwired because we need to look after these little things for several years. That's our default response to stress but we can revert to fight or flight or shutdown in which case we will show poor social skills, lack of eye contact, and a disturbed and activated autonomic NS. He goes on to say that which your default system is can be programmed by early life events, so if these have been damaging you might get programmed to go preferentially into fight or flight. The final part of this concept is that it's all liked through brain structures with emotions and indeed pain. I want to emphasise, within the polyvagal theory, the idea of being safe. You need to feel safe in order to switch on the nurturing response. If you don't feel safe you may go into fight or flight.

Porges says that we have created an environment around modern medicine which is seriously linked with being very unsafe. So perhaps it's not surprising if people don't get the best context effect if they are in an unsafe environment, and maybe the success of some CAM practitioners is that they create a safe environment. This isn't of course just about what you're wearing or about your machines – it's the whole situation that you're in.

So the hypothesis that I want to put forward (and would love to get funding to research) is this: if early life events set you up for a default fight or flight or shut down response to stress, you will respond in adulthood with high distress, dysautonomia, poor social skills and pain. The power of context effects (or contextual healing) is that in some way they help you revert to your nurturing response. Porges suggests that this can happen not simply in a safe environment , personal interaction and so on but also by having some specific kind of input into the midbrain where all this is happening (which could perhaps be identified with the 'safety area' Katja Wiech described yesterday). It is possible that stimulating baroceptors by slow tipping may relieve pain by getting you out of fight and flight mode.

Discussion

I've got a sense of déjà vu listening to this – it reminds me very much of Engel's paper on the pain-prone patient, which he wrote sixty years ago. And a lot of it sounds like what Michael Balint was talking about in the early sixties.

I agree there's nothing new in what I just said. What I'm trying to suggest is that we might have a neurophysiological pathway that we can play with. But I'm excited about it because the reason people like Engel and Balint don't survive is that because we can't see something light up in the brain or measure serum rhubarb it's all just tea and sympathy talk. Maybe if I could show this all depends on beat to beat heart rate or something ... that's the new perspective I want to bring to it.

This would explain a phenomenon we saw, and missed a golden research opportunity, when we moved our clinic from a nasty location in a corridor next to the ICU (pretty bare and functional) just round the corner into a room with pleasant lighting and comfortable chairs etc. We noticed that the patients were somehow different. That fits in very well with the safe environment.

Perhaps this accounts for different results of the same research by different groups – no-one has asked about the colour on the walls! This might tie up with colour therapy... colours have different symbolic significance – perhaps we could use them more.

There is literature about this. It's probably much better known to CAM practitioners than traditional doctors. David Riley in Glasgow has rebuilt the entire homeopathic hospital entirely on the principle of the safe environment. There was a study done of

patients having gall-bladder surgery who were randomised to two wards, one a traditional awful one and the other new with a better colour and outlook on green fields. The latter group had fewer post-op complications and went home earlier.

I moved from a drab clinic in the teaching hospital in Calgary to a new one in a private hospital with carpets, comfortable chairs and a fabulous view of the river. The response has been incredible: patients love coming, there are far fewer defaulters, and patients visibly relax when they see the view.

We really should be documenting this sort of thing.

Looking at this business of early trauma from the perspective of a paediatric anaesthetist: we have a whole cohort of children coming through that have unbelievably poorly supportive families and each child has its own personal hell. Then there's the group that went through the war, split up from their parents but they all did it together. How old do you have to be to go poof! [inaudible due laughter ... probably, 'and not be affected by adverse effects in this way.]

I can't answer that. It's not simple and it's going to partly depend on genetically programmed susceptibility. About 20 per cent of people are prone to things going wrong with the pain system if certain things conspire against them and you probably need both the adverse event and the predisposition. Within the polyvagal theory you need the event to trigger a marked fight or flight or shut down response. This has been suggested as particularly a feature of what young people do with sexual abuse. Much of the literature is concerned with this and I see a lot of people who tell me horrendous stories of this.

A routine question I ask is 'have you suffered physical or emotional abuse in your childhood or your adult life?' The answer is 'yes' in about 65 to 80 per cent – about 80 per cent in women and 40 per cent in men. That's regardless of presentation.

If you look at mind-brain functioning there is a tremendous disconnect between how we deal with things and what is actually going on. If you look at the way the brain works it's inferential, its data based ...the conscious mind is the content that falls out from this brain process. People want to use the conscious side which is content to deal with problems, but the truth of the matter is it's not cause and effect, it's association. You can go back and deal with this associated stuff with hypnosis.

Why don't you look at the autonomic nervous system in relation to hypnosis?

I think you might find support for your proposed studies into context effects from cognitive science because there the emphasis in the last 10 years or so has been the embodied nature of cognition – getting results that bear on the kind of effects you are seeing – not just the idea that when you smile you're more likely to be in a positive affective state, but also context effects like if you give students questions involving surgeons or scientists they do better compared with the same questions about pop or sport stars not known for their brightness. If questions were asked about old people students would leave the exam room more stooped than when they were about athletes. So cognitive science is investigating the physical manifestations of presentation or context.

We talked yesterday about the physician and the patient being interactive – the context has an effect on the physician as well as the patient. He'll smile more if he has a nice painted office with music playing and fish in the corner.

In general practice you do see a lot of patients who are self-mutilating who usually have a problem in past sexual experience. This seems to be people causing themselves pain to try to get rid of the painful experience ...

A lot of pain patients have personality disorders...

Maybe that's not very helpful linguistically in diagnosing what you might call a natural response to being a bit disorganised in how you present yourself to the world when you've been [abused] from a very early age...

Self mutilation is a step beyond that. They're trying to establish means of control...

Obesity is another area where you probably find a lot of people have been abused in childhood... we talk about obesity being a disease of society because we eat a lot of fat but it's often a behavioural disorder – they are deliberately harming themselves to get rid of a painful experience.

Sexual abuse has become such a popular topic and is supposed to be becoming more prevalent but I doubt it is as common as in primitive days when war was going on and rape was a common thing. You would think that after 40 or 50,000 years of social evolution that people would adapt. What happens under hypnosis involves this false memory thing. When we perceive something like a noise going on our unconscious minds we make up a story to make sense of it even if it isn't physiologically true. You have to be really careful with hypnosis because you can make a subject believe anything you want. I have not been convinced from this experience that obesity is caused by abuse.

I would like to raise the question of the extent to which we should be deliberately harnessing placebos? I found many of my patients came to me very disillusioned by their experience of having been assured that the latest wonder treatment would cure them and disinclined to believe anyone anymore, so I believed that it was important to be as honest as possible with them. But I found this difficult to reconcile with selling my treatments more confidently and enhancing their context effect, which was perhaps what I should be doing.

I have several views on that and hold some of them quite strongly. When I first qualified I worked for a short while as a GP, I used to give out pink medicine which was a tonic with no therapeutic value at all but I prescribed it with assurance that it would help people and I would like to think it probably did. I'm not allowed to do that now because evidence-based medicine has seen it off. EDM is also seeing off most complementary medicine because it doesn't fit our paradigm; we don't like it like encroaching on our area so we're going for medical imperialism. So to see it off you say the RCT is the law and that's always going to show that complementary medicine is useless. And you invent biomedical outcomes so you test the blood sugar; forget the fact that the patient may feel more at peace with the world or more coherent - we can't measure that. So we're getting rid of all those good things because we're not allowed to believe in them. I think that's dangerous because the placebo element of a treatment only works if both patient and doctor believe in it.

If the practitioner isn't allowed to believe in it then we can't use it. I think that's why homeopathic practitioners do great work as they actually believe in it, however bizarre it may seem, so it works. This might be a topic for a future meeting, deceit and consent in the treatment of pain, because both researching and practicing in this area essentially involves a degree of deceit. I think the whole subject of consent both in practice and in research is very muddled, and perhaps a subject for a future meeting.

Cultural influences on pain

Sue Peacock

Increasing ethnic diversity means clinicians are regularly required to meet the needs of people from different cultures and offer culturally relevant health care. Hence there is a growing necessity to understand the influence of race and ethnicity in pain management. We know that cross-cultural differences are evident in many aspects of human behaviour and in the prevalence of illness and in healthcare usage. Cultural factors influence beliefs, behaviour, perceptions and emotions, all of which have important implications on health and health care. Culture influences illness behaviour in a number of ways including defining what is regarded as 'normal' and 'abnormal', determining the cause of illness, influencing the decision-making control in healthcare settings, and impacting on health seeking behaviour.

Approximately one in five adults in Europe has chronic pain resulting in substantial healthcare costs. Evidence that cultural influences have an impact on pain is readily available from the UK where pain is the most common symptom encountered by the medical profession. This can be seen in the sickness absence for back pain, which increased dramatically in the UK between 1979 and 1996, although there was no change in the incidence of the conditions that cause back pain. This trend has reversed in recent years, leading commentators to conclude the changes were most likely a cultural phenomenon. Hocking explains this by suggesting that people cope with sub-clinical symptoms and only consult if the social environment changes and the 'symptoms' become viewed as malign.

Defining culture and the notion of acculturation

Before going any further we need to look at definitions. The terms 'race,' 'ethnicity,' and 'culture' are often used interchangeably, but they all represent very different concepts. Controversy exists over whether 'race', described as a construct which distinguishes groups of people according to their ancestry, is a biologically valid idea or a social concept which serves a social purpose. Distinguishing groups of people according to behaviour, culture, biological and physical characteristics is termed 'ethnicity.' Defining culture has not been straightforward as there are many definitions in the literature including culture as '*a coherent set of values, concepts, beliefs, and rules that guide and rationalize people's behaviour in society*' or '*a set of learned behaviours, beliefs, attitudes and ideals that are characteristic of a particular society or population.*' A persons' culture determines how pain is perceived, experienced and communicated. A useful analogy of culture described by Helman refers to culture as an inherited 'lens' through which the individual perceives and understands the world and as a result learns how to live within it.

We need to explore the notion of acculturation to aid our understanding of cultural influences on pain. Acculturation has been defined as the extent to which an individual who migrates from their country of birth adopts the values, beliefs, cultures and lifestyles of the country they emigrate to. Those who are more acculturated report similar levels of pain and illness to the country they have emigrated to. In particular, second and third generation immigrants are more likely to share the beliefs and behaviours of the host nation; however this remains poorly researched. The variation in health between groups could partly be explained by the idea that newly arrived immigrants tend to be situated in lower socioeconomic groups, and there is strong evidence of the link between low socioeconomic status and poor health including the report of pain.

My own experience and research in the South Asian communities within Leicester and Milton Keynes has shown vast differences. SA people attending the pain clinics

in Leicester have similar pain beliefs to the white population, perhaps because the SA community has been established in Leicester for many years. This is in contrast with my own clinical practice in Milton Keynes, where the SA population is very new in comparison to Leicester. They have very different beliefs, attitudes and ways of presenting their pain. For many of these people the concept of self management is alien. Hobbies and interests other than the family and politics seem to be unknown. If pain can't be cured they may think the doctor is useless, but accept that it is God's will that they should live with the pain, so one of my challenges is how to engage these people in self management.

Ethnic differences in experimental pain

Findings from some laboratory studies have suggested there are ethnic differences in response to experimental pain but other research has questioned this. Sensitivity to experimental pain stimuli has been demonstrated to be greater among African-Americans compared to non-Hispanic Caucasians. In a study focusing on ethnic variations in pain tolerance among South Asian males and White British males, and the results indicated South Asian males had significantly lower thermal pain thresholds and experienced higher pain intensity than White males. This was only true of thermal pain and no differences were reported for cold pain threshold or heat unpleasantness.

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Before drawing any formal conclusions about these ethnic differences we need to consider several issues. Firstly, the race or ethnicity of the experimenter is rarely documented or controlled. Some studies have suggested that the experimenter's gender has been found to influence results. It could be that similar effects occur in the context of ethnic characteristics.

The profound effect of pain beliefs

Turning now to the clinical situation: pain beliefs are brought to it by both clinician and patient and can have a profound effect on care. Mistaken beliefs about the nature of pain and disability, resistance to treatment seeking, reluctance to comply with treatment and failure to accept responsibility of the treatment outcome are not culturally or sub-culturally specific obstacles to pain management. Pain is a private experience but pain behaviour is influenced by social, cultural and psychological factors. These factors influence whether private pain is translated into pain behaviour, the form this behaviour takes, and sometimes the social setting it occurs in. Part of the decision about whether to translate private pain into public pain behaviour depends on the interpretation of the significance of pain. For example, is it seen as 'normal' or 'abnormal'? The latter is most likely to be brought to the attention of others.

Each culture and social group has its own unique language of pain and distress: its own complex expressions by which ill or unhappy people make other people aware of their suffering. There is a specific, often standardized way of signalling both verbally and non-verbally that the person is in pain or discomfort. The form that this pain behaviour takes is largely culturally determined, as is the response to this

behaviour. This often depends on factors such as whether their culture values or disvalues the display of emotional, postural, mobility or verbal expression in response to pain or injury. Some cultural groups expect an extravagant display of emotion in the presence of pain, but others value stoicism, restraint and playing down the pain.

Zborowski stated that a cultural group's expectations and acceptance of pain as a normal part of life will determine whether it is seen as a clinical problem that requires a clinical solution. This is illustrated by observations of Australian aborigines: despite one-third of men, and half of the women reporting back pain when asked, they did not perceive it to be a health problem and consequently did not report symptoms (unless asked), display pain behaviour or seek medical treatment. Another study in rural Nepal found back pain to be common and yet when medical facilities were available virtually no-one sought help. In this instance, it appears that the symptoms of back pain were not perceived to be a medical issue rather part of the aging process.

Identifying the barriers that lead to under treatment

The literature reviewed by Bonham shows empirical data indicating disparities in pain treatment based on the patient's race or ethnic background. The key findings of this review were specifically that Black and Hispanic patients were more likely to be under treated for their pain across "different types of health care facilities and treatment settings; from the emergency room to the community hospital to the nursing home" It is suggested that these disparities in pain treatment are a result of stereotyped perceptions of race and ethnicity, language barriers, socioeconomic status, doctor – patient communication and clinical assessment of pain. These disparities are echoed by Carey and Garrett who found that Black patients recorded worse disability as measured by the Roland Morris disability questionnaire, and higher pain scores on a 10 point scale in comparison to White patients. Yet clinicians considered Black patients less likely to have disc disease and to have less pain than white patients. The incidence of hospitalization and surgery for back pain was found to be significantly lower in Black patients than in White patients. Also, after controlling for income, education, insurance status and baseline severity scores of low back pain, Black patients were less likely to receive radiographs or advanced imaging studies than White patients.

So how can we improve this situation? We need to identify the barriers that lead to under treatment. These include the problem of communication: immigrants living in close-knit communities or those who have recently arrived may not be fluent in the language of their adopted country and health care providers might not have easy access to interpreters. Other barriers identified are the inability to access health information due to poor access to language specific literature, and literacy problems. Other reasons may be much subtler: for example it has been demonstrated that ethnic minorities are less likely to become involved in medical decisions about their treatment than non-minority groups. This effect can be reduced if the treating health professional has the same ethnic background as the patient.

The need for culturally grounded pain management services is clear. The psychological and behavioural management of pain is developed primarily from a Western approach to the causes and the appropriate way to manage pain. Although acculturation and increased socio-economic participation eventually reduces cultural inequalities in health, it is unethical to allow this alone to solve the problem. We need multidisciplinary research to investigate the models of pain and treatment in different cultural groups to allow us to understand how pain is presented and how beliefs and expectations about treatment can be married with effective evidence-based pain management. The role of factors such as gender, language, acculturation, socioeconomic factors, family involvement and interactions with the health care

system should be investigated to improve our knowledge of how these factors influence pain management. Within the healthcare setting, factors such as stereotyping, bias, clinical decision making, along with legal and insurance systems require further research.

So what practical solutions to reduce disparities in pain management should we be considering? Some of these have been suggested by Davidhizar and Giger. Many pain assessment tools have been translated into different languages. These have various levels of reliability and validity, and it is essential to utilize the appropriate cultural and linguistic tool, for instance a vertical visual analogue scale for Chinese people. We need to be aware of the limited usefulness of the basic pain assessment tool and combine them with reports from the patient and their families to ensure that accurate pain information is obtained and culturally appropriate care is provided.

Pain communication

It is important for the health professional to appreciate both verbal and non verbal responses to pain to avoid the misdiagnosis of having both pain and a hysterical emotional disorder. Cultural responses are usually divided into stoic or emotive, but we need to examine reasons for non verbal behaviour. These could include not asking for medication because either they think it will be brought to them if they need it, or that it is disrespectful to ask. Others who grimace or groan may feel that this is enough to describe their pain so do not verbalise it. Research has shown that health care professionals are more likely to be responsive to pain communication by people from the same culture, and are less likely to understand that of other cultures. Therefore we need to acknowledge that the meaning of pain frequently differs between different cultures. For some this permits expression of pain and for others their pain is associated with religious beliefs, whilst some try to find meaning to make sense of their pain.

Health professionals should be aware of the biological factors that influence pain treatment. Pharmaceutical research has determined ethnic differences in drug metabolism, dosing requirements, therapeutic responses and side effects. It is also important to consider that these differences are possible within cultural groups, and therefore the assumption that all people in that cultural group will respond in a certain way should be avoided.

It is vital for the health professional to engage in personal reflexivity to further develop their own self-awareness of values and beliefs. Reflexivity can help avoid ethnocentrism, (that is the belief that their culture is superior to other cultures) and help health professionals become aware that personal biases can influence their responses to and management of pain.

Discussion

I agree with everything you say but how do we take this forward in practical terms? How do I get the necessary information? It takes a lifetime to understand another culture – should I have a basic manual with some hints or something?

There have been some quite successful developments in other branches of medicine such as the treatment of diabetes and perhaps we should be trying to incorporate these into pain management.

You can't do it all and it depends on the size of your hospital. We were fortunate to have people on the staff including a Kurdish and a Polish doctor who could help.

We've been doing research in Leicester with South Asian and White British GPs. We found that they were equally likely to classify South Asian patients as mainly having psychosomatic rather than pain problems and the reverse in White patients.

So you still carry professional cultural baggage into the consulting room irrespective of your ethnicity – and your ethnicity may not reflect your cultural beliefs. That was a big eye-opener for me which I hadn't anticipated.

Maybe they were both right?

When we looked at the patients themselves there was no evidence for that. But the descriptions of pain were different, for instance the South Asian patients were less likely to describe their pain as local and discrete – it was a broader description, and that seemed to be a cultural description.

We only study the people that come to us for help, and you said that in some cultures people regarded back pain as due to aging but that's true of our cultures. When I worked in Bristol we did a large community-based studies looking at help-seeking behaviours in the South West where there are no ethnicity issues. Something like 50 to 60 per cent of people reporting severe chronic pain were not seeking help. We tried to understand why they didn't seek help and the basic answer was that they thought the pain was part of who they were, a part of life, and not amenable to concepts of medical disease or treatment. This represents more than half the population in pain and thank goodness it is!

There has been a feeling that we should be going out there and offering help to the people not seeking it but we have more than enough on our plates with the ones who do!

There might be a chicken and egg/self-fulfilling prophecy element here: you could imagine a medical discussion going something like 'don't scan that patient because they come from such and such a group and they all make a big deal of their pain' and you ask why do you think that is: obviously your statistics show that they're not getting it proportionately so there might have been a slight racial bias at the beginning but it becomes a vicious circle because the group start to over-report pain because they need to get attention, the doctors notice this and start discounting it more... I'm making this up and I don't know if it really happens...

Wendy (Callaghan) gave a talk on the same subject a few years ago ... have things improved at all?

Yes – people doing research have found increasing numbers of ethnic minority patients in pain clinics. We did a very small study on black elders and why they did or didn't consult. Some of it was that if the treatment didn't work they didn't go back as they didn't want to tell the doctor 'your treatment was rubbish'. Sometimes they had so many other conditions that when the doctor suggested a tablet they didn't want to know. One factor was that single handed doctors don't refer as much. It threw up more questions than answers.

We found that if you were a south Asian female you were 50 per cent less likely to be referred to a pain clinic, males a little more, even though SAs consulted their GP twice as often. The GPs said that they wouldn't turn up and the pain management you offer them is inappropriate.

Earlier societies (as primitive ones today) had much less access to medical care so people were forced by necessity to adapt to life situation. It sometimes seems to me

that the West: the US, England and Canada what's happened is because of profit driven systems we're bringing patients out that could be adaptable to pain that is considered unacceptable and we've created a giant industry which historically we've never needed. Maybe it's our culture is the one that's upset.

I remember Minha Rajput when she was here talking about Kenya and the Masai men who did not express pain because it would bring shame on them, even while undergoing circumcision, and the women who would not express pain in childbirth. They would deny pain even when dying and refuse any treatment for it.

There was another study of some primitive people who coped incredibly well with acute pain but crumbled very quickly in the face of chronic pain.

It was also shown in a study pain distress in different groups of South Asians that Moslem women in particular became very distressed very quickly from the onset of pain which might show that the social role and level of interference might be greater on some groups.

The talk on Kenya Willy referred to was part of a discussion of the Declaration of Pain Relief as a Human Right, and in that context the question came up: if pain is culturally acceptable in a far off country, should it be acceptable for us to ignore it? Are we absolved of all responsibility of trying to change the situation?

Some women seem to suffer little or no pain in childbirth and I wonder if the situation for the others is made worse by unnecessary dramatisation and the expectation of pain.

Zebrowski who had worked in a maternity unit in Poland was astonished when he went to America by the difference in pain report and requirement of medication. He thought that was because if it was available you asked for it and started to create behaviour that would demand pain relief. The Polish women were much less demonstrative because there was no point in it.

I was asked to see a young West African student nurse with quite advanced AIDS for palliative care. During quite a long consultation I asked her if she was depressed. She was completely flummoxed by the word. I asked her about mood but it was clearly something we couldn't communicate about so we moved on to practical matters. I should have taken this further but I was talking to a doctor from the same part of the world and he explained that there wasn't a word in their language for depression and it couldn't be translated. Does that mean people don't get depressed? It wasn't even in the medical vocabulary for back pain. If a word for something doesn't exist does that mean that the thing doesn't exist?

Douglas Adams suggested in the Hitchhikers Guide to the Galaxy that the best way to avoid unhappiness is not to have a word for it!

Ethics of Professionalism and Managerialism in Lord Darzi's NHS

Michael Platt

The ethes of managerialism and professionalism have been alluded to in a previous paper. Several changes are currently occurring in the NHS as a result of Lord Darzi's review of the National Health Service, which will replace the *NHS Plan 2000*, a ten year plan which has already resulted in much change. I will attempt to examine some of the ethical issues involved, after first looking at professionalism and managerialism and how they will work in this new world.

In my last talk, I outlined the fundamentals of professionalism and managerialism. You will recall that professionalism evolved from the work of those who 'professed' a vocation, usually associated with a religious calling. Originally these were the clergy, the lawyers and medicine practitioners. Professions tend to have common features which mark them out. These include a response to a calling, or vocation and preliminary teaching and training as intellectual in character which involves a body of esoteric knowledge and learning, as opposed to mere skill. A profession possesses a code of ethics, it has a Licence to practice from the Government and it is self-regulatory (now under review in medicine!). It is pursued for the benefit of others, as opposed to the self and puts self interests secondary to those of clients (or patients). It is not pursued for monetary gain alone and seeks the welfare of others.

Medical professionalism began with Hippocrates and his fellow practitioners around 450 BC, whose famous oath is still used as a model for others:

By Apollo (the physician), by Asclepius (god of healing), by Hygeia (god of health), by Panacea (god of remedy), and all the gods and goddesses, together as witnesses, I hereby swear that I will carry out, inasmuch as I am able and true to my considered judgment, this oath and the ensuing duties: To hold my teacher in this art on a par with my parents. To make my teacher a partner in my livelihood. To look after my teacher and financially share with her/him when s/he is in need. To consider him/her as a brother/sister along with his/her family. To teach his/her family the art of medicine, if they want to learn it, without tuition or any other conditions of service. To impart all the lessons necessary to practice medicine to my own sons and daughters, the sons and daughters of my teacher and to my own students, who have taken this oath-but to no one else. I will help the sick according to my skill and judgment, but never with an intent to do harm or injury to another. I will never administer poison to anyone-even when asked to do so. Nor will I ever suggest a way that others (even the patient) could do so. Similarly, I will never induce an abortion. Instead, I will keep holy my life and art. I will not engage in surgery--not even upon sufferers from stone, but will withdraw in favour of others who do this work. Whomsoever I visit, rich or poor, I will concern myself with the well-being of the sick. I will commit no intentional misdeeds, nor any other harmful action such as engaging in sexual relations with my patients (regardless of their status). Whatever I hear or see in the course of my professional duties (or even outside the course of treatment) regarding my patients is strictly confidential and I will not allow it to be spread about. But instead, will hold these as holy secrets. Now if I carry out this oath and not break its injunctions, may I enjoy a good life and may my reputation be pure and honoured for all generations. But if I fail and break this oath, then may the opposite befall me.

Managerialism evolved with the development of the industrial revolution and the need to manage complex processes. I also looked at how medical professionalism interacts with managerialism in modern healthcare, particularly in the NHS. I came to the conclusion that modern healthcare was very much led by and managed by managers, but in an increasing symbiosis of the two – especially with the increasing corporatisation of the NHS. NHS managers even have their own code of practice by which they make the care and safety of patients their first concern; respect the public, patients, relatives, carers, NHS staff and partners in other agencies, undertake to be honest and act with integrity, accept accountability for their work, the performance of those they manage and their own organisation and to co-operate with colleagues in the NHS and the community.

The impact of a new model on medical professionalism

Lord Darzi is currently reviewing the NHS and we are currently going through much change in how we, as medical professionals, will work in his new NHS environment. This paper focuses on the development of managed care in the NHS and how the ethos of medical professionalism might be challenged by a modern corporatized and impersonal NHS. Lord Darzi wrote a '*Framework for London Healthcare*' in 2007, which he is now expanding to encompass a review of the entire NHS. Much of this framework will form the basis of the NHS review, and will undoubtedly reflect the corporate approach which we have already seen. The basic structure of the NHS is likely to change, with a move away from large centralised hospitals and a return to smaller decentralised units, thus far dubbed 'polyclinics', named after the large commercial mini-hospitals used in Germany, which combine General Practice with specialist clinics and minor surgery, but no overnight beds. *The Framework for Action*, relating to London, was a response to failing health issues in the capital, especially in areas of low income and poverty. Its introduction states: '*There are stark inequalities in health outcomes and the quality and safety of patient care is not as good as it could, and should, be.*' This immediately shows the ethical consideration of justice and beneficence are clearly being applied. The report examines the aging population, the lack of local health services and the desire for more disease prevention. All of these are laudable aims and reflect a concern to ensure healthcare equality (justice) and care for one's fellow man (beneficence). However, how are these aims going to impact on the medical profession and how might our ethos of care be challenged?

The effects of a corporatized NHS

Much of modern medicine aims to reflect 'evidence-based' care. This means that there is evidence to prove that treatments work for specific problems. Antibiotic medication and their actions against specific organisms are a good simple example. The use of meta-analysis has revolutionised the way we can ascertain the benefits and concerns of modern and old treatments. However, what happens when there is insufficient evidence for definite benefits or otherwise? This is particularly true in pain medicine, where by far the majority of treatments only work in 30 per cent of the population – little more than placebo. Yet we know that by trial and error, we can find an appropriate combination of therapy for most patients. This is probably a reflection of the great genetic variation in molecular receptors and the structure of the nervous system, which is proving to be ever more complex.

What has this to do with the corporatisation of the health service? Corporatisation of the NHS, with its application of 'New Managerialism' has resulted in the attempt to broaden the application of medical treatments by a greater combination of health

professionals, including nurses and allied professionals such as physiotherapists, providing treatments that were once the remit of the medical profession. There is a drive to open up much of the medical profession's 'minor' responsibilities to other health professionals, under corporate clinical governance, removing much of the responsibility for patient care from doctors. Managers are now involved both in senior positions as heads of operations, as well as at the coal face, ensuring that patient targets are being met, using healthcare practitioners of all professions as virtual technicians to ensure that waiting time targets, numbers treated and the dreaded breech targets are all met.

Is this necessarily good for patients?

Managerialism has four essential features, which we can see apply to healthcare:

1. Economic efficiency, with greatest output for the least input;
2. Use of Tools and techniques of management science to resolve problems;
3. A unifying managerial consciousness which places responsibility for organisational function on management and justifies a reliance on hierarchy and control inherent in bureaucratic structures;
4. Managerialism as a moral agent working to achieve the greatest good, not only for organisations, but for society as a whole, demonstrating managerialism's close links with utilitarianism.

Managerialism believes that industrial and other organisations can be made more efficient by '*separating policy planning and control from implementation, routine operations and production*'. Specialist managers have evolved to deal with the various aspects of monitoring work flow and quality, disciplining and hiring of the workforce, as well as managing finance, corporate affairs and marketing. Yet others deal with planning and investment strategy, the collation of intelligence about customers, other companies and rivals and so on. All these functions are now labelled as 'management', and we can see clearly in operation in the NHS.

As a result of these changes, do professionals feel de-professionalised? Advantages include more efficient and faster patient treatments, but at what cost? No longer do consultants run their own wards with their own patients, run by their own firms, with their own ward sisters and nursing teams, often with high levels of discipline. Wards are now mixed-specialty, mixed-sex and high bed occupancy (over 80 per cent). Junior trainee doctors cover across different specialties, preventing continuity of patient care. GPs tend to be based in large practices with many partners and associates. Patients rarely see the same GP – continuity of care? Doctors enjoy much less training time, with fewer hours attending patients – often supernumerary. Increasing specialisation is producing a generation of doctors who are unable to generalise and treat the whole patient – is this generating doctors as technicians in fragmented specialities unable to treat a whole patient, unless working in a large and complex team? In this case, is the quality then dependent on the team management and the managers therein?

Nice 'n nasty, interestin' and mundane – Fairness in the Clinic

Willy Notcutt

I wan to talk from my personal experience (phenomenologically perhaps?) about a subject that has been troubling me for some time. Our focus so far has been on the patient and quite a bit on slagging off other docs (like orthopods!) and so on, but we haven't given much attention to ourselves as good caring doctors. I'm aware of differences in the way we do things - orthopods don't have philosophy and ethics groups - but if you go to a surgeon with a hernia he says I'll repair it – end of story. There s are problems for instance with post code prescribing of chemotherapy but by and large if you go to that clinic you get it done.

But pain is different. Our interaction with the patient is therapeutic: we are part of the therapy. (This may apply in small measure to the surgeon who does your hernia but by and large that's a mechanical thing.) Therefore we are giving of ourselves. The Big Four Principles of Ethics are:

- Autonomy: patients' rights and physicians' rights
- Beneficence: acting in the best interest of patients
- Non-malefeasance – doing the least harm possible
- Justice and fairness

Are we allocating ourselves fairly to all our patients?

In the latter context, we often talk about macro-allocation, the fair allocation of resources at the local and national level, but I want to concentrate on micro-allocation, in other words the fair allocation of resources based on individual patient needs, as we are a treatment resource in ourselves.

This is my problem: there are some patients I take an instant dislike to the moment they come through the door. (I do have one advantage with the unsanitary – I am relatively anosmic) You know how it is – as they sit down they're not making eye contact and you're going through the whole gamut of negativity. There is another side of the coin – the patient you find immediately attractive and with whom you have an instant chemistry. [Readers must use their imaginations about the pictures that illustrated the above categories!] The question is, are our instant reactions determining what we do?

You know the sort of patients that arouse feelings of negativity: the grossly obese that you know you can't do anything with, the hugely demanding patient: the uninteresting patient and the blocker. The latter was the occasion for me to have a brush with the GMC. A woman came to see me with pain in her groin and leg; she was grossly obese and came with her son and was sort of latently aggressive towards me throughout the interview. The referrer thought she had an adductor tendonitis and had suggested a steroid injection which she refused because she claimed to be allergic to every single drug in the BNF including steroids! At the time I had a laceration in my arm which was well scabbed which by now was providing a greater source of interest and she picked up on this. I struggled my way to the end by which time I really couldn't think of any way to help her so gave her another appointment and some advice about diet and weight loss in the meantime. She didn't turn up for her next appointment and the next I heard of her was a letter, initially to the GMC who passed it down via the hospital, which stated that I was something out of the 19th Century and hugely paternalistic etc. etc. That's a thankfully unusual example of negativity but there are other categories: we have the cultural stereotypes: we have a Greek community and there is the elderly Greek woman

dressed in black with polyarthralgia – you're instantly into the stereotype mode. There's another thing which comes up – I have heard it at pain society meetings and even once in this group (not this time) – someone saying all pain patients are mad. While that might be a bit of black humour and language we can feel OK with I feel uncomfortable with it even though there may be a very few with significant psychological problems. I wonder if surgeons talk about their hernia patients like that? (*They do if they have chronic pain!*) Or even psychiatrists.

And then there is positivity – the patients we go into overdrive with. Like the appropriately distressed patient, and the appropriately dressed patient. (I put that in by mistake but it is a good example of something that evokes positivity.) There are patients who become 'friends' over a long period of time (in a non-social sense) – even some who use my Christian name. There are personal friends and colleagues that we provide a service for perhaps at home or after the clinic is finished. Are they more likely to have a scan? Am I likely to give more of myself to the patients I feel positive about? Is this fair on the others?

I have regular clinics and a high turnover. There are some patients I recognise that I can't handle in my clinic and need extra time to address problems that need time so I give them extra time slots. Now am I selecting these patients on a basis of need or urgency, or are they just nice people, with complicated and interesting problems? Sometimes I don't quite know.

Where's the fairness?

I've never yet seen a professor of nociceptive pain and I've looked on Google. (There may be a few of acute pain) However there are several defined chairs in neuropathic pain and I wonder if we're inclined to get super-interested in neuropathic pain and leave the rest. We get obsessed by our own areas of interest. I've heard of the SCS implanter who regards every patient as a potential recruit. I have a research interest and I realise that there is a huge contextual effect with trial patients – they have longer appointments and everyone listens to them: patients in a research project get much better care than others – where's the fairness?

How do we apply fairness to ending the clinical relationship? How do we choose who gets long term involvement and who doesn't? [Laughter at more pictures.] How do we abandon them if there is no way to help them? GOMYC is my version of GOMA (get out of my emergency room, from the book the House of God. The way the emergency physician got rid of the patient by identifying that the serum urea was slightly raised so he could pass them on to the nephrologists.) What strategies do we use to evict patients from our clinics? What do we do with 'revolving door' patients?

I turned to the IASP curriculum to see if there was anything there that could help us and read through the area of philosophy and ethics and found nothing.

Lastly, to take a philosophical view, I want to look at equality. The equality of all persons, male and female, rich and poor, of any race, class, or caste, is proclaimed in the scriptures of all faiths. This is true despite the conventions of many cultures that discriminate between people on the basis of caste, class, race, or sex. Regrettably, such discrimination is also on occasion supported by certain conventional interpretations of passages from sacred texts. Yet with the development of a more refined religious consciousness, all forms of discrimination are being overcome, and interpretations of religious texts which have traditionally under-girded discriminatory attitudes and practices are being shown to be erroneous. The golden rule is the *The Ethic of Reciprocity*. This is found in the scriptures of nearly every religion. It is often regarded as the most concise and general principle of ethics.

Justice, fairness and equality are implicit in this.

You shall love your neighbour as yourself.

Judaism (and Christianity); *Leviticus 19:18*

Whatever you wish that men would do to you, do so to them.

Christianity; *Matthew 7:12*

Not one of you is a believer until he loves for his brother what he loves for himself.

Islam; *Forty Hadith of an-Nawawi* 13

A man should wander about treating all creatures as he himself would be treated.

Jainism; *Sutrakritanga* 1:11:33

*One should not behave towards others in a way which is disagreeable to oneself.
This is the essence of morality. All other activities are due to selfish desire.*

Hinduism; *Mahabharata, Anusasana Parva* 113:8

Tseung asked, "Is there one word that can serve as a principle of conduct for life?" Confucius replied, "It is the word shu—reciprocity: Do not do to others what you do not want them to do to you."

Confucianism; *Analects* 15:23

Comparing oneself to others in such terms as "Just as I am so are they, just as they are so am I," he should neither kill nor cause others to kill.

Buddhism; *Sutta Nipata* 705

So I leave you with these questions:

- Are some patients more equal than others?
- Is unfairness a reality in our practice?
- Do we confront our prejudices and identify and manage unfairness in our practice?
- Do we as pain docs, nurses, psychologists etc. have enough training to overcome our prejudices and look at ourselves?

Discussion

Medical students are being taught a lot of communication skills – hopefully this sort of thing is included.

A friend of mine said his students were fantastic communicators but didn't know a thing about anatomy.

This is an extraordinarily important subject which isn't given much attention and I think there is another level of it: which patients get to you in the first place. There is evidence from other specialities that socioeconomic status is big driver determining whether you get into clinics and whether you then get appropriate treatment. The higher up the scale you are the more likely you are, and the earlier, to have a knee replacement. It appears that the GP is more likely to take notice of people and to refer the patient, and the surgeon to operate, if they are in the same socio-economic

status as themselves. There has been some work with actors reporting angina who are treated differently depending on the socio-economic status they adopt. We are prejudicing treatment all the time. We do need to be much more aware of our reflex behaviour and understanding of how we get over it.

One of the things we do in teaching postgraduate communication skills is to get people to talk specifically about their prejudices. People will come out with them. I'm aware of some of mine but the difficult ones are those you're not aware of! I'm aware of some of mine like the guy who's had 13 children by six different women on incapacity benefit who hasn't worked a day in his life. I realise that I am getting much more cautious in the way I treat people as I am aware that I may cut corners.

One thing you've got to recognise is that you'll probably never get it right. If you do catch yourself having a negative reaction to someone you'll probably feel guilty and overcompensate for it and give them far more time than they need and deny it to people who really ought to be getting it!

One clue might lie in something you brushed off very dismissively and that is about physician's rights. You're actually dealing with people that anybody would find difficult however skilled they are and might have similar reactions. Some of us (psychologists) have long training in dealing with those reactions and supervisory relationships where we can take our negative reactions and try and understand them and therefore improve our behaviour. Doctors don't get this and often they work alone. If they have a colleague these are not the kinds of issues they discuss. Maybe you need to enforce your physician's rights (to have the same support as psychologists)/

I do work in a very supportive environment and we do moan at each other about our patients – that ability to offload and reflect.

That's not quite the same thing....

But it's better than nothing.

Another category is the 'pre-charged' patient whose anger – not necessarily directed against you – you pick up as they come through the door. We are no different from our patients as we need to be empty for the next one but we are pre-charged for the next? How do you deal with this even if you are aware of it?

I think one thing health care providers tend to do is to try to take responsibility for the patient because they feel ethically compelled. I had rules: if you come in the first time and you're not cleanly you go find a bath and a change of clothes before you come back. I take the attitude that I'm not responsible: I do my job ... if your behaviour is inappropriate and you've made problems for yourself in the past it's your problem – I don't care...If you make the patient responsible for themselves. I've found that if such patients raise their standards they actually feel better about themselves, become more responsible and more engaged at their treatment.

I'm just wondering how I will respond to my first letter from the GMC after I tell someone to get a bath!

I had a complaint about the number of times one of my team members yawned in a consultation.

We have notices about how to complain in the waiting room.

When the Patients' Charter came out there were framed copies of it all around the hospital. They very soon disappeared to be replaced by Patients' Responsibilities.

What about the extreme racist? I had a chap who spent his time complaining about having to share the waiting room... and wrote a letter complaining that the two Asian women in front of him got more of my time...and I had to reply to it...

These extreme cases are not really the problem. It's more subtle. It's our unexplored and unappreciated prejudices – the small changes we make so we're not actually treating some patients as well as others.

It's this iterative process– our negativity is fed back to us and it goes round and round...

...guidelines – the government want us to treat everyone the same – if you see (a) you have to do (b).....

But you can't do that as they're all individuals...

But if you're going to take out any interaction and eliminate your reactions you have to go to the point of having rigidly predetermined ways of doing things...

But that is to deny your humanness... you might as well be a computer...

Alex would quote Levinas at this point, 'divinity is in the face of the other'. I would emphasise that when we are faced with a patient it's the interaction between you – not all you being the clinician and them the patient...

I remember Professor Rosenheim when I was a student who had the amazing capacity to treat everyone the same...

What was his secret?

I don't know.

Poetry and Pain

Michael Hare Duke

Medical science proceeds by first identifying a disease. This is followed by research, understanding the origins of the lesion and then managing the outcome. Mastery. Because that I think is my feeling around the word science – it's about mastering things. Whereas poetry seems to be giving space to the unmasterable emotions. It seems to me we need both in treating the phenomenon of pain. Part of the necessity in coping with pain is to have some sort of story into which it fits. To make sense of it – 'why?' Why has it happened to me? What do I make of it? Who shares it?' Looking to poetry as a way in which emotions are expressed I thought of the different kinds of emotion that pain evokes in us and what we need.

First of all there is the protest that comes with pain – the need to complain. That's there in a number of the items I have chosen but particularly in *A Poison* by William Blake, about sharing anger:

I was angry with my friend:
I told my wrath, my wrath did end.
I was angry with my foe
I told it not, my wrath did grow.

And I water'd it in fears,
Night & morning with my tears;
And I sunned it with smiles,
And with soft deceitful wiles.

And it grew both day and night,
Till it bore an apple bright;
And my foe beheld it shine,
And he knew that it was mine,

Arid into my garden stole
When the night had veil'd the pole:
In the morning glad I see
My foe outstretch'd beneath the tree.

Ha-Ha! The sense of the anger that we need to express. Who is the foe? Sometimes it's the physician that doesn't come up with the answer – expecting him to be the scientist who knew exactly what the pain meant and how to cure it. Or sometimes it's the god, as in Elizabeth Barrett Browning's poem *A Musical Instrument* about the great god Pan:

What was he doing, the great god Pan,
Down in the reeds by the river?
Spreading ruin and scattering ban,
Splashing and paddling with hoofs of a goat,
And breaking the golden lilies afloat
With the dragon-fly on the river.

He tore out a reed, the great god Pan,
 From the deep cool bed of the river;
 The limpid water turbidly ran,
 And the broken lilies a-dying. lay,
 And the dragon-fly had fled away,
 Ere he brought it out of the river.

High on the shore sat the great god Pan,
 While turbidly flow'd the river;
 And hack'd and hew'd as a great god can
 With his hard bleak steel at the patient reed,
 Till there was not a sign of the leaf indeed
 To prove it fresh from the river.

He cut it short, did the great god Pan
 (How tall it stood in the rive !),
 Then drew the pith, like the heart of a man,
 Steadily from the outside ring,
 And notch'd the poor dry empty thing
 In holes, as he sat by the river.

'This is the way,' laugh'd the great god Pan
 (Laugh'd while he sat by the river),
 'The only way, since gods began
 To make sweet music, they could succeed.'
 Then dropping his mouth to a hole in the reed,
 He blew in power by the river.

Sweet, sweet, sweet, O Pan!
 Piercing sweet by the river!
 Blinding sweet O great god Pan
 The sun on the hill forgot to die,
 And the lilies revived, and the dragon-fly
 Came back to dream on the river.

...and then the question: why does it have to be first the pain, and then the effect – to get the beauty?

Yet half a beast is the great god Pan,
 To laugh as he sits by the river,
 Making a poet out of a man:
 The true gods sigh for the cost and pain
 For the reed which grows nevermore again
 As a reed with the reeds of the river.

It's somehow an understanding of pain that says it's got an outcome – it's a cost you have to pay to get the music. It may be a kind of natural pattern, by why is it made like that? We're going into theology now: where is the justice of God who makes beauty out of pain? Why does it have to be this way? When we try to help people in pain or with a terminal illness what can we say to them that actually helps make sense of things and have some kind of story which gives them hope and enables them to cope? There is certainly an ability to be angry about the injustice but also there is the value of compassion.

Blake again, in *On Another's Sorrow*:

Can I see another's woe,
And not be in sorrow too?
Can I see another's grief,
And not seek for kind relief?
Can I see a falling tear,
And not feel my sorrow's share?
Can a father see his child
Weep, nor be with sorrow fill'd?

Can a mother sit and hear
An infant groan an infant fear?
No, no ! never can it be
Never, never can it be I

And can he who smiles on all
Hear the wren with sorrows small,
Hear the small bird's grief & care,
Hear the woes that infants bear,

And not sit beside the nest,
Pouring pity in their breast;
And not sit the cradle near,
Weeping tear on infant's tear;

And not sit both night & day,
Wiping all our tears away?
O, no ! never can it be I
Never, never can it be!

He doth give his joy to all;
He becomes an infant small;
He becomes a man of woe;
He doth feel the sorrow too.

Think not thou canst sigh a sigh
And thy maker is not by;
Think not thou canst Weep a tear
And thy maker is not near.

O! he gives to us his joy
That our grief he may destroy;
Till our grief is fled & gone
He doth sit by us and moan.

And then pushing that up – which in the Judaic version is ‘*can a woman forget her child? – How can God forget his people*’ – and going on to the religious story of God’s incarnation. Here is God suffering human pain and taking it on board; allowing a new relationship to overcome the anger at the injustice – God taking responsibility for the injustice and pain. That’s a coping story and all the other religions have their coping stories. For the Jew it’s the story of the Exodus – people brought out of slavery into a promised land – all in the future. For the terminally ill it provides a view that there might be something beyond – a faith statement.

There is also the experience of depression as expressed in the Gerald Manley Hopkins poem *I Wake and Feel the Fell of Dark*:

I wake and feel the fell of dark, not day.
 What hours, O what black hoürs we have spent
 This night! what sights you, heart, saw; ways you went!
 And more must, in yet longer light's delay.
 With witness I speak this. But where I say
 Hours I mean years, mean life. And my lament
 Is cries countless, cries like dead letters sent
 To dearest him that lives alas! Away.

Clergy in depression whom I have sat with tell me they wake at four o'clock in the morning and can't get to sleep again and know they are back with the misery of this illness. One chap who was quite a well known religious writer who went through a long period of depression said to a fellow-priest 'I'm so glad to know I've got cancer – I thought it was the depression coming back and I couldn't have borne that.' The sense that something saps into you and you wake and it's all dark.

I am gall, I am heartburn. God's most deep decree
 Bitter would have me taste: my taste was me;
 Bones built in me, flesh filled, blood brimmed the curse
 Selfyeast of spirit a dull dough sours. I see
 The lost are like this, and their scourge to be
 As I am mine, their sweating selves; but worse.

To feel that someone as devout, as caught up in the world of faith, and can also write poetry, who stands alongside you in your depression: it gives you a voice - I couldn't have said that but he did and I can latch onto his coat-tails, as it were, and can be somewhere else than my own endless dark. Here is Hopkins again reminding us of that sheer awfulness of pain (both mental and physical) which was alluded to several times on the first day, in *No Worst, there is None*.

No worst, there is none. Pitched past pitch of grief,
 More pangs will, schooled at forepangs, wilder wring.
 Comforter, where, where is your comforting?
 Mary, mother of us, where is your relief?
 My cries heave, herds-long; huddle in a main, a chief
 Woe, world-sorrow; on an age-old anvil wince and sing—.
 Then lull, then leave off. Fury had shrieked 'No ling-
 ering! Let me be fell: force I must be brief'.

O the mind, mind has mountains; cliffs of fall
 Frightful, sheer, no-man-fathomed. Hold them cheap
 May who ne'er hung there. Nor does long our small
 Durance deal with that steep or deep. Here! creep,
 Wretch, under a comfort serves in a whirlwind: all
 Life death does end and each day dies with sleep.

Poetry as an armoury

I once worked with a girl who had much of her life been a victim of sexual abuse, feeling that nobody ever dared admit the word rape that she felt she had experienced since childhood – how could anything help her express what she felt?

She felt that *The Shield of Achilles* by W.H.Auden somehow spoke to her condition. The story behind this is that Thetis, Achilles's mother, wanted a beautiful shield wrought for him by Hephaestos, the armourer of the gods. When she went to see what he had done the awful reality of what he had put there wasn't at all what she'd hoped for:

She looked over his shoulder
 For vines and olive trees,
 Marble well-governed cities,
 And ships upon untamed seas,
 But there on the shining metal
 His hands had put instead
 An artificial wilderness
 And a sky like lead.

A plain without a feature, bare and brown,
 No blade of grass, no sign of neighbourhood,
 Nothing to eat and nowhere to sit down,
 Yet, congregated on its blankness, stood
 An unintelligible multitude.
 A million eyes, a million boots in line,
 Without expression, waiting for a sign.

Out of the air a voice without a face
 Proved by statistics that some cause was just
 In tones as dry and level as the place
 No one was cheered and nothing was discussed;
 Column by column in a cloud of dust.
 They marched away enduring a belief.
 Whose logic brought them, somewhere else, to grief.

She looked over his shoulder
 For ritual pieties,
 White flower-garlanded heifers,
 Libation and sacrifice,
 But, there on the shining metal
 Where the altar should have been,
 She saw by his flickering forge-light
 Quite another scene.

Barbed wire enclosed an arbitrary spot
 Where bored officials lounged (one cracked a joke)
 And sentries sweated for the day was hot:
 A crowd of ordinary decent folk
 Watched from without and neither moved nor spoke
 As three pale figures were led forth and, bound
 To three posts driven upright in the ground.

The mass and majesty of this world, all
 That carries weight and always weighs the same
 Lay in the hands of others; they were small
 And could not hope for help and no help came:
 What their foes liked to do was done, their shame
 Was all the worst could wish; they lost their pride
 And died as men before their bodies died.

She looked over his shoulder
 For athletes at their games,
 Men and women in a dance
 Moving their sweet limbs
 Quick, quick, to music,
 But there on the shining shield
 His hands had set no dancing-floor
 But a weed-choked field.

A ragged urchin, aimless and alone,
 Loitered about that vacancy, a bird
 Flew up to safety from his well-aimed stone:
 That girls are raped, that two boys knife a third,
 Were axioms to him, who'd never heard
 Of any world where promises were kept.
 Or one could weep because another wept.

The thin-lipped armourer,
 Hephaestos hobbled away,
 Thetis of the shining breasts
 Cried out in dismay
 At what the god had wrought
 To please her son, the strong
 Iron-hearted man-slaying Achilles
 Who would not live long.

It's incredibly difficult to read any kind of gladness into this poem by Auden who was writing at the time of Nazi Germany, wrestling with his own sexual orientation as a gay person and who found very little help in that 1930's world . But this girl who had grown up with abuse felt that that somehow it made sense to her – that in it she had found someone who had been listening – who had really known what that world is like – it isn't the bright one that Thetis had hoped Hephaestus would produce. In a sense it resonated with her – she found a voice. And I have found poetry helps to provide an armoury for such people. Sometimes together we can write something which manages to give a voice to something that they had felt was unvoicable before.

Understanding the question

And so I wanted to look at the pain that needs expression to cope with it; to say – look, it really is there, and now somebody is finding words that they can share with me and because it has become a human subject and not a dehumanising one, then we can actually manage to speak together as fellow human beings, not just imagining unspoken things, but finding words that will incarnate them. And that's the most important thing I wanted to say: that I have found it possible as a counsellor and priest to work with somebody in a world where we no longer have any easy scriptural references – where Gladstone could touch on a scriptural theme in parliament and everybody knew what he meant. Now it's an esoteric subject; maybe the story of Lazarus resonates but maybe it doesn't. I was talking last night to someone who had been recommended to read the book of Job; but you have to read it in a historical context and ask why it was written when it was written and what it was trying to answer. And that is part of the question we have to be thinking about: why do we import into theology and philosophy things that pass over people's heads?

Why do we do it? What is the object of those words? And one has to say if we are to connect with a person one has to know what their question is. And I sometimes wonder if we should be more concerned with what the patient is asking in order to produce some kind of an answer because if I'm answering my question I'm not answering theirs. To discover what the question is, is the most important thing.

We've got to be in touch

I was brought up on the aphorism that when I open a book and find I can understand all the words but none of the sentences I say this must be philosophy. When I open a book and can understand all of the sentences but none of the words, I say 'ah – this is science!' We've got to be communicating well enough to know what the question is, and speak to that condition rather than tell a story whose meaning is beautiful and let the words take over from us, and even become a kind of game. Like most things, Lewis Carroll touches on this fundamental question in Alice Through the Looking Glass when she meets Humpty Dumpty and she asks him what a word means and he answers crossly that '*words mean what I intend them to mean – I pay them.*' Later on as result of this exchange he says '*impenetrability, that's what I say*' and when Alice asks '*what does that mean?*' he replies '*ah – now you're talking like a sensible child!*' When we can work on these words which are not imposed on us, and know what we are trying to say and use a word even if it's impenetrability – and know what it means – then we're in dialogue. But language can be a great blocking off – a way of flight from engagement because if I can say something I don't have to engage nearly so closely. There are lots of ways of blocking people off. I have an image of myself as a young hospital chaplain also running a parish in Lancashire. Sometimes the week would run on and I hadn't done a proper ward round; I would go in knowing that there were six wards and I had to get round them somehow and be back in time for Evensong. I'd say 'how are you?' and they'd begin – and then I'd realise that this was going to be a long story. And then I'd feel as if I had a kind of stopwatch in my pocket and I'd stopped it. And I could see the person look very wretched – he asked but he didn't bloody want to know. We do it in all sorts of ways. I do it, or at least I used to do it when I ran the diocese when I would go to a vestry and they wanted to know what the future was.

I didn't know but I didn't want to admit that so I'd manage to shift it on and have a bit of theology and they wouldn't be helped and neither was I – but I'd got out of it. Language which blocks is so easy a tool for avoiding the pain of direct clear communication.

A sense of empathy

So helping people to cope is first of all giving them a voice, but we can only give them one out of our own understanding. We have got to have some sense of empathy with their feeling, their needs, and then sharing it, working with it, taking it apart so that we don't have to look directly at their pain but at this thing on a side view that they can relate back. For some people it used to be words of Scripture and for some it still is, be it the Qur'an or the Bible. Or else one may have a new armoury, a new set of words that one has picked up and have read and felt – gosh, that rings a bell for me – let's catch it – and the sense of searching: As in the anonymous poem *The Rabbit*:

I hear a sudden cry of pain
There is a rabbit in a snare;
Now I hear the cry again,
But I cannot tell from where.

But I cannot tell from where
 He is calling out for aid;
 Crying on the frightened air,
 Making everything afraid.

Making everything afraid,
 Wrinkling up his little face,
 As he cries again for aid;
 And I cannot find the place!

And I cannot find the place
 Where his paw is in the snare:
 Little one! Oh, little one!
 I am searching everywhere.

We live in a world that carries so much pain and tragedy. We have the sensitivity that hears the cry of pain. One watches the television news and it's Burma, children dying in Africa, an earthquake in China – people in pain. And what do we do about finding something to help with? That's where those of you that have delved deep into pain can help society. We're not a very compassionate society. Oh yes we write our cheques and put money into emergency aid, but you have thought deeply about this? You've got a tremendous educational function. It's not simply making this grow larger and having more doctors, it's about educating so many people. I have a daughter who works in the Bethnal Green Museum of Childhood. Part of her job is to reach out to the ethnic communities around and bring children in and help them to play. As they play with dolls and things my daughter and her colleagues look at the situations they are coming from – like a family has had a row or someone is in hospital, and my daughter's task is to help them reflect about this. And I'm certainly going to take back to her some of the things I've been thinking about as I have listened here. For instance, the educational value of helping people not to have unreal expectations of doctors and to realise that they are part of the human scene; part of the incompetence of our world. And I think she can try to design imaginative games that will help children come to terms with the difficulty of the world, which isn't a safe place, and grow up with a realistic technique of coping. We have all sorts of allies in this business of education and helping people to cope with what you have seen deeply, by engaging with the human experience of pain which needs to be shared, not just among doctors but in society.

Discussion

I went to a Rudolf Steiner day course on 'The Shadow Self' once and at the end of the morning we were asked to write a poem in ten minutes on 'my shadow self'. I told the leader I couldn't write poetry but he said 'don't think about it – just do it'. I had a similar experience when I asked an artist, regarding a picture of his entitled 'The Vicious Circle' (a topic which interested me in the context of pain), what he thought about before starting. He replied 'I don't think – I just do it'. I tried this after a talk on torture here some years ago – just drawing without thinking – after I had read the deeply disturbing handouts describing experience of torture. I was amazed at what I had done – not at all what I expected – it was quite peaceful and quiet. So perhaps your inner mind balances these things? Perhaps if you do a drawing you will get some peace out of it. And later I did a series of spontaneous drawings to go with quotations....

Are there art therapies used for pain?

Yes – I would love to include a session on art, music and poetry therapy in a future meeting. We have used this sort of thing in palliative care.

I think at the moment we're thinking more of pain expression than pain treatment. I too have a daughter who is a primary school teacher and she was telling the story recently of a little girl in her class called Willow – a sweet name for a pale little thing – who says she is hungry – she doesn't get enough food to eat. She is also extremely angry. She comes from a very sad dysfunctional background – she gets no love. My daughter teaches music and art together (and finds that classical music seems to stimulate art) and this little girl is very angry and refuses to do anything. After a lot of persuasion and reassurance that it needn't look like a picture anyone could recognise she spent nearly an hour with a dark colour, almost ripping the paper. And I think it's so important giving people the opportunity to express themselves in any way – there's no common way or right way. But we're so contrived in our clinics. So conventional – so medicalised – that we don't often have the confidence to feel free enough to do that.

Dame Cecily Saunders used a lot of poetry. Her patients were encouraged to write their own poetry. These [the poems presented by Michael] are lovely but they are by well-known poets and it's very insightful to hear what the patients are describing as they are dying or suffering – and their relatives as well. Some of these have been published and given out to other patients and that inspires them....

Somehow the boundaries are more easily broken down in palliative care...

But in a sense we're all in palliative care – we should all be using

But people are nervous. One of our nurses is going through disciplinary because she mentioned that she was a Christian to a patient.

Can I just say how grateful I am because I don't normally read poetry. There seem to be so many other calls on my time. But I took some time this morning to read the poems you gave us. At first I didn't find it easy to understand or digest them, but I think this has been a wonderful end to the meeting. We don't do enough of this. It's so important to explore the higher cognitive spheres of what's going on but also the soul-searching which this did this for me. The other thing was hearing you read it out which gave it an extra dimension – and your little marks: this is anger – this is depression – it was fantastic. The other thing I wanted to say that these meetings don't make me a better doctor in the sense that I take something away and I know exactly what it is. It's happening over time: I know that since I have been coming to these meetings I have changed, although how and why I have changed is difficult to grasp.

We need to redesign our services. I see now that what I need is a waiting room with lots of space and perhaps art materials in it, so before they see us patients are already helping themselves to that.

A lot of the self-help stuff we have is very practical – how to do exercise, how to do this that and the other day by day. But not a lot of it is about getting patients to connect their pain with their emotions which some of these things may do and help people to see something of themselves in it and making more sense of it.

One of my techniques in practice with difficult patients is to get them to write the problem – not poetry; one guy filled 48 foolscap books. I had to work through this and it was staggering what came out. Another question: we've been speaking about impotence this morning, in the face of all the pain in the world. I don't know about you but when I see the suffering following the earthquake in China and the cyclone in the Irrawady Delta, and Darfur and so on, I have a real sense of pain, and I do pray – I do bring this to God. What's your take on this? The weight of pain in the world – we feel so powerless... I know I'm asking an impossible question...

Part of the answer is your sense of prayer. When the first Gulf war broke out I was appalled by it and, I don't know why, I woke up that morning and heard that the invasion had begun and it came to me that we had to get people to find some tools for prayer. My fax machine ran hot, getting people from around the world – Sheila Cassidy, Desmond Tutu – everybody sent something in; I put it together and Hodder said if you can put it together in ten days we'll print it – and they did. It was absolutely astonishing. There was a richness about this. We weren't just sitting there feeling appalled and alone. There was a community...

I posed the question in the flyer and again at the end of the first session as to whether science could replace religion in the understanding of the "whys" of suffering. We didn't have time to discuss it then and I still don't know the answer but from this morning I think we have learnt that even the most dyed in the wool atheist would have to admit that one thing we can't do without is poetry and imaging, not just at the level we have been discussing of people expressing their own pain but also generally in trying to express deeper realities and truths. It occurred to me that to try to make a distinction between poetry and imaging on one hand and religion on the other – to regard them as separate things - was possibly mistaken, and that they are in fact completely inseparable.

Yes. The traditional way that art grew was by responding to the stories, whether scripture or the lives of the saints and things that made people say 'wow'. And the 'wow' effect is what lies behind poetry and art.

I have a poem for you:

GOD IS HERE

*I listened to the altar priest,
dressed in fine robes of white, red and gold.
He, with his voice so holy,
preached upon cold, stone steps
laid before the wooden crucifixion cross,
a lamp of God,
speaking to those clustered within.*

*He sung, in tones both soft and strong:
Our God is thus,
our God is thus-not,
our God is just,
our God is love,
our God is the sole God,
our God is Creator of the All.*

*Be silent, have the faith, question not,
for in the end all shall be set to right,
all shall be well,
evil shall be banished and the tread-upon set free.*

*I listened and I saw
mankind's path of selfish gain,
unnecessary destruction and reoccurring pain,
seeming deaf to words spoken in the churches of old.
I saw this message
as pitifully incomplete,
a travesty laid falsely upon mankind,
for words and faith are not enough.*

*Though darkness was clearly upon me,
I saw on earth a gift so great,
a feeling prevailing over all unpleasant things,
right now, right here, not away far nor yet to be.
An embodied goodness so deep and pure,
called Hope and Wisdom.
For within a life founded upon Hope and Wisdom,
we learn about our suffering,
when it is necessary and useful
and when it is not.
For beneath all suffering, glows a radiant flame,
consuming all liabilities and foolishness,
cheap fodder for this eternal flame;
just ask Pandora!*

*For in Hope and Wisdom,
and not by fancy words or promises unproven,
I know that God is Here,
filling my heart with gladness and cheer,
God's voice so sweet and clear,
guidance to my earthly ears.*

*What happens is what happens
and that is quite clear.
Find strength in what you can do
through conscious choice and right attitude,
look for God Within and not to the world.*

(Michael Kell)