# A Case for Using a Guided Multiple-Models Approach to Address Philosophical Tensions in Naturopathic Medicine

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## THE CHALLENGE

Both in day-to-day clinical practice and in how the profession is regulated and evolves, naturopathic medicine is grappling with ontological and epistemological tensions. These conflicts arise from different views of what constitutes truth, evidence, and even what can be known. These varying approaches are often described as falling on a spectrum with the opposing views of vitalism/energy-based medicine at one pole and evidence-based medicine (EBM) at the other. These tensions manifest in debates about what constitutes good/ethical medical practice, teaching, and learning; how to preserve the naturopathic traditions and approaches that distinguish practitioners from other healthcare professions; and how to protect and promote the credibility and legitimacy of the profession.

Sometimes the first step to finding alternatives is to step away from the problem to search for analogous problems and solutions.

### The Multiple-Models Approach

In today's information era, many different areas of human endeavour (business, engineering, sociology, policy, education, and so on) are awash in data.[1] Often, the problem isn't that people working in these various fields are lacking data to inform their choices but lies, rather, in managing and prioritizing data for effective decision-making.[1] Databases are abundant, but these only help contain and organize information—alone, they cannot be used to appropriately interpret the data. Moreover, the interactions between various factors and agents within a given system are often complex (rather than linear).[1] Thus, the information age has raised the importance of (data) models.[1] Dr. Scott E. Page, PhD, author of *The Model Thinker*, writes: "Organizing and interpreting data with models has become a core competency for business strategists, urban planners, economists, medical professionals, engineers, actuaries and environmental scientists, among others."[1]

For the purposes of this article, a model is defined as a system, structure, or approach that helps explain, interpret, and predict data. There are models to interpret economic data, such as housing starts and unemployment numbers; there are meteorological models to analyze factors such as temperature, humidity, and atmospheric pressure; and there are psychological models that help us understand human behaviours and interrelationships. Data are not just numbers—they are information of all kinds. Whether explicitly or implicitly, all models are informed by theory or philosophy.

According to Page, models have three shared traits:

1. They simplify through prioritizing and extracting data so unnecessary information is eliminated
2. They help codify a system so data can be used in a logical fashion to understand, predict, and problem-solve
3. They are all wrong—by simplifying or prioritizing/deprioritizing/interpreting information, all models are fallible and limited. None is fail-safe.[1]

The third characteristic seems like a good reason to reject the use of models, but the inundation and complexity of data means that models are here to stay. The solution, Page writes, is to use multiple models:

> As powerful as single models can be, a collection of models accomplishes even more. With many models, we avoid the narrowness inherent in each individual model. A multiple-models approach illuminates each component model's blind spots […] With multiple models, we build logical understandings with multiple processes. We see how causal processes overlap and interact. We create the possibility of making sense of the complexity that characterizes our economic, political, and social worlds [...].
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> To rely on a single model is hubris. It invites disaster […]. We need many models to make sense of complex systems […]. By definition, complex phenomena are difficult to explain, evolve, or predict […]. When taking

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> actions, wise people apply multiple models like a doctor's set of diagnostic tests. They use models to rule out some actions and privilege others. Wise people and teams construct a dialogue across models, exploring their overlaps and differences.[1]

A multiple-models approach, Page argues, provides different perspectives on the same phenomena, providing deep insights and nuanced, rich understandings.[1]

Voices in medicine and medical education echo this argument. Dr. Paul Thomas, MD, writes: "Different kinds of lenses or questions produce different kinds of truth or answers […]. Each insight is valuable, but none captures it all. Together the insights reveal a fuller, moving picture."[2] In *The challenge of evidence in clinical medicine*, Dr. Mark Tonelli, MD, asserts, "Expert clinicians must utilize a variety of reasons and methods of reasoning in arriving at the best clinical decision or recommendation for an individual patient."[3]

## The Multiple-Models Approach and Naturopathic Medicine

Evidence-based medicine and vitalism within naturopathic medicine are mega-models, meaning each is a collection of models. Each mega-model is founded on a different philosophy or set of theories. Naturopathic medicine has been arguing about the supremacy of one mega-model over the others. However, each approach has its blind spots and weaknesses.

In the field, a large component of the naturopathic profession is practicing what could be described as a multiple-models approach. These naturopathic doctors (NDs) are informed by EBM-produced research where it is available and where they judge it to be applicable to their patients, and they also use other models from the eclectic approach as they deem it to be suitable and effective. Yet this approach generates much tension within the profession, with some seemingly intractable and opposing stances.

Part of the problem is the mistaken belief that the various models used by NDs have to be congruent or even integrated with each other. While every field of study strives to find truth, there isn't a single way to find it. Eastern, Indigenous, and Western philosophies, as an obvious example, are radically different. None can be explained through or encompassed by the other, yet each brings insights that the other cannot.

On the other hand, as professionals and human beings, we need some agreement on truth. We cannot define, teach, measure, or offer competence if all truth is considered relative and all models considered equal at all times and in all circumstances.

So how can the profession move forward? The following suggestions may be ways to move beyond the current impasse:

Embrace a multiple-models approach. This involves:

a. Acknowledging and teaching the shortcomings and biases inherent in all our models, as well as their relative strengths. This moves practitioners and students away from dogma and toward humility and curiosity.

b. Teaching how to use various models and when to switch. This involves cognitive flexibility and some guiding principles, such as:

   i. Risk and benefit: What are the relative risks/benefits of using one model/approach over another? What is the relative benefit or cost to the patient, to the public, or to the reputation of the profession for each approach?
   ii. Evidence or probability: What is the best evidence we have from each of the available and appropriate paradigms?
   iii. Complexity, holism, and individual responses: With increased complexity, there are increased risks but also possibly increased benefits. A student and a practitioner must be trained to appreciate and work within complex systems and not see matters (or living systems) as simple or black-and-white when they are not.
   iv. Reasonableness: the above three principles must be reasonably applied without dogma or biases/cognitive errors such as slippery-slope thinking.

c. Developing tolerance for ambiguity. Our understanding of the world and medicine is always subject to change as a result of new discoveries. However, NDs can still develop guidelines for patient care, provided that the training is also in place for practitioners to judge when it is reasonable or required to deviate from these standards. NDs must be confident, effective, and decisive in matters that are within the scope of the profession, even as they are humbly aware of the limits of their knowledge and experience.

How could this be applied, practically speaking? Take the example of a patient who is debating undergoing a course of treatment that has been associated with great reductions of death and suffering around the world, but there are also allegations and theories that this treatment may cause harm to vulnerable individuals or negatively impact human health in other ways (this could be vaccines or antibiotics, both of which may be beyond the scope of NDs but still within their sphere of patient influence). The ND must consider the relative risk to both the patient and the public, the current evidence available and the relative strength of the data, and what is reasonable. Unless there are indications that a particular patient may be vulnerable to side-effects of this treatment, the ND's recommended treatment would be informed by the preponderance of evidence, the significant potential benefit, and the relatively low risk of harm (with acknowledgement of the potential risks and unknowns).

On the other hand, if the patient's concern was an issue that did not have immediate significant risk/cost to the individual or the public, other models may be considered equivalent and therefore valid avenues to explore. However, even in this case, there are limits applied by reasonableness: a patient cannot be asked or expected to return for appointment after appointment—or to pay for expensive forms of treatment—if there is not significant improvement within a reasonable time. Standards

of care and guidelines for what would be considered reasonable can be developed if there is sufficient support for the multiple-models approach.

## CONCLUSION

Naturopathic medicine is not the only discipline that struggles with different ontologies and epistemologies or theories of what can be known and what constitutes valid evidence. However, other disciplines *do* accept that different models (systems, structures, or approaches that help explain, interpret, and predict data) are appropriate; they may debate which one may be used appropriately in which circumstances, but this can be a productive debate. It is time that the naturopathic profession move beyond ideological purity and be honest about what it can reasonably know with any given model (or modality) available.

Respecting that different models may offer valuable insights into a large and complex reality that no single model alone can fully represent, naturopathic medicine can embrace a multiple-model approach and collectively develop/endorse guidelines that help guide learners and educators in the wise and reasonable use of these models.

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