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ORIGINAL ARTICLE

The *promise* of unconceived alternatives: metaphysical explanation in Indian philosophy

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Abstract

The 'Problem of Unconceived Alternatives' – essentially the idea that we can never know when a radically different but better explanation is available – goes to the heart of what is involved in trying to understand the cosmos given our limited capacities for observation, and the challenges of interpreting the data. This article rethinks large-scale cosmological interpretation (in effect, 'metaphysics') as a process of modelling 'protectorates' of past experience in terms of 'typicalities' found in our own local range of empirical data, and then of making it available as a tool for understanding and prediction. Based on the role of *examples* and *analogies* (*dṛṣṭānta*) to build ontologies explaining the cosmos in the history of Indian metaphysics, it argues for a broadly structural realist account. When we ask whether something is a physical object, a material, a force, a field, or some other as-yet-unconceived kind of thing, we use best-fit models that are *schematic* of the structure of evidence, rather than *descriptive* of the thing in itself. Given this, Indian metaphysical history suggests strategies for finding unconceived alternative *better* explanatory models, by stretching the imagination towards novel schemas. In this light, the 'problem' becomes a 'promise' that unconceived alternatives with ever-better explanatory power await us, subject to more innovative, imaginative interpretations.

Keywords: metaphysics; Indian philosophy; inference; *dṛṣṭānta*; Vedānta

> The advance of knowledge is an infinite progression towards a goal that forever recedes. (Frazer James 1996, 854)

What is explanation – and what is *metaphysical explanation* of reality itself? It is this kind of explanation that is most pertinent to what Bliss (forthcoming, 11) calls 'cosmological explicationism', a feature of fundamental ontologies and philosophical conceptions of the divine. But how do we construct such explanations, what are they meant to show, and how true are they really supposed to be – particularly when we are attempting to explain the *totality* of things, rather than just a selection of facts or processes? This article derives from a conference applying Kyle P. Stanford's 'Problem of Unconceived Alternatives' (PUA) to religion, and is part of a special issue treating that problem. Consequently, it uses Stanford's approach and thinkers like Hempel and Duhem, whom he discusses, to reflect on both approaches to metaphysical explanation and distinctive features that evolved in

the Indian Vedāntic tradition particularly. Speculating on reasons for the diversity of metaphysical 'alternatives' for explaining the universe in India (where idealism was as common as realism, Humean-style tropes as common as mereological atomism or hylomorphism, and metaphysical nihilism as common as foundationalism), it will use lessons from the role of analogies in Indian metaphysics to argue for a broadly *structural* realist account of truth in metaphysical theories. Metaphysical explanations are models picturing ways present and potential empirical phenomena may be encountered, making existing data useful for prediction by using analogies with familiar phenomena to map out progressively more effective 'protectorates' of understanding – ideas that will be explained below. Along the way, we learn that metaphysical model-making is a process that requires imaginative novelty, and infinite enthusiasm for progress.

Methodologically, since the PUA draws its conclusions partly from the history of radical theoretical changes in Western science, we will need to take a longue-durée approach to the history of *Indian* metaphysics to show the contrast. For this reason, we use a range of sources across periods and schools to show how the use of analogies opened a wider 'possibility-space' of explanation. New ideas became available as new analogies facilitated 'leaps' across different mechanical pictures (like the shift from particles to waves, to choose an example from modern physics). We will also approach the theological application of the PUA specifically through a focus on metaphysical explanation; as Bliss (forthcoming, 11) has noted, 'In the Western tradition, God has typically been wheeled out in service' to the 'issue of whether or not everything has a sufficient reason for its existence, where that everything includes the existence of the cosmos in its entirety'. Even Buddhism's metaphysical insights are 'dripping with big picture, ultimate concerns'. While the PUA was originally formulated in the Philosophy of Science, it speaks to wider questions about how confident we should be in our inductive and abductive inferences, cosmological explanations, and ultimate picture.

Metaphysics and the PUA

In essence, the PUA points out that we can never know if an interpretation of our data about the world will be superseded by a better yet radically different account. Even our most successful and compelling explanation of the world may fall victim to new interpretations, given the 'repeated failure of scientists and scientific communities to even conceive of fundamentally distinct alternatives to extant theories that were nonetheless both scientifically serious and reasonably well-confirmed by the evidence available at the time' (Stanford 2019, 2). Moreover, we can never know when we have covered all the possible explanations (what PUA supporters think of as the 'possibility space' afforded by a situation). Nor can we know when we have accounted for all the possible evidence (a problem of future validation that Ruhmkorff (2019, 3934) has called 'the Cathedral problem'). Modern theories of truth have had to accommodate insights into the context-dependent positionality of truths, their embeddedness in language-games, the historical genealogies shaping truth criteria, and the 'revolutions' in scientific paradigms that shape each era (thinking of the work of Thomas Kuhn, Hans-Georg Gadamer, Michel Foucault, Charles Taylor, and others). The PUA warns us that we must remember to see scientific truths as framed within the constraints of our 'historical moment' (Sample 2015).

Stanford points out that this may seem a blow to our confidence in any of the ways that we explain the world. It seems to diminish metaphysics and any theology that adduces empirically-supported claims, such as the natural theologies of Christianity, Islam, and Judaism, which sought to show that reason can take us towards God, and also to those Hindu theologies that aligned their notion of the divine with the material, efficient, and formal causes of Being itself, and the metaphysically-grounded religiosity of many Buddhist schools. But the PUA challenges us to consider that when we find a new superseding

alternative, this discovery fulfils a goal of human knowledge that may be more important than truth: *progress.* That is to say that when something accounts for a greater volume or more relevant range of data, we take it to be a case of explanatory progress – and this feature may survive the challenge of the PUA, even when our habit of calling our theories 'true' is cast aside.

Thus, where unconceived alternatives present a problem, they may also offer the potential for promise and progress. Yet to achieve this shift, we may need to adjust our idea of that in which our knowledge consists, and I argue that India's metaphysical diversity can provide some useful pointers. Stanford (2016, 318) suggests we should abandon truth for a form of 'instrumentalism', construed as a position that regards scientific theories 'not as literal and/or accurate descriptions of the natural world, but instead as mere tools or "instruments" for making empirical predictions and achieving other practical ends'. Even the realist must realize that her reality consists of that pragmatic usage: its instrumental utility 'simply does not require that the constituent claims of that theory should or even can be neatly separated into distinct categories consisting of those we must believe in in order to make effective instrumental use of the theory and those we need not' (Stanford 2016, 334). For those who see physical or metaphysical explanations as 'correspondence' descriptions of exactly how the world is (Hilary Putnam is a well-known advocate of something like this position), the step down to seeing metaphysical explanations as a *best-fit-to-current-data* scheme of 'how we reliably interact with the world' can feel disappointing. Yet this position, as Stanford sees it, is fairly continuous with a past lineage including Andreas Osiander, Cardinal Bellarmino, Bishop Berkeley, perhaps Ernst Mach, and arguably a selection of classical Greek thinkers suggested by Duhem (see Stanford's (2023) discussion of Duhem and others).

The Indian philosophical tradition has long contained thinkers who acknowledged the context-relativity of metaphysical interpretation, the conceptual looseness of any description, and the predictive purposes of modelling the world. At least from the advent of Buddhist and Jain philosophy and Carvaka scepticism around the fourth century BCE, philosophers would have been aware of quite radically different alternatives to their own views. Whether or not they liked having them around, the culture of debate forced them to seek better versions of their own views. Some texts – admittedly in medical rather than metaphysical inference – even encouraged them to embrace new discussants as beneficial to theorizing (Frazier 2025c). The Indian cultural context provides a counterpoint to the predominance of a 'realist' paradigm in Western philosophical culture (notwithstanding its Platonist and idealist traditions). For any given history, if the past has shown us that progress in predictive modelling is in principle always possible, then one should stay eager to keep seeking those 'unconceived alternatives' that do a better job, and even to keep 'revolutionizing entire disciplines; creating entirely new fields; or disrupting accepted theories and perspectives' (Bement 2007). In Stanford's words, the need for improvement is 'considerably less pressing if scientific realists are right and their historicist opponents are wrong than if the reverse is true' (Stanford 2019).

Uncompromising epistemic realism of the kind the PUA primarily addresses takes our quotidian perception, and empirical observation's extension into scientific realism, as the measure of fundamental reality. This kind of scientific realism takes successful theories to be successful because there is some deep correspondence between their descriptions and the truth about reality. In addition, there are 'latter-day realists' who accept the historicist insight that most successful theories can revolutionarily change over history, but they still capture 'approximate truth' which admits of increasing degrees over time (Stanford calls them 'catastrophists' on the model of geological theory). Placing great emphasis on what he sees as a dogma contained in 'the elastic verbal formula' of 'approximate truth' and its 'standard "explanationist" defense of realism: that the best (or only) explanation

for the success of many contemporary scientific theories is that they are true' (Stanford 2016, 877). For shorthand, we will use the term 'realism' for approaches that see theoretical success as best understood in terms of alignment with 'truth'. This view seems intuitive but as Stanford notes, it seems an extreme position to take given our frequent experience that observations can be theorized in useful ways that are nevertheless thereafter proven wrong. More epistemologically, humble approaches are available from verificationists and semantic instrumentalists, metaphysical quietists, perhaps coherentists, and arguably even structural realists. These different positions share a 'common commitment to an alternative positive construal of scientific theories as mere conceptual tools or "instruments" for achieving our practical goals and objectives' (Stanford Kyle 2014, 98–99). What we focus on here is that all, insofar as they think varying theories genuinely account for varying proportions of the data, are committed to the possibility of progressive success in prediction.

If we define progress as an ever-more successful range of detailed predictive power, then those successful theories we call 'truths' become the most powerful predictive tools, bringing quantities, structures, relevances, and depths of the world's data into fruitful connection with our lives. With this in mind, we should keep refining, deepening, and expanding our theories. As Ruhmkorff (2019) puts it:

> scientists less committed to the best available theory will likely spend more time reflecting on alternatives or at least be more open to them when proposed by others... the widespread adoption of instrumentalism on the basis of the problem of unconceived alternatives would increase scientists' ability to uncover plausible unconceived alternatives!

But as Stanford (2016, 877) emphasizes, it is not only refinement but also radical rethinking of the data that is needed here, for the historically-informed 'uniformitarian' theorist expects future radical revisions to be necessary and so supports 'the search for fundamentally distinct and even more instrumentally powerful successors to contemporary scientific theories'. Here, novelty is desirable, for it is progress that is a spur to advance our understanding, particularly when a theory hits an explanatory impasse and needs to incorporate new information. By contrast, a realist about the description-of-reality-based correctness of scientific and metaphysical theories might claim to be intensely inspired by hope of future certainty about the correctness of a description ... but this is a hope for which we have no epistemic basis if the PUA is right. Moreover, as we will argue, realism assumes an artificial idea of what it is to *describe* something accurately in the first place; in truth, we always implicitly use analogies, and we always describe what is shown by events of interaction. More ambitious kinds of correspondence realism that aim to describe how something really intrinsically is, should make theologians particularly sceptical, given their frequent focus on things (the divine nature, divine action, divine purposes, or values) for which empirical evidence is... indirect to say the least.

In the rest of this article, we define metaphysical forms of explanation as a kind of 'modelling by analogy', highlight the fertile insight that unconceived alternative explanations of the world are always possible, and challenge us to become more creative in our thinking. We argue that scientific realism aimed at correct description of the thing itself is philosophically naïve, since what we really build are structurally-correct schemes of the 'joints' that our empirical data reveal about reality. First, we develop a model for clarifying our sense of epistemic progress – not as correct description of intrinsic features, but as the development of manipulable representations of more or larger 'protectorates' of empirical patterns that we can thereby predict and interact with. Second, we argue that when we ask whether

something is a physical object, a material, a force, a field, or some other as yet unconceived kind of thing, we are already using best-fit models from past experience that are *schematic* of evidence, rather than *descriptive* of some truth about the thing in itself (a distinction developed below). Third, given the way that analogies serve an important role in abductive inferences, the article looks at the use of Indian analogies and suggests strategies for finding unconceived alternative *better* explanatory models by stretching the imagination towards novel kinds of systems.

Metaphysical explanation: modelling reality's mechanical joints

What does metaphysical explanation try to do?[1] Is it a pragmatic exercise that builds models of how our world works – giving useful names like 'substance', 'force', 'object', and 'field' to parts of the model? Or is it a correct description of the entities and other factors that make up our world? If I build a picture of the world that correctly reflects every constraint on my experience entailed by the data about it, but I have framed it in terms of forces rather than substances, or particles instead of powers, have I done wrong? And if so, how? I would be mapping something rightly, but interpreting it wrongly. What would I need to change, and what about the world might prompt me to do so?

Many philosophical traditions through history would think of themselves as doing both pragmatic and purely theoretical work – often achieving the former through proper achievement of the latter (although as we will see, some Indian philosophers tried to drive a wedge between the use value of practical conventions and the truth value of ultimate reality). Yet Kyle P. Stanford's 'problem of unconceived alternatives' suggests that we should never confidently claim to achieve any correct theory. Historically, one way to convincingly explain/predict the world is often superseded by a new and better but radically *different* account, and this might be taken as the very modus operandi of metaphysics: abductive models meant to explain the world are developed and successively challenged and superseded. It is perhaps for this reason that India's Jain schools of philosophy developed a 'could be' (*syādvāda*) approach to metaphysics that described empirical reality as essentially 'non-one-natured', at least as far as it can be known by us.

The problem is that one could interpret good data in numerous ways – taking objects to be atoms in aggregation, substances moulded into forms or evolved into modes, powers, and processes caught at different points in the vector of their expression, a conceptual web at a certain point in its nexus, or some other thing of which we have not even conceived. Each provides a valid 'inference ticket' to borrow Nagel's (1961, 139) term. In this light, any selection of data could be framed in terms of such holistically differing yet encompassing accounts that it would be difficult to find a place into which one could insert a wedge where empirical testing would reveal one to be better than another. Pending such a data wedge, all the available 'possibility-space' compliant theories would be equally valid in their claims to truth. As long as something fits the data (an important requirement to which we will return), then it falls into the 'possible alternatives' category which contains not only the options we have considered (among which we can choose a best-fit option), but also the options we have not thought of, which may be almost infinite in number and almost infinitely better-fitting in nature had we complete data about the universe.[2]

But what is it we do when we explain something? One account might be, calling upon the weary Principle of Sufficient Reason, that: firstly, on the rule that 'all facts have grounds',[3] we think of things that would provide sufficient reasons for a thing being as it is. Secondly, we square those possible explanatory reasons for a thing with other empirical data we have about the world, at macrolevels (general cosmological principles) and mesocosmic scales (in the specific context, and others like it). Thirdly, we project future or potential implications of that explanation, and square our theory with those predictions and counterfactuals.

Whatever gives a best-fit abductive explanation for it all becomes our theory, which is to say that it is the explanatory model we firmly cling to until new data become available.

To see what kind of understanding we gain here, it is helpful to introduce a distinction between a *right mechanical account* (the systemic mapping of patterns leading to good predictions and use) and a *right ontology* (the explanation of those mechanical patterns in terms of particular kinds of things). If predictive and instrumental success normally means we have the mechanical account right, then we can remain provisional about ontology without losing anything. Instead, we may affirm real 'understanding' in Wilkenfeld's (2013) sense of possessing representations that facilitate manipulability. The correct mechanical account, manipulated through such representations, would then capture what Laughlin (2005) calls 'protectorates' of local systems or mesocosmic scales. We do not need to know what lies outside space-time if we are manipulating vectors within it, or about fundamental particles if we are manipulating biological organisms. We develop pictures of *the kind of thing going on* that capture the core predictive patterns we see in our data. Yet we remain cautious about the way we cash out these successful models in terms of the larger ontology.

How does the development of these pictures work? We might divide the process into two phases: first, we simply map the data as indicative of some *mechanical structure* in reality, observing patterns that indicate actual (and inferred from this also *possible*) points of force.[4] In this sense, our explanations map out ranges of modality, giving us a guide to potential interactions and manipulations on our part. Second, we *model* that mechanical picture of actual and possible patterns in terms of some familiar ontology or other. Where mapping plots the data we have against a chart of possibilities, modelling abductively attaches these maps to different possible kinds of general explanation types. We might explain a situation in terms of causality, grounding, mereology, hylomorphism, or some other typological model. This, which we may liken to statistical mechanics broadly conceived, is essentially a schematization of patterns detected in the empirical world that we encounter moment by moment, and can only change according to its own constraining rules. Such patterns represent reliable tendencies which, even if we are Humeans, must be used to predict future possibilities of experience. Across a wide survey, they become the basis for reasoning about what Lazarovici (2023) calls 'typicality'.

Some may be sceptical of these patterns' basis in deep ontological structure. But thinkers like Lazarovici argue that when these patterns are cross-referenced with the successes of classical mechanics on the meso-level of the cosmos (the level at which we organic beings operate), where our general observation of entropy and the arrow of time is located, then we get an overall mechanical picture that cannot be jettisoned without rejecting even our most basic reasoning about world, future, action, concept, and language. For explainers in Lazarovici's camp, 'the problem of empirical underdetermination… does not mean that there are no rational standards by which ontological commitments can be tested against the world. Typicality provides such a standard' (Lazarovici 2023, 337).[5] Statistical mechanics point to typicalities, and typicalities give us our best indicator of joints in *empirical* reality, at the very least.

But beyond merely mapping mechanical patterns and using them predictively (and thereby implicitly agreeing that something leads them to be consistent across past and future contexts), we may also *model* them according to some picture of the cosmos. For this, we develop 'ontologies' – toolboxes of candidate phenomena that might adequately explain how the explanations do their work. Perhaps what we are seeing is best explained as a particle, or a field, an agency, roaming substance, force, power, category of Being, or something unconceived that explains our data; each of these encodes a 'pattern of patterns', as it were. Through analogy with past patterns of experience, we give abductive flesh to our predictive calculations by referring to a library of typical *kinds* of things. Indian thought might call

the explaining scheme a 'foundation' (*adhiṣṭhāna*), base (*vastu*), base (*āśraya*), and essence (*svabhāva*) of data, and then would try to find out which kind of ontology fits it best.

This is not some total constructivism about image-based truths, however. As Garfield (2021, 309) has said of reusing *dṛṣṭānta* analogies, they are 'a vehicle not only for the preservation and clarification of ideas, but also for philosophical progress'. A theory that does not fit our experience of the world immediately disqualifies itself as a viable alternative, diminishing the possibility space for explanations. As Lazarovici says, a viable theory must be 'arranged in precisely such a way as to ground, realize, or serve as the supervenience base of whatever structure we identify in nature'. On this account:

> If we want to assess what explanatory work an ontological hypothesis is doing and how it matches the world that we live in, we should consider the corresponding set of ontologically possible worlds and require, at the very least, that the features of our world which fall under the purview of the proposed metaphysics do not come out as atypical (Lazarovici 2023, 336–337).

The data determine which ontologically possible worlds constitute our 'alternatives', and we take it as a message from reality – *empirical* reality at least. It tells truths, even if sometimes cryptically. The trouble comes in first *evidentially* (from the possibility that new data can always fill in the facts quite differently, redistributing the patterns we thought we had seen in some new way), and second *interpretively* (from the potential for models beyond those we have conceived of at any time that do even better with the data we have and clue us into features of reality we have as yet not seen or understood – as when we realized that light comes in waves, magnetism is a field, gravity is a distortion in a field, electricity is a flow, etc.).

Yet these models merely sketch out the possible type of thing we are seeing. They do not describe, but *model*. Whether this is a step down depends on how you feel about the goals of metaphysics. Let's consider the cause of disappointment the 'descriptive realist' (or so we will call him) may feel. When the model-user goes around talking about atoms, the descriptive realist says to him:

'But your atoms do not exist! They are only stand-ins, signs, placeholders for some pattern. They do not really do any work as individuations of the world's ontology – they are not truth-bearers but mere mental-handles for a certain set of data's likely extensions. As such you have not really made any metaphysical progress in learning about reality at all!'

'True', says the model-user. 'My truths are really about reality's behaviour. I suppose I agree with Daniel Wilkenfeld's conception of understanding as *representation manipulability*: when I understand *x*, I possess mental representations that allow for successful manipulation of *x*. I seek "a representation of that which is understood that is sufficiently robust to be manipulable for inferential and practical purposes" (Wilkenfeld 2013, 998). The best such representation will be good for a variety of manipulations, turning out to be successful with each new demand for manipulation, presumably because it maps a real feature of things – though of what kind, I am not sure. I never thought I had the whole picture of *x*, just a map of its possible interactions with me, modelled into a speculative ontology. On this account, I can gain and increase in *understanding* about the patterns and structures without needing to have a realist's commitment to our ontological interpretation of them being exactly right.'

'That is all very well, but we do not even know which part of your model does the real predictive or function-representing work! You might have a totally wrong ontology that nevertheless produces the right results because the results of certain individual processes reliably come out correctly.'

'True', I may have things really *very wrong.* Perhaps, for instance, there are no laws, but only a giant programmer or a kind God who has used his non-nomic magical will to make it appear in each case I've measured that there are laws. Still, something is there making it law-like and that reliably lawy-thing is what I am mapping. I don't really know whether it is a horse, a car, a transporter or a flying carpet that gets me to work in the morning, but something keeps doing it. When I'm being careful I call it *the work-transporting-phenomenon* but other times I just call it *the vehicle.* I tend to think the nomenclature doesn't matter too much unless other data are in question and need to be captured by a larger placeholder; as Jean Rostand said and Kyle P. Stanford (2010, 3) repeated, 'Theories come and theories go. The frog remains.'

Finally, the descriptive realist asks, 'Can anyone really live that way, believing in half-truths all the way down?', and the structural realist replies, 'Sure. Read up on philosophers of religious language, negative theology, and any metaphysician who ever changed his mind.'

From maps to models to analogies: Indian metaphysical speculation

This does indeed seem to be how some metaphysicians thought of their pictures of the world. We may be used to philosophers making bold assertions, rather than *something-like-this* statements. But let's look more closely at one culture's metaphysical tradition: the interweaving views found in Indian scholastic thought. Encompassing many ontologies ranging across Hindu, Buddhist, and Jain traditions, the Indian tradition engaged in debates about causation, grounding, mereology, identity, emergence, modality, and other topics that would feel quite familiar to those who have worked on the Aristotelian scholastic tradition and the forms of reasoning later questioned by Humean sceptics. Here we see diverse ontological models applied to the evidence of the world, and a vigorous process of theoretical critique and evolution.

From around 700CE to the present, a philosopher in India would have had a wide range of ontologies in view, and been acutely aware of the potential for competing metaphysical interpretations of reality. Pushed by competition and critique, Indian metaphysical culture was a vibrant generator of diverse ontologies, seen in the sheer diversity of mainstream views including language-correspondent realism (Mīmāṃsā), atomism (Vaiśeṣika), trope-theory (Abhidharma), monism (Vedānta), dualism (Sāṃkhya), multiple kinds of idealism (Advaita, Pratyabhijñā and Yogācāra), metaphysical nihilism (some forms of Madhyamaka), and various schools that resisted obvious metaphysical categorization (e.g. Jainism). Indeed, the range of interpretations was so diverse that some schools sought a way to undercut the models with some way of pointing more directly at their predictive mechanical successes.

One attempt at this was the Sāṃkhya school's development of a modal argument for ultimate grounding: this classical school argued that something is needed to explain the apparently contingent *order* of consistent patterns that unfold as the cosmos.[6] We see typicality patterns in the natural world, like cows producing milk, milk solidifying into curd, and seeds growing into plants (all common Indian examples). These patterns seem to show a constraint on the *mechanics* of the world that we reliably observe, and without which our capacity to reason typologically would be impossible. Yet Sāṃkhya acknowledged that we cannot see this something and must use inference to arrive at the conclusion it is there (see *Sāṃkhya Kārikā* 4–8). Furthermore, we do not know *what* this constraining force shows. Although it was called by the metaphysical terms 'substance' (*pradhāna, sat*) or 'power-possessor' (*śakti-mat*) or foundation (*adhiṣṭhāna, avasthā*), nevertheless these were just a 'name-practice' (*nāma-dheya*) or word-handle (*vāc-ārambhana*) for that thing which in other

respects was unknown. Different models were applied to this temporally-extended, cosmically coherent modal determiner, following different analogies; for some, reality was a material cause like clay, while over time others tried to refine this model by replacing it with alternatives: a substance changing modes like water that becomes foam, or a play of processes like the flickering flames of a fire, or a personal agency like the movements of a body, or even the unfolding of ideas from a seed concept.[7]

In effect, these theories, as metaphysical explainers, were really analogies drawn from past experience of the empirical world. This was the push-back to the otherwise very compelling non-realism about empirically-observed things found in Buddhist and other schools. Some recent scholars have characterized the Buddhist reductionist position on descriptions of macro-level empirical phenomena as a kind of 'fictionalism' (e.g. Sauchelli 2016; Siderits 2022), and schools that demurred from advocating any theory of truth might be seen as seeking to remain neutral about useful ideas in this way. But metaphor theorists were closer to structural realists who remain neutral about other features of their descriptions.

One example of this attitude can be in the twelfth-century theistic philosopher Rāmānuja. Discontent with previous ideas of reality as a single material, or alternatively as the target of constructed imaginings, he adopted a new analogy: reality is a giant agency possessed of dispositional powers and a concrete body expressing its actions, much like a human person. Rāmānuja was aware that the image of a body was only an analogy, which was a good guide to experience in some ways but not in others (for instance, in terms of the dynamics of having an 'inner controller' or *antaryāmin*, as Julius Lipner (1986) carefully studies theological language). Thus, while he emphasized the image of a divine body mediating agency into the world, he also glossed this 'body' (*śarīra*) as merely an accessory (*śeṣa*) or tool (*prakāra*) or supported feature (*adheya*). The analogy was itself just a 'word-handle' helping us negotiate a *kind of relational mechanics* focused on real-time control and dependence across contingent variations.

Strictly speaking, the word *dṛṣṭānta* (literally a 'seen-instance') could be used with two related meanings: it could be an 'example' of a phenomenon on which we base inductive inferences (*anumāna*).[8] Epistemological conventions in India classically treated inference as a process of calculating pervasive or non-pervasive concomitance between two features across different contents. This was sometimes formulated as *connection, exclusion*, and *pervasion* of concomitance between specific properties (i.e. *anvaya, vyatireka*, and *vyāpti*). According to the usual example, if we see fire where there is smoke, and there is no evident counter-explanation (e.g. the smoke turns out to be mist or a swarm of gnats), then we should always infer fire from smoke and we may take it as probably indicative of a joint in reality. This is effectively what Müller (2001 (1853), 68) calls 'measuring something according to something else' through 'repeated observation'. Some sources (e.g. Annambhaṭṭa's *Compendium*) simply treat it as a matter of knowledge through reliable connection, without prejudice as to whether it indicates causation, identity, grounding, or some other fact about reality. Tillemans (2020, section 1.3) likens this approach to epidemiology and notes that thinkers like Dharmakīrti were not using notions of modal necessity in their reasoning but rather 'very strong confidence that a universally quantified material implication holds without exception in the actual world because of natures in this world', and where a 'material implication' was measured by regular (and often apparently but never verifiably universal) concomitance. Implicit here is the idea that pervasive connections represent general 'natures in this world'.

But *dṛṣṭānta* was also used to mean analogy: in the Vedāntic tradition, this meaning is found in the various metaphysical descriptions of all reality as being 'like' (in Sanskrit, *iva*) some worldly thing is not a direct induction. Rather, when philosophers said a hylomorphic

substance is like clay being shaped, or a substance undergoing different modes as like an ocean with waves and foam, they were using past examples of a *kind* of relation to infer that such a typology is a broader possibility and so could apply to this case by virtue of similar relations. There is an induction to a wider metaphysical pattern that is then abducted as a best-fit explanation. Here our 'modelling' in terms of analogies helps us think through the kind of relation that best fits the case, drawing on our 'normality assumptions' from past 'typicality'. Guha (2021) has argued that this miniature mental modelling of information according to some implicit ontology was part of the Vaiśeṣika version of receiving information through language – even when processing experience-distant sources like testimony. The images themselves – e.g. clay for hylomorphism, or a body for agency – are like little world-models, highlighting certain general typicalities and possibly cross-referencing more than one pattern, so that we can speculate in more wide-reaching directions about possible characteristics of reality.

To put it a different way, each metaphor might be seen as a 'protectorate', in Robert Laughlin's sense. Although we can never know exactly what is going on out there in the 'real', we can know that the world contains occurrent clusters of repeating phenomena generating typicalities. Laughlin (2005) focuses his picture of the world on 'stable, complex organizational structures that form' from 'primitive elements'. This does not assume what those elements are, and acknowledges with Laughlin and Arthur Eddington that 'the universe... is stranger than we can imagine'. Yet our imagination uses analogies to create its own kind of non-descriptive, practical realism about the structures we experience. They may well be 'mesoscopic' as Laughlin puts it, extrapolating from some localized middle-levels of reality, highlighting emergent phenomena that are particularly relevant to our own possibilities of interaction, and missing out patterns that occur at larger or smaller scales. But to some extent that is inevitable, humble metaphysics, like a good Buddhist monk, pursues a 'middle way' (Laughlin et al. 2000). Further, while a Hindu Advaita or Buddhist non-realist might argue that even our mesoscopic conceptualizations are mere confabulations, superimpositions (*adhyāsa*) of ideas seen elsewhere or exclusions (*apoha*) of non-functional notions rather than truth-assertions for certain concepts, he acknowledges that the confabulations we use are precisely those that 'lead us to successful action' (Westerhoff 2013, 130). Unconceived alternatives matter precisely insofar as they do a better job of capturing structural patterns in experience.

Is this simply a standard form of structural realism? Sider (2011, 1) has proposed a kind of realism that holds that the world has a 'distinguished structure' which expresses 'fundamentality' and the right representation of it does work of 'joint-carving', where it uses 'the right concepts, so that its conceptual structure matches reality's structure'; as he himself puts it, 'truth is not enough; the representation [of reality] must also use the right concepts, so that its conceptual structure matches reality's structure'. This is an intriguing formulation: the structure that any statement is targeting lies not only in the world but also in the concept, and in a sort of analogy between the two. Sider goes on to hold that whatever structure the two relate to is an 'ultimate or fundamental structure of reality underlying the appearances', and that discovering this has always been 'a central task of metaphysics'.

By contrast, the analogical view is perhaps more cautious about knowing what we do when we align a pattern of empirical data with a 'structure of reality', given that we do not know what that structure betokens in terms of metaphysical individuation. A pattern of consistency, for instance, may signal a single object, the presence of a type of material or force, a causal directionality, or a field of influence of any kind, past or present. Probably, there is some structure that counterfactually explains this striking specificity. But we cannot do much beyond modelling it and exploring the success of such models. One might take

this as a commitment – unlike Sider – to treat it in modal terms, but only broadly so (without necessarily committing to further formal concepts of modern Western modal thinking).

We might note that seeing things in these terms never presented any practical problem, in India at least. One of the objections to Stanford's instrumentalism was that it might 'put some of us at a cognitive remove from the content of these theories'. Ruhmkorff (2019) writes that a:

> ... person may have extensive withholding of belief about the individuation of physical reality. However when a person is ducking a snowball, or bird-watching, or cooking breakfast, it would be beneficial for her to think of snowballs and birds and eggs as beings real and distinct from her.

But no Indian non-dualist in the Himalayas, say, ever had trouble ducking a snowball because of her metaphysical beliefs. This brings out the way that the model user is:

> a) a realist about there being a reality (whether mental or material, to borrow the Cartesian terms that have so influenced the West) of some kind with a structure that we can manipulate but not wholly control because it operates by its own lights. We can note along the way that this gives the lie to Buddhist fictionalist claims to be reality-neutral in taking idea-usefulness as merely a psychological matter of taste. Sauchelli (2016, 1284) describes the fictionalist stance as holding that 'things do not need to exist to be useful. Thus, we are not irrational in entertaining false thoughts because of their utility... because we do not think that those false beliefs... are true.' But this fails to acknowledge the modal push-back on which ideas *we are able to* fictionally entertain as true: I may find the fiction of being able to fly psychologically useful, but I may find it pragmatically dangerous when on the edge of a cliff. The world chooses for me, and utility maps this constraint among other features of our experience.

The model-user is also:

> b) a cautious realist about joints of that reality which our experiences represent accurately, although without directly telling us any further about its nature and unexperienced features. The metaphysical joint-limning project will continue as long as our sphere of empirical perception continues expanding.

But the model user is, however:

> c) an anti-realist about the kinds of metaphysical things – the ontology or scheme of metaphysical individuation – that she or anyone else uses to describe that to which the joints pertain. Those can never be more than tentative models based on analogy with past schemas derived from more well-attested, detailed, and reliable experience of what we call 'physical materials', 'building blocks', 'forces', 'fields' and so on.

To Ruhmkorff's cognitive confidence objection, she would argue that this is no more counterintuitive than modern physicists' habit of thinking about tables as made of invisible particles or some other more fundamental phenomena. The public who base their views on physics are all individuation anti-realists already, though they may only remember it when they read the latest issue of *Scientific American*, and forget it as soon as someone throws them a snowball.

Creativity and progress in metaphysical modelling

Finally, this brings us to the hidden *promise* embedded in Stanford's PUA. If we see explanation as mapping and modelling our past experiences and likely interactions with the world, then there is nothing to choose between different explanations that are equally good representational instruments – except their cognitive appeal, and their capacity to unveil new and perhaps as-yet-unconceived successful interactions. In real terms, there is always unexplained data to assimilate, and *more* data to be acquired – much of which may challenge our existing typicality protectorates. Further, a good model may point us to a structure of reality that exceeds our experience, showing us possibilities we had not even sought to investigate. If past metaphors fail, then we need to look for better ones. And even successful metaphors may constrain us to known patterns, rather than directing us to unsuspected ones that are 'out there' waiting to be discovered. The PUA reminds us that radically different models of individuation are always possible... we just have to get *beyond* our past experience to imagine truly novel structures.

In this sense, the past-directedness of our analogies can be a problem, since the mesoscopic scope of proven typicalities is trained on a limited spectrum of the world. To speculate beyond that, we may need to look at less typical cases, reach towards the edges of our observational field, and stretch existing analogies in new ways. We see this in India where over more than a millennium, philosophers in the Vedāntic tradition fished for new ontological models they could apply to reality, cycling through analogies with clay, water, milk, light, fire, an illusory snake, a light-refracting crystal, a dreamer, a dancer, language, love, and more. If we trace the progression of analogies in any one application, we can see specific processes of novelty at work. For instance, the shift from hylomorphic analogies of water (attributed to a classic Bhedābheda Vedāntin like Bhartṛprapañca)[9] was contrasted with a non-substantial analogy of space divided up by the 'Aupādhika' Bhedābheda thinker Bhāskara, and both were later replaced with a process analogy of fire (by the Gosvāmins' Acintya Bhedābheda Vedānta) which acts according to its natural disposition to flicker, glow, and expand, and so addresses the lack of an explanation for the fundamental reality's transformation into the complex world. Thus, explanatory lacks were one of the most common reasons to push beyond a model to something new.

Analogies also sometimes need elements to be pared away: the examples of space or fire also showed that a physical base (a body or separate agent) is not always needed for powers and processes, so that one might have a powers-only ontology. Unwanted implications were also a concern: the analogy of clay shaped into clay artefacts implied that everything made from the original material would continue to visibly share its features. But this is not true where we see more profound transformations, as of seeds into plants, into food, into living organisms, breath, and ultimately speech, mind, and imagined worlds (a point of concern to hylomorphic substance monists like the Vedāntic philosopher Śrīnivāsa; see Frazier 2025b). Here, milk (able to curdle) and water (able to become foam) were more useful analogies than clay since they contain unseen typological possibilities within them. The example of a peacock's egg,[10] which shows no hint of the rich plumes to come, pressed the point that potentialities are not visible at every stage. In these cases, lacks and unnecessary additions in an existing ontological model help us to move towards new explanations.

These colourful cases helped philosophers to model the mechanical system of the world. They could run the model backward and forward to calculate the prior and posterior conditions it entails, consider it counterfactually in terms of what we would see if it were and were not right in specific ways, and make cross-ontology leaps when something seems paradigmatically wrong.[11] Philosophers seemed almost eager to reach for new unforeseen models that might explain our experience in increasingly coherent, elegant, and encompassing ways. Perhaps they perceived a limit of the analogical approach to unconceived

alternatives: sometimes finding a radically different ontological account of the data simply means attending to little-noticed phenomena like language, fire, or art. But there are possibly many ways things can be that we – due to our limits as spatio-temporal conscious organisms dependent on this region of the physical world – cannot observe. Indeed, current physics largely agrees that space-time is not how things are at other, probably more fundamental levels of reality. There are probably unobservable ontological kinds which are more relevant when we seek to understand things beyond our own mesoscopic view – like the cosmos beyond space-time or the ground of Being. Unless the structure of reality stays within a narrow range, analogy may thus have limits to its metaphysical usefulness or may require more acute analysis of the key explanatory elements that is able to reconstrue their significance in more imaginative ways.

But the larger epistemological takeaway is that cultures of knowledge are not always built around certainty and closure. They can be built around a sense of infinite quest, judging their success not in terms of indubitable facts but in terms of increased discovery and interaction with the world. A medical manual called the *Caraka Saṃhitā* emphasized the need to stay open to new information and interpretations, when the knowledge one seeks is based on experience: inductive reasoning needs empirical fuel. It warns the medical scientists of classical India:

> There is no end to the science of life, hence one should devote himself to it carefully and constantly. This is worthwhile... for the wise the whole world is teacher, while for the unwise it is enemy.[12]

This ancient text goes on to recommend both epistemological means to check for alternative interpretations, take into account contextual framings, and control our psychological tendency to resent challenges to our existing account.[13] It demonstrates a thoughtful humility about the goals of science, coupled with a profound commitment to the impossibility of closure. It may remind us of a very different pronouncement from one of the West's Victorian enthusiasts of science, J.G. Frazer. He sustained a similar epistemic humility amid his enthusiasm for the possibilities that science were opening up to the world at the end of the nineteenth century. Towards the end of *The Golden Bough*, he wrote that:

> ...the laws of nature are merely hypotheses devised to explain that ever-shifting phantasmagoria of thought which we dignify with the high-sounding names of the world and the universe. In the last analysis magic, religion, and science are nothing but theories of thought; and as science has supplanted its predecessors, so it may hereafter be itself superseded by some more perfect hypothesis, perhaps by some totally different way of looking at the phenomena—of registering the shadows on the screen—of which we in this generation can form no idea. The advance of knowledge is an infinite progression towards a goal that forever recedes. (Frazer James 1996, 854)

Insofar as science, philosophy, and natural theology deal with theories of the natural world, such future-directed humility is fitting to all of them. It may be that all we are ever really doing is making maps of 'structural parallels' (Stanford 2010, 55) that define the nomic appearance of our empirical world at different levels and conditions. But this is true of all truths; as true of one's idea of a loved one we know well, as of our theory of a distant star, or the immanent particles in our bodies. It is a cornerstone of hermeneutic thought that reality is something we converse with, not something we capture (on this, see Hans-Georg Gadamer's critique of scientific knowledge).[14] We can treat the PUA not as a threatening

creature to be caged, but as a teacher ready to inspire us towards new regions of investigation and thought. The possibility of unconceived alternatives invites us to an infinite progression in which we become ever more friendly with the mysterious creature that reality is... but without ever hoping to know the truth perfectly – as no thing could ever really be fully known.

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Notes

1. Insofar as we deal in the present article with theological worries about unconceived alternative theories of empirical evidence, we treat theological theorizing as essentially a form of metaphysical explanation.
2. Some have claimed that this is a special problem for science, but others have doubted that we can make a distinction between, for instance, 'theoretical' and 'observational' material (as distinguished in Carl Hempel's deductive-nomological characterization of scientific truths, e.g. Carl 1965). It is this general view on which we will focus.
3. PSR has been defined in a range of ways. We take this simple formulation from Oberle (2023), building on discussions by Amijee, Raven, Bliss, and others. For a more nuanced attempt at translating this idea in global terms, see Bliss forthcoming.
4. Whether 'reality' is seen as merely empirical – pertaining to our perceptions alone, or mind-external, is orthogonal to the issues here.
5. It is important to note that such maps of the mechanics of the 'world' have nothing to do with whether that world is 'inner' – in the sense of being merely mental – or 'outer' in the sense of being objective, concrete, or external to the mind. A Buddhist anti-realist such as Nāgārjuna ('It seems safe enough to say that all Buddhist philosophers are anti-realist about one thing or another... The Madhyamaka school is different. Its anti-realism is global' (Siderits 2022, 171)) may nevertheless use such patterns to predict what we will experience in the future (see Bliss forthcoming on Nāgārjuna's non-realist endorsement of PSR).
6. See Frazier (2022, 2024a).
7. See Frazier (2014) for a short history of the evolution of such analogies.
8. In fact, the formal nature of examples in reasoning, and their relation to inductive inference, has been a topic of some scholarly debate; see, for instance, the essays examining the role of examples in Indian reasoning in Katsura and Steinkellner (2004).
9. See Śaṃkara's *Bṛhadāraṇyaka Upaniṣad Bhāṣya* 4.3.30.
10. For example, Bhartṛhari's *Vākyapādīya* 1.51.
11. The *Nyāya Sūtras* discuss the use of examples in 1.1.25, and Vatsyāyana's commentary points out that they allow one to match a given theory against corroborative and counter instances. See Gangopadhyaya's translation with commentaries (1982, 35–36).
12. See Frazier (Forthcoming).
13. See Frazier (2025c) on openness to alternative views in the *Caraka Saṃhitā*, building on Dagmar Wujastyk's work.
14. For example, see Gadamer (1981, 2004, 4–8).

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