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SPINOZA AND PROCESS ONTOLOGY

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abstract: In this paper, I put forward some remarks supporting a reading of Spinoza's metaphysics in terms of process ontology, that is, the notion that processes or activities, rather than things, are the most basic entities. I suggest that this reading, while not the only possible one, offers advantages over the traditional substance-properties interpretation. While this claim may sound implausible *vis-à-vis* Spinoza's language of 'substance' and 'attributes', I show that process ontology illuminates important features of Spinoza's thought and can facilitate solutions to some interpretive problems.

1. THE REVISION OF TRADITIONAL METAPHYSICS

In *Process and Reality*, Alfred North Whitehead writes:

> The philosophy of organism is closely allied to Spinoza's scheme of thought. But it differs by the abandonment of the subject-predicate forms of thought, so far as concerns the presupposition that this form is a direct embodiment of the ultimate characterization of fact. The result is that the "substance-quality" concept is avoided; and that morphological description is replaced by description of dynamic process. Also, Spinoza's "modes" now become the sheer actualities; so that, though analysis of them increases our understanding, it does not lead us to the discovery of a higher grade of reality. . . . In such "monistic" schemes, the ultimate is illegitimately allowed a final, "eminent" reality beyond that ascribed to any of its accidents.[1]

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[1] Alfred North Whitehead, *Process and Reality: An Essay in Cosmology*, ed. David Ray Griffin and Donald W. Sherbourne (New York: The Free Press, 1978), 7.

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While praising Spinoza for seeing the "organic" character of reality, Whitehead criticizes him for two reasons. First, Spinoza failed to see that there is no reality more eminent than the reality of the individual "accidents." Second, Spinoza saw reality in terms of a substance and its predicates rather than of "dynamic processes." The first criticism is correct to the extent that, in Spinoza, modes are ontologically dependent on substance and, in that sense, less "eminent" (it is not correct if Whitehead uses the term 'eminent' as a cognate of 'transcendent', but I will not explore this issue here).[2] In this paper, I will address the second criticism and show that there are good reasons for reading Spinoza's ontology in terms of "dynamic processes" rather than in terms of subject-properties, or substance-predicates. I will not show that the process ontology I ascribe to Spinoza is consistent with Whitehead's (I believe that it is not). I will also use a very basic notion of "process ontology" for my interpretation. My goal is to offer some preliminary remarks suggesting that a reading in terms of process ontology is, at the very least, consistent with Spinoza's metaphysics and that it has interpretive advantages.

In this first section, I offer a summary of Spinoza's revision of some traditional metaphysical notions. Many seventeenth- and eighteenth-century interpreters (such as Leibniz) read Spinoza's philosophy as radical Cartesianism. While Spinoza cannot be considered, strictly speaking, a Cartesian, he admired Descartes's work and, throughout his life, he measured himself against Cartesianism.

In his endorsement of "modern" philosophy and correspondent rejection of Aristotelian physics and metaphysics, Descartes provided a significant improvement over the Aristotelian–Scholastic tradition in the eyes of the young Spinoza.[3] At the same time, Descartes's views on God, the mind-body problem, as well as his discussions of substance and causation made him a prime target. Oversimplifying, Descartes "did not go far enough" for Spinoza.[4]

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[2] Because modes are effects of God, arguably God is more "eminent." However, one must remember that, for Spinoza, God cannot exist without his modes because these are necessary expressions of his essence.

[3] Even with all his verbal rejection of the scholastic tradition, Descartes was heavily indebted to it. Scholarship on Descartes and the scholastics abounds. See in particular Jorge Secada, *Cartesian Metaphysics* (Cambridge: Cambridge University Press, 2000) and Tad Schmaltz, *Descartes on Causation* (New York: Oxford University Press, 2008).

[4] The only work Spinoza published in his life under his own name is *The Principles of Cartesian Philosophy* (*PCP*) with a preface written by his friend Lodewijk Meyer (included in *The Collected Works of Spinoza*, vol. 1, ed. and trans. Edwin Curley [Princeton: Princeton University Press, 1985]). In his preface, Meyer reveals that Spinoza disagrees with much of Cartesian philosophy. At the end of *Philosophy as Interpreter of Scriptures* (1666), Meyer mentions cryptically a forthcoming publication on God and man that would finally bring Cartesian philosophy to perfection (Meyer, *Philosophy as Interpreter of Scriptures*, trans. S. Shirley [Milwaukee: Marquette

I will not discuss Cartesian metaphysics here. The interpretive debate on several of Descartes's positions (e.g., causation) is still open. One uncontroversial claim, however, is that Descartes accepts the causal containment principle. This principle states that the cause must contain whatever reality is in its effect, or the effect would come from nothing, in violation of the *nihil ex nihilo* axiom. Descartes uses this principle in his proof of the existence of God in the Third Meditation.[5] Spinoza accepts the causal containment principle; however, for him there is a conflict between this principle and the possibility of creation. In general, Spinoza challenges the notion that effects can be *really*, that is *substantially*, distinct from their causes.

Briefly put, here is the conflict. According to traditional creationism, God must contain everything that he creates, under penalty of violating the causal containment principle.[6] Yet he must also be infinitely, incommensurably *different* from what he contains and creates. God is infinitely perfect; he is eternal, omnipotent, immaterial, simple, and pure being. Created things are incommensurably different: their being is finite and highly imperfect. Many of them are material; hence, they are composite and dependent on their constituent parts. Moreover, created things depend on God in order to be brought into existence and be conserved; otherwise, they would relapse into nothingness.

So God—the infinitely perfect, independent, simple being—"contains" a plurality of metaphysically and morally imperfect beings, including bodies. The notion of eminent containment was developed to explain how God "contains" such things. Suárez, in his *Metaphysical Disputations* (1597), emphasizes that eminent containment is an unclear notion but that it is necessary to explain creation.[7]

University Press, 2005]). According to some, Meyer is referring to Spinoza's *Ethics*; see, for example, Wiep Van Bunge, *From Stevin to Spinoza: An Essay on Philosophy in the 17th Century Dutch Republic* (Boston: Brill, 2001).

[5] René Descartes, *Meditations on First Philosophy*, in *The Philosophical Writings of Descartes*, vol. 2, trans. John Cottingham, Robert Stoothoff, and Dugald Murdoch (New York: Cambridge University Press, 1997), 28. Henceforth *The Philosophical Writings of Descartes* will be referred to as 'CSM', followed by volume and page number.

[6] The sixteenth-century scholastic Francisco Suárez warned that the expression 'creation *ex nihilo*' does not mean that somehow God "extracts" being from nothing but rather that, where there was nothing, there is now being (*Metaphysical Disputations* [*Disputationes metaphysicae*] [Hildesheim: G. Olms, 1965], vol. 2, 63b). Strictly speaking, creation is *ex Deo* because all being comes from God. So the causal containment principle is respected.

[7] Suárez, *Metaphysical Disputations*, Disp. 30, sec. 10. Ideally, Suárez admits, one should be able to infer causal containment from a conceptual analysis of the cause. However, in the case of eminent containment, the inference is from the effects themselves. The reasoning is admittedly defective because of the conceptual priority of the cause: to declare that X eminently contained Y *post facto*—because X, while not being Y, did in fact cause Y—is considered by Suárez far from clear reasoning.

Descartes accepts the doctrine of eminent containment. Spinoza implicitly dismisses it in the *Ethics* (*E* 1p15s, 421–24).[8] He agrees with traditional creationism on the notion that nothing can exist, or conserve itself in existence, except for pure being. He identifies pure being, or the First Cause, with substance proper: "that which is in itself and is conceived through itself" (*E* 1D3, 408). By definition, nothing that is caused by something else can be a substance (*E* 1p7, 498–99).[9] Nothing can be ontologically dependent on a substance and, at the same time, be really distinct from it.[10] God's effects are *modes*, which are never really distinct from their cause.

So Spinoza answers the containment challenge by eliminating the ontological distance between the First Cause and the effects. God, or Nature, is not a transcendent, but an immanent cause: he is the one substance, and individual things are not really distinct from each other or from God.[11] This solution comes at the cost of a drastic revision of traditional ontology—a revision that extends to the concept of *essence*.

Traditionally, Aristotelians posited a distinction between the essence of a thing and its activities; roughly, this is the distinction between potentiality and actuality. Actuality is a perfection of something's essence. For Aristotle in the *Nicomachean Ethics*, the perfection of a man is achieved through activity of the rational soul (philosophy).[12] Men can and do exist without doing philosophy, but it is only when they engage in philosophical thinking that they are fully actualized men. Any man is potentially a philosopher by essence, but only some become philosophers in actuality.

Aristotle eliminates this distinction in God, who is pure act and always in that form of activity that constitutes his perfection (pure thought). However, Aristotle did not have to explain how God, as pure act, brings about a world of change and potentiality: for Aristotle there is no creation.[13]

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[8] In the scholium to proposition 15, Spinoza argues that it is incoherent to claim that God created matter without being extended himself. References to Spinoza's *Ethics* are given parenthetically using the standard abbreviations: part (first numeral), 'a' for axiom, 'p' for proposition, 'd' for demonstration, 'D' for definition, 'c' for corollary, 'L' for lemma, and 's' for scholium; citations to *Ethics* (*E*) will be followed by the relevant page number(s) in Curley's translation in *The Collected Works of Spinoza*. Thus, for example, '*E* 1p15s, 421–24' refers to *Ethics*, part 1, proposition 15, scholium; Curley, 421–24.

[9] Descartes had almost admitted as much (*Principles of Philosophy*, pt. 1, par. 52; CSM I: 210).

[10] By 'real distinction' both Descartes and Spinoza mean the distinction between substances. For this use of 'really distinct' in Spinoza, see *E* 1p25s, 421; for Descartes, see *Principles of Philosophy*, pt. 1, par. 60; CSM I: 213.

[11] Hence, Whitehead's praise for seeing the organicity and interdependence of everything in nature.

[12] Aristotle, *Nicomachean Ethics*, bk. 10, ch. 7.

[13] Aristotle does introduce a causal relationship between God and the world-God as a final cause—but this is not relevant to my discussion. See *Metaphysics*, bk. 12.

Christian and Jewish philosophers must explain the origin of potentiality and imperfection, while preserving the purity of God's actuality as well as free will. A commitment to free will may determine how the relationship between essence and activity is conceptualized. If something's causal activity is a necessary consequence of its essence, there is no freedom. If God, compelled by his moral or metaphysical perfections, *must have* created this world, he is not free. This is why Neoplatonic emanationism—the doctrine that creation is a necessary "overflowing" of being from the One—was frowned upon in the Scholastic tradition.[14] Fire does not choose to burn, but I can decide whether to devote my life to academia or to Ponzi schemes. Introducing "degrees of separation" between a being's essence and its effects preserves freedom in this sense.

These "degrees of separation" also reflect the ontological dependence of created things. For many philosophers, including Descartes, it is impossible for created beings to exist and be active independent of God's conservation and concurrence. If causal powers belonged necessarily to an essence, then, once given the essence, its effects would necessarily follow (unless prevented by external factors). For example, if the power of heating were in the essence of fire, then fire would necessarily heat. In order to avoid a conflict between ontological dependence and causal independence, Suárez (among others) argued that a created thing needs God's concurrence in order for the accidents inhering in its essence to become actual *powers*.[15] The interaction between a thing's accidents and the nature of God's intervention was elaborated differently in various thinkers, but the basic idea was the same.[16]

So, for the reasons summarized above, an ontological gap is posited between the essence of a created thing and its causal activity. Even in God there is a gap. In God's case, the problem is to preserve the essence of God as

[14] From before Aquinas to Suárez to Descartes and Leibniz, philosophers struggled with reconciling God's freedom and the notion that certain facts about creation follow inevitably from God's nature. Descartes's voluntarism, the notion that even logical and moral truths depend on God's will, was a nontraditional response.

[15] Suárez, *Metaphysical Disputations*, Disp. 22. For a discussion of this conflict, see Alfred Freddoso, "God's General Concurrence with Secondary Causes: Why Conservation Is Not Enough," *Philosophical Perspectives* 5 (1991): 553–85.

[16] The concept of divine causal concurrence had been long debated. Some philosophers (e.g., Durandus of Saint-Pourçain) reject it altogether. Others, such as Suárez, elaborated it in different ways. Still others (e.g., Malebranche) argued that all causal power comes from God, and created things are only "occasional" causes. Among the many scholarly discussions, see Vincent Carraud, *Causa sive Ratio: la raison de la cause, de Suárez à Leibniz* (Paris: Presses Universitaires de France, 2002); Steven Nadler, ed., *Causation in Modern Philosophy* (University Park: Pennsylvania State University Press, 1993); and J. A. van Ruler, *The Crisis of Causality: Voetius and Descartes on God, Nature and Change* (Leiden: Brill, 1995).

pure activity (and as infinite power), while at the same time making creation contingent upon, rather than necessarily entailed by, God's essence.

Spinoza rewrites ontology. He is not constrained by traditional doctrines about human or divine freedom. Moreover, he rejects creationism in favor of the view that all of God's effects are necessarily determined by his essence and are only modes or affections of the divine substance. So Spinoza rejects both the traditional gap between essence and power and the traditional notion of potentiality. In God as well as in the modes, essence is *potentia* as power and activity, not *potentia* as potentiality. Thus, Spinoza eliminates any degree of separation: essence and power are one and the same, and effects necessarily follow from the essence.[17] The power of individual modes, or "striving to persevere in one's being," is necessarily manifested in effects unless prevented by more powerful external factors.[18]

This is a strong interpretation of the causal containment principle. For Spinoza, *having* the power of bringing about an effect means *being* the power to bring about that effect—or *containing the effect in one's essence*. It also means that the effects take place *necessarily*, given the cause: therefore, everything will bring about whatever is in its power to bring about (unless prevented by some external overpowering factor). Moreover, and most importantly, *there is nothing to being an essence besides being a cause*. A number of interpretive questions arise at this point. In particular, how does a thing "contain" its effects? How is a thing's essence—a book, a stuffed bear, a bag of chips—nothing but active power?

In the next section, I will argue for the following thesis: Spinoza's definition of essence as power and activity and his overall metaphysical picture suggest that a "substance" and its "modes" can be understood as processes rather than as a property-bearing substrate and its properties. While this reading is not problem-free, and is certainly not entailed by Spinoza's definition of

[17] I discuss these issues in more detail in " 'God Acts from the Laws of His Nature Alone': From the *Nihil Ex Nihilo* Axiom to Causation as Expression in Spinoza's Metaphysics" (PhD dissertation, University of Pittsburgh, 2006, online at http://etd.library.pitt.edu/ETD/available/etd-04102006-152735/unrestricted/dipoppa.pdf).

[18] An anonymous reviewer suggests that finite modes have potentialities, that is, powers that are never expressed because the mode is never exposed to the right circumstances. While this is a plausible position in general, it is not compatible with Spinoza's necessitarianism. For Spinoza, this is the only possible world. If an object has a power that is never expressed in effects (e.g., a baseball having the power to break glass, but never exercising it because it is never thrown against a window), this implies that God's power, which is the mode's power, remains unactualized: this is impossible. Counterintuitive as this seems, for Spinoza, unexercised powers (potentialities) constitute a contradiction in terms. Power is always actualized, and the only factor that can prevent an effect from taking place is an external overpowering factor. It is our lack of knowledge that makes us think in terms of contingencies and potentialities (see *E* 1p17s, 425).

essence as power, I will show that it is at the very least as plausible as the traditional reading because Spinoza's God and his modes play the philosophical role of processes.

2. PROCESS PHILOSOPHY AND SPINOZA: AN OVERVIEW

In this section, I offer an overview of several elements of Spinoza's philosophy in terms of process metaphysics.

2.1 *Processes*

Nicholas Rescher defines 'process' as

> an actual or possible occurrence that consists of an *integrated* series of connected developments *unfolding* in *programmatic* coordination; an orchestrated series of occurrences that are *systematically* linked to one another either causally or functionally. . . . Process is mereologically homogeneous: a part of a process is itself a process.[19]

A process is the most basic entity in this alternative to traditional thing- or substance-based ontology.[20] Process ontology rejects the following assumptions: that every activity must be the doing of a substance and that activities are *derivative* of substances and their properties; or, as Rescher puts it, that "every verb must have a subject, and every event or occurrence is a matter of the agency of the thing."[21] According to this view, everyday "things" are bundles of processes. While activities such as eating or driving a car *prima facie* can be assigned to a subject, Rescher remarks that there are many activities that cannot be ascribed so obviously. A magnetic field is not a "thing-like" subject. There is no such thing as the subject of the verb 'to rain'. While a rainfall is arguably reducible to various properties of things such as water and

[19] Nicholas Rescher, *Process Philosophy: A Survey of Basic Issues* (Pittsburgh: University of Pittsburgh Press, 2000), 22–23; emphasis added. In *Process Metaphysics: An Introduction to Process Philosophy* (Albany: SUNY Press, 1996), Rescher calls Leibniz the "principal standard bearer" of process philosophy in the modern age. Surprisingly, he does not mention Spinoza. An interesting reading of Spinoza's psychology in terms of process philosophy is given by Heidi Ravven in "Notes on Spinoza's Critique of Aristotle's *Ethics*: From Teleology to Process Theory," *Philosophy and Theology* 4 (1989): 3–32. Ravven does not discuss the metaphysical context, and some of her claims connecting Spinoza to Aristotle are not well supported with texts.

[20] An example of a different approach, where mechanisms are described as organized structures productive of regular changes, is given by Peter Machamer, Lindley Darden, and Carl Craver in "Thinking about Mechanisms," *Philosophy of Science* 67 (2000): 1–25. Mechanisms, however, are ultimately explained in terms of things (e.g., molecules) and their properties (e.g., geometrical structure or electrical charges), which explain activities. This is an attempt to overcome the limits of substance-property ontology in explaining change and causation. In terms of process ontology, the ultimate constituents are the activities themselves.

[21] Rescher, *Process Philosophy*, 6.

air molecules, we can push the argument all the way to subatomic particles and question whether they are best understood as things rather than as processes.[22] Quantum mechanics questions the status of ordinary objects as constituted by much smaller thing-like particles.[23]

Rescher writes: "Traditional metaphysics sees processes as the manifestations of dispositions which must themselves be rooted in *the stable properties of things*. Process metaphysics . . . takes the line that the categorical properties of things are simply stable clusters of process-engendering dispositions."[24] Without these *inherently processual* dispositional properties, the real properties of substances are inert and unknowable. Process philosophers suggest that substances do not do the philosophical "heavy lifting" that they are supposed to carry out; rather, activities are what are manifested and knowable.[25] While different versions of process ontology exist, many of which are incompatible with Spinoza's metaphysics,[26] for the purpose of this paper, I am committed to a minimalistic thesis: that the basic entities are *processes* or *activities* rather than things and properties.[27]

2.2 *Metaphysics*

In the beginning of the *Ethics*, Spinoza concludes that there is nothing in reality but substance and its modes.[28] Substance is "what is in itself and is

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[22] Thanks to an anonymous referee for this remark.

[23] For a detailed discussion of process philosophy as the preferred ontology for contemporary physics and a discussion of related problems and solutions, see Lieven Decock, "The Taming of Change," in *After Whitehead: Rescher on Process Metaphysics*, ed. M. Weber (Heusenstamm: Ontos Verlag, 2004).

[24] Rescher, *Process Philosophy*, 7.

[25] In fact, one of the most interesting themes of seventeenth- and eighteenth-century philosophy is the debate about what we can know about substance, aside from its properties or effects, and about the philosophical legitimacy of the claim that this inaccessible *substratum* in fact exists. For an interesting discussion of this debate, see Louis E. Loeb, *From Descartes to Hume: Continental Metaphysics and the Development of Modern Philosophy* (Ithaca, NY: Cornell University Press, 1981).

[26] For example, there is no open-endedness in Spinoza's metaphysics: processes are single-track, and each stage determines the next, in itself or in interaction with other processes. (My thanks to Nicholas Rescher for this comment.)

[27] An anonymous referee pointed out that it is implausible to reject properties altogether. I am not suggesting that, for Spinoza, there are no properties. Processes *have* properties, such as relations to each other. My contention is that Spinoza's ontology dispenses with a particular kind of substrate for properties, such as substance, or, in general, the *subject* of activity, the *thing* that carries out the activity because of *its properties*. It is not my goal, however, to defend the plausibility of agentless activities (a view that, I confess, I find quite attractive). In what follows, I will explain what makes an interpretation of Spinoza's metaphysics in terms of process philosophy plausible. Whether this makes Spinoza's philosophical project more or less attractive, I leave for the reader to judge.

[28] "Whatever is, is either in itself or in another (by A1), i.e. (by D3 and D5) . . . there is nothing except substance and its affections" (*E* 1p4d, 411).

conceived through itself" (*E* 1D3, 408). A mode is "the affection of a substance, or that which is in another" (*E* 1D3,D5, 408). *Prima facie*, this is a clear endorsement of substance-based ontology. Nonetheless, I hope to show that the philosophical role of Spinoza's substance is not that of a basic ontological layer that is the *subject* of activities and to which activities are ascribed but, rather, that of activity. Substance as discussed in the *Ethics* is activity itself, activity of "expression" (Spinoza's term), that is, of systematic, structured unfolding—a *process*. Spinoza writes:

> P30: An actual intellect, whether finite or infinite, must comprehend God's attributes and God's affections, *and nothing else.*
>
> Dem.: A true idea must agree with its object . . . ; i.e. . . . what is contained objectively in the intellect must necessarily be in nature. But in nature . . . there is only one substance, viz. God, and there are no affections other than those which are in God . . . and which can neither be nor be conceived without God. . . . Therefore, an actual intellect . . . must comprehend God's attributes and God's affections, and nothing else. (*E* 1p30, 434; emphasis added)

This is an interesting passage; the proposition states that *only* attributes and modes exist (there is no mention of a substance). In the demonstration, the substance (God) takes up the role of the attributes, that is, of that which exists together with the modes. This supports the identification of the substance with the totality of its attributes (I will explain shortly how I interpret the attributes). Remember that only substance and its modes exist (*E* 1p4, 411)—not substance, *attributes*, and modes.

From the *Ethics*, we know that God's essence, by which God (his attributes) and all modes are and act, is his power *itself* (*E* 1p34, 439). It is not that God has power by essence: Spinoza identifies essence and power.

> P34: God's power is his essence *itself.* (*Dei potentia est ipsa ipsius essentia.*)
>
> Dem.: For from the necessity alone of God's essence it follows that God is the cause of himself . . . and of all things. Therefore, God's power, *by which he and all things are and act*, is his essence itself. (*E* 1p34, 439; emphasis added)

Earlier, Spinoza identified God's essence and his existence (*E* 1p20, 428). Now, we know that essence, existence, and power of God (the totality of the attributes) are one and the same. God's power *is* his existence and activity (by which he causes himself *in the same sense* in which he causes everything else) (*E* 1p25s, 431), which is "expressed" through the attributes, in the sense that God exists and is active only through the attributes. There is no power prior to the attribute: God's essence or power is always *power-of*. Elsewhere I argue that attributes are not properties, but basic activities: they are expressi*ngs* of God's activity, whose expressi*ons*, or effects, are the

infinite and finite modes.[29] Attributes are "powers of": the power of producing, the power of representing, and so forth. The totality of these expressings of God's power is identical with God: this explains the structure of proposition 30 (*E* 1p30, 434). If it is so, what role is left for the "subject" that "has" these powers? Spinoza identifies the substance with its attributes. If I am right about the interpretation of the attributes, God *is* his activities, and no philosophical role is left for him as the subject of activity.

Attributes are that which "constitute" the essence of a substance, or that which makes it "substantial"; substance is its own activity. In *Short Treatise* III Spinoza draws a distinction between what constitutes the essence (an *attribute*) and what follows from the essence (a *proprium*).[30] Attributes express the ontologically independent, self-sustaining, active nature of God. *Propria* do not express anything "substantial" but refer to what follows from God's essence. Thus, what constitute the essence of God are not properties but an active nature that *causes* (itself and everything else).

To be sure, identifying essence and productive power does not, in and of itself, rule out the view that God is substance-like rather than a process. Yet it persuasively paints a picture in which the activity itself is primary. It could be the case that the term 'substance' is used to express ontological independence rather than the concept of a subject of attributes/activities. I offer a tentative discussion of this solution in section 3.

The identity between essence and power is universal (as we will see): not just God, but *everything* is necessarily productive. As Spinoza writes, nothing exists from which some effect does not follow (*E* 1p36, 439). So everything unfolds into effects, and nothing is static or fails to "produce." Modes are finite and conditioned expressions of God's power, so their essence as well is inherently "activity." Finite modes can effectively be thought of in terms of processes: structured activities that remain stable through change, until they "dissolve" into other processes.

While the contemporary concept of "process" as inherently temporal may seem quite inappropriate for Spinoza's God,[31] God can be interpreted as an unchangeable, structured activity *vis-à-vis* his essence (*Natura naturans*) and as an infinite chain of interacting processes *vis-à-vis* his "creation" (*Natura naturata*). Spinoza states that "*God acts solely by the laws of his own nature*" (*E* 1p17,

[29] Francesca di Poppa, "Spinoza's Concept of Attribute: A Reading of the *Short Treatise*," *British Journal for the History of Philosophy* 17 (2009): 921–38. See also my PhD dissertation "God Acts from the Laws of His Nature Alone."

[30] Spinoza, *Short Treatise*, in *The Collected Works of Spinoza*, ed. and trans. Edwin Curley (Princeton: Princeton University Press, 1985), 80–81.

[31] In fact, some process theists accept a temporal dimension to God's creative activity.

425). The laws of God *are* his nature: God's activity (his power) is his essence, and this essence is structured. *Natura naturans*, the attributes, can be thought of as the immutable, self-sustaining, *structured* power of all change, which itself never changes. Thought and extension (as well as the other infinite, unknowable attributes) are causally isomorphic; that is, they share the structure within which all change happens. Such structured power is metaphysically prior to the infinite manifold of activities that "follow" from it, but it can only exist in these activities.

In *A Study of Spinoza's Ethics*, Jonathan Bennett offers an interesting twist on the traditional substance-attribute interpretation, although he does see attributes and modes as properties (he defines attributes as "basic ways of being").[32] However, the interpretation is problematic, especially in the discussion of extension in terms of field metaphysics, describing individual things as spatiotemporally contiguous "strings" of regions in space in a certain state.[33] First of all, identifying Spinoza's extension with Cartesian extension or geometrical space is inconsistent with Spinoza's criticism of Cartesian extended substance. For Spinoza, extension as an attribute must explain the existence of change, of various patterns of motion and rest, which is exactly what extension as geometrical space cannot do without the intervention of a transcendent God. Extension as geometrical space fails to meet the definition of an attribute: how does it "express eternal and infinite essence" and explain the infinite immediate mode of motion and rest (as required by the definition of an attribute)? As Spinoza wrote in a letter to Ehrenfried Walther von Tschirnhaus, from the notion of extension as inert, rather than as "expressing infinite essence" (i.e., *power*), it is impossible to explain the existence of the variety of bodies in motion (Ep. 81; *The Letters*, 352).[34] Moreover, Bennett fails to offer an account of the attribute of thought that parallels his "field metaphysics."[35]

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[32] Jonathan Bennett, *A Study of Spinoza's Ethics* (Indianapolis, IN: Hackett, 1984).

[33] For a recent, interesting attempt to improve on Bennett's reading, see Valtteri Viljanen, "Field Metaphysic, Power, and Individuation in Spinoza," *Canadian Journal of Philosophy* 37 (2007): 393–418. For criticism of Bennett's interpretation, see, for example, Michael Della Rocca, *Representation and the Mind–Body Problem in Spinoza* (New York: Oxford University Press, 1996), and, more recently, Sherry Deveaux, *The Role of God in Spinoza's Metaphysics* (New York: Continuum, 2007).

[34] See also Ep. 64; *The Letters*, 298. Quotations from Spinoza's correspondence are from *The Letters*, trans. Samuel Shirley, with introduction and notes by Steven Barbone, Lee Rice, and Jacob Adler (Indianapolis, IN: Hackett, 1995). Citations will be given parenthetically as 'Ep.' with the letter number, followed by the page number in *The Letters*.

[35] Bennett suggests that Spinoza "started with a sound doctrine about the modal nature of extended particulars and then stretched it over mental ones . . . and was willing to reapply his result to thought without working out the details" (*A Study of Spinoza's Ethics*, 94). I find this explanation unacceptable, considering that much of Spinoza's work is dedicated to the mind.

I suggest that thinking of both extension and thought in terms of process ontology offers a better understanding of Spinoza's attributes. Attributes express essence (*E* 1D6, 409) and existence (*E* 1p19–20, 428); essence is power (*E* 1p34, 439). Attributes therefore express existence *as* (extension, thought, etc.) and power *of* (producing, representing, etc.). To say that God is extended substance and thinking substance is equivalent to saying that God is the structured, self-determined power of producing infinite patterns of motion and rest, and of representing the modes of all the other attributes. To say that God *is* means to say that God *acts*, as Spinoza writes, for example, in the demonstration for proposition 34 (*E* 1p34d, 439). I hope I have shown that, because of the dynamic understanding of attributes and their identification with substance, it seems that the philosophical role of a subject of activity is quite thin.

From the attributes, or *Natura naturans*, no finite effect can follow. From the power of producing, there follow immediately the forces of motion and rest. From the attribute of thought or the power of representing, there follows "absolutely infinite intellect" (Ep. 64; *The Letters*, 298–99). From these infinite immediate modes follow the infinite *mediate* modes, which include in their totality the infinite causal chain of mental and physical realities as we experience it.[36] The infinite mediate mode of extension—the totality of the physical universe—is described as that "which, although varying in infinite ways, yet remains always the same" (Ep. 64; *The Letters*, 299). The infinite mediate mode of thought is the totality of ideas in God's intellect, representing of all the finite modes in all the various attributes. While we can access only two attributes because of our nature, Spinoza argues that there are infinite others.[37]

The infinite mediate mode is an infinite sequence of finite modes in a structured chain with no beginning and no end. Finite modes do not follow *individually* from the infinite mode. The vertical causal chain begins with God and ends with the infinite mediate mode;[38] the horizontal causal chain never

[36] The best interpretation of the difference between the infinite immediate mode and the infinite mediate mode, in my opinion, is that the former contains the *eternal essences* of all the possible modes (bodies, ideas, etc.), while the latter contains the actually existing, durational modes. Thus, the essence of my body as a certain pattern of motion and rest is contained in the infinite immediate mode, while my actually existing body is a part of the infinite mediate mode. Because there are no unactualized possibles in Spinoza, all the infinite essences will at some point be actualized as parts of the infinite mediate mode (the whole of the universe).

[37] Bennett suggests that, when Spinoza argues for an infinite number of attributes, all he means is that God has all the possible attributes, which are only extension and thought. This conflicts with a series of passages, in both the *Ethics* and letters, in which Spinoza admits the existence of infinite attributes of which humans have no knowledge (e.g., *E* 1p9, 499–500, or Ep. 56; *The Letters*, 276).

[38] Spinoza does not explicitly say so in the *Ethics*; however, a letter to Schuller (Ep. 64; *The*

begins and never ends but exists as a totality, as an unchanging, stable *process* whose parts—also processes or bundles of processes—are always changing, aggregating, dissolving, evolving, devolving, coming into being, or being destroyed.

In summary, God is a self-sustaining, unchanging, structured power that exists and expresses itself in the attributes (which *are* God). The infinite and finite expressions or effects of this power constitute the only possible world because they are determined by God's nature alone or by the very structure or laws of the attributes.[39] All there is to an existing finite mode (*res* or *idea*) is a process that is a temporally limited structured sequence of states and activities interacting with infinite other processes.[40] In distinguishing between attributes (*Natura naturans*) and modes (*Natura naturata*), Spinoza stresses the ontological and conceptual distinction between what is self-causing and self-sustaining, on the one hand, and what is finite and dependent, on the other. Spinoza cannot accept the existing universe as a brute fact: he must offer a *causa sive ratio*. This cause can only be a being whose nature is such that it is self-determined, a self-sustaining activity: that which is in itself and acts through the laws of its nature alone. Hence, we see Spinoza's use of the term 'substance'. The world of experience—this infinite chain of finite processes interacting according to deterministic laws—cannot be its own cause: it would be a violation of the Principle of Sufficient Reason.

2.3 *Physics and Psychology: Finite Modes*

Moving on to finite modes, Spinoza offers a depressingly brief discussion of physics in part 2 of the *Ethics*. He writes:

> A1′: All bodies either move or are at rest.
>
> A2′: Each body moves now more slowly, now more quickly.
>
> L1: Bodies are distinguished from one another by reason of motion and rest, speed, and slowness, not by reason of substance. (*E* 2a1,a2,L1, 458–59)

Letters, 298) lists *facies totius universi* as the only infinite mediate mode. This supports the conclusion that this infinite mode contains the whole actually existing universe in its totality (Spinoza thinks of it as an organism, as more than the sum of its elements).

[39] While some scholars question Spinoza's commitment to necessitarianism, I find Don Garrett's discussion ("Spinoza's Necessitarianism," in *God and Nature in Spinoza's Metaphysics*, ed. Y. Yovel [Leiden: E. J. Brill, 1991]) to be the most consistent with Spinoza's texts. Spinoza argues forcefully that to suppose that anything could be different would entail a change in God's essence. Every single event is necessarily entailed by God's essence and counterfactuals are metaphysically impossible (though they seem possible to us because of our ignorance).

[40] Finite modes are not temporally limited in the sense that, by essence, they come with an "expiration date." They are limited in time because, at some point, they will inevitably be overwhelmed and destroyed by more powerful external processes. For Spinoza, nothing can contain in its essence the "seeds" of its own destruction.

Notice what Spinoza does *not* say: that these bodies are distinguished by shape or size or spatial location.[41] The simplest bodies ('simple' does not mean "indivisible") are those that do not have component parts in different states of motion or rest. Spinoza's understanding of "motion and rest" cannot be the Cartesian, relativistic one; if it were, Spinoza's claim that motion and rest are infinite immediate modes of God would be incoherent. In his *Principles of Cartesian Philosophy*, Spinoza describes a "*force* in moving" and a "*force* of resistance" (*PCP* IIp22, Note; Curley, 282). There are very good reasons to think that motion and rest in part 2 of the *Ethics* are the moving force and the force of resistance described in *Principles of Cartesian Philosophy*.[42] Spinoza's endorsement of a form of the principle of inertia in the *Ethics* makes sense in light of this account (*E* 2L3c, 459–60).

'Essence' is defined as *conatus*—the "striving to persevere in its own being" (*E* 3p6–7, 498–99): the essence of these simplest bodies is nothing but their force of motion or resistance by which they oppose external changes. Because encounters with other bodies easily change their motion or rest, *and therefore their essence*, it follows that these simplest bodies are not very adept at persisting through change. In traditional ontology, we would have to say that "the same particle" has different properties: now the property of "being in motion," now the property of "being at rest." But notice the language of A2′: Spinoza says that "the same body" can have different

[41] For an interesting discussion of how shape loses importance in Spinoza's physics (compared with Descartes's), see Francois Zourabichvili, *Spinoza: une physique de la pensée* (Paris: Presses Universitaires de France, 2002).

[42] There is an important drawback of Bennett's interpretation; he writes, "Spinoza's view is that the movement of things or stuff is, deep down, the passing along of something *qualitative*—a change in which regions are F and which are not, for suitable values of F" (Bennett, *A Study of Spinoza's Ethics*, 89–90; emphasis added). Given the importance that motion and rest and their *quantities* have in Spinoza's metaphysics, this does not seem to be a proper reading. Viljanen offers an interesting attempt to improve on Bennett's interpretation by focusing on Spinoza's emphasis on power. Space is defined as a "unified field of power" and modes are "states" of regions of space that are, "field metaphysically speaking, constituted by differences in the intensity or strength of spatial power" (Viljanen, "Field Metaphysic," 402). Viljanen's interpretation has the merit to stress the importance of the forces of motion and rest, and of the *quantitative* aspect of Spinoza's discussion of extension (overlooked by Bennett). Viljanen even suggests that 'substance' should be considered closer to a *verb* than a *noun* (that which *acts*, *produces*, etc.), thus moving toward an interpretation of Spinoza as a process philosopher. He does not take this step, however: his interpretation is consistent with understanding these differential distributions of power as *properties* of the extended substance. Moreover, Viljanen fails to discuss the attribute of thought. But it is interesting and, to me, encouraging that follow-up writings on Bennett's field metaphysics move toward a "de-reification" of substance.

speeds, not that the same body is now moving, now at rest.[43] This anticipates the claim that an individual body (or mind) can survive only as long as its essence has a certain level of stability through change. Body A, moving at a certain speed, would no longer be the same body after coming to a complete stop against body B: A's essence or power has been dissolved by the superior essence or power of B.[44] But if A has "changed essence," it is no longer A. We cannot say "A, which was in motion, is now at rest." Body A no longer exists (unless we accept that A can change its essence or nature and still be identical to itself—a very counterintuitive proposition, to say the least). From the encounter of A and B, we now have A′ and B. In terms of processes, the interaction of processes A and B brought about the dissolution of A and the generation of A′.

Spinoza defines individual bodies as fixed structures or patterns of motion and rest: "When a number of bodies . . . are so constrained by other bodies that they lie upon one another, or, if they so move, whether with the same degree or different degrees of speed, that they communicate their motion to one another in a certain and fixed manner, we shall say that those bodies . . . compose one body or individual" (*E* 2D, 460). Spinoza moves on to clarify that the individual can remain the same through changes in size, or in the composing particles, as long as the structure of motion and rest is the same. What does Spinoza mean when he talks about a "fixed" ratio or pattern in L5 (*E* 2L5, 461), immediately below the definition above?[45] It seems clear that he makes room for some change, as long as the structure is kept within a certain range. The discussion of *conatus*, the essence of finite things, and the discussion of affects that can increase or decrease it, show that there room for oscillation between extremes, as we will see shortly. While Spinoza's definition of individuals in part 2 of the *Ethics* applies only to bodies, '*conatus*' is a more general term. The '*conatus*' of a body also refers to this stable pattern of motion and rest, explaining the body's striving to persevere *and* to act, which Spinoza considers equivalent. In other words, this structure or pattern

[43] Viljanen ("Field Metaphysic") takes this as an indication that for Spinoza there are no simple bodies at rest. This conflicts with Spinoza's previously cited statement that "*all* bodies are either in motion or at rest." There is no textual evidence for the position that simple bodies are never at rest.

[44] That Spinoza could consider rest simply a case of motion in which speed is down to zero is ruled out by his discussion of a "force of rest" as opposed to a "force of motion."

[45] See Don Garrett, "Spinoza's Theory of Metaphysical Individuation," in *Individuation and Identity in Early Modern Philosophy*, ed. Kenneth F. Barber and Jorge J. E. Gracia (Albany: SUNY Press, 1994). I follow Garrett in translating the Latin '*ratio*' with a term that suggests something different from a quantity expressible through a mathematical formula. Garrett suggests 'pattern'.

explains what the body *does*, both in terms of acting on other bodies and of resisting their actions on it.[46]

The mind is not a substrate to thinking activity: it is the idea of the body. Ideas, for Spinoza, are not "images or pictures." They are activities, as he explains. Like all other ideas, the mind *is* thinking activity, or, in Spinoza's words, "the very [act of] understanding" (*E* 2p43s, 479). There is no thing-like subject of thinking activity, just as there is no thing-like subject of the forces of motion and rest.

In the demonstration of proposition 7 (*E* 3p7d, 499), where 'essence' is explicitly defined as *conatus* or the "striving to persevere in its own being," Spinoza, in a revealing move, equates "striving to *persevere in one's own being*" with "striving to *do anything*" (*E* 3p6–7, 498–99). Necessarily, from something's *being*, something else must follow: so *being* is *doing* or acting ("acting" includes resisting another body's activity). Essence is activity, nothing more basic than that. It is interesting, at this point, to note that, after defining singular things as those that have a finite existence, Spinoza adds: "if a number of individuals so concur in one action that together they are all the cause of one effect, I consider them all, to that extent, an individual" (*E* 2D7, 447).

In one of his letters to Oldenburg, Spinoza insists on his account of individuation based on activity, which he discusses in terms of "laws of nature" (Ep. 32; *The Letters*, 192). Each individual is to be considered as such insofar as its "laws," its activity, are different from, and possibly in opposition to, its neighbors'. Insofar as a number of individuals are "in agreement," or act together, they compose a whole, a larger individual that is identified by its activity. Spinoza offers the example of a "worm" in the blood seeing the other particles in the blood as individuals, not aware that, insofar as they all act together in the circulatory system, *they are all one individual*. The same reasoning applies to ideas: their connection is the same as the connection of their *ideata*—ideas that jointly "produce" the idea of a certain effect are one individual idea. There are no atomic particles; there are no "atomic ideas." There are no absolute individuals in the realm of bodies or minds, which has interesting consequences for Spinoza's psychology and political theory.

In parts 3 and 4 of the *Ethics*, human psychology is explained in terms of this metaphysics of activity. Like everything else, what a person *is* is what a person *does*, and *vice versa*. "Being" in this discussion is dynamic, a process. A person is a bundle of activities, striving to persist while interacting with other

[46] In the *Ethics* (2L4–6, 461), Spinoza considers the "stable pattern" as the body's nature. The definition of '*conatus*' is the definition of the individual mode's essence. Because Spinoza treats "essence" and "nature" as equivalent, it is clear that the stable structure of motion and rest is the essence of a body, that is, its *conatus*.

individuals whose *conatus* hinders or cooperates with his own (Spinoza argues that, insofar as we have something in common with others, we cooperate, and, insofar as our passions make us different, we obstruct each other).

Activity is making things happen; passivity (hence, *passion*) is letting things happen (*E* 3D1,D2, 492–93). Because humans are not independent beings, but constituents of larger systems, they can achieve only a certain level of self-determination and activity. Insofar as my actions (my career or marriage choices) are determined by my nature (my values, my research, my reasoning) rather than by external pressure (familial, social, or financial), I am free. Humans do what they are *determined* to do by the interaction of their own essence or activity with external factors.[47] They affect and are affected in many ways that make them more or less active. External factors that increase or decrease human *conatus* are of many kinds: food (or lack thereof), disease, access to information, social pressure, abundance or scarcity of intellectual freedom, and stimulation. Death occurs when one's essence is overwhelmed by external factors.

3. SOME INTERPRETIVE QUESTIONS

As I suggested in the opening section, process philosophy offers some interpretive insights into otherwise problematic aspects of Spinoza's philosophy. I will give a couple of examples.

In a perplexing passage in part 4 of the *Ethics*, Spinoza suggests that, when psychological continuity is disrupted (as in his example of the amnesiac Spanish poet), personal identity is destroyed (*E* 4p39s, 569).[48] Death is a "solution of continuity," that is, a rupture of that *conatus* or stable pattern of motion and rest (at the bodily level) that maintains identity through time. This rupture does not necessarily involve the termination of all mental and

[47] A human being is a very complex process: the body is a complex organism of smaller, less complex interacting bodies, a mind is a complex system of interacting ideas or acts of representation (on how ideas act by increasing and decreasing *conatus*, see parts 4 and 5 of the *Ethics* on the affective life). For each bodily process there is a mental process representing it. We do not have full awareness of these representations. Steven Nadler suggests that consciousness is a function of a mind's internal complexity, which, in turn, is the body's internal complexity ("Spinoza and Consciousness," *Mind* 117 [2008]: 575–601). Don Garrett suggests that consciousness is rather a function of the mind's (and therefore of the body's) power, or *conatus* ("Representation and Consciousness in Spinoza's Naturalistic Theory of the Imagination," in *Interpreting Spinoza: Critical Essays*, ed. C. Huenemann [Cambridge: Cambridge University Press, 2008]). Both interpretations are intriguing, although I think that Garrett's is better supported by the texts.

[48] With Gebhardt, Curley suggests that the reference is to Luis de Góngora (1561–1627), who lost his memory the year before his death due to illness. Spinoza possessed a copy of his works.

corporeal activities. Mind and body can continue in their physiological and psychological activities; yet the person can die, and the body and mind turn into *another individual*, as happened to the Spanish poet. Spinoza suggests that, in the normal course of human existence, different natures succeed each other at various stages (from infant to child, then to adult, then to elderly, then to corpse). People assume that their identity is retained through all these changes because they *believe* that they observe it in others, such as their friends or family. Spinoza suggests that our belief that over time we and our loved ones are the same individuals does not stand up to philosophical scrutiny: interactions with external factors beyond a certain threshold disrupt physical and psychological continuity, literally turning us into different individuals over and over again. Spinoza does not push the issue because, he writes, he does not want to provoke the "superstitious."

How should we read this claim? If we think of ourselves as "things," the claim is that in life "we" continuously acquire and relinquish different essences. But what, or who, exactly is this substrate—this "we"—that acquires and relinquishes essences? The position that an individual may take different essences and yet remain the same individual is hardly defensible. If, however, we think of ourselves as *processes*, activities without a substrate, Spinoza's suggestion is that life is a continuous coming into being from previous processes (childhood from infancy) and vanishing into other processes (childhood into puberty).

Political entities such as a state, an individual constituted out of many, offer a relevant analogy. We think of the geopolitical entity "Italy" as being the "same country" since 1861, even though it underwent a series of dramatic changes, including territorial and constitutional ones. Considering that the entity known as "Italy" in 1910 did not have the same territory, constitution, or even the same kind of government as its 2010 counterpart, one can legitimately ask in what sense is it the same "entity" that has survived through changes. In my reading, Italy would be a process that did not survive the disruptions of war and "regime changes" and would be turned into different processes over time. While the name and other commonalities may remain,[49] no individual (object, person, community) stays the same while undergoing changes beyond a breaking point.

A government, like a person, a body, or any other individual, is a bundle of processes: its stability is determined by its internal constitution and its interaction with external forces. In part 4 of the *Ethics*, Spinoza suggests that a community of like-minded people constitutes one individual ("one Mind

[49] Actually, in the case of 'Italy', the name changed to 'Repubblica Italiana'.

and one Body") (*E* 4p18s, 555–56).[50] Since Spinoza claims that, insofar as a number of individuals concur in one action, they can be called "one singular thing" (*E* 2D7, 447), this suggests that *any* community constitutes one individual to the extent that its members share common activities (making lunch, playing in a band, building a barn, writing and enacting a new constitution). This "body" and its "mind" will persist for as long as the *ratio* of motion and rest among its parts are able to resist sources of instability and as long as its *conatus* increases or decreases within a certain range. Since a community of men does not make for a unified thing in the traditional sense of "thing,"[51] this lends support to the view that Spinoza conceptualizes individuation in terms of activity rather than "thingness." Process ontology, therefore, seems to clarify Spinoza's discussion of human life and illuminates his puzzling statements undermining traditional notions of personal identity.

There are other interpretive advantages that I will now discuss. First of all, traditional interpretations struggle with clarifying the relationship of modes, conceived as things, and an entity whose essence is power. In short, the idea of a stable "thing," a basic ontological substrate to causal powers, is difficult to conceptualize in terms of Spinoza's claim that a thing's essence is an expression of the power of God. Finite "things" are not *parts* of the one substance. Spinoza argues forcefully against the notion that God or substance has parts. In the course of his argument against a vacuum, Spinoza clarifies that proper parts are "really distinct," that is, each is independent of the others (*E* 1p15s, 421–24). Hence, it is impossible to conceive of a substance that is divisible into parts. Modes are not really distinct from one another, so they are not proper parts of the one substance. What then is their relationship to the power of God, which is his essence and *their* essence, and that in which these "things" exist? Spinoza defines modes as "affections" of God. *Prima facie*, it makes little sense to think that cups, cheesecakes, and puppies are "in God" the way properties are in their subjects.[52] If modes are "things in God," and God is a substance in which all these "things" are, how can Spinoza claim that God has no parts or contradictory properties, such as winning and losing a

[50] An important discussion of the state as individual is given by Alexandre Matheron in *Individu et Communauté chez Spinoza* (Paris: Les Editions de Minuit, 1969). Matheron does not discuss process philosophy.

[51] Such understanding of communities as individuals, while supported by Spinoza's text, is hardly consistent with Bennett's requirement that individual "things" be spatiotemporally contiguous, as Garrett points out in "Spinoza's Theory of Metaphysical Individuation."

[52] For this and other reasons, Curley suggests that Spinoza's notion of the inherence of modes in the substance should be read as the relation of causal dependence of modes, an interpretation that has been criticized on several grounds. See Edwin Curley, *Spinoza's Metaphysics: An Essay in Interpretation* (Cambridge, MA: Harvard University Press, 1969) and *Beyond the Geometrical Method* (Princeton, NJ: Princeton University Press, 1988).

battle at the same time, as Pierre Bayle asked?[53] Several answers have been offered, including Bennett's field metaphysics, and I will not argue that process philosophy is the only coherent reading, or that it is problem-free. I suggest, however, that it is at least as plausible as the alternatives.[54]

As the one infinite, structured, self-sustaining power, God is that in which everything exists. The relationship of inherence is related to the relationship of causal dependence, but it is first and foremost a relationship of ontological *being in* (*in-haereo*).[55] Modes causally depend on the one infinite self-sustaining process. At the same time, they are *in* God because God's power only exists as these structured, determined, finite powers or processes. Thus, individual ideas (in the sense of "individual" as discussed above) are in God because they are *in* the infinite flow of thinking activity that follows from God's power, that is, from God's "having the attribute of thought." Individual bodies, such as my coffee mug, are in God because they are stable structures of motion and rest *in* that infinite individual that Spinoza describes in his letter to Schuller as *facies totius universi* and that "although varying in infinite ways, yet remains always the same" (Ep. 64; *The Letters*, 299). This infinite individual, in turn, is *in* God because God's power of production is expressed necessarily as this infinite individual. This is to be read, I have suggested, as a process whose component activities or forces (in two letters to John Hudde, Spinoza uses 'power' and 'force' as synonyms) dynamically balance each other out (Ep. 35, 36; *The Letters*, 204, 208). Spinoza expresses this view of nature, so appreciated

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[53] Pierre Bayle, "Spinoza," in *Historical and Critical Dictionary*, trans. Richard H. Popkin (Indianapolis, IN: Bobbs Merrill, 1965). Bayle's powerful criticism is based on reading modes as "accidents" or "properties." Spinoza makes God the subject of change, that is, "passage from one state to another, the subject of the accidents that it ceases to have and those that it commences to acquire staying the same" (Bayle, "Spinoza," 326).

[54] I cannot, for lack of space, discuss all the existing readings of the relationship between modes and substance, none of which is problem-free. I have already discussed Bennett's. Curley's has been criticized by, among others, Bennett (*A Study of Spinoza's Ethics*), Steven Nadler ("Substance and Things in Spinoza's Metaphysics," in *Interpreting Spinoza: Critical Essays*, ed. C. Huenemann [Cambridge: Cambridge University Press, 2008]), Michael Della Rocca (*Spinoza* [New York: Routledge, 2008]), and John Carriero ("On the Relationship between Modes and Substances in Spinoza's Metaphysics," *Journal of the History of Philosophy* 33 [1995]: 245–73). Carriero suggests that Spinoza's notion of the mode–substance relationship of inherence must be understood in terms of the Aristotelian notion of being *per se* in a substance. Carriero claims that the main objection to the idea that finite modes are in fact accidents, or affections, of God is based on two misunderstandings. One is the confusion between inherence and predication, on the one hand, and the rejection of particular accidents, on the other. Carriero's intention is to make a plausible historical case for accepting that finite "things" are in fact particular accidents that inhere in (but are *not* predicated on) God. I find Carriero's discussion less than satisfactory, due mostly to the fact that his examples of particular accidents are examples of properties, such as "the snub," rather than chairs, humans, or bags of chips. After reading his article, it is still not clear to me *how* exactly a thing such as a bag of chips is an accident of God.

[55] For a defense of the notion that inherence is nothing but causal/conceptual dependence, see Della Rocca, *Spinoza*.

by Whitehead, as an infinite organism composed of an infinite number of modes interacting with each other in several texts, including his letter to Oldenburg, where Spinoza insists that the "stable ratio of motion and rest" that constitutes individuation for finite things is also preserved in the whole of the universe (Ep. 32; *The Letters*, 192).[56] So, reading God and modes as processes can shed light on what Spinoza had in mind in his discussion of the relationship between God, *Natura naturans*, and his effects, the modes (*Natura naturata*).

Another vexing question finds an answer if we interpret Spinoza in terms of process ontology: the question of how finite modes are individuated. In terms of things-property ontology, the individuation of particular modes gives rise to a problem. There are good reasons to think that, for Spinoza, modes are individuated by their locus in the causal chain.[57] The problem is that, if a mode is conceptualized as the subject of activity (rather than the activity itself), the argument becomes viciously circular.

Consider two modes, A and B, where A is the cause of B. These modes are identified by their locus in the infinite causal chain, that is, by their causal interactions with other modes.[58] If modes are thing-like, they are the *subjects* of their causal interactions. Because a subject is prior to its activities, there should be a way to identify A and B *prior to*, and independently of, their causal role. In other words, it should be possible to distinguish A from B *before* ascribing the correct causal role to the correct subject. But it is not possible to identify A and B *prior to* causal interactions because modes are *identified by* their causal interactions.

If modes are the activities themselves, or *processes*, rather than subjects, the circularity vanishes. Modes are activities or processes individuated only by their causal relationships to other processes, and that is all that there is to it. Activities, in turn, do not have modes as their subjects *because modes are nothing*

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[56] In his response to Bayle's second objection (that Spinoza's philosophy makes God changeable), Carriero fails to appreciate this aspect. In "On the Relationship Between Modes and Substances in Spinoza's Metaphysics," Carriero argues that Spinoza saves the immutability of God only as *Natura naturans*, not as *Natura naturata*, and this may (or may not) be considered a sufficient response to Bayle. But it seems clear from the text above that Spinoza intended immutability as a form of dynamic equilibrium, which applies to the attributes (which, being God's "ways of causing," never change their operations) as well as to the infinite modes, that is, the totality of all existence.

[57] For a detailed discussion, see Della Rocca's interpretation in *Representation and the Mind–Body Problem in Spinoza*, ch. 7.

[58] One of the reasons to support this interpretation is that the position in the causal chain is the only thing that a mode of extension and a mode of thought have in common: "the order and connection of ideas is the same as the order and connection of things." So we can say that mode of extension P_e and mode of thought P_t are one and the same mode because they occupy the same locus on the causal chain.

above and beyond activities. It turns out, of course, that there is no absolute individuation for Spinoza: a mode cannot be individuated *independently* of the causal interactions in which it takes place. It is in the nature of modes *not* to be independent individuals, ontologically or conceptually. Each mode is dependent not only on God but also on infinite other modes.

Thus, ascribing Spinoza a form of process ontology has its advantages. It illuminates Spinoza's understanding of God's modes, or effects, as expressions of his nature, which is pure activity—expressions that are never separated from God. It is quite consistent with Spinoza's discussion of the essences of bodies as having a "stable ratio of motion and rest." It is also consistent with his definition of the essence of individual modes as *conatus*, or active striving, as well as with his psychological and political thought.

A most serious objection to my reading, however, is found in Spinoza's own language. Reading Spinoza's ontology in terms of processes rather than things seems incongruous *vis-à-vis* the language of things and properties in the *Ethics* (individual modes of extension are called '*res*': God is the one *substance* with his *attributes*). It is interesting to note, however, that there is a linguistic shift between Spinoza's early *Short Treatise* (composed and abandoned in the early 1660s) and the *Ethics*. In *Short Treatise* Spinoza writes that all of reality is "predicated of" God (Curley, 68–69). This language, however, disappears from the *Ethics*. Moreover, as discussed above, even as early as *Short Treatise*, Spinoza distinguishes between 'attributes' and the adjectival '*propria*'. As they express an infinite essence, attributes express activity. Spinoza also distinguishes between 'attributes' and 'properties' in a 1666 letters to John Hudde.

We should keep two factors in mind. One is the struggle of a very radical thinker in amending the existing philosophical lexicon. Spinoza's discussion of substance focuses more on the notion of dynamic, self-sustaining, ontological independence than on what kind of entity (a *thing* rather than a *process*) is independent. The fact that he defines the essence of this substance as *power* (rather than writing that the substance *has* power in its essence)[59] suggests that he did not necessarily have the traditional concept of substance in mind, even though he was using the traditional term.

The other factor that we should consider in this conflict between a radical idea and a traditional terminology is the struggle with intuitions that may not have been consistently elaborated, Spinoza's aspiration to *ordo geometricus* notwithstanding. While Spinoza's discussion suggests that modes are not individual things, he still uses a language that reifies them. While he asserts that substance has no parts, Spinoza uses the term 'parts'. This lexicon gets in

[59] Compare, for example, with the language used by Descartes in discussing *causa sui* in the First and Fifth Replies to Caterus and Arnaud, respectively.

the way of understanding substance and modes as activities, even though the philosophical role that they perform can be understood as that of processes rather than things, as I have tried to show.

4. CONCLUSION

This paper suggests some advantages of reading Spinoza's metaphysics in terms of process ontology. For the purpose of this paper, I use a minimalistic notion of process ontology: the notion that processes or activities, rather than substances, are the basic entities. Spinoza's identification of essence and power invites to question the notion that a "thing" is something more basic than its activity, making it at least compatible with process philosophy. Spinoza's discussion of personhood, death, and identity, moreover, gains clarity from this reading.

Offering a detailed textual analysis of Spinoza's *Ethics* in terms of process philosophy would require much more space than what is here allowed, so I offered only a few suggestions. My hope is that this paper furthers the discussion.[60]

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