Received: 24 March 2016 | Revised: 16 November 2016 | Accepted: 30 December 2016

DOI 10.1111/jep.12713

WILEY Journal of Evaluation in Clinical Practice
International Journal of Public Health Policy and Health Services Research

ORIGINAL ARTICLE

A novel clinical framework: The use of dispositions in clinical practice. A person centred approach

Matthew Low MSc, BSc, MMACP, MSCP

Lead Clinician Physiotherapist, The Royal Bournemouth and Christchurch NHS Trust, Bournemouth, UK

Correspondence
Matthew Low, Lead Clinician Physiotherapist, The Royal Bournemouth and Christchurch NHS Trust, Castle Lane East, Bournemouth, BH7 7DW UK.
Email: mattlow128@gmail.com

Abstract

This paper explores a novel clinical framework that is underpinned by a specific philosophical perspective of causation and its utility in clinical practice. A dispositional theory of causation may overcome challenges that clinicians face in complex clinical presentations including those that are medically unexplained. Dispositionalism identifies causes not as regular events necessitating an effect but rather phenomena, which are highly complex, context-sensitive, and which tend toward an effect. Diagnostic uncertainty and causal explanation are significant challenges in terms of clinical reasoning, communication, and the overall therapeutic outcome. This novel framework aims to facilitate improved collaborative clinical reasoning, enhanced patient-practitioner interaction, and supported treatment planning. The paper uses a real case study of a patient[1] with nonspecific spinal pain to demonstrate the clinical framework as used in clinical practice.

KEYWORDS

causation, clinical practice, clinical reasoning, dispositions, philosophy, physiotherapy

1 | BACKGROUND

There has been significant progress within the field of biomedical science, exemplified by the elimination of fatal diseases such as smallpox and reduction in the incidence of polio. Conversely, medically unexplained symptoms accompanied with multimorbidity continue to increase.[1,2] In a traditional biomedical model, conditions are conceptualised, diagnosed, and treated as single discrete entities[3] with illness and suffering ascribed to a certain part of the patient's body such as the back, liver, or the heart.[4] Recent epidemiological evidence suggests that viewing people in this way is increasingly inappropriate as comorbidity and multimorbidity are normal in contemporary medicine and facilitate "silo-based" treatment and management.[2–4] Diseases may be perceived as affecting the whole person but then treated and managed as parts of the whole person leaving the patient's personal, relational, and contextual circumstances adrift in a vacuous space.

Bridging the gap between the biomedical endeavours epitomised by scientific objectivity and evidence-based medicine and the subjectivity of psychological and social factors is challenging. The bio-psychosocial model[5] recognises the individual's biomedical, psychological, and social profiles; however, problematically, it could also lead to categorical thinking where complex presentations are reduced into their psychological, somatic, and environmental component parts. Pincus et al[6] found that the bio-psychosocial model may have been misunderstood and therefore ineffectively applied, both in research and clinical practice with only 10% of classification systems incorporating a bio-psychosocial framework.[7] This may be because the bio-psychosocial model fails to explain the body/mind problem, with the biomedical paradigm on one side and the psychological and social perspective on the other with no clear theoretical link between them.[8] From a patient's viewpoint, the distinction between body and mind may be impossible to grasp as the experience is situated within the patient's own lifeworld as an embodied person. Their body is at the centre of the experience of symptoms that occurs at a prereflective level and may not correspond to the healthcare practitioners' categorical understanding of disease and to the distinction between mental and physical manifestation of the illness, disease, or suffering.[9]

The following questions arise: What do clinicians do when they are faced with managing conditions that are unexplained medically? How do practitioners manage and understand the multiple and varied causal factors within a clinical reasoning approach and apply it in practice? In what ways do clinicians communicate these encounters to patients?

For the purposes of the paper, I shall refer to the patient as a person that is embodied and enactive within their sociocultural environment seeking help for their symptoms. The distinction is made purely to avoid confusion between describing the treating clinician from the person seeking help.

Dispositionalism, a philosophical theory of causation, may help with such difficulties.

The dispositional theory of causation proposed by Mumford and Anjum[10] interprets the concept of cause as a cluster of powers, or dispositions, orientated toward an effect. Powers can be thought of as the causal component of the properties of things. For example, a wine glass has a disposition of fragility. The glass has certain properties that could causally explain why it may break if it were to fall to the ground because of the material from which it is made. However, the fact that the glass has fallen onto the floor does not necessarily mean that it will break. Other causal powers may interrupt, counteract, or intervene. The effect is reached when a single or combination of dispositions exceed a threshold. This can be graphically represented as a vector model.

The purpose of this paper is not to compare or contrast philosophical accounts of causation or to offer robust accounts of causal explanation beyond those in the current literature.[11] However, this paper does attempt to describe how a dispositional theory of causation has been beneficial for the author in its utility in clinical practice and that it may benefit from further research and development in the future.

2 | DIAGNOSIS AND CAUSAL CLAIMS

Diagnosing conditions is regarded as an essential element of medical practice,[12] and correspondingly acquiring an acceptable diagnosis is a significant feature within the patient's illness experience that offers practicality, provides psychological reassurance, and provides social acceptance.[13] Diagnosis effectively ascribes a causal claim, which suggests a biomedical explanation of illness, whereby the illness can be controlled and treated[14] with the potential for subsequent optimism and hope about the future. Additionally, diagnosis has legal and political implications giving individuals the opportunity to access welfare benefits. It also plays a significant social function by validating illness.[15] Diagnosis is therefore of exceptional importance in the management of medical conditions. Non-specific low back pain is defined as low back pain not attributable to a recognisable, known specific pathology (eg, infection, tumour, osteoporosis, fracture, structural deformity, inflammatory disorder, radicular syndrome, or cauda equina syndrome). By its very definition, a biomedical causal claim is contested.[16] However, commonly in clinical practice, back pain is considered from a purely biomedical perspective[17] despite poor associations between radiological imaging and symptoms.[18,19] On the one hand, having a diagnosis of exclusion (eg, cancer) is reassuring,[20] but, on the other, diagnostic uncertainty remains where the cause of the pain is unknown, which appears to lead to pain-related guilt, disability, and depression.[21] Jarvik et al[17] completed a 3-year prospective study to determine predictors of new onset of low back pain by reimaging 148 subjects via magnetic resonance imaging (MRI). They did not find a relationship between MRI scan structural changes and first onset of low back pain but did find that depression was an independent predictor of first onset of low back pain, rather than effect. This study is an example of the difficulty in establishing perceived causal relationships and the nature of their interactions.

3 | CAUSAL COMPLEXITY—NON-LINEAR INTERACTION AND MUTUAL MANIFESTATIONS

Many causal factors have been cited in respect to low back pain onset and maintenance. Examples include cognitive factors (negative beliefs, fear avoidance behaviours, catastrophising, hypervigilance, and poor pacing),[22] psychological and emotional factors (anxiety, depression, stress, and maladaptive coping strategies),[23] physical factors (pain provocative postures and movement behaviours and muscle guarding and deconditioning),[17] lifestyle factors (inactivity, social withdrawal, sedentary behaviours, and sleep deficits),[24–26] and environmental factors that include socioeconomic factors,[2] negative childhood experiences, and allostatic load.[6] All of these factors may coexist, are context dependent, and interact in a nonlinear fashion. In contrast, a traditional Humean view of causation favours empirical-based observations that are seen with regularity, temporal asymmetry and occur together with respect to time and space. This Humean view is one that sees the same cause producing the same effect and therefore, in a healthcare context, the same treatment would provide the same effect in each clinical encounter. The complex interactions of causal relationships are not accounted for and can only be seen as correlations. Causation in clinical practice simply cannot be reduced this way into regular and linear observable events. Such complexity in clinical practice requires a different ontological view of causation.[25] Mumford and Anjum[10] describe that dispositions, or powers, can exist unmanifested but through interaction with other dispositions can facilitate causal processes to be initiated. Therefore, no causal factor or mutual manifestations necessitate an effect. A disposition can lead to a number of different effects, depending on their causal context. This theory and model favours uniqueness, context sensitivity, and holism, in contrast with the traditional reductionist medical approach. A model that successfully conveys this is the vector model (Figure 1).

The vector model provides an overview of the causal powers that act in a specific situation. They convey the relative strengths of power indicated by a vector's length in relation to each other and direction towards or away from the manifestation of an effect or not. The overall tendency is a composition of all the powers that mutually manifest in a given context.

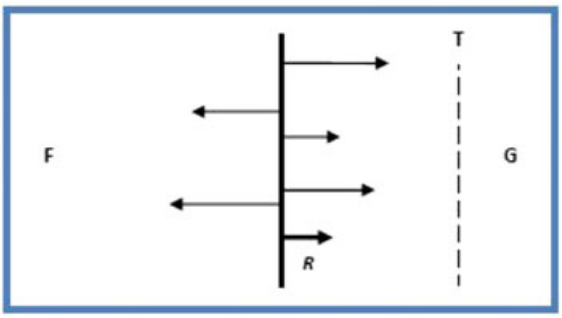

FIGURE 1 Example of the vector model.[10] The solid vertical line indicates the starting situation, F and G represent 2 qualitative outcomes, and T is a certain threshold effect. The arrows show causal factors that dispose towards or away from the threshold effect. The thick arrow R represents the overall tendency of the situation

4 | THE UTILITY OF DISPOSITIONS IN CLINICAL PRACTICE

People who suffer with painful conditions wish to know and understand the cause of their symptoms. Linear models are insufficient to provide an adequate explanation as conditions and contextual factors vary with time. A traditional, biomedical model can be seen as linear with respect to assessment, investigation, establish a diagnosis followed by treatment using traditional positivist ontology. This ontology favours monocausality reductionism (single cause and single effect) and dualism (mind/body dichotomy). Sufficient evidence has been gathered that suggests that this approach has been unsuccessful to manage patients with low back pain in terms of prevalence,[27] cost,[28] and in particular, when using singular therapeutic approaches.[29–32]

Despite the development of the bio-psychosocial model that emerged in response to the challenges of the traditional biomedical approach,[5] the bio-pyschosocial model has been criticised for ignoring the patient's experience in distinguishing illness from disease and neglecting the distinction between pain and suffering as an irreducible experience.[33] Rather, it compartmentalises the condition into biological, psychological, and social phenomena.[33] The importance of interpreting the experience in such ways that both patient and therapist make sense of it lies comfortably within a dispositional ontology. The utility of dispositions in clinical practice may avoid the tension that classification systems create by being noncategorical in so much that multidimensional causal mechanisms replace simplistic linear ones. An example of a simplistic linear explanation for a patient with low back pain may be that they have had investigations that exclude a serious cause, but their MRI shows degenerative disc disease at a level that is sensitive to palpation. The symptoms may also correlate to movement thought to induce load and anterior shear forces through the disc[34] such as repeated or sustained flexion; and therefore, the symptoms are attributed to this in light of normal neurology and lack of other findings. The presence of symptoms (C) could have been seen to arisen because of a history of repeated flexion or sustained loading (A) and the presence of degenerative changes on MRI (B) (A + B = C). However, imaging findings such as disc degeneration, disc bulges, annular tears, and prolapses are highly prevalent in pain-free populations and are not strongly predictive of future low back pain and correlate poorly with pain and disability.[19,27] A dispositional view recognises singular and multiple causal factors that tend towards an effect rather than necessitate them. The strength and direction of the causal powers recognise a holistic view that recognises uniqueness rather than assuming that individuals are examples of a statistical averages. Clinicians recognise the multifactorial nature of conditions,[35,36] but reasoning and communication may be adversely affected by the difficulty in establishing causal relationships. The vector model could help overcome such difficulties. Within a clinical framework, the vector model provides a visualisation of the set of causal powers that dispose towards or away from the manifestation of the symptom. These causal powers are offered through the patient's narrative and interpreted collaboratively with the therapist to make sense of the condition,[33] to provide empathetic rapport, and to address the patient's issue to bring greater benefit to the therapeutic encounter.[37] It should be emphasised that a clinical framework based on this model would be purely qualitative. The vector model is intended to give both the clinician and the patient an idea of the causal powers at a specific moment in time; the powers included may change over time because of the changes in the patient's presentation and circumstances. The aim is to facilitate the analysis of the patient's unique situation and identify the relative intensity of the causal powers involved. Assigning numeric value to the causal powers to try to make this qualitative model seemingly more quantitative is superfluous and possibly counterproductive to the patient's treatment and outcome. The strength and direction of the relative causal power can be used to provide a reflection of the coconstructed perspectives of both the therapist and the patient. In addition, the context and intensity of the causal power may be a way in which treatment(s) can be discussed and prioritised. This approach avoids references to probability studies and seeks to reduce unnecessary labelling and negative judgements of patient behaviours and circumstances whilst increasing patient confidence and optimism by substituting the concept of tendency for the concept of necessity or inevitability. The concept of necessity or inevitability implies that causal outcomes are absolute and final. In complex, adaptive biological systems, it would be bold to suggest that this can be the case; in fact, the outcome could be deleterious. For example, in language, using the term "wear and tear" to describe age-related changes in the spine is commonly used as causal reason for low back pain.[38] However, the term wear and tear meant to patients that they were "rotting away" and that there was no treatment available to them resulting in having to live with the symptoms (inevitability).[38] Patients defined "degenerative change" as a condition that would (necessity) progressively worse and that nothing could be done (inevitability).[38] The terms' meaning in their view was that degenerative change and wear and tear would necessitate and inevitably lead to future on-going back pain and disability, which is not entirely supported by the clinical research.[18] The term "tendency" acknowledges the complexity and relative uncertainty involved in the clinical encounter, but it is less likely to be met with the negative associations of absolute certainty and provide a realistic and balanced view alongside other causal factors that recognise the whole picture. A dispositional view of causation can convey and account for the interference of powers that may manifest toward symptom generation. An example of this is how restorative sleep can counteract symptoms of irritability, fatigue, and mood, all of which, including sleep disturbance itself, may contribute or cause increases in low back pain.[39,40] There may be situations where causal powers oppose each other resulting in equilibria states whereby a number of causal powers of various strengths oppose in an equal manner, which creates no change to a resultant vector. This would be advantageous in circumstances where rehabilitation programmes and medical interventions were aiming to stabilise (eg, maintain vital signs of a critically unwell patient) or prevent (eg, injury prevention) a health condition.

A causal dispositional account of fitness has been described in the literature and demonstrates nicely the emergence of fitness within the context of time and the relationships between fitness and the functional dispositions that compose it.[41] It exemplifies how causation can take time in an unfolding process that is sensitive to context rather than a Humean view of relating causation to static events bereft of context.

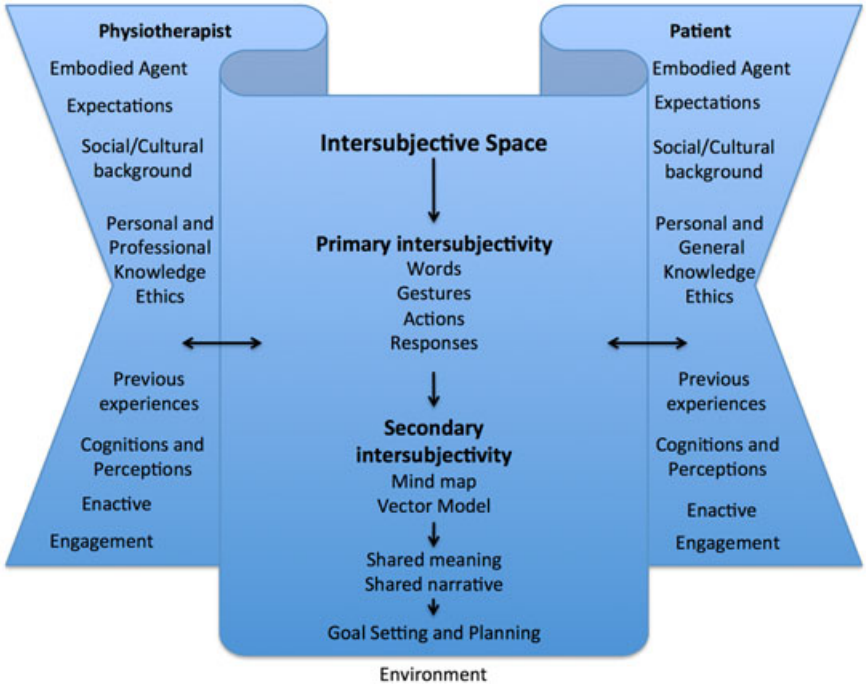

FIGURE 2 A graphical representation of intersubjective communication in clinical practice and the intersubjective space. Modified from Øberg et al[43]

5 | THE IMPORTANCE OF A PERSON'S NARRATIVE: A COLLABORATIVE APPROACH

The person's narrative generates the context for the causal powers. Careful history taking in the spirit of motivational interviewing can elicit a rich story through the use of open questions, affirmations, reflective questions, and summaries.[42]

A systematic and appropriate physical examination evaluates the supporting and negating information regarding hypotheses related to the condition. Attention is paid in particular to red flags and features of sinister pathology. Completion of the physical examination provides further evidence that needs to be carefully evaluated and openly discussed with the patient.

All patients, particularly those whose symptoms are medically unexplained, require their experiences to be heard, understood, and related to. Kirkengen and Thornquist eloquently call for medicine to embrace the lived body that is free from objectification in favour of an approach that appraises the values and meanings of an ethically informed epistemology.[43] The lived body acknowledges that human experience is embodied in the world and embraces a phenomenological view beyond subjectivity and values embodied intersubjective communication. The bringing together of the patient's narrative, thoughts, feelings, beliefs, and previous experiences combine with that of the therapist. The combining and sharing of these two worlds come together into an intersubjective space where careful respect and understanding are required to convey a useful, purposeful, and shared clinically reasoned impression that informs further decision making (Figure 2). Both primary and secondary intersubjective methods are simultaneously used to engage with the patient and are explained in detail by Øberg et al.[44] and by Edwards et al.[45] A mind map can help communication and bridge the "intersubjective space" through the inclusion of key aspects of the history and the dialectical reasoning processes to provide a collaborative tool for both clinician and patient. The mind map acts as a bridge between the intersubjective perspectives of the clinician and the patient but is initiated from the clinician's perspective initially. However, it is important to discuss the content of the mind map in an open way with permission given to the patient to change any element, as they feel appropriate in an attempt to bridge the intersubjective space. This process encourages active listening, empathy, and openness, qualities that have been recognised as important in practitioner/patient interaction.[42] Opportunities to discuss the complex interaction of causal factors can be initiated particularly in relation to tendencies rather than necessities. This approach also reduces the risk of the patient feeling judged, which may inhibit the therapeutic relationship and cause barriers to facilitating change.[42] Establishing empathetic rapport and addressing the patient's issue has been associated as significant factors for facilitating behaviour change for a positive therapeutic outcome.[37] Causal explanation is complex, and a number of explanatory models exist in the literature ranging from amplification and sensitivity theories to illness behaviour and autonomic nervous system dysfunction theories.[46] However, without the context of the narrative to frame such explanations, they can become misunderstood, potentially threatening and facilitate a negative therapeutic outcome.[47] It is therefore imperative that if causal powers are provided in a vector model and are to be used collaboratively with the patient as part of a reasoning process, that it is based upon the patient's narrative and carefully gathered from a physical examination. Using this method of collaborative and coconstructed approach may support a positive patient-therapist interaction that is associated with improved rehabilitation outcomes.[48]

6 | THE VECTOR MODEL—A VALUABLE CLINICAL REASONING TOOL

The causal factors are added to a vector model with the relative and resultant tendencies towards or against the manifestation of the current complaint. The vector model represents the current contextual

FIGURE 3 A mindmap representing Jack's narrative and potential relationships between them

elements at the present time through coconstruction with the patient. It provides a snapshot of all known causal powers that have been elucidated through the narrative and examination, gathered from the patient's perspective, the clinician's clinical experience, and current research literature. From here, strategies can be made to facilitate changes to affect the identified causal factors. The vector model may also shed light on factors that may not be amenable to physiotherapy and that may benefit from treatment from other healthcare professionals or agencies. In causal factors that are seen as modifiable, plans can be put into place with joint goal setting; for example, movement-related fear may be counteracted through education, graded exposure activities, and movement modifications. The vector model may bring awareness to causal powers to both the clinician and therapist such as specific lifestyle and environmental factors, sometimes overlooked by alterative clinical frameworks. It is important to note that the vector model is a representation of complexity, context, tendencies, thresholds, linear/nonlinear composition, interference, strength, and direction. It is not a model that merely describes causal factors, which may determine causal claims.

7 | CASE EXAMPLE—JACK

A 25-year-old apprentice lift engineer presents with a two-year history of neck, scapula, and thoracic back pain with no history of injury or trauma. Following investigations that included normal MRI scan imaging of the cervical, thoracic and scapulae regions, and normal blood tests, he was referred to physiotherapy. Previous physiotherapy and chiropractic intervention had not been successful. His work was very stressful due to the nature of his apprenticeship and difficulty with relationships with his coworkers. Just prior to the onset of symptoms, his parents were undergoing a breakdown in their relationship, which was particularly difficult. In addition, his long-term relationship with his girlfriend was ending and had become increasingly socially isolated. Jack felt that his symptoms needed to be explained through a structural mechanism and focused on how his muscles around his scapula must be the cause his symptoms as a previous practitioner described him as having scapula dyskinesia. Jack had completed exercises on a daily basis to correct this but they did not change his symptoms. He had become frustrated and was anxious because each day appeared to be the same with no end to his pain in sight. He suffered with poor sleep patterns and felt low in mood. This culminated in negative feelings regarding the future. Jack's movements appeared guarded with a tendency to maintain upright and rigid postures, believing them to be helpful in keeping the pain he had at current levels. To add to this, he tended to hold his breath during low load tasks, which may increase spinal loading.[49] Despite this, he had maintained a good level of physical activity and, although he was fearful of lifting activities, was keeping fit.

Initially, an exploration of Jack's narrative of the events and circumstances that led up to the manifestation of his symptoms was documented as a mind map (Figure 3). Physical examination findings found no loss of range or function of the cervical, thoracic, or shoulder regions; however, a tendency to increase muscle activity prior to movement appeared to occur. Widespread allodynia and hyperalgesia were found on sensory testing across the upper aspect of the thoracic spine and shoulder girdles. Neurological integrity examination was normal as was upper limb power. Pain was reported as increased on all movements and steady at rest.

A theoretical relationship between the narrative, the context, and the subsequent behaviour was explained through the mind map and then the relative powers represented on a vector model (Figure 4). The intensity of the powers drawn on the vector model were coconstructed by the therapist and the patient to bring personal and

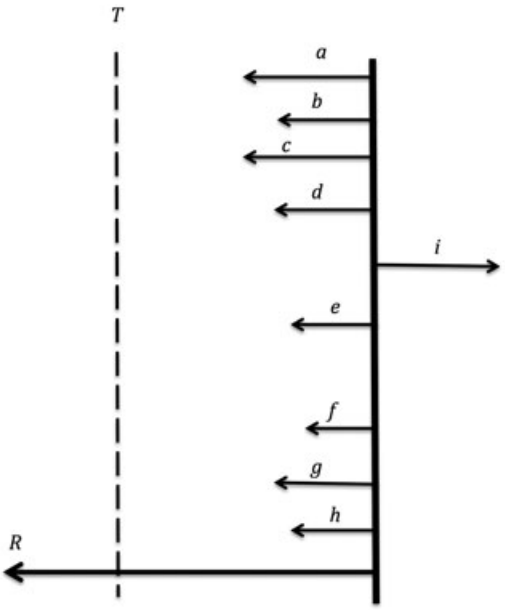

FIGURE 4 A vector model used for Jack in clinical practice and is relevant at the initial assessment. Causal vectors (a) chronic stress; (b) fear of movement; (c) sleep; (d) anxiety; (e) negative beliefs; (f) mood/depression; (g) social support; (h) negative previous experiences (questionably modifiable) (i) physical activity. Resultant vector (R); threshold (T)

shared meaning. Long term stress, fear of movement, poor sleep, anxiety and fear of the future, negative beliefs, lowness in mood, challenging social circumstances, poor self efficacy, and negative experiences were plotted a causal relationships that tended towards the manifestation of Jack's symptoms as all made his symptoms worse. These causal powers have been identified in patients with persistent pain.[17,22,23,35] Jack's levels of physical activity were felt to tend away from his symptoms. Jack felt better for exercising, even if, as he thought, it was because he was distracted. Figure 4 shows the resultant vector (*R*) has passed the threshold (*T*) and is beyond the threshold. In this case, improving just one causal relationship, or indeed, a number may not be sufficient to reduce Jack's symptoms. This may indicate a poorer prognosis of recovery and/or a longer rehabilitation period or represent a more complex clinical presentation.

The treatment was initiated by using educational methods and reassurance with regards to the state of the tissues through describing and detailing the results of the investigations. Pain neuroscience education was provided within the context of Jack's narrative paying particular attention to central sensitisation theory.[50] Factors such as perceived threat,[51] predictive, and associative learning[52] were normal responses that could be changed and eventually improve his symptoms. Altering movement behaviours that were provocative and modifying them to reduce the pain supported this. The addition of using breathing control, relaxation techniques, and cognitive reframing provided moderate pain relief, which was rewarding and motivated Jack to continue with the treatment plan.[53]

It is important to note that caution was made to ensure that Jack's experiences were not ascribed to being purely psychological in nature. This is a common feeling felt by patients with medically unexplained symptoms where investigations have not yielded a causal explanation. The mind map and vector model can be used to recognise and make sense of the number of causal factors that are interrelated and could tend towards the effect of widespread pain.

Other treatment strategies included focusing on Jack's social interaction with friends and incorporating physical activity in these environments. Jack started boxing training and spent time outside of home and college. These addressed many of the modifiable causal factors in a way to counteract them (reduce stress, fear and anxiety, and reframe beliefs), subtract (pain provocative movement), and interrupt through an improved understanding of pain relieving use of pharmacology such as analgesics, nonsteroidal anti-inflammatories and neuropathic medications.

The outcomes resulted in self-reported improvements in pain scores and sleep quality, stress, fear of movement, improved social interaction, and physical activity as well as self-reported improved confidence and self efficacy. The vector model now shows how the resultant vector (*R*) is reduced and lies under the threshold (*T*) (Figure 5).

Jack's symptoms are improved, in so much as he no longer has constant pain; however, his symptoms can and do return through a potential number of causal ways. One can see that a small change in a single or a number of causal factors (vectors *a*-*h*) can make the resultant vector (*R*) surpass the threshold (T) and Jack's constant pain returns. The variation of his symptoms could be explained though by the complex interrelationships of causal factors. Such variation is understandably concerning, when one feels changes in pain through no discernable mechanism, but the vector model can convey this message, and it can be very reassuring.

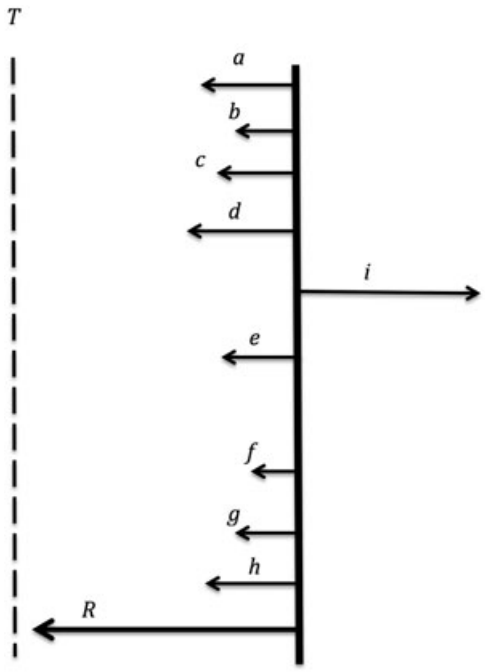

FIGURE 5 A vector model used for Jack after 4 months of treatment. Note the resultant vector (R) lies below the threshold (T). (a) chronic stress; (b) fear of movement; (c) sleep; (d) anxiety; (e) negative beliefs; (f) mood/depression; (g) social support; (h) negative previous experiences (questionably modifiable) (i) physical activity. A number of the causal vectors have changed with the exception of d and h

Jack reported feeling more in control of his symptoms and related the vector model to a balance scale. If circumstances "tipped the balance," he felt confident that he could counteract (relaxation techniques and focus on breathing control), interrupt (use medication in the short term), and subtract (pace activity) the causal factors. This was felt to improve Jack's self efficacy and sense of control over his condition. In this respect, the vector model is dynamic and represents causality as complex and situation dependent on a range of factors that vary contextually in time. Jack reflected on his progress and recognised that, for him, a key element that changed his perspective was a positive change on his focus of attention. He also reflected on his experience and felt that "there is no da vinci code" or singular mechanism that would improve his situation in isolation and that he felt empowered to take control of his situation and explore solutions for himself. A year later, Jack is now exercising in the gym three times a week, achieving success in further education, with considerably less pain and feels positive about the future.

8 | CONCLUSIONS

Philosophical considerations of causation with respect to dispositions, tendencies, and powers have utility in clinical practice. They facilitate person-centred care, holistic clinical management, and provide opportunities for individualised clinical reasoning and communication. The evidence-based medicine approach to healthcare is not derived from a scientifically neutral ontology but stem from a Humean account for causation.[4] Anjum states that the

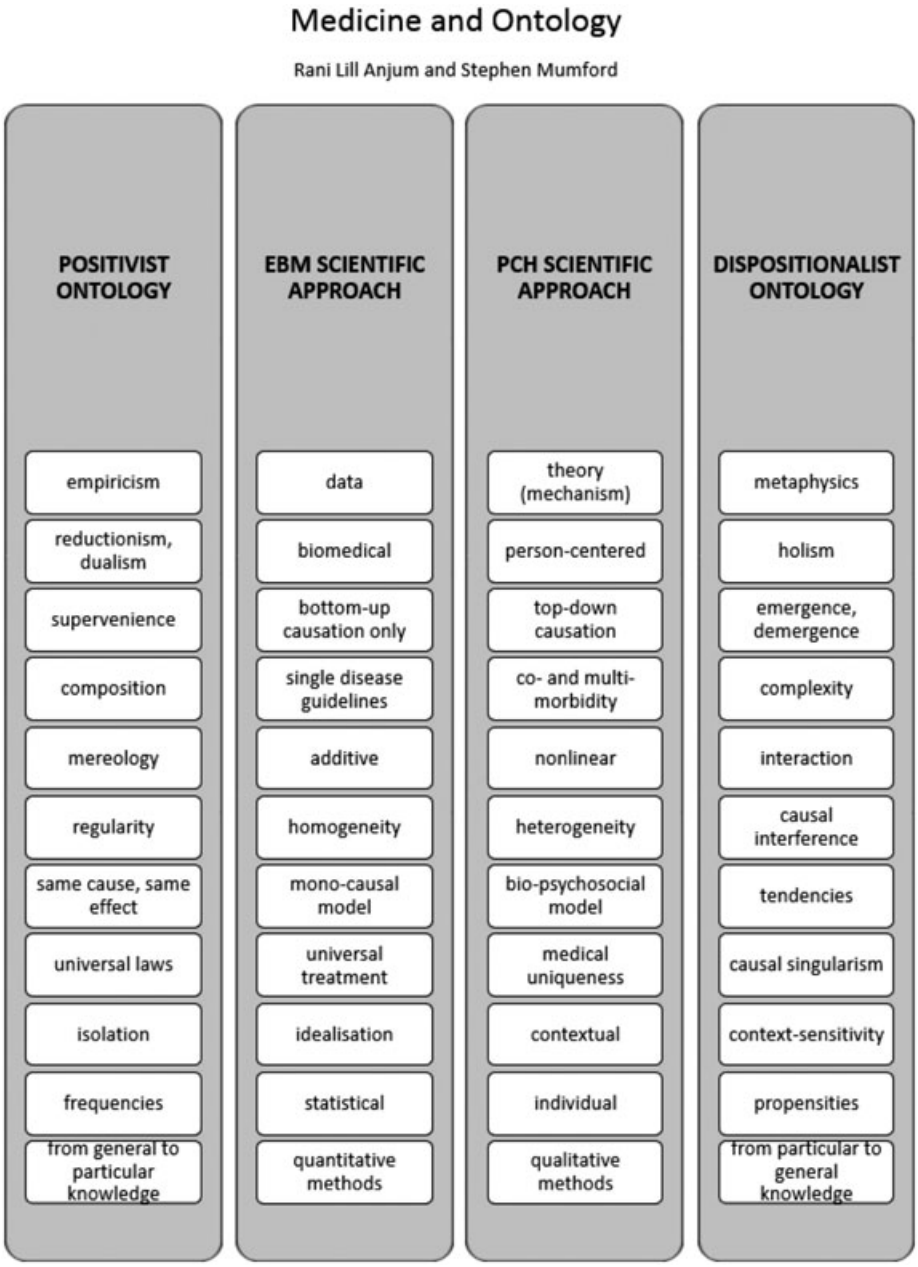

FIGURE 6 Different ontologies motivate different scientific approaches. From Anjum[51] with permission. EBM indicates evidence-based medicine; PCH, person-centered healthcare

> *biomedical model is justified in the assumption of reductionism, for instance, and statistical methods are appropriate for generating individual probabilities if we assume frequentism. Mereological composition, against genuine holism, seems warranted and the regularity theory of causation supports universal treatment and finding causes through homogeneity.*[54]

In contrast to this, a dispositional ontology accommodates holism, complexity, heterogeneity, individual propensities, or causal mechanisms to create a person-centred approach that favours uniqueness. This is summarised by Anjum[4] in Figure 6.

The novel framework discussed aims to empower both the patient and the therapist as well as provide professional autonomy of collaborative decision making, thus enabling a unique view of the situation prior to discussing and engaging in treatment, which is grounded in a dispositional ontology. The framework attempts to bridge the chasm between the therapist and patient's intersubjective viewpoints while respecting each other's autonomy and engage each other to achieve collaborative meanings, values, and goals. The framework aims to elicit reflection, reflexivity, and context sensitivity within both the patient and therapist for a mutually beneficial and fulfilling therapeutic relationship and outcome.

It is hoped that further exploration and development of the vector model may play a promising further part in future clinical practice and consideration in person-centred approaches to healthcare.

ACKNOWLEDGEMENTS

I would like to thank Stephen Mumford and Rani Lil Anjum for their inspiring work and engagement with health care professionals. I would like to thank the CauseHealth team and collaborators and also Roger Kerry for his support and encouragement. I would like to thank Mick Thacker for his thoughts on this paper. Last, but certainly not least, I would like to thank Jack; if it were not for him, this paper would have never been written.

REFERENCES

1. Nimnuan C, Hotopf M, Wessely S. Medically unexplained symptoms an epidemiological study in seven specialties. *J Psychosom Res*. 2001;51(1):361–367.
2. Barnett K, Mercer S, Norbury M, Watt G, Wyke S, Guthrie B. Epidemiology of multi-morbidity and implications for health care, research, and medical education: a cross-sectional study. *Lancet*. 2012;380(9836):37–43.
3. Tomasdottir MO, Sigurdsson JA, Petursson H, et al. Self reported childhood difficulties, adult Multimorbidity and allostatic load. A cross-sectional analysis of the Norwegian HUNT study. *PLoS One*. 2015;10(6).
4. Anjum RL. Evidence based or person centred? An ontological debate. *Eur J Pers Cent Healthc*. 2016;4(2):421–429.
5. Engel GL. The biopsychosocial model and family medicine. *J Fam Practice*. 1983;16:409–413.
6. Pincus T, Kent P, Bronfort G, Loisel P, Pransky G, Hartvigsen J. Twenty-five years with the biopyschosocial model of low back pain – is it time to celebrate? *Spine*. 5;2013;38(24):2118–2123.
7. Billis EV, McCarthy CJ, Oldham JA. Subclassification of low back pain: a cross-country comparison (2007). *Eur Spine J*. 2007;16(7):865–879.
8. Davidsen AS, Guassora AD, Reventlow S. Understanding the body-mind in primary care. *Med Health Care Phil*. 2016;19(4):581–594.
9. Davidsen AS. How does the general practitioner understand the patient? A qualitative study about psychological interventions in general practice. *Psychol Psychother Theory Res Pract*. 2009;82(2):199–217.
10. Mumford S, Anjum R. *Getting Causes From Powers*. Oxford: Oxford University Press; 2011.
11. Yunus M. Central sensitivity syndromes: a new paradigm and group nosology for fibromyalgia and overlapping conditions, and the related issues of disease verses illness. *Seminars in Arthritis Research*. 2008;37(6):339–352.
12. Mishler EG. Viewpoint: Critical perspective on the biomedical model. In: Mishler EG, Amarasingham LR, Osherson SD, AHauser ST, Waxler NE, Liem R, eds. *Social Contexts of Health, Illness and Patient Care*. Cambridge: Cambridge University Press; 1981:1–23.
13. Nettleton S. 'I just want permission to be ill': towards sociology of medically unexplained symptoms. *Soc Sci Med*. 2006;62(5):1167–1178.
14. Lyng S. *Holistic Health and Biomedical Medicine: A counter System Analysis*. Albany. New York: State University of New York Press; 1990.
15. Telles JL, Pollack MH. Feeling sick: the experience and ligitimisation of illness. *Soc Sci Med*. 1981;15(3):243–251.
16. National Institute for Clinical Excellence. Low back pain in adults: early management. CG88 (2009). Available at: https://www.nice.org.uk/guidance/cg88 Accessed November 16, 2016.
17. O'Sullivan P. Common misconceptions about back pain in sport: Tiger Woods' case brings five fundamental questions into sharp focus. *Br J Sports Med*. 2015;49(14):905–907.
18. Brinjikji W, Luetmer PH, Comstock B, et al. Systematic literature review of imaging features of spinal degeneration in asymptomatic populations. *AJNR Am J Neuroradiol*. 2015;36(4):811–816.
19. Jarvik JG, Hollingworth W, Heagerty PJ, Haynor DR, Boyko EJ, Deyo RA. Three-year incidence of low back pain in an initially asymptomatic cohort: clinical and imaging risk factors. *Spine*. 2005;30(13):1541–1548.
20. Cournoyea M, Kennedy AG. Causal explanatory plurism and medically unexplained physical symptoms. *J Eval Clin Pract*. 2014;20(6):928–933.
21. Serbic D, Pincus T, Fife-Schaw DH. Diagnostic uncertainty, guilt, mood, and disability in back pain. *Health Psychol*. 2015;35(1):50–59.
22. Vlaeyen JW, Crombez G. Fear of movement/(re)injury, avoidance and pain disability in chronic low back pain patients. *Man Ther*. 1999;4(4):187–195.
23. Linton SJ, Buer N, Vlaeyen J, Hellsing AL. Are fear-avoidance beliefs related to the inception of an episode of back pain? A prospective study. *Psychol Health*. 2000;14(6):1051–1059.
24. Egger G, Dixon J. Beyond obesity and lifestyle: a review of 21st century chronic disease determinants. *Biomed Res Int*. Available at: https://doi.org/10.1155/2014/7316852014
25. Kerry R, Eriksen TE, Lie SA, Mumford SD, Anjum RL. Causation and evidence-based practice: an ontological review. *J Eval Clin Pract*. 2012;18:1006–1012.
26. Björck-van Dijken C, Fjellman-Wiklund A, Hildingsson C. Low back pain, lifestyle factors and physical activity: a population-based study. *J Rehabil Med*. 2008;40:864–869.
27. Deyo RA, Mirza SK, Turner JA, Martin BI. Overtreating chronic back pain: time to back off? *J Am Board Fam Med*. 2009;22:62–68.
28. Dagenais S, Caro J, Haldeman S. A systematic review of low back pain cost of illness studies in the United States and internationally. *Spine*. 2008;8:8–20.
29. Van Tulder M, Malmivaara A, Esmail R, Koes B. Exercise therapy for low back pain: a systematic review within the framework of the Cochrane collaboration back review group. *Spine (Phila Pa 1976)*. 2000;34:1610–1618.
30. Furlan AD, van Tulder M, Cherkin D, et al. Acupuncture and dry needling for low back pain: an updated systematic review within the framework of the Cochrane collaboration. *Spine (Phila Pa 1976)*. 2005;30:944–963.

31. Assesndelft WJ, Morton SC, Yu EI, et al. Spinal manipulative therapy for low back pain: a meta-analysis of effectiveness relative to other therapies. *Ann Intern Med*. 2003;138:871–881.
32. Ferreira ML, Ferreira PH, Latimer J, et al. Comparison of general exercise, motor control exercise and spinal manipulative therapy for chronic low back pain: a randomized controlled trial. *Pain*. 2007;131:31–37.
33. Butler C, Evans M, Greaves D, Simpson S. Medically unexplained symptoms: the biopyschosocial model found wanting. *J R Soc Med*. 2004;97:219–222.
34. Mawston GA, Boocock MG. The effect of lumbar posture on spinal loading and the function of the erector spinae: implications for exercise and vocational rehabilitation. *New Zealand Journal of Physiotherapy*. 2012;40(3):135–140.
35. O'Sullivan PB, Dankaerts W, Burnett AF, et al. Effect of different upright sitting postures on spinal-pelvic curvature and trunk muscle activation in a pain-free population. *Spine*. 1;2006;31(19):E707–E712.
36. Vibe Fersum K, O'Sullivan P, Skouen JS, Smith A, Kvåle A. Efficacy of classification-based cognitive functional therapy in patients with non-specific chronic low back pain: a randomized controlled trial. *Eur J Pain*. 2013;17(6):916–928.
37. Berger BA, Villaume WA. A new conceptualization and approach to learning and teaching motivational interviewing. *Innovations in Pharmacy*. 2016;7(1) : Article 3. Available at: http://pubs.lib.umn.edu/innovations/vol7/iss1/3.
38. Barker KL, Reid M, Minns Lowe CJ. Divided by a lack of common language? A qualitative study exploring the use of language by health professionals treating back pain. *BMC Musculoskelet Disord*. 2009;10:123
39. Koffel E, Kroenke K, Bair MJ, Leverty D, et al. The bidirectional relationship between sleep complaints and pain: analysis of data from a randomised trial. *Health Psychol*. 2016;35(1):41–19.
40. Aili K, Nyman T, Svartengren M, Hillert L. Sleep as a predictive factor for the onset and resolution of multi-site pain: a 5-year prospective study. *Eur J Pain*. 2014;19(3):341–349.
41. Triviño V, Nuño de la Rosa L. A causal dispositional account of fitness. *Hist Philos Life Sci*. 2016;38:6. doi: 10.1007/s40656-016-0102-5
42. Miller WR, Rollnick S. *Motivational Interviewing Helping People Change*. 3rd ed. New York: The Guildford Press; 2013.
43. Kirkengen A, Thornquist E. The lived body as a medical topic: an argument for an ethically informed epistemology. *J Eval Clin Pract*. 2012;18:1095–1101.
44. Øberg G, Normann B, Gallagher S. Embodied-enactive clinical reasoning in physical therapy. *Physiother Theory Pract*. 2015;21(4):244–252. Available at: https://doi.org/10.3109/099593985.2014.1002873
45. Edwards I, Jones M, Thacker M, Swisher L. The moral experience of the patient with chronic pain: bridging the gap between first person and third person ethics. *Pain Med*. 2014;15:364–378.
46. Van Ravenzwaaij J, olde Hartman TC, van Ravesteijn H, Eveleigh R, van Rijswijk E, Lucassen PLBJ. Explanatory models of medically unexplained symptoms: a qualitative analysis of the literature. *Ment Health Fam Med*. 2010;7:223–231.
47. Darlow B, Dowell A, Baxter GD, Mathieson F, Perry M, Dean S. The enduring impact of what clinicians say to people with low back pain. *Ann Fam Med*. 2013;11(6):527–534. doi: 10.1370/afm.1518
48. Jesus T, Silva I. Toward an evidence-based patient-provider communication in rehabilitation: linking communication elements to better rehabilitation outcomes. *Clin Rehabil*. 2016;30(4):315–328.
49. Shirley D, Hodges PW, Eriksson AEM, Gandevia C. Spinal stiffness changes throughout the respiratory cycle. *J Appl Physiol*. 2003;95(4):1467–1475.
50. Nijs J, Malfliet A, Ickmans K, Baert I, Meeus M. Treatment of central sensitization in patients with 'unexplained' chronic pain: an update. *Expert Opin Pharmacother*. 2014;15(12):1671–1683. doi: 10.1517/14656566.2014.925446
51. Vlaeyen J, Hanssen M, Goubert L, et al. Threat of pain influences social context effects on verbal pain report and facial expression. *Behav Res Ther*. 2009;47:774–782.
52. Harviea DS, Meuldersd A, Maddena VJ, et al. When touch predicts pain: predictive tactile cues modulate perceived intensity of painful stimulation independent of expectancy. *Scand J Pain*. 2016;11(2016):11–18.
53. Navratilova E, Morimura K, Xie JY, Atcherley CW, Ossipov MH, Porreca F. Positive emotions and brain reward circuits in chronic pain. *J Comp Neurol*. 2016. doi: 10.1002/cne.23968
54. Eriksen TE, Kerry R, Mumford S, Lie SAN, Anjum RL. At the borders of medical reasoning: aetiological and ontological challenges of medically unexplained symptoms. *Philos Ethics Humanit Med*. 2013;8(11):1–11.

How to cite this article: Low M. A novel clinical framework: The use of dispositions in clinical practice. A person centred approach. *J Eval Clin Pract*. 2017;1–9. https://doi.org/10.1111/jep.12713