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THE ARGUMENT FROM WHOLES: A CLASSICAL HINDU DESIGN ARGUMENT FOR THE EXISTENCE OF GOD

John Kronen and Sandra Menssen

All wholes are made by an intelligent agent; some wholes were not made by an embodied agent; so, some things made by an intelligent agent were not made by an embodied agent. Such was the basic argument for God's existence defended by Udayana, the greatest of the Nyāya-Vaiśeṣika philosophers, in his *Kiraṇāvalī*. Our paper explicates this argument and highlights its merits.

The Argument and Its Tradition

The Nyāya-Vaiśeṣika¹ philosophical school is one of the so-called “Orthodox” or Hindu schools of Indian thought, with roots that antedate the birth of Christ, and several long periods of glory, including one that ran from about the fifth century through the eleventh and culminated in the writings of Udayana. Though lauded by cognoscenti, the Nyāya's contributions to philosophy are still largely unrecognized in the West. That is unfortunate, since we can learn much from them. They elaborated one of the most powerful and sophisticated forms of substantivalist realism the world has ever seen. They were master logicians; their work on inductive logic has few rivals in the history of thought. They were theists, and the preeminent natural theologians of ancient India. They developed and defended a number of arguments for the existence of God, most of which have counterparts in the West.² The most important of these, in our view,

¹The Nyāya and Vaiśeṣika schools of Indian philosophy were sister schools which seem to have been offshoots of the very ancient Pāśupata Śaivism. Their doctrines were virtually identical. The two schools were merged into one by Udayana, and after his time, the new, merged school tends simply to be referred to as Nyāya, or sometimes as “the new Nyāya” (*Navya-Nyāya*)—though many scholars believe that it was Gaṅgeśa, Udayana's fourteenth-century follower, who was the true founder of the new Nyāya.

²Primary sources we have consulted in preparing this paper include: *The Nyāya Sūtras of Gautama with the Bhāṣya* (commentary) of Vātsyāyana and the *Vārṭika* (commentary) of Uddyotakara, four volumes, trans. Gaṅgānātha Jhā (Delhi: Matilal Banarsidass, 1985); *Praśastapāda, Padārthadharmasaṅgraha*, trans. Gaṅgānātha Jhā with the *Nyāyakandali* (commentary) of Śrīdhara (Delhi: Chaukhambha Orientalia, 1982); *The Vaiśeṣika Sūtras of Kaṇānda with the Commentary of Śaṅkara Miśra*, trans. Nandalal Sinha (Allahabad, 1911, repr. New York: AMS Press, 1974); Udayana, *Nyāyakusumāñjali*, translation of the *Kārikās* and interpretive exposition of Udayana's auto-commentary by Bhaswati Sinha (New Delhi: Aryan Books



is the argument from wholes, a distinctive sort of design argument brilliantly defended by Udayana.

The argument from wholes in its fullest sense consists of a series of sub-arguments. But in a more restricted sense the description can be applied to the sub-argument concluding that *some things made by an intelligent agent were not made by an embodied agent*. (The Nyāya progressed from this sub-conclusion to the further conclusion that the unembodied agent is God, as Aquinas progressed from his sub-conclusion that there is an unmoved mover to the further conclusion that there is a being with a full complement of divine attributes.)

In this paper we aim to explicate and highlight the merits of this sub-argument, which we will call W as a reminder that it focuses on the nature of *wholes*.

We formulate W along the lines taken by Udayana in his *Kiraṇāvalī*.³ Like all classical Indian philosophy, which is conservative by nature, Nyāya thought mainly developed by way of *augmentation* rather than revision. Versions of W were well-known before Udayana, and the argument was further refined and buttressed by Udayana's philosophical heirs.⁴ As we present W, we'll draw on the best resources we know of from the tradition, paying particular attention to Udayana; but we'll speak of W first and foremost as an argument of the Nyāya, and only secondarily an argument of Udayana's.

Here, then, is W:

International, 1999); Udayana, *The Kusumānjali or Hindu Proof of the Existence of a Supreme Being*, with the commentary of Hari Dasa, trans. E. G. Cowell (Calcutta: Baptist Mission Press, 1864); Udayana, *Laksanāvalī* (in its entirety) and *Kiraṇāvalī* (portions), trans. Musashi Tachikawa in *The Structure of the World in Udayana's Realism* (Dordrecht: D. Reidel, 1981); Udayana, *Atmatattvavivēka*, translated with an explanation by N. S. Dravid (Rashtrapati Nivas: Indian Institute of Advanced Study, 1995).

Secondary sources we have consulted include: Surendranath Dasgupta, *A History of Indian Philosophy*, Vol. I (Delhi: Matilal Banarsidass, 1997 [originally published in 1922, Cambridge: Cambridge University Press]); Jadunath Sinha, *Indian Philosophy*, Vol. I (Delhi: Matilal Banarsidass, 1978); B. K. Matilal, *Perception: An Essay on Classical Indian Theories of Knowledge* (Oxford: Oxford University Press, 1986); B. K. Matilal, *Logic, Language and Reality: Indian Philosophy and Contemporary Issues* (Delhi: Matilal Banarsidass, 1985); R. R. Dravid, *The Problem of Universals in Indian Philosophy* (Delhi: Matilal Banarsidass, 1972); Jonardon Ganeri, *Philosophy in Classical India* (London: Routledge, 2001); D. Shastri, *The Philosophy of Nyāya-Vaiśeṣika and its Conflict with the Buddhist Dignāga School* (Delhi: Bharatiya Vidya Prakashan, 1997); John Vattanky, *Development of Nyāya Theism* (New Delhi: Intercultural Publications, 1993); George Chemparathy, *An Indian Rational Theology: Introduction to Udayana's Nyāyakusumānjali* (Brill: Vienna, 1972); J. N. Mohanty, *Explorations in Philosophy*, Vol. I: *Indian Philosophy*, ed. Bina Gupta (Oxford: Oxford University Press, 2001).

³Udayana discussed and defended W in his *Atmatattvavivēka* and his *Nyāyakusumānjali* as well as his *Kiraṇāvalī*, using slightly different formulations of it in each. For the exact formulation he used in the *Kiraṇāvalī*, see Chemparathy, *An Indian Rational Theology*, 87–88.

⁴For a learned and thorough account of the development and refinement of W by Udayana himself, as well as by his predecessors and successors, see Vattanky, *Development of Nyāya Theism*. Unfortunately Vattanky's work is couched in the technical terminology of Nyāya logic and this makes it largely unintelligible to those not acquainted with that terminology.

(W1) All wholes⁵ are made by an intelligent agent.

(W2) Some wholes were not made by an embodied agent.

(W3) So, some things made by an intelligent agent were not made by an embodied agent.

We have set W out as an Aristotelian syllogism, though Udayana did not use exactly that form. As is fairly well-known, the Nyāya developed a five-step argument pattern very similar to the Aristotelian syllogism; we have chosen an Aristotelian formulation of the argument since a sympathetic rendering in the Nyāya form would require too time-consuming an explanation of the purpose served by two steps that typically seem superfluous to Western philosophers.

The Nyāya argument from wholes is sometimes misconstrued as a cosmological argument.⁶ It is better seen as a design argument, in our view.

However, to regard the argument from wholes as a design argument is to invite misunderstanding. We will be emphasizing the fact that W involves an induction. But we do *not* mean to say that W is probabilistic in the sense of being a Bayesian argument, or an inference to best explanation, or even a sampling argument. It is inductive in the Aristotelian sense, according to which induction involves abstracting essential natures from individuals having such natures in order to arrive at an understanding of some of the essential properties of everything possessing such a nature. Now the Nyāya, like Aristotelians, did not believe in innate ideas. Nor did the Nyāya believe that essences—even of wholes large enough for us to perceive—manifest themselves to us at “one glance,” so to speak, in the first experience we have of them. Indeed the Nyāya developed experimental methods for coming to know something of the essences of such wholes, methods very like Mill’s celebrated methods of agreement and difference. But, like neo-Aristotelians who know of and accept Mill’s methods, the Nyāya held that such methods would be pointless if there were no universal essences allowing us to extrapolate general truths about kinds of things from the examination of particulars.

⁵In Sanskrit the middle term of Udayana’s syllogism (i.e., the subject of proposition W1), *kārya*, literally means “product,” with the connotation of “artifact.” We have chosen to formulate Udayana’s argument using the middle term “whole” in order to avoid the impression that the Nyāya relied on question-begging connotations when arguing with atheists. They didn’t—all the greatest Nyāya defenders of W gave non-question-begging arguments for the proposition that all those entities the Nyāya held may properly be called “products” *are* products, i.e., that they are non-eternal entities requiring the action of intelligent causes to come to be. And all of these arguments focus in various ways on the property *being-a-whole*—hence our formulation of Udayana’s argument. On the importance of the Nyāya’s mereology for their natural theology, see Mohanty, *Explorations in Philosophy*, 116–117.

⁶See, for instance, Francis X. Clooney, “The Existence of God, Reason, and Revelation in Two Classical Hindu Theologies,” *Faith and Philosophy* 16:4 (1999), 523–543. See also Dasgupta’s *History of Indian Philosophy*, 325–326. Dasgupta’s terse discussion of the argument would lead most Western readers to think, mistakenly, that it is cosmological.

So while W is a design argument, it is different from (though not inconsistent with) some contemporary fine-tuning arguments. Fine-tuning design arguments may focus on “entities” the Nyāya would not even take to be wholes. Consider this analogy. It seems one can legitimately infer from an arrangement of plates, glasses, and silver on the table at Christmas that “Somebody set the table” even though, according to the Nyāya criteria for true universals, the arrangement is not a whole and there is no single undergirding universal corresponding to the aesthetically pleasing arrangement. Nothing the Nyāya say about the need for undergirding universals in support of W entails that one cannot infer that an intelligent mind is behind the aesthetically pleasing arrangement on the table.

We see the project of this paper as worthwhile because the Nyāya argument from wholes is not well-known in the West; furthermore, it has not, to our knowledge, been set out and explained by Western philosophers as clearly as is desirable. The argument is worthy of close consideration by Western philosophers not only because of its intrinsic merits, but also because it can shed light on Western versions of the design argument.

The remainder of our paper has three sections. In Section I we defend W1, the first premise of W. In Section II we defend W2, the second premise of W. In both these sections we engage certain objections to W that the Nyāya themselves treated at length. In Section III we take up what we call two “contemporary” objections to W: these are objections that seem particularly to appeal to audiences today.

I. Defense of W1: “All Wholes Are Made By an Intelligent Agent.”

The Nyāya held that we have sufficient inductive evidence to support the claim that the efficient cause (in the strictest sense) of every whole is an intelligent agent. Wholes such as pots, palaces, and chariots were made by an intelligent agent, they maintained, while non-wholes such as atoms and space were not. The main argument they developed in support of W1 may be set out as follows:

- (W1.1) We can correctly infer that chariots (or pots, or palaces) were made by an intelligent agent (at least one intelligent agent).
- (W1.2) If (W1.1), then there is a universal undergirding such an inference.
- (W1.3) The only universal that could undergird the inference is *wholeness*.
- (W1.4) If (W1.3), then all wholes are made by an intelligent agent.
- (W1.5) So all wholes are made by an intelligent agent.

The first premise is, presumably, non-controversial: a watch found on a beach, a chariot encountered in a field, a pot or a palace chanced upon—we automatically assume that these entities were fashioned, were designed,

were *made* by at least one agent with intelligence. Understanding the appeal of the second and third premises requires understanding what it is to be a *universal*, and what it is to be a *whole*. We will shortly turn to extended discussion of these two concepts. Once we've explained them we'll return to a discussion of supporting argumentation for the premises of the argument just set forth, and most particularly the supporting argumentation for W1.3.

Universals: Their Ontology and Their Existence

A universal, according to Udayana's definition, inheres in many and has nothing inhering in it.⁷ The Nyāya doctrine of universals was *like* Plato's in specifying that universals are really distinct from the particulars they inhere in, so even if every cow were destroyed, cowness would not be. But the doctrine was *unlike* Plato's in that the Nyāya denied that universals are more real than particulars as well as that universals are archetypes. A cow does not in any way resemble cowness for the Nyāya—it resembles other cows. There are universals both for substances and qualities. Thus a brown cow instantiates the universals cowness, animality, and so on, all the way up to the universals substanceness and existenceness. Its brown color (a property trope) instantiates the universals brownness, colorness, etc., all the way up to the universals qualityness and existenceness.

The Nyāya conceived of universals to form a hierarchy that does not depend on human classification. According to them, any two universals are either co-ordinate, like cowness and horseness, or, if not, one is subordinate to the other and the other supraordinate to the first. The Nyāya conceived of this hierarchy extensionally. Existenceness is the highest universal because it has the greatest extension. Immediately subordinate to it are the universals substanceness and qualityness, and no universal subordinate to either one of these can be subordinate to the other.⁸ Thus there is no universal brown-cowness. This is so because cowness is subordinate to substanceness and brownness to qualityness. Thus if there were such a universal as brown-cowness it would have to be subordinate *both* to substanceness and to qualityness and hence would be as absurd as the universal cow-horseness. Cowness, brownness, and magnitudeness are *real* universals, natural kinds (*jātis*). But big-brown-cowness is a bogus universal (*uphādi*). The Nyāya insistence on the distinction between real and bogus universals plays a crucial role in their defense of W.⁹

A number of arguments for the existence of universals can be found in the Nyāya tradition. But the two that are the most important here bear on questions concerning the nature of induction and causality.

⁷See the *Laksanāvāli*, #202, in Tachikawa, *The Structure of the World in Udayana's Realism*, 85.

⁸Most Nyāya held that *motionness* was a third universal immediately subordinate to *existenceness*, but we ignore this as not being of particular relevance to our paper since the Nyāya defense of W works just as well if there are two rather than three universals immediately subordinate to existenceness.

⁹Udayana's criteria for distinguishing real from bogus universals are justly famous. On these criteria see Ganeri, *Philosophy in Classical India*, 79–81.

Consider the nature of induction. The Indian materialists held that even though we have innumerable times seen smoke accompanied by fire, that does not guarantee that at future times or other places smoke will not be found without fire. The Nyāya—in particular, Udayana—claimed that this very argument of the materialists against the possibility of induction was itself based on an induction. We can meaningfully speak of future times and other places only by inductive extrapolation from known times and places.¹⁰ Furthermore, Udayana noted that to say such things as “There might be smoke without fire” seems implicitly to rely on supposing that there are universals. How can we sensibly talk about *smoke* without fire unless we have some concept of the universal smokeness? Arguing against the possibility of induction involves raising questions about universals, which requires appeal to universals.

A second (closely related) argument of Udayana for universals was based on the observed causal regularity in the world. If a person wants to produce barley sprouts, he collects barley seeds, not little pebbles that might *look* like barley seeds. But how must the world be in order for this behavior to be rational? Udayana argued that the behavior could be rational only if there are universals, and universals regulate causality. It's not in virtue of being this *particular* seed that something has the power to produce a sprout, it's in virtue of being a *seed*. The universals seedness and sproutness have a connection, and causality is regulated by universals, so whatever instantiates seedness has the power to effect something that instantiates sproutness. If this were not the case, Udayana argued, there would be no causal regularity in the world, and anything could produce anything else.¹¹

Wholes: Their Ontology and Their Existence

The concept of a *whole*, is, of course, also central to W: the Nyāya argued that the relevant universal for inferring that a thing was made by some intelligent agent is the universal *wholeness*.

For the Nyāya, a whole is a substance (i.e., quality-possessor) that inheres in more than one substance. Pots, chariots, and trees are all wholes, the Nyāya held; and so is the planet Earth (though not the universe itself). Wholes are composite; and non-eternal substances are co-extensive with wholes. *Substance* is the most important ontological category for the Nyāya. They conceived substances to be quality possessors, where a quality is a property particular (e.g., the red color of a rose), not a property universal (e.g., redness). For the Nyāya a substance is, in effect, an ontological host while a quality is an ontological parasite. The Nyāya saw a fundamental difference between eternal substances (substances that never come to be and that never cease to be) and non-eternal substances. According to the

¹⁰See Ganeri, *Philosophy in Classical India*, 159–160.

¹¹See Dravid, *The Problem of Universals in Indian Philosophy*, 19–22.

Nyāya all eternal substances are simple (not made of parts), even though some have extension.

Wholes are made out of other substances; more precisely, for the Nyāya wholes are made *in* other substances. A whole is really distinct from the substances it subsists in. In one way, then, a whole is simple. A shirt, for instance, is not intrinsically constituted by the threads it is made in, but rather depends upon them as its sustaining substrata. The shirt has a magnitude of its own, and the sleeves/collar/etc. are aspects of this magnitude, parts that could not survive the destruction of the shirt (and hence of the shirt's magnitude), and so are only quasi-parts of it, like the different quarters of space (North, South, East, West). If a shirt-tunic is destroyed by cutting through the front "part" of it (i.e., the quasi-part that covers the chest and stomach), the sleeves of the shirt-tunic will not survive its destruction since sleeves can only exist as "parts" of a shirt. Any threads of the shirt, however, not destroyed by the cutting will survive the destruction of the shirt. These threads are the *proximate* proper parts of a shirt, but they are not its only proper parts—indeed the ultimate proper parts of a shirt are atoms, i.e., material substances having spatial position but no spatial thickness.

The Nyāya took atoms to be the ultimate components of every whole, including the smallest wholes. A smallest whole is a whole such that all of its proximate parts are non-wholes. The Nyāya thought the smallest whole was a *dyad*, a whole inhering in two atoms. But it seems clear that smallest wholes need not be made in only two atoms; of course *some* of them might be, but this is not necessary, nor is it necessary that all of them be even if some are.

For the Nyāya, a whole inheres in its proper parts. To say that one thing inheres in another thing is to say that the relation between them is so intimate that it could be destroyed only by destroying at least one of its relata. In this respect inherence is unlike conjunction. A glass on a table is in conjunction with the table but this conjunction can obviously be destroyed without destroying either the glass or the table. But a shirt, a kind of whole, inheres in its threads and as long as both the shirt and its threads exist they must be intimately related to each other via inherence. The only way to destroy the relation between them would be to destroy some of the threads, or the shirt. Since the Nyāya were mereological essentialists, they held that the destruction of any of the threads would destroy the shirt, a whole. A shirt, however, could only be destroyed in a way that does not destroy the threads or any of the inherence causes of the shirt (e.g., cotton fibers, molecules, etc.) by destroying the conjunctions of some of the threads constituting it. Thus inherence is an asymmetrical relation.

The Nyāya conceived the conjunctions of the parts of a whole to be the most proximate causes of the coming to be of the whole. They named these the non-inherence causes of the whole since the whole inheres in its parts, not in the conjunctions of its parts (no substance can inhere in the qualities of other substances). So the conjunctions of the substances

that will come to constitute the proximate proper parts of a new whole, though necessary for the coming to be of that whole, are not the inherence causes of the whole. But the conjunctions that are the proximate causes of any whole must be brought about by something, and thus another type of cause must be posited to account for the coming to be of the conjunctions that are the proximate causes of the coming to be of a whole. This further type of cause the Nyāya named the efficient cause of a whole. This cause is the substance (or substances) actively bringing about the conjunctions of the substances that will serve as the inherence causes of the whole that will come to be. The Nyāya held (on grounds we'll later explain) that everything that is *strictly speaking* an efficient cause is an agent.

So much for a quick sketch of the ontology of Nyāya wholes.¹² Why should we think there are any such things? After all, the Buddhists denied that Nyāya wholes exist.

To begin with, the Buddhists argued, the very concept of Nyāya wholes is incoherent:

- (1) If there are wholes, they inhere either wholly in some one of their parts, or partially in each of their parts.
- (2) If they inhere wholly in some one of their parts, they cannot be present in their other purported parts, with the absurd consequence that those other parts aren't really parts of the whole at all.
- (3) If, on the other hand, wholes inhere partially in each of their parts, then they are intrinsically made of another collection of parts, and so are not really wholes at all.
- (4) So, there can be no wholes.

The Nyāya deny the first premise of this argument, on the ground that it makes a category mistake. To ask whether the whole inheres wholly in one of its parts, or partially in all of them, is to treat the whole as if it were a group of entities. Uddyotakara, a great seventh-century Nyāya philosopher, says that to ask the question whether the whole is wholly present to one of its parts, or partially present to each of its parts, makes as little sense as asking whether the number 2 is wholly present only to one of a pair of entities, or partially present to each member of the pair.

But the Buddhists further argued that even if the concept of a Nyāya whole is coherent, there's no good reason to think such wholes exist. The Buddhists held, like Leibniz, that such objects as tables and chairs and even the bodies of living organisms are only well-founded *phenomena* which are ultimately nothing more than quality-atoms arranged in a certain way.

The Nyāya critique of this view was intimately bound up with their defense of the existence of substances, because any substances we could reasonably be said to *perceive* would have to be wholes.

¹²For further discussion of the Nyāya concept of wholes, see Matilal, *Perception*, 266–283.

The Nyāya arguments for the existence of substances are based on a realist interpretation of beliefs of the following sort:

I am touching what I just (only) saw.

We will call beliefs of this sort S-beliefs. The Nyāya contended that we often have such beliefs. A person sees an apple, has the desire to eat it, and picks it up. She normally, in doing so, does believe that the object she feels when she picks it up is the same object as the object she just saw and is probably also currently seeing.

The Nyāya held that commonly accepted beliefs should be deemed innocent until proven guilty—true until proven false. On that point they agreed with Reid, Moore, and Chisholm. If we do hold S-beliefs innocent until proven guilty, it seems we can take them as evidence for the existence of substances in two ways. We could take them to be evidence for the existence of substantival selves (i.e., souls). But since selves are not wholes, we will here concentrate on the second way S-beliefs evidence the existence of substances. This way can be set out as follows:

- (1) I am now touching what I just saw.
- (2) If (1), then there is an extra-mental reality that possesses a color quality and a tactile quality.
- (3) If there is an extra-mental reality that possesses a color quality and a tactile quality, then substances exist.
- (4) So, substances exist.

This argument depends on supposing that S-beliefs are innocent until proven guilty, as we have noted; but the Buddhists held that such beliefs are guilty until proven innocent. Hence the Buddhists denied premise (1) of the above argument. They explained S-beliefs by claiming that color patches composed of color “atoms” are the objects of visual perceptions, and that tactile patches composed of touch “atoms” are the objects of tactile perceptions. They further insisted that we never perceive substances as such, but only colors, tactile qualities, scents, etc. Thus, in the absence of a good argument for the conclusion that there are substances in which color, tactile, olfactory, etc. qualities inhere, it is gratuitous to suppose that such substances exist on the basis of the occurrence of S-beliefs. For it may be that, in virtue of the close proximity of color and touch atoms, we fail to perceive their distinct spatial positions and thus erroneously think there is an entity that we both see and touch.

The Nyāya asked the Buddhists to explain why we typically believe that we perceive such things as jars that are characterized by certain *shapes* as well as by certain colors and tactile qualities. The Buddhists answered that what accounts for such beliefs is that we find certain aggregates of color and tactile atoms to have a “jar-like” shape.

In response, the Nyāya insisted that such a way of speaking is improper. Jars certainly do have characteristic shapes, but we do not say of jars that *they* have “jar-like” shapes. To say of an *x* that it has an *F*-like shape requires having cognized *ys* that are *Fs*, as well as having cognized the shapes characteristic of things that are *Fs*. If I say that a post is shaped like a man, that requires having cognized men in the past *as well as* their shapes.¹³

Notice that this argument of the Nyāya for composite substances will work not only against Hume-like Buddhist phenomenalism, but also against types of materialism that do not deny the existence of absolutely simple substances (i.e., sub-atomic micro-particles), but hold that objects such as chairs and chariots and trees are not true unities but simply aggregates of micro-particles.

Now a question naturally arises. When do conjunctions produce new wholes, and when do they not? The Nyāya want to say that threads combined in a certain way produce cloths and shirts; but they would not suppose that a vase on a table produces such a monstrous entity as a “vasetable.” All it produces is a conjunction of a vase with the table it is on. The Nyāya face, in other words, the problem of the criterion, applied to wholes.

The implicit answer of the Nyāya is that we can eliminate such entities as armies or vasetables if we can re-express, *salva veritate*, sentences that use such terms as “army” or “vasetable” with sentences that don’t. But it seems we cannot do that with true wholes—or at least, not without cheating. To speak of “atoms arranged in a jar-like way,” the Nyāya would claim, *is* cheating.

The Nyāya had other arguments for the existence of wholes, but for our purposes the arguments just reviewed must suffice.

Back to the Main Argument for W1:

Using the Concepts Universal and Whole to Defend W1

When presented with an inductive generalization such as the one supporting W1, a skeptic will certainly ask why one should think that the properties said to be invariably concomitant are in fact always found together. Hume, for instance, famously suggests in his attack on Western design arguments that one can reasonably infer that a shirt, or chair, or pot was made by an intelligent agent, only because shirts, chairs, and pots belong to a class of wholes, some members of which *we have seen* to have been made by intelligent agents; he thus tries to undercut the theistic claim of invariable concomitance between wholes and things that are made by an intelligent agent. Hume’s position was adumbrated by Buddhist philosophers opposing the Nyāya; Buddhists, the most ardent

¹³The above is a summary of part of Uddyotakara’s lengthy defense of the argument for substances from S-beliefs in his *Commentary on the Nyāya Sūtras*, 1-1-13/14, Vol. 1, pp. 248–264 in Jhā. An even more elaborate defense of this argument can be found in Udayana’s *Atmatattvaviveka*, 329–342.

and penetrating foes of the Nyāya, articulated the position hundreds of years before Hume wrote.

The Nyāya had an answer to the question of why the property *being a whole* is invariably concomitant with *being made by an intelligent agent*, an answer that depended on their carefully wrought theory of universals. Udayana asks the Buddhists: Suppose you had only seen blue pots made by intelligent agents, and had never heard of red pots, and one day you come upon a red pot—could you infer that was made by an intelligent agent? The Buddhist of course would answer “yes.” But then Udayana would challenge the Buddhist to name the relevant universal involved in the inference. It can’t be blue-potness because if it were, then since a red pot is not a blue pot, the inference wouldn’t work. The Buddhist might say (if the Buddhist were willing for the sake of the argument to refer to universals): “it’s the universal *potness*.” But Udayana argues that this can’t be either, because not only pots, but palaces, and clocks, and chariots were made by an intelligent agent. And it seems one could never enumerate all these things to come up with a great big disjunctive universal that is the relevant universal for inferring something is made by an intelligent agent.¹⁴ Furthermore, the Nyāya’s extensional principle for individuating universals, coupled with their belief that existenceness is the highest universal, entails that disjunctive universals are bogus. (If there are disjunctive universals, then, in addition to substanceness and qualityness, there would be the universal *substanceness-or-qualityness*. But this universal would inhere in all particulars, and thus would have the same extension as the universal existenceness.)

The Buddhist would claim (again, if the Buddhist were willing to refer to universals) that the relevant universal is *wholeness-inhering-in-all-the-members-of-a-set-of-wholes-some-of-the-members-of-which-have-been-seen-to-have-been-made-by-an-intelligent-agent*. But the Nyāya would say that just as big-brown-cowness or red-potness are bogus universals because they cross-sect the categories of substance and quality (compare with Aristotle’s remark that there is no essence *white man*; there’s an essence man and an essence white), so also is *wholeness-inhering-in-all-the-members-of-a-set-of-wholes-some-of-the-members-of-which-have-been-seen-to-have-been-made-by-an-intelligent-agent* bogus. That is especially so since *having-been-seeness* is an extrinsic property, and it, like the property *object-of-thoughtness*, cross-sects categories, even more promiscuously than *blue-potness*. For not only substances and qualities, but universals themselves are objects of thought.

Udayana agrees with the Buddhists that particular kinds of wholes point to particular kinds of intelligent agents, so that from the fact that something is a pot we can correctly infer it was made by a potter. But this no more bars us from being able to correctly infer that the Earth was made

¹⁴See Udayana’s *Nyāyakusumānjali*, chapter 5, defense of *Karika* II. Unfortunately neither Sinha nor Hari Dasa mention this particular passage in their summaries of Udayana’s auto-commentary, but Vattanky does discuss it in his *Development of Nyāya Theism*, 135.

by a super-human intelligent agent than it bars us from being able to correctly infer a great big fire from large puffs of smoke, even if we've only seen little fires corresponding to little puffs of smoke in the past.

So: we have an inductive argument for the first premise of W, for W1, supported by appeal to the Nyāya theory of universals. We may summarize the line of reasoning supporting W1.3, the premise that the universal *wholeness* is the only universal that could undergird the inference that a chariot has been made by an intelligent agent, as follows:

- (1) The universal undergirding the inference from the existence of a chariot to the existence of an intelligent agent who made the chariot is either (a) wholeness, or (b) not.
- (2) If (b), then the universal is either (c) subordinate to wholeness, or (d) not.
- (3) If (c), then we could not infer that any whole that does not instantiate a specific universal subordinate to wholeness was made by some intelligent agent.
- (4) But we can make inferences of the sort described in (3).
- (5) If (d), then the undergirding universal is either a disjunctive universal, or a substance-cum-quality universal.
- (6) But there are no disjunctive universals and there are no substance-cum-quality universals.
- (7) So wholeness is the universal undergirding the inductive inference that a chariot was made by an intelligent agent.

To conclude our discussion thus far in Section I: the argument constituted by W1.1–W1.5, the argument we set out at the very beginning of this section and have been discussing ever since, seems to us the fundamental ground the Nyāya provide for W1.

However, the Nyāya developed many other supporting lines of argument for W1 (often dialectically, in response to objections). For instance, the Nyāya gave a supporting argument for the first premise of W founded on the nature of efficient causality. Being substantialists, like Aristotle, they held that only substances could be efficient causes. But they did not believe in any such universals as *being-an-efficient-causeness* since a substance is an efficient cause in virtue of certain qualities it possesses and, as we have seen, there are no substance-cum-quality universals. Souls can be efficient causes in virtue of the knowledge that they can produce a certain effect, the desire to produce it, the absence of a stronger desire not to produce it, and, finally, a volition to produce it. Thus, we might hold that *soulness* is the universal regulating efficient causality.

Suppose this is not so, however, and that certain material substances can be efficient causes. Then, granted that there can be no disjunctive universals, the universal regulating efficient causality will be *substanceness*.

But this cannot be, since neither space nor time (which are substances according to the Nyāya) can function as efficient causes. Hence *soulness* is the universal regulating efficient causality and, since wholes are effects, we have a further support for the first premise of W.

This argument attempts to show that all efficient causes are agent causes, and only souls can be agent causes.¹⁵ What are we to say about billiard balls moving other billiard balls?

It seems clear that the Nyāya can explain the action of billiard balls moving other billiard balls as a case of instrumental causality rather than of efficient, and that the same can easily be said of manufacturing machines that are ultimately caused by agents to produce certain effects. But what about seeds? Udayana himself says that seeds taken as instantiating seedness have the power to “produce” effects, such as sprouts. Here one must allow that the great philosopher was speaking rather loosely, for on the deep doctrine of the Nyāya, the seed causes the sprout by supplying it with most of its inherence causes—i.e., certain of the wholes that are parts of the seed come to be proper parts of the sprout—and no efficient or instrumental cause ever does this. True, we speak of the universals seedness and sproutness as regulating the coming to be of sprouts, but that is because most of us lack an adequate understanding of the parts of the seed that will come to form parts of the sprout. Hence, though the seed is a whole and a spool of yarn is not, the seed’s causal contribution to the sprout is like that of a spool of yarn to the cloth in that the seed contains certain of the wholes that will themselves come to be inherence causes of the sprout, just as the spool “contains” (though in a looser sense) certain of the wholes that will come to be the inherence causes of the cloth, and it is the universals (whatever they are) that are instantiated in *these* parts of the seed that are truly causally relevant in the coming to be of the sprout, rather than the universal *seedness*. And this is true even with respect to God. God does not need seeds to make sprouts, but even if he caused a sprout to come to be miraculously, he would have to first (at least ontologically) fashion many of the wholes that are in seeds in order to make the sprout. This is necessarily so since sprouts are not smallest wholes.

II. Defense of W2: “Some Wholes Were Not Made By an Embodied Agent”

Why, now, should we think that some wholes could only have been made by an unembodied agent? The Nyāya gave a number of arguments to support this claim.

¹⁵On this matter Nyāya substantialism differs from Aristotelian substantialism, with which it is often compared. And this difference flows from Nyāya atomism. Like many classical modern philosophers, and unlike Aristotle, the Nyāya held that material substances lack any intrinsic active power and need to be activated by a mind. They also, contra Aristotle, denied that material substances have a natural telos. For them only intelligent beings, which can act on purpose for a reason, can act for an end. For more on certain details of the Nyāya causal theory, see John Kronen and Jacob Tuttle, “Composite Substances as True Wholes: Toward a Modified Nyāya-Vaiśeṣika Theory of Composite Substances,” *Canadian Journal of Philosophy* 41 (2011), 289–316.

The argument that they held to be the most powerful is based on their definition of an agent-cause. According to the Nyāya, the necessary and jointly sufficient conditions for a substance to be the agent cause of some whole are (1) perceiving the substances that could be used to produce a certain sort of whole, (2) cognizing at least one sort of whole that could be produced in those substances, (3) desiring to make a whole in those substances, (4) willing to make it, and (5) having the power to make it.

One might question why the Nyāya held (1) to be a necessary condition for being the agent cause of some whole. In part they did so inductively—agents typically do have a perception of the substances that could constitute the proximate parts of some whole they desire to make in those substances. But they also argued that a mere inferential knowledge that, for instance, a certain smallest whole is possible, coupled with a desire to make it, would not give an intelligent being the ability to make it. This seems reasonable and so it could be taken that conditions (1) and (2) are necessary for (5). Consider the fact that we don't think that the farmer planting the seed is the cause of the sprout, the creator of the sprout, in the deep way in which the weaver is the cause or creator of the shirt. That is because though the farmer intends the sprout to come about by planting the seed, he does not perceive the substances that will become the proximate parts of the sprout, or know how to arrange those parts to produce a sprout. His lack of knowledge of these two things is sufficient to make him unable to be the maker of the sprout in any deep sense.

Even if one grants (1) to be a necessary condition for being the agent cause of some whole, one might think that (1) rules out the very possibility of any bodiless agent since one might think that perception requires sense organs. The Nyāya disagreed, holding that the correct definition of perception is that it is a belief that does *not* depend on another belief. In this a perception is different from an inferred belief, since an inferred belief is a cognition that in some way *does* depend on other beliefs. Notice that this definition of perception, while it does not rule out that a perception may depend on the operation of certain sense organs, does not *require* it. One might, of course, hold that the Nyāya definition of perception is wrong; but it is easier to say this than to make out the case in a way that does not beg the question. Furthermore, good definitions of perception are hard to formulate and it seems that the Nyāya have formulated a definition that excludes all the sorts of beliefs we would not want to say are perceptions while at the same time not excluding the possibility that a bodiless being could have perceptions. Finally, that a bodiless agent could not perceive—in the Nyāya sense of “perceive”—has certainly never been shown to be absolutely impossible.

If an agent must perceive the substances that could be used to form the proximate parts of a whole, then any agent who made a smallest whole would have to perceive atoms. But this could not be done by an agent that depends on sense organs to perceive. The atoms are not merely too small to be seen with eyes; being without extension, they are as absolutely

invisible and imperceptible via the senses as spirits are. Hence, not even an aggregate of them closely conjoined together could be seen or sensed by anybody through sense organs. Thus any agent capable of perceiving the atoms must be capable of bodiless perception, and hence be an unembodied agent.

A second argument the Nyāya used to support the idea that any agent responsible for a smallest whole is bodiless rested on their belief that *this* universe is not eternal—it came to be at some time. If it came to be, however, it stands to reason that less complex wholes were produced in atoms before more complex ones and, hence, that at least some smallest wholes came to be *before* any wholes that are not smallest wholes; and in fact modern science seems to hold this. But if we combine this doctrine with the view that every whole was made by an intelligent agent, it should immediately be apparent that the agent that made the first smallest wholes of this universe could not have been embodied.

Yet a third argument the Nyāya used to support the existence of a bodiless agent did not focus on the existence of smallest wholes; rather it made use of the idea that even non-vicious infinite regresses should be avoided unless there is some good reason to posit them, coupled with the observation that, if there is no bodiless agent, it follows that every essentially embodied agent was made by another essentially embodied agent and so on ad infinitum. Though such a regress would not be vicious according to the criteria used by the Nyāya, they held it to be gratuitous and hence irrational to posit.

This third argument, surprisingly, can be given further support through an argument of Richard Dawkins. Resting on his materialism, Dawkins supposes that any intelligent beings capable of creating life on Earth would have to have brains (and hence bodies) of much greater complexity than humans. Supposing then that such beings exist, how were their bodies made? If they were made by other embodied agents, the bodies of those agents must be even more complex. It seems that in contemplating this we are forced to conclude either that (1) there is an infinite regress of ever more complex embodied agents, or (2) there is some bodiless agent, or (3) some wholes, including the simplest ones, came to be without intelligent design.¹⁶ Both Dawkins and the Nyāya reject (1) for the reason that good explanations do not explain what is less complex by what is more complex, but rather the reverse. Dawkins rejects (2) because of his materialism. But the Nyāya gave powerful arguments for the conclusion that no physicalistic explanation of consciousness works, and from this they inferred that even essentially embodied agents *are* immaterial souls that need to be conjoined to a body in order to perceive and to act. And according to them, that some intelligent agents are essentially embodied no more entails that they all are, than the fact that some bodies are non-eternal entails that all bodies are non-eternal. The Nyāya's immaterialism

¹⁶Richard Dawkins, *The God Delusion* (New York: Houghton Mifflin, 2006), 157–158.

about the mind, coupled with their inductive support for the claim that every whole was made by an intelligent agent, led them to embrace the second rather than the third of the above-mentioned possibilities.

Several classical Indian schools of thought endorsed the claim (call it E) that *Every intelligent agent is embodied*. That claim (assuming it is true, and assuming W1 is true) could be used to deny W2, the premise that "Some wholes were not made by an embodied agent." (One could also use E to deny W1, "Every whole was made by an intelligent agent," since it seems reasonable to hold that some wholes such as smallest wholes could not have been made by an *embodied* intelligent agent.)

The Indian schools that affirmed E did so in different ways. The Mimamsakas affirmed it by taking "embodied intelligent agent" to mean intelligent soul having a body; the Buddhists affirmed it by taking "embodied intelligent agent" to mean a series of causally related homeless thoughts associated in some necessary way with a "body" (i.e., series of aggregates of quality atoms arranged in a certain way); finally the Indian materialists affirmed it by taking the phrase "embodied intelligent agent" to mean an intelligent agent that *is* a body, whether complex or simple (though *most* Indian materialists thought that all intelligent bodies are complex material substances, not all did).

Udayana (and the Nyāya more generally) spent a great deal of time responding to objections to W based on E. Their main response involved arguing that W1 is supported by a stronger inductive argument than the inductive argument supporting E, so one can use W1 to infer that *some* intelligent agent is *not* embodied. They had various other responses. Here is one of Udayana's clever responses that may be appealing: he holds that if by "body" the maintainer of E simply means those material substances that an agent can act *directly* on, there is nothing to prevent the theist from holding that the atoms themselves are God's body!

One might try to save E (at least interpreted broadly enough to allow that an agent that is a body could count as an embodied agent) by maintaining a non-reductive kind of materialism, according to which all atoms can think. In this way one might agree with the proposition that all wholes were made by an intelligent agent but deny that a smallest whole could not have been made by an embodied agent. In short a believer in non-reductive materialism might maintain that the atoms composing the first smallest whole, for example, might have purposefully come together to form the smallest whole *in* themselves, analogous to the way cheerleaders form "human pyramids."

The Nyāya objected to this sort of theory in two ways. One was to insist that if it were true then there would be many cognizers in a single human body; but in that case the different cognizers might disagree and the harmonious action of the body would be hindered. And if many cognizers existed in a human body, it seems that there would not be a single consciousness pervading that body—but apparently there is such a single consciousness, otherwise a person might regard her foot in the

same way she regards another person's foot. A second way the Nyāya objected to non-reductive materialism was to insist that, if it were true, then water pots would be conscious. But there is no evidence that they are, and to suppose they might be without evidence is to be as irrational as supposing that hares might have invisible horns.

III. Two "Contemporary" Objections and Responses

Objection 1: "There are powerful counterexamples to the claim that all wholes are made by an intelligent agent"

W1, the first premise of the argument from wholes, is "All wholes are made by an intelligent agent." The Nyāya held that such wholes as palaces, pots, chariots, and tunics give positive support for this premise, and that space, atoms, and souls give negative support for it. They also emphatically asserted that there are no known counterexamples to the premise.

But an objector might well claim that there *are* known counterexamples, for instance, trees, crystals, planets, and so on. For it seems that we can sufficiently explain the "coming to be" of trees, crystals, and planets by reference to natural causes alone, without invoking the agency of any intelligent being: to also invoke an intelligent designer would involve causal overdetermination. Or so the objection goes. (This is the objection we most often encounter when we present W to colleagues.)

It is worth remembering here that the inductive support the Nyāya put forward on behalf of W1 appealed not only to examples, but to a well worked-out theory of universals that gives powerful reasons for thinking both that a successful induction must appeal to true universals, and that the relevant universal for inferring that a thing was made by some intelligent agent is the universal *wholeness*. The present objection to W, the claim that there are counterexamples to W1, does not purport to identify a flaw in this line of reasoning.

But might these putative counterexamples be used to try to form what the Nyāya would call a "counterbalancing argument" to their argument for W1? An argument that "counterbalances" another is an argument that leads to a conclusion inconsistent with the first argument, where both arguments have premises that are fairly plausible (or at least not obviously false). A counterbalancing argument need not identify flaws in the reasoning of the targeted argument; still, the counterbalancing argument should be taken seriously indeed if its premises are more plausible than the premises of the argument under attack.

So how far can the putative counterexamples carry us in constructing a line of reasoning that counterbalances W?

To begin with, unless it's impossible for there to be causal overdetermination (of anything), it's not *inconsistent* to say that a whole that can be explained completely by reference to natural causes was made by an intelligent agent. Only if one thinks that there can't be any causal overdetermination would the objection at issue become a potentially "counterbalancing" argument.

But set that point aside. Is there good reason for believing that the wholes cited in the objection as counterexamples—trees, crystals, and planets—*can* be explained solely by reference to natural causes? This question cannot be answered simply by attending to our perceptions or intuitions about trees, crystals, and planets. Naturalistic explanations must be produced by the objector, or an argument must be given for the conclusion that the explanations will at some point be produced. And this is a tall order.

An explanation of trees, crystals, and planets that refers exclusively to natural causes will suffice only if the smallest wholes that can be found in the trees, crystals, and planets—parts of what we today call atoms—can be explained naturalistically. (Recall that the Nyāya took atoms to be material substances lacking spatial thickness, substances that are the ultimate components of every whole, including the smallest wholes. These substances are not themselves wholes, on their view. This is *not* the contemporary understanding of atoms.) Scientists do not know how the smallest wholes came to be, and do not have naturalistic explanations for them. And it is far from clear that science will at some point in the future produce the explanations.

So the search for an argument that counterbalances W on the basis of the examples proffered (trees, crystals, and planets) does not get very far.

Perhaps the objector will respond: “Well, I don’t have a detailed naturalistic explanation of the sort you’ve requested; you, on the other hand, lack a detailed account of how an intelligent agent could come to be actively involved in the creation of trees, crystals, and planets. Are we supposed to imagine that some mysterious Mind whispers ‘Exist!’ right before a tree, or crystal, or planet comes into existence, and thus creates the whole? That hardly fits with our understanding of the gradual evolution or development of these natural entities.”

But nothing like the whispering Mind need be imagined. It is certainly possible to accept both W1, and *largely* (though not exclusively) naturalistic explanations of trees, crystals, and planets. For W1 can be read as claiming that wholes are made by intelligent agents acting either *mediately* or *immediately*. Many of the examples of wholes we’ve cited (palaces, tunics) are made at least partly by automated machines that human agents build; in other words, humans make these wholes *mediately*. That’s very clear these days, with our elaborate technology; but even in the time of Udayana, humans used tools to erect a palace wall or weave a piece of cloth. Similarly, an intelligent agent, an unembodied creator, might make smallest wholes *immediately*, and larger wholes such as trees, crystals, and planets *mediately* (or *proximately*, or *remotely*). The smallest wholes might never have come to be, and supposing that some intelligent agent formed them does not entail causal overdetermination. So even if *once smallest wholes are in existence* there is a completely naturalistic explanation of trees (and crystals and planets, etc.), the action of an intelligent agent may be necessary for the existence of trees, because it may be necessary

for the existence of the smallest wholes that are parts of the trees. If W1 is true, then the action of an intelligent agent *is* necessary for the existence of smallest wholes.

Now it may seem that this view of things misses something important: don't some (though not all) larger wholes have a tightness, a unity, that makes it attractive to suppose an agent was a *proximate* cause of the whole? Isn't this part of what makes W1 appealing in the first place, and don't we lose something by giving up a whispering Mind for select wholes?

But the view we have sketched is consistent with supposing that intelligent agents are proximate causes of *certain highly unified* wholes, of what we might call organic wholes. Some wholes, such as trees and other living things, seem to have a unity or tightness as well as a complexity, missing in, say, a palace or a television. It may well be that we can't understand maples qua maples unless we understand what makes them living things, and that we cannot understand what makes them living things without supposing a non-naturalistic explanation. In cases of this sort, we might want to say that a designer is a proximate efficient cause of the special whole, the living thing; indeed, we might even want to say that an intelligent agent must be continuously causing the special whole to exist, for the duration of its existence.

This expanded view of the matter (expanded to include a focus on organic wholes) might be made a little more elaborate. It could be that a designer needs to come into the picture any time there is a radical change, what we might call a change in ontological degrees of being. For instance, one might think a creator is necessary for smallest wholes to come to be, and again for the first *living* beings (there is no naturalistic account of how living beings can come to be from non-living beings), and again for the first *sentient* beings (here too a naturalistic account of the jump is lacking), and again for the first *rational* beings (there is no naturalistic account of this).¹⁷ And for some or all of the living wholes to exist there might need to be not only a proximate creative act, but a *continuous* creative act.¹⁸ (Udayana did, in fact, think that we need to posit God to sustain the material world in being, since all wholes, as contingent entities, need to depend on a non-contingent entity to keep them in existence. This is Udayana's third argument for God's existence in the *Nyāyakusumānjali*.¹⁹)

But some such expanded view is not necessary for W1 to stand against the counterexamples originally mentioned. For that, it suffices to recognize

¹⁷For a brief discussion of some shortcomings of naturalistic explanations of these ontological jumps, see Sandra Menssen and Thomas D. Sullivan, *The Agnostic Inquirer* (Grand Rapids: Eerdmans, 2007), especially 34–45, 94–119, and 242–248.

¹⁸As atheistic philosopher of science Elliott Sober writes: "The theory of evolution does not rule out deism, the thesis that God starts the universe in motion and forever after declines to intervene. But the theory also does not rule out a more active God whose interventions into nature fly under the radar of evolutionary biology." Elliott Sober, *Did Darwin Write the Origin Backwards? Philosophical Essays on Darwin's Theory* (New York: Prometheus Books, 2011), 139.

¹⁹See Chemparathy, *An Indian Rational Theology*, 92–95.

the absence of complete naturalistic explanations of trees, crystals, and planets (etc.), and to recognize the possibility of reading W1 as claiming that all wholes are made *mediately or immediately* by an intelligent agent.

And again (because the point must not be forgotten), the Nyāya advanced an argument on behalf of W1 that appealed not only to examples, but to a sophisticated theory of universals that undergirds the claims that a successful induction must appeal to true universals, and that the relevant universal for inferring that a thing was made by some intelligent agent is the universal *wholeness*.

Objection 2: "The argument from wholes depends on a complicated metaphysical system which is far from being obviously acceptable."

In the world of post-Hegelianism, contemporary philosophers are weary of systems, as John Searle notes at the beginning of his book *Minds, Brains and Science*.²⁰ Philosophers today often like to address themselves to solving very particular problems in such a way as to make use of as few metaphysical doctrines as possible. From this vantage point, one might deem W to be weaker than, for instance, Paley's watch-maker argument, since *that* argument does not appeal to highly contestable metaphysical doctrines but rather to intuitions shared by the majority of humankind.

But attempting to solve particular philosophical problems without recourse to a fully developed metaphysical system has its drawbacks, as can be illustrated if we look to Searle's work on the mind. Searle wishes to present a philosophy of the mind that is consistent with contemporary science but preserves as many of our common-sense ideas about ourselves (e.g., that we are conscious beings) as possible. His basic solution to the mind/body problem hinges on the idea that wholes have properties that their parts do not—hence there is no mystery about how the brain (a whole) could be conscious, even if none of the micro-particles constituting it is. But because Searle has no rigorously worked out metaphysics, he has no rigorously worked out mereology either. Hence he flounders badly on the ontological status of wholes.²¹ Indeed, he prefers to call them "systems" (like the solar system), but there are clearly problems with supposing that a system is *a* thing, as not only the Nyāya but also Suarez and Leibniz have argued. If systems are not things, however, and if brains are systems, then supposing (as is usually supposed) that conscious states are monadic qualities, it is difficult to see how brains could be conscious. This is just one small illustration of the fact that in philosophy every problem is connected to many other problems, and to try to solve one (and only one) metaphysical problem is perilous.

W does not face the problems that Searle's solution to the mind/body problem does, precisely because it is embedded in a fully worked-out metaphysical system, a system enriched over centuries by geniuses whose

²⁰John Searle, *Minds, Brains and Science* (Cambridge: Harvard University Press, 1984), 13.

²¹*Ibid.*, 20–22.

"selfless toil," in the words of Surendranath Dasgupta, "kept it living through the ages of history."²² He further notes that "As a system passed on it had to meet unexpected opponents and troublesome criticisms for which it was not the least prepared. . . . A system as it was originally formulated in the sutras had probably but few problems to solve, but as it fought its way in the teeth of opposition of other schools, it had to offer consistent opinions on other problems in which the original views were more or less involved but to which no attention had been given before."²³ The battles that followers of the Nyāya system and followers of other systems waged throughout long centuries ensured that those that were less fit to survive died out or were absorbed into other stronger systems. The Nyāya's longevity is a testament, not only to the geniuses who selflessly toiled to keep the tradition alive, but also to the inherent plausibility of the Nyāya world view. One cannot fully judge such a system by looking only at its solutions to particular problems: to adequately evaluate its success in solving any given philosophical problem, one must look at its solutions to a whole range of philosophical problems and consider how well those solutions fare when compared to ranges of solutions offered by other complete systems of philosophy.

And we wish to note that, though Paley's watch-maker argument does employ fewer contested metaphysical doctrines than W, it was exactly *that* which made it so vulnerable to attack from Hume. Judging by Paley's work, one can say that he assumed the sort of common-sense empiricism propounded by Locke. But that empiricism was not well worked out and was vulnerable to devastating attack both from the rationalist Leibniz (who had a fully worked out metaphysical system) and the radical empiricist Hume (who had one as well).

Furthermore, it must always be remembered that every system has parts that when taken in isolation from the whole seem weak. If one wants a system, one needs to do comparative analysis among those available and pick the one that's best overall. Which metaphysical system has the greatest explanatory force? The Nyāya system gets very high marks.

In our view, then, W's embeddedness in a metaphysical system that provides a coherent and reasonably plausible picture of the world is, overall, a strength rather than a weakness.²⁴

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²²Dasgupta, *A History of Indian Philosophy*, 64.

²³Ibid.

²⁴We would like to thank Thomas P. Flint and three anonymous reviewers for helpful comments.