

Cognition: Mechanistic versus humanistic paradigms in medicine

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Synergy – the bonus that is achieved when things work together harmoniously.

– Mark Twain¹

The transition of most Australian medical degrees from undergraduate to postgraduate models resulted in attracting students with diverse prior experience. During medical school and beyond, my colleagues have consisted of former lawyers, political scientists, business graduates, and even musicians. The differing cognitive frameworks and life experiences of graduates have brought into the profession varied approaches to problem solving and patient engagement.² I, too, was from a non-medical background – having worked for six years as an engineer in two research groups.

Engineering science is based on the mechanistic principle that natural behaviour can be explained by relatively simple foundational laws, and that if you split a problem into small enough parts, the entire phenomenon can be explained by these laws alone.³ This approach – applied to stable and predictable *solid materials* – has enabled bridges to be built, motors to be manufactured, and even the invention of complex computer circuits.

Although the mechanistic approach continues to contribute significantly to medicine, it is very far from being able to completely explain, predict or control human biology, and in no system is this more apparent than in cognition.⁴ This is supported by the article in this issue by Chin, which presents the current understanding of the pathophysiology of dementia, highlighting our limited

understanding and calling for additional large longitudinal studies.⁵

Furthermore, a solely mechanistic approach to medicine leads to patients feeling dehumanised, misunderstood and can lead to missed diagnosis.⁶ Also in this issue, Pond and McNeil highlight a humanistic approach to driving assessment involving early discussion of the issue to allow for the patient to prepare for and accept the time when driving becomes impossible.⁷ The article by LoGiudice et al demonstrates the importance of considering cultural and community complexities when considering the diagnosis of dementia among Aboriginal and Torres Strait Islanders.⁸ Humans exist in a complex interdependent world, where the context is as important as the diagnosis.

In contrast to the engineering approach, a humanistic framework has been the historic paradigm of medicine since the Hippocratic Oath.⁶ This approach places the patient's values, interest, dignity and experience squarely in the centre of healthcare. This philosophy ensured the perpetuity of Western medicine despite therapies that lacked efficacy and evidence. As science and technology have advanced, hugely tangible benefits have been realised from a mechanistic approach to healthcare, allowing for improved investigation, diagnosis and management of disease. However, it is the author's experience that when mechanistic paradigms prevail over the humanistic, there is a driving force towards patient disengagement with conventional healthcare.⁹ Mechanistic paradigms should only ever support and promote humanism and never supplant it, lest our patients suffer, and medicine be forced to realign itself.

General practice represents the synergy between mechanistic and humanistic

paradigms. In general practice, a patient's family, cultural, emotional and physical situation – a humanistic paradigm – is supported and improved by offering evidence-based investigation, diagnosis and management of their disease – the mechanistic paradigm. *AJGP* shares this duality – promoting the best of science and technology, while placing the patient and their welfare at the centre of our mission.

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