Cartesian Dualism and Pain Medicine

Harry Eeman BA BSc MBBS(Hons) FAFRM(RACP) FFPMANZCA
Specialist Pain Medicine Physician and Rehabilitation Medicine Physician

Cartesian dualism remains a powerful paradigm about the nature of human beings. This philosophical theory has become so entrenched in western medicine that it has almost become regarded as self-evident¹. Not until very recent times has its dominance in medicine become questioned. Pain Medicine in particular is at the vanguard of this change.

Renee Descartes (born 1596 – 1650) was a French philosopher who suggested that the body works like a machine, whereas the mind (or soul) was immaterial and did not conform to laws of nature. Prior to this the prevalent orthodox Christian view was that humans were spiritual beings: body and soul were one². Ill health was therefore attributed to nonmaterial forces and healing usually required contrition towards God. As such, the art of healing was under the auspices of religious leaders.

Through mind-body dualism, Descartes demythologised the body and handed it over to the emerging natural sciences from which modern medicine emerged³. Whilst the body was now open to enquiry, the mind (or soul) was still ‘off limits’ to mechanistic enquiry as the notion that the mind could be subject to physical laws challenged concepts of free will, transcendence of the soul and ultimately the existence of a God according to Christian doctrine. The study of the nature of mind, mental events, mental functions, consciousness and their relationship to the physical body, particularly the brain is known as the Mind-Body Problem which is the subject matter of a branch of philosophy called philosophy of mind.

Once dualism became established, ill health became interrogated through the paradigm of “body machine breakdown”. From this, a modern understanding of disease was born - that is, illness is due to anatomical pathophysiology. The rise of the scientific method, with its emphasis on observed and measurable phenomena (empiricism) and reductionism¹, married well with Cartesian dualism. This endeavour ultimately resulted in great advances in medicine, most notably germ theory. Such successes shaped the way illness was studied, managed and subsequently taught at medical school.

Contemporary medical practice still reflects its reductionist mind-body heritage, which was derived from Cartesian dualism. For instance there is still a preponderance of organ-based specialties (eg. cardiology, gastroeneterology, nephrology, etc...). Perhaps the most obvious example of dualism in medicine is in the separation between psychiatry (the mind) from neurology (the brain).

¹ the philosophical position which holds that a complex system is nothing but the sum of its parts, and that an account of it can be reduced to accounts of individual constituents.
Mind-body dualism as a dominant paradigm became increasingly under threat in the latter part of the last century. The influx of new ideas from non-Western cultures and a greater emphasis on quality of life rather than longevity saw the biomedical model struggle for popularity. Dissatisfaction with contemporary medicine saw the emergence of a new market for the so-called complementary and alternative medicines. Medicine did respond somewhat to the changes in popular attitude and the creation of a number of non-organ-based specialties emerged. For example, Gerontology focused on the effects of ageing on health; Palliative Care medicine focused on symptom management of people in extremis; Rehabilitation Medicine focused on the minimising the impact of disability; in Australia Pain Medicine became a recognised specialty in 2005.

George Engel’s paradigm, the ‘biopsychosocial’ approach to understanding health and illness, was adopted by these new disciplines and a multidisciplinary management approach was also adopted. The biopsychosocial model acknowledges the interplay between the ‘biological’, ‘psychological’ (thoughts, emotions, behaviours) and ‘social’ (socio-economic, socioenvironmental, and cultural) to create illness. This is in contrast to the biomedical model of medicine which emphasises a disease model of ill health, that is as a deviation from normal function caused by virus, gene or developmental abnormality, or injury.

Another challenge to biomedicine came in 1980 as the World Health Organization defined a framework to classify the health components of functioning and disability. In its latest iteration (2001) the WHO’s International classification of Functioning, Disability and Health (also known as ICF) outlines how medical and social factors impact on a person’s health condition and personal and societal function. Once again the centrality of disease as the basis of ill health is challenged.

Strictly speaking, neither the biopsychosocial model nor the ICF violate the mind-body dichotomy of Cartesian dualism. Both ‘biological’ and ‘psychological’ are incorporated into the models as being distinctive but interacting factors. The biopsychosocial approach is the dominant model currently in Pain Medicine although in a recent article Daniel Carr suggests more emphasis should be placed on contextual factors (i.e the social and psychological) rather than nociception (i.e the biological). To reflect the Faculty of Pain Medicine’s agreement with this principle, a ‘sociopsychobiomedical’ approach to understanding pain is being promoted.

The problem with Cartesian dualism

The biomedical model of splitting of the person into body bits - the use of reductionist analysis of the body system with the emphasis on finding pathology to validate the person’s experience has lead to widespread public discontentment. This is evident to anyone who has worked in an emergency department where a large number of patients who present with symptoms that are ‘non-specific’ are discharged once “serious pathology” has been ruled out. Often there is a tendency to label patients as having ‘non-organic’ causes of their illness. Since the workings of
the mind (or soul) has traditionally been tied to concepts of free will, the presence of a ‘non-organic’ illness (i.e. the mind) is often construed as a failure of the individual. Lack of legitimisation of the patient’s concerns due to absence of identifiable disease often provokes frustration in the patient and suspicion by the doctor. The commonly heard phrase “this person’s pain is not genuine” emphasises a dualistic understanding of the world.

**Challenges to dualism**

Arguments against dualism come both from philosophy and modern medicine, most notably from neuroscience.

Monism is the philosophical view that a variety of existing things can be explained in terms of a single reality of substance. There have been a number of monist theories which have attempted at eliminating the mind-body dichotomy. Three broad monist types exist. Idealist monism holds that only the mind or spirit is real. Material monism holds that only the physical is real and that the mental or spiritual can be reduced to the physical. Neutral monism holds that one sort of thing fundamentally exists, to which both the mental and the physical can be reduced.

In more recent times, modern medicine has challenged the mind-matter dichotomy. The effect of ‘biology on ‘psychology’ seems most evident in people who have sustained acquired brain injuries. The ‘argument from brain damage’ posits that damage to the brain affects the mental substance of the person affected. That is, brain injury may change personalities, behaviours and emotions. In fact we can now predict with some reliability the effects of brain damage on the person’s cognitive function. Another example of the effects of biology on psychology is the use of pharmaceuticals to treat and manage mental illness (ie.‘psychology’). The effects of alcohol on mood and behaviour is perhaps the most conspicuous example of biology acting on psychology.

The effect of ‘psychology’ on ‘biology’ is also seen in medicine. In 1975 Robert Ader showed that an immune response could be induced by a classic conditioning paradigm which saw rats die when exposed to the non-toxic, conditioned stimulus of saccharin water (which had previously being mixed with cyclophosphamide). This heralded the new medical field of psychoneuroimmunology. In Pain Medicine, modern imaging technique (fMRI) has shown ‘biological’ changes in response to both education and CBT (i.e. psychology). Again, a positive treatment response and certain changes in brain activation patterns were congruent. Perhaps the most ubiquitous example of the effect of context (i.e. the psychosocial) on biology is that of the placebo effect. This is one of the most robust measurable clinical phenomena and has up until recently being regarded as being a scientific ‘nuisance’. Modern research is now elucidating a number of different biological mechanisms which underlies this phenomenon. It is hoped that in time we will be able to maximise these endogenous health promoting mechanisms without violating any ethical principles.
Modern imaging (eg, PET, fMRI) has allowed the observer to visualise and quantify brain activity. Notwithstanding small inter-individual differences, it seems that there are typical brain activation patterns when an individual performs a task. Moreover, these patterns correlate well with people’s reported ‘subjective’ experience. In some contexts, that a person is about to make a decision can be detected up to 10 seconds in advance by means of scanning their brain activity\(^\text{10}\). This challenges the concept of a subjective, non-physical, free will. It also challenges the notion that there is a linear causal relationship between the mind and body, i.e. that psychology causes biology or vice-versa.

**Conclusion**

More and more, the delineation between ‘psychology’ and ‘biology’ as distinct entities seems to blur. The emerging consensus rightly promotes a more holistic evaluation of a patient where neither psychology or biology is rendered redundant. Indeed it may be that in fact the “psychological” and “physical” (and their synonyms) refer to different ways of talking about the same event, and not to different events\(^\text{11}\). Perhaps then, when we use a biopsychosocial (or sociopsychobiomedical) prism to understand a complex phenomenon such as pain we witness the same phenomenon from three different angles, and not three different causes per se.

---


\(^2\) Mehta N, op.cit.

\(^3\) Mehta N, op.cit.


\(^6\) Engel, G L op.cit.

\(^7\) Carr DB, Bradshaw YS. (2014) Time to flip the pain curriculum? *Anesthesiology*. Jan;120(1):12-4

\(^8\) Wikipedia entry – Monism; philosophical monism – types of monism; [http://en.wikipedia.org/wiki/Monism](http://en.wikipedia.org/wiki/Monism)

