

A Blue Print for a Non-Reductionist Theory of Reality

Introduction

Since we must get straight from the outset what is meant by the term “reduction,” I will begin with some senses of the term that are *not* objectionable. First, I do not mean restricting attention to a particular aspect of the data to be explained. Nor do I mean eliminating a hypothesis that is unnecessary or has been displaced by a better one.¹ Neither do I mean identifying the nature of any whole with the nature of its smallest parts, which can sometimes be true even though it’s more often not true.

What I have in mind here is, first, a metaphysical sense of “reduce” according to which everything in the cosmos is said to have only X kind of properties and be governed by only X kind of laws. This reduces the content and variety of the cosmos by eliminating all non-X properties and laws from it.² Secondly, I also include as objectionable a weaker claim that is sometimes misleadingly called “non-reductionist” because it does not eliminate every non-X kind of properties-and-laws from the cosmos. The weaker claim allows that there are non-X properties, laws, or things in the cosmos but insists they are all produced by purely X realities.³ This weaker claim seems initially more plausible just because it doesn’t eliminate everything non-X from what we experience. But it is still an exclusivist claim on behalf of the ultimate realities that it says produce all else. And it still reduces the status of all non-X realities by comparison to the X kind since every non-X reality is made to depend on purely X realities that are non-dependent. Let’s consider a few examples of such theories.

¹ For example, the kinetic of heat “reduced” heat to the kinetic energy of molecules by eliminating the caloric hypothesis.

² There are two versions of the eliminative claim. One argues that pre-theoretical experience is largely illusory with respect to the existence of non-X realities, the other argues that all that appears non-X is actually identical with Xs. No matter which mode of argument is employed, however, the upshot is that all distinctly non-X realities are eliminated.

³ A closer delineation of the objectionable types of reduction theories can be summarized as follows:

A) Meaning Replacement: the nature of all reality is to have properties of X kind exclusively, and to be governed only by the X kind of laws. This is defended by arguing that all terms with allegedly non-X meaning can be entirely replaced by X terms with no loss of meaning, while not all X terms can be replaced by non-X terms. (Berkeley, Hume, and Ayer defended phenomenalism this way.)

B) Factual Identity: the terms of non-X vocabularies cannot be entirely replaced by X terms, but non-X terms refer to only X properties and laws all the same. The selection of X is defended by arguing that the only or best explanations of anything whatever always have X terms as their primitive terms and X laws as their basic laws. (J.J.C. Smart defended materialism this way.)

C) Metaphysical Causal Dependency: the nature of reality is basically (not exclusively) made up of X (or X & Y) kind(s) of things. This is defended by arguing that there is a one-way dependency between properties and laws of the non-X kinds upon entities whose nature is exclusively of the X (or X & Y) kind. (Aristotle and Descartes each defended their ideas of “substance” in this way.)

D) Epiphenomenalism: is similar to causal dependency reduction except that the caused properties are less real in that there are no laws of their kind. Therefore no genuine explanation can be given for anything in terms of epiphenomenal properties. (Huxley and Skinner argued that states of consciousness are epiphenomenal on purely physical bodily processes or behavior.)

For the Pythagoreans, all the rich diversity of the cosmos is produced by numbers. The producing entities were therefore supposed to be purely *quantitative*, and the theory was that everything that is not quantitative consists of combinations of numbers. Another theory which likewise has a single kind of things producing all else is materialism. For materialists, both ancient and modern, everything is either purely physical - the strong claim - or there are entities that are exclusively physical which combine or interact so as to produce everything that is not physical - the weaker claim (think of the physicists who say that if they can unify all of physics they will then have a “theory of everything”).⁴

There are also dualist theories of reality that are reductionist in that they propose there are purely X and purely Y realities whose interaction produces all else. For example, Plato and Aristotle viewed the cosmos as the product of the interaction between changeless rational Forms and changeable matter. And Kant held that the world of our experience is produced by purely *sensory* forms of perception and purely *logical* categories of understanding being imposed by our minds upon an utterly chaotic raw material. These views of reality, and many more, have endured for centuries among the conflicting isms of metaphysics. And each of them has, in turn, undergirded contrary theories of knowledge, ethics, politics, and law, as well as contrary interpretations of hypotheses in every natural science.

Notice that common to every one of these reduction theories - whether monistic or dualistic, exclusivist or non-exclusivist - is the identification of one or two realities that are taken to be of one exclusive nature and to be the producer(s) of everything else in the cosmos. According to all these theories, everything is either identical with or produced by purely X realities, or by an interaction between purely X and purely Y realities. From now on I'm going to refer to the stronger version of reduction as an “exclusivist” claim, and the non-exclusivist version as a “causal” claim since it says that the purely Xs (or Xs plus Ys) produce all else. But it is important to notice that the sort of causality employed in these weaker reduction claims is not the same as the causality sought in the sciences. Rather, it is what I will call “metaphysical causality.” That is to say, it is not merely the sort of causality that we speak of when, e.g., we say that heating a copper wire causes it to glow green. In that case heating is its cause in the sense of being sufficient for the *occasion* of a green glow; it is not intended as an answer the meta-physical question, “Why are there such things as green glows?” Any answer to that broader question proffers a metaphysical cause.

Since exclusivist claims take X realities to be all that exist, and causal claims purport to identify what produces all else, it should be clear why another important feature of both types of theories is that their favored candidates for that-to-which-everything- reduces have always been accorded independent reality: X (or X plus Y) realities do not depend for their existence on anything, while all that is non-X (or neither X nor Y) depend on them. In sum, then, there are two common factors to both the exclusivist and causal versions of reduction theories: 1)

⁴ The quantitative and physical are not the only kinds of properties-and-laws to have been distinguished over the past 2700 years. Other kinds include the spatial, biotic, sensory, logical, linguistic, social, economic, ethical, and more. It should be kept in mind that although quantitative properties represented by numerals are utilized in geometry, physics, and other sciences, they are not themselves spatial or physical properties. Spatial properties include, e.g., distance, shape, area, size; while physical properties include, e.g., mass, weight, momentum, charge, specific gravity.

both propose things that are exclusively X (or X plus Y) as the producer-of-all-else,⁵ and 2) the producer(s) of all else are taken to have independent existence.

For the purposes of this paper, however, it matters little to me whether a theory of reality posits one or two candidates for the kind(s) of things have independent existence and produce all else. It doesn't even matter to me whether a theory is strongly reductive and asserts everything to be of the same kind as the producing realities, or is the causal claim that allows there are properties or things which are qualitatively different from the producers-of-all-else. This is because I will be attacking all the versions of reduction at once by exposing their basic idea as unjustifiable: *I will argue that there can be no discursive justification for the belief that any particular kind of entities can be independent of all other kinds.*

This is important because virtually every theory of reality in the history of western philosophy has made such a claim. For over twenty five centuries there has been a long parade of one-sided reductions provoking contrary one-sided reductions. Their claims have attempted to enthrone not only (allegedly) purely quantitative, or physical entities as the independently existing producers-of-all-else, but have also been made on behalf of supposedly purely spatial, logical, sensory, historical, or linguistic things or processes (and mix-and-match combinations of them) said to comprise or produce the cosmos we experience. So let me reiterate that my critique of reductionist theories will rule out the possibility of justifying *any claim to have found in the cosmos a self-existent reality that is exclusively X in nature and is either all there is, or is that which produces everything else.* I will do this by showing that all claims of having identified a purely X reality have no sense whatever. Like talk about square circles, such claims can be asserted but *we cannot so much as frame the idea of anything as having one exclusive kind of nature.* It follows, then, that neither can we frame any idea of anything with one exclusive kind of nature *existing independently of all else.* Thus I will be mounting a wholesale attack on reduction as a *strategy* for explanation, rather than just on particular versions of it. And the attack will undermine not only large scale reductionist ontologies but individual reductionist concepts. It will, for example, show why we cannot so much as frame any idea of such things as purely physical objects, purely sensory percepts, or purely logical concepts. Because of this (and other reasons) I advocate that we bend every effort to construct a non-reductionist theory of reality, and allow it to guide our theorizing in the sciences. And this paper closes by sketching what such an ontology could look like.

The Role of Religious Belief in Theories

Before proceeding to give the non-reductionist argument, however, we should pause to notice that there are only two options open to us for constructing a non-reductionist theory. If we abandon every kind of reality found in the cosmos as the producer-of-all-else, then we must either drop all consideration of ultimate metaphysical cause from our theory of reality or take that cause to transcend the cosmos. I will return to comment on the first option at the end of the

⁵ Exclusivist theories also allow for realities that are produced. For example, exclusivist materialism admits there are many realities which, while purely physical, nevertheless come into being and pass away. They are therefore caused by the purely physical realities that are the ultimate, metaphysical causes.

paper and for now speak only about the second option, the option of a transcendent producer-of-all-else. This option, in turn, has two possible versions. One insists the transcendent reality is all there is, and rejects all reductionist explanations for that reason. On this view, everything in the cosmos is metaphysically equal because everything is in fact unreal. This is the sense of transcendence taken by the Hindu and Buddhist traditions. No individual entity, no type of entities, no property, law, or kind of them, is the producer of the rest of them because *none of them whatsoever is real*. They are instead “Maya” – illusion. Such a view gets rid of reduction by holding not only that there is no ultimate explainer of the cosmos within the cosmos, but also that there is simply no cosmos to explain. The other possibility is that of Theism: belief in a transcendent producer-of-all-else (Creator) that is distinct from the cosmos. On this view, the cosmos is real but nothing in it - no thing, event, state of affairs, relation, property, or law - has independent existence. This is true not in the obvious Theistic sense that nothing can be independent of the Creator but, as my argument will show, in the extended sense that no kind of entity in the cosmos can be thought of as independent from all other kinds.⁶ The non-reductionist program that results from this option would thus be free to trace out causal pathways in the world, discover patterns, conceive of hypothetical entities, etc., without supposing that some one (or two) kind(s) of things must always be the ultimate (or even penultimate) explanation of all else.

Reviewing these options opens the way for us to see why, in the final analysis, the issue of reductionist vs. non-reductionist views of reality is a *religious* one. Simply put: every belief that anything is the independently existing producer-of-all-else is a *religious* belief for two reasons:⁷

1) Independent reality is the essential characteristic of divinity. For over 3000 years, a multitude of thinkers from very diverse points of view have discovered and rediscovered that the idea of having independent reality and producing all else is at the core of all religions.⁸ There are, of course, many conflicting views as to exactly *who or what* has the status of divinity, but all religions regard something as divine because they believe it to be the non-dependent producer of all else. It is the only exceptionless common characteristic they all share. That is to say: however else they describe the divine, it always has that status. This is so whether they have one, two, or many

⁶ This is important because so many theists have proposed or supported reductionist theories of reality thinking they can be baptized by a simple ploy: grant that everything in the cosmos reduces to X, and then insist that X depends on God. The anti-reductionist argument shows why this too is unacceptable, for no one kind of thing, property, or law in the cosmos can be conceived as independent of any other kind. Thus none can qualify as an idea of a substance that metaphysically causes the others. (See note 27 below.)

⁷ Comp. Calvin’s remark: “...that from which all other things derive their origin must necessarily be self-existent and eternal.” (*Inst.* I,v,7). For a fuller defense of this definition of divinity see chapter 2 of *The Myth of Religious Neutrality* (Notre Dame: University of Notre Dame Press, 2005).

⁸ For example, Plato, *Timaeus* 37, 55; Aristotle *Metaphysics* 1064a33; Wm James *The Varieties of Religious Experience* (NY: Longmans, Green & Co., 1929), 31-34; Mircea Eliade, *Patterns in Comparative Religion* (NY: Sheed & Ward, 1958), 23-25; C.S. Lewis *Miracles* (NY: MacMillan, 1948), 15-22; Robert Neville, *The Tao and the Daimon* (Albany: State University of NY Press, 1982), 117; Paul Tillich *The Dynamics of Faith* (Harper & Bros, 1957), 12; N.K. Smith *The Credibility of Divine Existence* (NY: St Martin’s, 1967), 396; H. Kung, *Christianity and the World Religions* (Garden City, NY: Doubleday, 1986), xvi; Pierre Chaunu, “Revelation and the Sacred in Christianity” in *The Reformation*, ed. P. Chaunu (Gloucester, UK: Alan Sutton Pub., 1986), 18; and many more including F. Schleiermacher, Immanuel Swedenborg, Joacim Wach, Herman Dooyeweerd, and A.C. Bouquet, inter alia.

divine realities; whether their divinity is personal or not, whether it is worshipped or not, and whether their belief in it generates an ethic or not. Without exception, *all religions take the divine to be the unconditional, non-dependent reality that produces all else.*

2) Second, divinity beliefs are grounded in experience and cannot be justified in the way theories are. No evidence or argument can establish a particular idea of divinity as true without begging the question because every argument or interpretation of evidence presupposes some divinity belief or other. Divinity beliefs are held on grounds of experience, not argument.⁹ This explains the persistence of beliefs that some aspect of the cosmos has divine status despite the fact that no one can frame the idea of any X as independent of all that is experienced as non-X

It is worth noting that while there are different terms for the divine status among religions, some don't have any special term for it at all. Some myths simply trace everything back to an original source without specifically calling it self-existent. But tracing everything else back to a source and ending the story there is the same as conferring self-existence on it by default. For if all else depends on X and that's the end of the story, then X is divine. Most traditions do have special terms to designate the divine status, however, and they vary greatly. Here are a few: "God", Brahman-Atman, "absolute", "self-existent", "ultimate reality", "metaphysically ultimate", the "sacred", 'Dharmakaya', "Nirvana" and the "Tao". All are names for different ideas of what it is that is divine, specific notions of what has unconditional reality and generates everything else.

Moreover, not only are all religions centered on a divinity belief, but all beliefs ascribing self-existence to anything whatever are thereby religious.¹⁰ They all ascribe to something the defining status of divinity, they are all incapable of proof and based on experience instead, and they all yield ideas of human nature, happiness, and destiny. When they occur within a religious tradition their primary purpose is to aid humans to stand in proper relation to the divine, and when they occur in theories their primary purpose is to explain. But so far as their *religious* character is concerned, it matters not whether an ascription of independent reality occurs within a cultic tradition or within a theory. In either case it is accepted by its advocates because they irresistibly experience it to be that on which all else depends. And in either case it has personal consequences by delimiting a range of acceptable ideas of human nature, happiness, and destiny. This point explains the persistence of the isms in metaphysics, as well as the imperviousness of differing divinity beliefs to counter-arguments. And it is why, as I already commented, deifications of aspects of the cosmos brought into philosophy or science persist despite the fact that their advocates cannot even conceive of their candidate for divinity as having independent existence.¹¹

⁹ This is defended at length in R. Clouser, *Knowing with the Heart: Religious Experience and Belief in God* (Eugene, Oregon: Wipf and Stock, 2007).

¹⁰ It is crucial here to recognize that not all religions include worship, rites, or the sanctioning of ethics, so these cannot be essential to what makes a belief religious. The only thing they all have in common is the belief in something or other as divine as I have defined divinity. See *Myth*, Ibid, 35 – 41.

¹¹ The scriptures of every cultic religious tradition teach that its central doctrines are to be known by the direct experience of their truth. The experience, like the divine itself, also has many names: enlightenment, conversion, Moksha, Prajna, Zen, intuition, etc. This is in contrast to the misunderstandings promulgated by such thinkers as

The remainder of this paper will be in two parts. The first will present an anti-reductionist argument; the second will sketch a non-reductionist theory of reality based on the second of the options above, namely, the Theism of a transcendent Creator. And while the anti-reductionist argument is my own, the impressive theory of reality I will introduce here is the work of the late Prof Herman Dooyeweerd of the Free University of Amsterdam who first published it in 1935.¹²

Reduction is Seduction

A. An Anti-Reductionist Argument

The argument I'm about to give is not deductive, so it does not require you to accept that I have found premises no rational person could reject. But neither is it inductive. It does not argue for any probability, and so needs no assumption as to whether to take a frequentist or Bayesian, subjectivist or objectivist, view of probability. Instead, it is an experiment in thought so simple that you can perform it for yourself right now - which is exactly what I'm asking you to do. Its results will then be confirmed in your own self-reflection. If you try it and get a different result from what I get, it will fall flat and have no force for you. And I agree in advance to accept in rebuttal whatever differing results you tell me you get when you try it. The experiment is simple: Let's try to conceive of *anything* as having only one exclusive kind of nature in the way reduction arguments claim on behalf of their candidates. That is, let's try to frame the idea of anything as being utterly monochromatic in kind and as existing in utter independence from all else.

As a first example of this, let's take materialism. Contemporary versions of this theory are less than forthcoming about naming the exact realities that are the exclusively physical producers of all else, but are quite confident that whatever those are we can rest assured they are exclusively physical. So let's see what our experiment yields when we try to think of *anything* as exclusively physical. Let's take as our first example a concrete object such as a book. Can a book really be conceived of as a "purely physical object?" That would mean, to quote a famous materialist, that "no irreducibly 'emergent' laws or properties" can be true of the book because "in the world there are [no] non-physical entities [or] non-physical laws."¹³

R. Dawkins, E.O. Wilson, and D. Dennett to the effect that divinity beliefs are all hypotheses taken on blind trust. But the fact is that no religion's scriptures ask anyone to believe in the reality of its divinity on blind trust. The role of faith arises in a religion concerning its promises for the future, the fulfillment of which is not yet experienced, not concerning the reality of its divinity.

Compare this point about experience as the basis of divinity beliefs with the candid comments of Paul Ziff and Richard Lewontin about their materialism. In a lecture at the U. of Penn Ziff said: "If you ask me why I'm a materialist I'm not sure what to say. It's not because of the arguments. I guess I'd just have to say that reality looks irresistibly physical to me." And Lewontin wrote: "It is not that the methods...of science somehow compel us to accept a material explanation of the ...world, but on the contrary, we are forced by our *prior* adherence to material causes to create...a set of concepts that produce material explanations no matter how counter-intuitive..." (*New York Review of Books*, January 7, 1997, p. 37). Amazingly, these remarks express the same ground that was offered by Calvin and Pascal for belief in God. See R. Clouser, *Knowing with the Heart: Religious Experience and Belief in God* (Downer's Grove: IVP, 1999), 95-96.

¹² The 1935 work was titled *Het Wijsbegeerte de Wetsidee* but better known is its enlarged (4 volume) English edition: *A New Critique of Theoretical Thought* (Philadelphia: Presbyterian & Reformed Pub. Co., 1958)

¹³ J.J.C. Smart, "Materialism" in *The Mind/Brain Identity Theory*. Ed., A. Flew, (London: MacMillan, 1970), 160.

The proposal, then, is that a book has only physical properties and is governed only by physical laws. So let's begin to strip from our concept of a book every kind of property we experience as non-physical. Start by taking from it all quantitative and spatial properties, so that it has no "how much" and no location or shape. Then strip away every sensory property such as its color and tactile feel. Next take from it every logical property so that it lacks being logically distinguishable from anything else, and also remove its linguistic property of being able to be referred to in language.¹⁴ I could go on to ask that you now divest it of further kinds of properties such as social, economic, aesthetical, and so forth, but I think that you can already see my point. Removing only the few kinds of properties-and-laws I just named already wipes out any idea of a book whatever.

Let me ask: did you get the same result? If not, I have no further argument and you have an intellectual right to claim that materialism makes sense - provided, of course, that you can specify what is left of your concept of a book! On the other hand, if you got the same result I got, you have seen the concept of a book disappear before your mind. And the reason the concept of a book dissipates like the morning dew is that while we have a clear idea of what "exclusively" means and what "physical" means, we quite literally have no idea whatever of what "exclusively physical" means. In this respect the main claim of materialism is strongly analogous to the claim that there are square circles; we know what "square" means and we know what "circle" means, but we have no idea whatever of what "square circle" means.¹⁵

This experiment doesn't only succeed when we attempt it with the concept of a concrete object such as a book, however. To see that this is so, let's try it again - this time with the concept of an abstract physical property, say the property of weight. Strip from the idea of weight all numerable quantity, spatial location, all connection to sensory properties, the logical property of being distinguishable, and the property of being able to be referred to in language. Once again, I ask you to tell me: What do you have left? What is weight that can't be quantified, is nowhere, can't (in principle) be sensorily perceived, is not logically distinguishable from all that is not weight, and can't be referred to in language? I get nothing whatever. What do you get?

Again, I would not have you suspect that while this works with concrete objects and abstract properties, it fails if we consider the entire *kind* of properties and laws we call physical. It's not that materialism doesn't work for everyday individual things or for particular properties physics deals with, but succeeds on the more global scale. Rather, the same thing happens when we take "physical" in its widest scope. What idea is left of the entire physical *kind* of properties-and-laws when we try to think of it aside from time and space, every quantity, and without being logically distinguishable from all that is non-physical? The conclusion yielded by this experiment is that despite all the ingenuity and ink that have been spent over the centuries defending materialism or trying to find exceptions to its all-

¹⁴ Of course, being distinguishable and able to be spoken of are *passive* properties as opposed to active ones, but they are no less really properties of a book for that reason. If a book itself lacked the property of being logically distinguishable we could form no concept of it, and did it not possess the property of being able to be referred to, we could not speak of it. The active and passive senses in which properties can be possessed will shortly be explained in more detail.

¹⁵ The two are analogous rather than precisely the same because in the case of "square circle" there are laws that make such things *impossible*, whereas we simply can't form any idea of "exclusively physical." For this reason, "impossible" and "not possible" need to be distinguished. Comp. *Myth*, Ibid. p. 360, n 11 and see note 27 below.

encompassing claims, its central claim never had any sense at all. *We cannot so much as frame the idea of anything as exclusively physical.*

Please notice that this thought experiment doesn't work only for materialism. All the other isms making similar exclusivist claims on behalf of other kinds of properties-and-laws fall victim to it as well. Are there sense data made up of purely sensory properties? Are there purely logical concepts or categories? If so, why can't we so much as frame the idea of them? What is a sensation (either the subjective act or the object of the act) that takes no time, is not denumerable, is nowhere in space, involves no physical energy or conditions, is not logically distinguishable, and not able to be referred to in language? Ditto for the logical kind of properties-and-laws. Even the fundamental axiom of non-contradiction includes a necessary reference both to time and the more-than-logical "sense" of any proposition to which it is applied, for it says that no statement can be both true and false at the same *time* and in the same *sense*. It therefore explicitly concedes the existence of other-than-logical properties and tacitly concedes the existence of other-than-logical laws. For if a property is insufficiently ordered in a non-logical sense, it would not be definite enough for logical laws to guarantee it cannot be true and false at the same time.¹⁶

Rejecting all such reductionist views has many ramifications. It destroys the grounds for believing any specific kind of thing can exist "in itself", for example. It also utterly undermines the notion that our experience consists of purely (internal), *sensory* perceptions which can never be identified with purely (external) *physical* objects. Since we cannot think of either our acts of perception or the objects of perception except as sharing a multiplicity of kinds of properties and being governed by a multiplicity of kinds of laws, there is no reason for thinking the two are qualitatively isolated from one another. Perception is perception *of* things themselves, not an internal copy which has an utterly different nature from its external causes. Or take Plato's theory that there are Forms each of which exists "in itself" (*αυτο το*).¹⁷ The argument shows why it is just as meaningless to speak of justice itself or beauty itself, or of their real independence from all other qualities, as it is to make that claim on behalf of the physical. What is left of our ideas of beauty or justice if we isolate them from every property and law of time and space, quantity, sensation, logic; and from every linguistic, social, and economic factor? This argument may also be regarded as impure reason's critique of Immanuel Kant. Since there are no purely sensory or purely logical anythings, there is no need to postulate a "transcendental ego" that combines those spurious "purities" into the virtual reality show that supposedly replaces pre-theoretical experience.

The thought experiment equally undermines metaphysical dualisms which, as I said, run afoul of this argument twice instead of only once and are then unable to explain how their two independent metaphysical causes can relate. Take, for example, the idea of form-matter substance. What is meant by "Form" in this theory? Surely it's the principles of order that accounts for the observed *orderliness* of things. But what *kind* of order are we talking about? Is

¹⁶ There are properties corresponding to complex states of affairs that are like this, such as the concepts of being bald or being a forest. How many hairs have to be missing from someone's head for him to be bald? How many trees have to be growing in a specified area for it to be a forest? Since no rules govern baldness or being-a-forest in such a way as to make these concepts definite, logic is helpless to tell us that if we assert one of them its denial is false – even though one or the other would have to be true if we had a definition and employed it unequivocally.

¹⁷ E.g., *Hippias Major* (286d8); *Symposium* (211a10).

it quantitative, spatial, kinematic, logical, or what? If you say, “None of these” then the term is devoid of meaning. If you pick any one, then I’ve already shown you why it can’t be thought of as independent. If you say, “It’s all the kinds of order taken together”, then there is no reason to think they are individually dependent but collectively independent. (Moreover, there would be no way the idea of substance could explain what is accidental in a thing, since there would be nothing left to be accidental.) The same sorts of impasses result on the other side of the dualism where “matter” means the stuff that gets formed. What *kind* of material are we talking about? No matter how this is answered, the thought experiment shows that no candidate-kind can be thought of as having independent existence: not numbers, or atoms, or energy. And the same insurmountable difficulties beset the reply that “matter” merely means “potentiality.” What *kind* of potentiality? Once again, every kind of potentiality is a kind that cannot be thought of in isolation from all the other kinds, so “pure potentiality” is as empty of meaning as are all the other allegedly pure ideas.

I will not go on to apply my argument further to the history of philosophy, though it is tempting to do so. For it has devastating consequences for every theory that assumes any kind of thing in the cosmos has independent existence. It leaves such proposals, if taken as theories, to bite the dust and there is no recovery for them. But that’s not all. In addition to this argument, there is also the matter of how badly reduction theories fail by comparison to a non-reductionist approach. Before proceeding to sketch an example of such a non-reductionist ontology, however, I must first deal with an objection to my thought experiment. The objection suggests that perhaps the thought experiment only works for the specific list of kinds of properties-and-laws I’ve been working with, but would fail for alternative lists. In that case, using my list begs the question, so I need to explain why the case against reduction does not depend on any particular listing of basic kinds of properties-and-laws being exactly right.

B. Aspects of Experience

In order to make this discussion less wordy, I’m going to press into special service the English term “aspect” to refer to a basic kind of properties-and-laws. (An aspect is “basic” when it cannot be subsumed under any other aspect without resulting in antinomies, contradictions, or other serious incoherencies.¹⁸) To call a kind of properties and laws an aspect of reality, then, is to say that it is true of both our subjective acts of experiencing and of their objects. It also intends to say that these kinds are abstracted from our pre-theoretical experience of things, events, relations, states of affairs, persons, etc. It is the objects of ordinary experience that exhibit both the properties and the conformity to laws that, in turn, exhibit the meta-properties (quantitative, spatial, physical, logical, etc.) that qualify each aspect. It is their basis in experience that has resulted in so many thinkers in the history of philosophy and the sciences working with roughly this same list of aspects. In fact, most of these aspects have been more than just recognized; many have been declared by one or more influential schools of thought to be the one that qualifies the nature of the self-existent producer-of-all-else. This is not to say that there’s universal agreement about a list of genuine aspects, of course, and even if there were that wouldn’t settle the issue. Moreover, the issue is an important one for any ontology. But since there isn’t the room to do that job here, I will simply refer you to Dooyeweerd’s work in which he spent hundreds of pages arguing for the right list of aspects.

¹⁸ In *Myth* I distinguish three sorts of incoherencies besides antinomies and logical contradictions, and strong and weak senses of each of them. See *Ibid*, 80- 87.

What I will do instead is explain why I think that neither my non-reductionist argument nor the broad outline of his non-reductionist ontology depend on first establishing any particular listing of aspects as the exactly correct list.

First, there is general point that *any kind that is experienced as qualitatively distinct enough to be regarded as an aspect cannot then be reduced to another in any of the senses I have defined as objectionable*. A person may be mistaken to see a particular candidate as qualitatively different, but if a specific candidate-kind *is* seen that way it cannot then also be identical to any other or eliminated in favor of any other. Neither could it be (metaphysically) caused by any other, since for one aspect to be the cause of another it would have to exist independently of the other, and we have already seen that such independence is literally inconceivable. (This point assumes that at least *some* of the traditionally recognized aspects are genuine, even if not all are. It assumes as reasonably unassailable the quantitative, spatial, physical, sensory and logical, e.g.)

Moreover, the same inconceivability would ensue for any causal laws (“bridge laws”) postulated to defend the causal version of reduction. What *kind* of laws would they be? If, for example, the claim is that solely X entities combine so as to bring into existence things with distinctly Y properties, then the causal laws would have to be X realities. But for the least doubtful aspects just mentioned, we cannot conceive of a purely X law any more than we can conceive of a purely physical property or a purely X object. As it is with properties, so it is with laws: we can say the words “purely X laws” but we have no idea what they mean. Moreover, if a causal theory insists on assuming we are dealing with things that are purely X or purely X and Y despite not being able to conceive of them, then it’s left with no way to frame any idea of interaction between them. This is the old problem of the homogeneity of cause and effect; it’s why Descartes, e.g., had to admit he had no idea of how purely non-physical mental acts could occasion physical responses and vice versa. Non-homogeneity undermines even the scientific senses of cause, and utterly destroys the metaphysical sense. The upshot is that for both one-way causal reduction theories and for dualist theories, taking an exclusivist view of any two aspects to be related results in no idea of either aspect and no idea of any interaction that could hold between them.

Finally, agreement on the exact list of aspects isn’t necessary to their inability to be reduced to one another because the thought experiment applies not only to entire aspects and concrete objects, but to every specific *property* we can frame an idea of. So it is not merely the great plausibility of the brief list I called the “least doubtful” aspects that comes into play here. It is also the reality of specific properties regardless of which aspects they are taken to fall under. We cannot, I pointed out, form any idea of weight that has no quantity, is not located in space, could have no sensory representation, is not logically distinct from other properties, and is not referable to in language. The same is true for instances of any other property we care to consider: what is blue, moribund, consistent, or expensive that can’t be counted, located, distinguished, or spoken of? But if every *property* is such that it we have no idea of it apart from other properties, *then it won’t matter whether we agree in seeing those properties as falling under the same overarching aspectual kinds or not*. Since we can’t think of any of them

as existing independently of one another, whatever aspects we think they fall under will also be equally inconceivable apart from all others.¹⁹

The only way to deny this last point would be to insist that, say, 2, square, weight, red, distinct from, and evil, e.g., are all of the same qualitative *kind*. That, however, is patently not what we experience. If it were what we experience, there would be no need to make reduction claims. But, on the contrary, reductive theories are attempts to correct our pre-theoretical experience - which is a tacit admission that what they propose runs counter to it. What is more, reduction claims themselves get their list of candidate-aspects from that same experience: it's from some such list that they select the one (or two) aspect(s) they favor as basic to reality. Hence my point that *everyone* works with some list or other.

For these reasons I don't think it necessary to try to establish here and now the exactly right list of aspects. In what follows I will use Dooyeweerd's list, and the main ideas of his theory will remain unchanged for anyone wishing to advocate a somewhat different list. So far as that theory of reality is concerned, then, its primary question will be how to understand the relations of properties and laws of different kinds so as to explain the natures of things. And in so far as this theory is a *non-reductionist* account, the project will be to explain the natures of things without regarding any one or two aspects of the cosmos as the nature of that which produces all else.

The Law Framework Theory

A. Aspectual Laws

In this non-reductionist ontology, several sorts of laws will be distinguished, and together they will be recognized as comprising a distinct side to created reality, where "law" means the source of the order which accounts for the orderliness we observe in the cosmos. The laws governing the cosmos will not be understood to precede or cause the existence of things subject to them, nor will the things be seen to precede or cause the laws. Instead, both the laws and the entities subject to them will be taken to have been created simultaneously by God, and to exist in unbreakable correlation. The theory then elaborates this idea of a framework of laws, under which all created things exist and function, by distinguishing aspectual laws, from type laws, from causal laws. Aspectual laws are those that hold among the properties of each aspect. Type laws hold across aspects and determine which properties of different aspectual kinds can combine so as to form things of a particular type. But neither of these should be confused with the causal relations we observe to hold between events. Those relations are themselves multi-aspectual, and are not to be thought of as having only one kind of properties.

Here is the list of aspects Dooyeweerd uses to develop his non-reductionist theory of reality. The order of the list is, of course, not causal and will be explained shortly.

¹⁹ In this connection it is significant that a number of thinkers who work with Dooyeweerd's ontology do in fact use a slightly different list of aspects or a different account of their order, and such variations have made no difference to the ontology as a whole.

fiduciary
ethical
justitial
aesthetic
economic
social
linguistic
historical
logical
sensory
biotic
physical
kinematic
spatial
quantitative

I have tried to avoid nouns to designate the members of the list so as not to give the impression that these are classes or groups of *things*. Instead I've used adjectives to help convey that they are kinds of properties and laws exhibited by things. This has resulted in some odd terms and some special meanings for familiar terms, so I need to comment briefly on a few of them.

The term “quantitative” is used to designate the *‘how much’* of things, and should not be taken to refer to distinct a realm of numbers or to abstract systems of mathematics devised for calculating quantity. There is evidence that even animals have a sense of quantity although they can't count, and humans have an even stronger intuitive awareness of quantity.²⁰ It is the experienced quantity of things that mathematics abstracts as its field of inquiry, and within which it further abstracts the property of discrete quantity. This then becomes the basis for the natural number series from which more abstract and complex concepts are built up.

“Kinetic” is used to designate the *movement* of things, their motion in space. Many scientists include kinetic properties and laws within the physical aspect, though Galileo seems to have disagreed with that and so have a number of contemporary thinkers.²¹

The term “sensory” is used to cover the qualities of both perception and of feelings; it designates the properties and laws of animal and human *sensitivity*.

The term “historical” is familiar but needs clarification anyway. It does not refer to everything that has happened in the past, because that's not what historians are interested in. What does interest them is whatever in the past is *culturally* important. So what this term picks out is the activity and transmission of culture-forming power. Other thinkers have preferred to use “formative” for this aspect since it centers on the human ability to make new things from natural materials. This includes, of course, forming such artifacts as language, theories, music,

²⁰ T. Dantzig, *Number: The Language of Science* (Garden City, NY: Doubleday, 1954), 2-3.

²¹ Not only Dooyeweerd, *A New Critique*, vol. 1, 93-106; and M.D. Stafleu, *Time and Again* (Toronto: Wedge, 1980), 80 ff, but also Planck and Einstein. See Einstein's remarks in “Autobiographical Notes” in *Albert Einstein, Philosopher-Scientist*, Ed. P.A. Schilpp (New York: Harper Torchbooks), 43.

as well as what we usually think of as artifacts such as houses, clothes, and tools. I also include many social groups as artifacts since they, too, are freely planned and formed.

Likewise the term “ethical” is not unusual in reference to right and wrong, but is also often used in different senses that need to be distinguished. For example, there is right and wrong according to the justice, and right and wrong according to morality. The justicial aspect has to do with right and wrong judged by the norms of *fairness*, while the ethical is concerned right and wrong according to what is *loving* or beneficent. Though importantly related, these are not identical. So I will use “ethics” for the aspect is qualified by human love relationships over the entire spectrum of life: love of self, spouse, children, parents, friends, work, country, nature, art, learning, food, etc. For the aspect that covers fairness I will use the term “justicial”.

Finally, I’ve used “fiduciary” to refer to the *reliability* or trustworthiness that people, things, beliefs, theories, etc. have.

Even at this early stage, it is possible to see how a non-reductionist view of these aspects can free theory of reality from one old dilemma, the dilemma of objectivism vs. subjectivism. This controversy can best be understood as the result of contrary answers to the question: what is the source of the orderliness of creation? Whereas the objectivist locates the source of order in the objects of experience, the subjectivist locates it in the mind of the knowing subject. So the objectivist view is that what we call laws of nature are actually our generalizations over the behavioral regularities of things as caused by their fixed natures. There really is no distinct law side to the cosmos on this view because there are no such things as laws; there are just the regularities in the actions and re-actions of things according to their fixed natures. The subjectivist position is that the orderliness we experience is the product of the organizing activity of our own minds. It holds that we impose the temporal, spatial, conceptual, and other kinds of order on experience – whether consciously or unconsciously. But our theory objects to both these isms. If all aspects are equally real, and if the producer-of-all-else is not any part of the cosmos, why should we buy into either of these dead-ends or try to work out some combination of them? Neither can be right. Contra objectivism, there would have to be aspectual and type laws among properties for there to be things with fixed natures. And contra subjectivism, there would have to be laws ordering minds for them to be capable of perceiving and conceiving objects – let alone of forming them. So why not accept that the same laws govern both knowing subjects and known objects? This makes sense provided we distinguish two different senses in which that happens.

The two senses correspond to two ways an object may have a property: actively or passively (this distinction was already introduced in note 11). These will be spoken of as ways a thing exists and functions “under” the governance of the laws of an aspect. The two functions are not mutually exclusive, however. For the theory sees all things functioning passively in all aspects all the time, so that it is only active functions that a thing may lack in certain aspects. In fact, it is the appearance of active functions in things that exhibit the sequential order reflected in the list of aspects given above, where an aspect’s being higher on the list indicates that it appears in some types of things but not in others. Consider the example of a rock. According to the distinction being proposed, a rock functions actively in the quantitative, spatial, kinematic, and physical aspects. It possesses properties in each of those aspects, and is subject to the laws of each, in ways that can actively impinge on other things and do not depend on the

rock's relations to them. The rock does not, however, function actively in the aspects higher on the list. Nevertheless, there is a real sense in which it has properties in them because there are respects in which it is subject to their laws. These respects depend, however, on the rock's being acted on by other things that do function actively in those aspects. These are what I'm calling the rock's passive properties. That it does not function actively in the biotic aspect means that the rock is not alive. It carries on no metabolic processes, does not ingest, digest, or reproduce. But it can have biotic properties in a passive way, a way in which it is acted upon by living things. It may, for instance, be the object on which a gull drops clams so as to eat them; it may be the wall of an animal's den; a small rock may be swallowed into a bird's gizzard and help grind its food. In other words, a rock can be passively appropriated by living things in a *biotic* way. Such passive properties are merely potential, of course, until actualized by contact with something that is biotically active. But they are real properties all the same, properties made possible by the fact that the rock is governed by biotic - as well as all the other - laws. (Be sure not to confuse "active" with "actual" here. Passive properties can be either potential or actual, while active properties are always actual.)

A rock does not function actively in the sensory aspect either, as it neither perceives nor feels. But were it not subject to sensory laws and in possession of passive sensory properties, we (and other perceiving beings) could not perceive it. In relation to perceiving beings, however, its passive sensory potentialities are actualized and it is seen, felt, etc. Ditto for its logical function: a rock doesn't think, but were it not subject to logical laws it could not have the passive property of being distinguishable, and we couldn't form a concept of it. In a similar way the rock also has passive properties in the linguistic, social, economic, and remaining aspects. By contrast a plant would have an active function in an additional aspect to that of a rock, namely, in the biotic aspect. A plant is alive and actively carries on metabolic functions, while having only passive functions in all the other aspects. Likewise, an animal exhibits an additional active function to that of a plant by being active in the sensory aspect. It perceives and feels in ways plants cannot.²² So far as we know, only humans have an active function in every aspect. The following diagram may help clarify this point:

²² This is not to deny that some animals have proto-logical or proto-linguistic abilities. These are not fully formed as in humans, but are nevertheless undeniable. (See "Conversations with a Gorilla", Francine Patterson, *National Geographic* (October, 1978.) This, I think, is what we would expect from an evolutionary point of view, and is not inconsistent with the idea of a qualifying function. It only needs to be acknowledged that in the aspects from the biotic upward things can have partial active functions as well as fully formed ones.

Fiduciary					
Ethical					
Justitial					
Aesthetical					
Economic					
Social					
Linguistic					
Historical					
Logical					
Sensory					■
Biotic			■		
Physical	■	■			
Kinematic	■	■			
Spatial	■	■			
Quantitative	■	■			

Rock
Tree
Animal

■ Active Functions
□ Passive Functions

As I pointed out earlier, it is the appearance of active functions that is represented by the sequential order of aspects in the list given above, so it should be clear why that order isn't causal. It's not that properties lower on the list produce properties higher on it, nor is the case that as we go up the list the aspects are 'higher' in the sense of having greater importance or dignity. The order is simply our observation that a thing must have active properties in the numerical, spatial, kinematic, and physical aspects in order to have active properties in aspects higher on the list. Put another way: possessing properties actively in aspects lower on the list is a pre-condition for having active functions in aspects higher on the list.

Even though this passive-active distinction has now merely been introduced and not developed in detail, I think we can already see some of its benefits. Let's for a moment consider a few of its consequences for theories about sensory perception. A stick, we would say, has the passive dispositional property of appearing brown to normal perception in normal light. This disposition becomes actualized (manifest) when actually perceived. But by the same token, the stick also has the disposition to appear bent in water. Thus there is no need to resort to the theory that what is bent is one *thing* while the "real" stick is another *thing*. No need, in other words, to be led into the dead-end of postulating that what we really experience are "sense data" wholly internal to ourselves, so that the nature of the stick "itself" (or even whether there is a stick independent of us) is forever unknowable. This same point explains the fact that every object of perception appears smaller the further it is from us, and that railroad tracks appear to converge at the horizon. These are all passive potential properties of the objects in question. Thus the passive/active distinction avoids the considerable mess (generated by Descartes and all who came after him) of supposing we are insurmountably isolated from the world "in itself". At the same time, however, the active/passive distinction also allows us to appropriate elements truth from both objectivism and subjectivism while avoiding the extremes of each. For example, on this theory we agree that apart from being perceived things are not actually brown or smooth or sour. But that does not justify the subjectivist inference that such

qualities are created by us wholesale or exist only in our minds. Thus we can agree with the subjectivist denial that sensory qualities are fully inherent in the perceived objects, without thereby being committed to a wholly subjectivist view. For objects of perception do possess - independently of us - passive dispositions to be perceived in the ways they are.

The distinction also serves to dispel other examples of a false objectivist/ subjectivist dilemma. For example, we can agree with the objectivist in denying that “beauty is in the eye of the beholder” or that economic worth is solely our own invention. Were not economic and aesthetic norms embedded in the law-side of creation, and did not objects have passive properties of those kinds, we couldn’t experience anything in those ways; there would be no economic or aesthetic potentialities for us to actualize. For instance, were a rock not subject to the laws of supply and demand and diminishing returns, we could not actualize any economic value for it. And this remains true although economic properties are not already actual in it independently of our actualizing them.²³

The distinction further shows why it is not plausible to suppose that entire aspects emerge into existence, even though there is a sense in which it is plausible to say that active functions in them “emerge.” But these arise only in relation to both the passive properties a thing already possesses in an aspect and to the laws of the aspect that order the emergent properties. What sense would it make to suggest, for example, that the cosmos originally had only physical properties and laws, while later on logical properties and laws emerged? In that case the “emergence” wouldn’t have been *logically possible*. Or what could such a world *look* like if it had no passive sensory properties? It could have no “look” at all! Nor can there be a plausible account of how living beings could have arisen were not biotic passive properties and laws already true of non-living things. It is in this way the passive-active distinction removes the most widespread reason for denying that all aspects are equally real.

In sum, we have so far noted that: 1) The sequence of aspects in the list given above should not be confused with a *causal* one. We have already seen why it isn’t possible to think of any aspect as independent of all the rest, in which case none can be the metaphysical cause of any other. 2) Since no specific property can be thought of apart from properties of other kinds, all aspectual kinds are equally real. And 3) every concrete thing possesses some properties in every aspect. Thus our denial, e.g., that everything is exclusively physical is not by way of saying that there are things that are utterly non-physical. Rather, the argument has shown why it is incoherent to deny that all things, events, states of affairs, relations, persons, etc., have some properties in every aspect.

B. The Natures of Things

However, despite being true of everything in the cosmos at all times, aspects do not all play an equal role in the specific natures of different types of things. The properties and laws of some aspects characterize the nature of a thing more centrally than do the rest. Traditionally, those aspects were said to be the “substance” of a thing, and in one sense that seems right: they

²³ The norms of these aspects are also parts of what I called earlier the distinct law-side of the cosmos. The difference between a norm and the laws found in the aspects lower on our list is that we have no power to violate the natural laws, while we can violate norms. Norms, then, are related to human freedom; it is our choice whether to act in conformity to them or not and we are responsible for our choices.

are the properties that a thing must have to be the type of thing it is. Nevertheless, there is also an objectionable side to the notion of substance if it is taken to be inaccessible to our experience or knowledge, to have independent existence, or to be the cause of the other (non-essential) properties of a thing. These claims have already been shown to be literally unthinkable and unjustifiable. So rather than be drawn into the supposition that any aspect(s) more central to a thing's nature comprise its "substance" that produces the rest of its properties, we will speak of the aspect central to a thing's nature as "qualifying" it. On this view, saying that a concrete thing is qualified by a particular aspect has three parts: 1) the qualifying aspect is central to its nature, 2) the laws of the qualifying aspect govern the internal relations of the thing taken as a whole, and 3) in the case of natural things it is the highest aspect in which they function actively (there is a slightly different account for the nature of artifacts which will be sketched shortly).

Several points serve to recommend this idea of qualifying function. First, it is open to empirical confirmation and disconfirmation, and it is not offered as a rule for classifying things that must be followed whether or not we find things that fail to fit it. Its value can only be determined by investigating what we actually find in the world in order to discover whether it holds up. Second, the idea can do justice to our ordinary way of speaking of things as "physical", for example. We call a thing "physical" to mean either that it's real as opposed to imaginary, or to mean that it is physically *qualified*. Ordinary speech, reflecting our pre-theoretical experience, never means that a thing is exclusively physical since nothing is ever experienced as exclusively physical. But the physical can be the highest aspect in which a thing has properties actively and be the aspect whose laws that govern its internal organization (think of the rock in our earlier example). So too, an act of perception can be sensorily qualified. Any such act is also actively countable, locatable in space, moveable, and physical, of course. And passively it can be conceptualized, trained, named, respectful, worth money, just, loving, or trustworthy. But it is qualified by its sensory properties and internally governed by sensory laws (nothing can appear red and green all over at the same time, e.g.). In the same way acts of human behavior can have differing qualifications: acts of buying and selling have an economic qualification, acts of eating have a biotic qualification, acts of dancing have an aesthetic qualification, while acts of deciding court cases have a justicial qualification. Yet they all occur under the governance of the laws of every aspect and have passive properties in them all, which is why they can be studied from the standpoint of any aspect.

Also recommending the idea of a qualifying function is the benefit it supplies to distinguishing numerous levels among of entities in creation. A few such levels are intuitively recognized in ordinary speech when we speak of something's being animal, vegetable, or mineral. The Law Framework theory understands these levels as corresponding to types of things as qualified by the physical, biotic, and sensory aspects; and, it adds, there are many more than just those three. The human active-functions of being perceptually conscious, thinking rationally, and forming natural materials into artifacts make possible still further levels; and there are yet others comprised of artifacts that are qualified by their linguistic, social, economic, aesthetic, juridical, ethical, or fiduciary aspects. These levels among *things* can now be seen to be as mutually irreducible as are the *aspects* that qualify them, and for the same reasons: none can be thought of as independent of any other or as the (metaphysical) cause of any other.

Moreover, this same point applies not only to things, but to events and relations as well. Events, too, are multi-aspectual and have a qualifying function. So this ontology doesn't need to decide (as Aristotle and Whitehead thought necessary) whether things are basic to events or events are basic to things. On this theory, neither creates the other since each is a correlate of the other and both were produced simultaneously by God. (We call an entity a "thing" when its constancy is more prominent to our identifying it than any sort of change it's undergoing, and we call an entity an "event" when its change is foremost to identifying it rather than its constancy.)²⁴ Among the most important events that need to be seen in this non-reductive way, are the causal relations we experience. These instances of orderliness result from what I have called the law-side of the cosmos since they reflect part of the cosmic order. These, too, we say are multi-aspectual relations that also have various qualifying functions, although there don't appear to be causal relations that are qualified by the first three aspects: there are no cause-effect relations that are qualified by the quantitative, spatial, and kinematic aspects. Rather, causal relations first arise in, and so are founded upon, the physical aspect. Nevertheless, even though they are all founded on the physical, they are not all physically qualified. In addition to physically qualified causal relations, there are also those that are qualified by their biotic, sensory, logical, linguistic, social, and economic, etc., aspects. For example, reproduction is a biotically qualified causal relation, the entailment of a conclusion by premises is a logically qualified cause, and the increased scarcity of a commodity is an economically qualified cause.²⁵ On this theory, then, there is a distinct sense of causality that holds for every level of reality that exhibits a distinct aspectual qualification.²⁶

Yet another point that recommends the idea of qualifying function is the way it enables us to draw the very important distinction between wholes comprised of parts, and wholes comprised of sub-wholes (as well as parts). As is well-known, Aristotle held that something is a part of a whole provided it: 1) participates in the internal organization and functioning of a whole and is 2) unable either to come into existence or to continue to function apart from that whole. This, however, is not an adequate definition. Human beings surely function in the internal organization of social communities and cannot come into existence apart from the community of their parents. Nevertheless, humans are not merely *parts* of families, businesses, schools, or states. What is needed to define something as a part of a whole is the added point that it must *share the same aspectual qualification* as the whole. Our definition, then, is that a part must: 1) function in the internal organization of a whole, 2) be unable to come into existence or function apart from the whole, and 3) must have the same qualifying function as

²⁴ A plant cell, e.g., is in continuous energy exchange and other interactions with its surroundings, yet it is experienced as a thing because it maintains its identity throughout those changes. So I propose that it is the predominance of its constancy over its change that accounts for this. It can't be accounted for by saying that things endure longer than events, as some events take centuries (a glacier's movement to the sea) or even billions of years (the expansion of the universe).

²⁵ Strictly speaking it's the *agents* of these causal relations that are qualified by higher aspects; the relations themselves take on such qualifications in a secondary sense. In this respect they are like artifacts in being qualified by an aspect in which they do not have an active function.

²⁶ On this account of causal relations, it would be improper to use any concept of causality to speak of the dependency of the cosmos on God as causal. Rather, God is the creator of all the kinds of causality that exist in creation. To be sure, we can properly use the limiting *idea* of cause in this connection which is only that for anything other than God, God can exist without it while it can't exist without God. But that sense can have no aspectual qualification, and so is not further specifiable. This includes its being formal, final, material, or efficient, as well as its being physical, biotic, social, economic, etc., because all such relations have properties with aspectual qualifications.

the whole. This exposes the fact that in ordinary speech we often call one thing a “part” of another when it is not. For example, we say that a rock is “part” of our garden. Even the traditional definition would have to reject that use of “part”, since the rock can come into existence and function actively in the physical aspect apart from the garden. But we now add that the rock is physically qualified while the garden is an aesthetically qualified whole. The rock is included in the garden, of course. But it is included as a sub-whole in a larger whole, not as a part.

C. Capsulate Wholes

Thus the idea of qualifying function now enables us to draw the distinction between part/whole relations and sub-whole/larger-whole relations. So we will speak of a larger whole as “encapsulating” a sub-whole, and of the larger whole as a “capsulate” whole. This turns out to be a very valuable distinction, and is thus an additional recommendation of the idea of a qualifying function. Take, for instance, the example of a marble sculpture of a human body. How are we to understand the relation of the marble to the statue as a whole? It cannot possibly be that of part to whole; the *parts* of the statue are its head, torso, arms, etc. (Even on the traditional view the marble can’t be part of the statue because it can exist without the statue.) Besides it makes no sense to speak of the marble as functioning in the internal organization of the statue! But our idea of capsulate relations can do much better. According to it, the marble is a sub-whole included in the aesthetically qualified capsulate whole that is the sculpture. Moreover, the relation of the marble to the sculpture shows a characteristic typical of whole to sub-whole relations: no amount of knowledge of the nature of its sub-wholes can ever yield knowledge of the nature of the capsulate whole. This is precisely because they have different natures owing to their qualifying functions being different. Here’s another example of the same point. Atoms of every chemical element existed before life arose on earth, although they surely function in the internal organization of a plant. So they are not parts of a plant – even on the traditional definition. And we add that they do not have the same qualifying function. But if they’re not parts of a plant what are they to it? We answer: sub-wholes encapsulated within it, since a sub-whole may have the same or a different qualification as the larger whole it is included in. And, as is usual, the nature of those sub-wholes is no clue to the nature of the capsulate whole (no one has ever suggested a way that even an exhaustive knowledge of atoms could yield the nature of plants, for example, although some reductionists have longed for it). On this point, the idea of capsulate wholes fits perfectly with the notion of irreducible levels of reality.

By contrast, the cells of a plant are really parts of it. They cannot come into existence or function without the plant, they do function in its internal organization, and they have the same biotic qualification as the plant. The relation of atoms to a molecule, however, would be a capsulate relation. The atoms of hydrogen and oxygen, for example, do function internally to a water molecule and have the same physical qualification. But they can exist and function independently of that molecule, so this is another case of a capsulate relation. And it is also another case of not being able to deduce the nature of the whole from the natures of its sub-wholes: no amount of knowledge of the two atoms could ever allow anyone to deduce that water would expand when it freezes or feel wet. In every case we can think of, sub-wholes bound into a capsulate relation retain their own identity since, apart from their encapsulation, their nature remains the same. Nevertheless, when they are included in a larger capsulate

whole, their own qualifying functions can be subsumed so as to contribute to the qualifying function of the capsule whole (think of a tree encapsulated in an aesthetically qualified garden, or the stone in a bird's gizzard). So while every capsule whole will have specific properties none of its sub-wholes possesses, some may also have a qualifying function all its sub-wholes lack. This is an additional reason why sub-wholes cannot be considered to be *causes* of the capsule wholes in which they are bound. They are necessary conditions for such wholes, but are never sufficient for them.

This last point raises the question as to what accounts for the ways properties of different aspectual kinds, and sub-wholes with different qualifying functions, combine in the things we find in the world? Why is it that some combinations of properties or sub-wholes are conceivable but are not actually possible in the world? The answer, says the Law Framework theory, is yet another kind of laws, laws that range across aspects.

D. Type Laws

What has been said so far about the concept of a qualifying function and the distinction between active and passive functions is, however, only a start at a non-reductionist account of the natures of things. These ideas all by themselves are not specific enough. To say, for example, that a tree is biotically qualified does single out the highest kind of properties it possesses actively and the kind of laws that govern its internal organization. But that does nothing to distinguish a tree from other things sharing the same biotic qualification. So the theory also postulates the existence of laws which make possible the inter-aspectual combinations of parts and properties we find exhibited in things and events, the combinations that demark a particular *type* of entity. The structural combination of parts and properties that is peculiar to a tree, and distinguishes it from an Akebia vine or a daisy, is thus explained by formulating its type law. (Of course, we don't know what types of things these laws make possible in advance of investigating the world empirically; type laws are discovered by analyzing what is given in experience.)²⁷

Thus the Law Framework theory proposes a complex, crosshatching network of laws. In addition to the causal relations we observe, the network consists of (at least) aspectual laws and type laws. And it is the latter two sorts of laws that allow us to be more specific about the nature of a type of things or events. That is, understanding a thing's qualifying function together with an analysis of its structural type comprises the account this theory gives of our pre-theoretical idea of the nature of a thing. It also supplies a fuller reason for rejecting any notion of substance that regards one (or two) aspects of a thing as independent causes of the others, or postulates an unknown X to do the same job. In keeping with the Theistic answer to the question "what is the producer-of-all-else?" the Law Framework theory insists that it is God who is the creator/sustainer of everything in the cosmos *and not anything found within the*

²⁷ Type laws also explain why entities that can be thought of with no contradiction are nevertheless not really possible. There are no flying carpets or talking trees because there is no type law for such things. Thus we are led to distinguish between something's being impossible because it would violate a law (a square circle) and a thing's not being possible because there is no type law for it. See J. Ross, "God, Creator of Kinds and Possibilities" in *Rationality, Religious Belief, & Moral Commitment*, Ed. Audi and Wainwright (Ithica: Cornell University Press, 1986), 315-335.

cosmos.²⁸ Every concrete individual thing or event in the cosmos is therefore to be understood as an individual structural assemblage of properties, parts, or sub-wholes, determined by a type law and qualified by the aspectual laws that regulate its internal organization. An individual thing is thus neither merely a bundle nor a heap of parts and properties, while at the same time it is nothing over and above an individual law-structured combination of all the properties, parts, or sub-wholes comprising it.

E. Artifacts

So far I have applied the concepts introduced only to natural things, because the various natures of artifacts are more complex. They need more than a specification of the qualifying function of their natural material and their type law if we're to account for what the natural material of an artifact has *become*. For example, the stones used to build a house would, by themselves, have no more than a physical qualification. But once they have undergone transformation into a house the new whole that encapsulates them as sub-wholes acquires an additional social qualification despite the fact that all its parts and sub-wholes have only a passive function in that aspect. Unless we recognize that such a transformation has occurred, however, we would not recognize the stones *as formed into a house*, and so would miss what they have become.²⁹

In this way the Law Framework theory adds two new components to identifying the nature of an artifact. First, it recognizes that artifacts, unlike natural things, may be qualified by an aspect in which they function only passively. Secondly, it expands the idea of what qualifies an artifact to include two aspects: the aspect qualifying *the process of transformation* by which the artifact is produced, and the aspect qualifying the kind of plan by which its production was guided. The aspect qualifying the process by which an artifact is formed will be called its *foundational function*, and the aspect qualifying the kind of plan which guided its formation will be called its *leading function*. It is this correlation of the foundational and leading functions that give a fuller account of what qualifies the nature of an artifact. So with respect to the example of stones formed into a house, the theory would say that the foundational function of a house is historical (or cultural) because the process of its formation is qualified by the human ability to transform natural materials. But what then is its leading function? One plausible candidate would be to say it is biological. And, no doubt, a house serves our biotic needs. We would form houses very differently were our bodies significantly different from what they are. But a house is more than bare biological shelter – which is why it differs from a mere lean-to or hut. It provides a place for social exchange and accommodates our need for privacy, and the varying sizes and shapes of its rooms usually indicate a difference in social status among those who occupy or use them. In fact, were a building to lack these features we wouldn't call it a house. For these reasons, I would say that the leading function of a house is *social*.³⁰ As this example shows, foundational and leading functions are correlates whose

²⁸ What St Gregory Palamas said of Christians in this connection applies equally to all Theists: “Christians cannot tolerate any intermediate substance between Creator and creatures, not any mediating hypostasis.” [John Meyendorff, *A Study of Gregory Palamas* (London: Faith Press, 1964), 130.]

²⁹ Animals also form artifacts, and the account of these is somewhat different. I explain this difference in *Myth*, 263 ff. For brevity's sake I speak here only of human artifacts.

³⁰ Since the aspect characterizing a leading function is the one that qualifies the plan that guided an artifact's formation, this function cannot be divorced from the idea of purpose. But it is purpose that is embedded in the nature of the artifact, not merely the subjective purpose(s) for which people may use the artifact. For example, the

significance in qualifying an artifact cannot be understood without each other. The example also shows what I meant when I said that the qualifying functions of things cannot be predicted by the theory, but only discovered by an analysis of empirically given reality.

There is not the space here to give many further examples of how these concepts help us to focus the nature of artifacts, but here are a few. A book would be said to have a historical foundational function and a linguistic leading function. The poetry in the book, on the other hand, would have a historical foundation and an aesthetical leading function. Likewise, a painting, sculpture, or piece of music would also have an aesthetic leading function. By contrast, a warehouse, with its loading platforms and storage areas, shows an historical foundation and an economical leading function. Of course, a bank has the same leading function. What distinguishes a warehouse from a bank is the type law for each; the law that determines the internal relation of its parts and sub-wholes such that it conforms to its type. So the full account of an artifact's nature must include its type law as well as its foundational plus leading function.

Now at this point you may feel like asking whether it wouldn't have to be the case that all artifacts have a historical foundation. After all, they're all formed by humans, no? While there is a sense in which that is true, there are nevertheless humanly formed artifacts that have their foundation at a lower level than the historical. To explain this I must first make the point that social communities are also artifacts, formed when humans give specific organization to aspectually differentiated inter-human relations. These differ from non-social artifacts in that their "natural materials" are other human beings rather than non-human things. That said, there appear to be (at least) two communities that should not be taken to have a cultural foundational function, namely, marriage and family. These are not free, cultural creations in the sense that they are rooted in our biotic, sexual, nature. Humans give them varied specific forms, to be sure. But it is our biotic make-up that drives the process of their formation and assures these institutions will be given some form or other.

F. Social Irreducibility: Sphere Sovereignty

Earlier we saw why many wholes cannot be analyzed only by distinguishing their parts, since they are capsule wholes that also include sub-wholes. This is especially true of social communities, since they include humans who are never merely their *parts*. Humans do not have the same qualifying function as any community since humans have no qualifying function at all.³¹ In keeping with the Theistic view we've been pursuing, a human's existence is centered in his or her "heart" or "soul" which is the unity and identity of each person. The human heart is not, therefore, identical with any of its functions; it is not essentially rational, or emotional, or volitional but is the source of all of them and of all else that makes up human life. That is why we deny any aspect qualifies human nature. Humans, then, are never *parts* of

leading function of a teacup is social even though someone may use it as a planter, and the leading purpose of a marriage is qualified by love even if someone marries for money or social prestige. Therefore I have called the sort of purpose involved here the "structural purpose" of the artifact. See *Myth*, 267, 272, 278, 290-91, 372n4.

³¹ In keeping with the Theistic view, human existence is taken as centered in the "heart" or "soul", the basic nature of which is to be *religious*: oriented to the divine. Thus human nature cannot be located in any of its aspectually qualified function since all such functions – intellect, will, emotion, etc. – have the heart as their source.

a marriage, family, state, school, business, church, or what have you. They are sub-wholes who include themselves in greater, capsulate wholes.

Now this same point can also be made about the major various social communities: none of them are parts of any another as most have distinct leading functions and all display a distinct type law. So, for example, a family cannot be part of a state as is shown by the fact that its members can be citizens of different states. But what is more important is that *neither can any of the major communities of society be encapsulated within another.*³² Recall that when a sub-whole is included in a capsulate whole, the leading function of the capsulate whole overrides the qualifying functions of the sub-wholes (think of the stone in a bird's gizzard which serves a biotic purpose). In the case of the major social institutions, subsuming one under another would mean the one(s) subsumed would serve the leading function of the capsulate whole. Thus, subsuming a business, school, or church under the state, for instance, would have the effect of stunting, debilitating, or outright cancelling the leading functions of the subsumed communities in favor of the state's leading function, justice.

Look at the same point from another angle, the angle of authority in human social life. Is there one supreme source of authority? If so, what *kind* of authority is it? There have been many attempts to answer this reductionistically. Theories have claimed that the source of authority is power, reason (or reason and virtue), wealth, or superior will. But a genuinely theistic view must reject all these proposals. Authority comes from God, who has built it into human life in plural forms: the authority of parents in a family, of owners in a business, of elected officials in the state, of teachers in a school, of clergy in a church, Temple, or Mosque, of doctors in a hospital, and so on. Such organizations are formed to promote and preserve aspectually distinct facets of life: ethical love (family), economic life (business), public justice (state), religious belief (church, synagogue, mosque), biotic health (hospital), etc. And each has its own distinct type of authority.

This idea of many kinds of authority, each with its own proper sphere or domain, was called "sphere sovereignty" by its great champion, Abraham Kuyper.³³ It stresses that no one kind of authority - and thus no single social institution - is the source of all authority in life or the supreme authority over all other kinds. Rather, each social institution has its own sphere of competence which corresponds to its leading function, so that each has a relative immunity from interference by authorities of different types or which arise in organizations with different leading functions. In practice this means, for example, that parents set children's bedtimes, not judges; churches set requirements for their membership, not governments; courts render verdicts, not churches; schools set educational requirements, not parents; and businesses decide what products to produce, not courts, etc.

One of the most important results of this social norm is that its idea of distinct and limited authorities is the only one that can honor the integrity of all types of social communities. It alone can restrain the power of the state by setting limits to the authority of

³² There are some examples of communities being sub-wholes within others, but this is never true of the major institutions of society. The examples are all of auxiliary organizations formed to serve another community: a PTA formed to serve a school, or a fund-raising group formed to support a hospital or orchestra, for instance.

³³ One of the most famous expositions of this idea was in his "Lectures on Calvinism", the Stone Lectures at Princeton Seminary for 1898.

government. Democracy alone can't do that. Simply allowing citizens to elect those who exercise governmental power will not ensure the preservation of human rights and freedoms so long as the state is believed to have totalitarian authority. If the state is viewed as having such an authority, then democratic elections will only produce a tyranny of the majority. And notice that our theory yields this non-totalitarian result not only with respect to the rights and freedoms of individuals vis a vis the state, but also with respect to all non-governmental communities and institutions relative to one another as well as to the state. Sphere sovereignty is therefore the principle that embodies a non-reductionist view of society, and that leads to a non-hierarchical view of the institutions that exercise those differing kinds of authority.³⁴

H. Divinity Redux

On page three, I mentioned that there are only a few basic possibilities for locating the divine producer-of-all-else. I spoke of religious naturalism as regarding some aspect of the cosmos as divine, and contrasted naturalism to the belief that all is divine (pantheism), and to theism. I then added that one of these would have to be right unless it is possible to have a view of reality in which nothing whatever is divine, and I promised to return to that fourth option at the end of this paper. So let's now take up the question as to whether it's possible to have a view of reality in which nothing whatever is divine – that is, a view in which nothing has independent reality and is the producer-of-all-else. Can this be done? The answer is “no”, and here's why.

The reason is that, try as we may, *we cannot conceive of any cosmological scenario that doesn't leave something in the status of having non-dependent reality*. For example, the claim that nothing is divine because all that exists is the natural world, is self-contradictory. If the universe is all there is, then there's nothing for it to depend on, and it must itself have divine existence. The most promising attempt to escape this point is the proposal that the universe is wholly contingent and the product of an infinite number of previous universes. According to this idea, nothing in this universe has independent existence, and neither does the universe as a whole. And since there never was a first universe for all the rest to depend on, no universe is self-existent. Does this work? Has it gotten rid of the last vestiges of every divinity belief? Clearly not. For whether or not our universe was produced by an infinite series of them and thus lacks independent existence, *the infinite series itself is still being regarded as independent and thus divine*. That series, taken as a whole, is still an answer to the question “why there is something rather than nothing?” And that answer - like every other answer - is that something just *is*, making that something divine. It will not do to object that the infinite series is also dependent because it depends on its member universes. Not so. The series doesn't *depend* on its member universes; it just *is* the member universes taken collectively. So, once again, it appears that it is not possible to conceive of any overview of reality in which nothing is left in the position of having non-dependent reality. The issue, then, is not whether something is divine, but what that is.

³⁴ It is thus the complement of the principle of subsidiarity. The latter specifies how internal levels of hierarchy are to function *within* any social organization, while sphere sovereignty specifies the non-hierarchical external relations that are proper *between* all organizations of a society. See *Myth*, 373, n 10.

Conclusion

The non-reductionist theory of social institutions won't usher in a utopian paradise, any more than a non-reductionist view of the natural and social sciences will hand us only true hypotheses or the next great scientific advances. Getting reductionist assumptions out of theories is not, therefore, a panacea for theories or for practical life. But it can eliminate one of the most grievous banes besetting both the theoretical enterprise and social praxis which has ruled western thought and action for over 2500 years. During that reign, it has required thinkers to skew the interpretation of data, laws, and hypotheses; it has induced a long series of one-sided exaggerations each of which has provoked and been replaced by another one-sided exaggeration. And this is besides the horrific results it has wreaked in politics and international affairs via nationalist, Nazi, Marxist, racist, and other reductive ideologies!

So I conclude that it is high time metaphysical reduction as a strategy for explanation had its bluff called; its come-uppance is overdue. It needs to be seen as based upon a deification of one or another of the aspects of the cosmos, and not allowed to pass for "pure science". Moreover, its deifications need to be exposed as claims that are empty words signifying no idea whatever, so that no science can actually employ them. Instead, the vaunted claims of the success of metaphysical reduction are one and all based on equivocations. They not only shift the senses of "cause" they employ, but speak of purely X explainers while employing multi-aspectual processes, properties, and laws to do their explaining. Finally, the experienced divinity of the various candidates of naturalism turns out to generate the blindest of faiths, since none of their advocates can form any idea of them as having divine status.

Roy Clouser
Emeritus Prof.
Philosophy Dept.
The College of New Jersey