

Free Will in a Network of Interacting Causes

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W. Simpson, R. Koons & J. Orr, eds., *Neo-Aristotelian Metaphysics and the Theology of Nature*,
Routledge, 2021, forthcoming

Abstract:

Broadly neo-Aristotelian theories of the general ontology of objects and of causal powers and causation have proliferated in the past quarter-century. This chapter begins by canvassing such theories and defending a particular position on each of these disputed topics. It then proposes a way to think about the exercise of (indeterministic) free will within the preferred framework.

A number of contemporary metaphysicians are engaged in the project of working out a pared-down, broadly neo-Aristotelian account of the natural world that provides a plausible framework for modern science.¹ Much as one seems to find differences in detail within a consistent broad vision at different locations in Aristotle's corpus, so contemporary theorists have forged different footpaths through the neo-Aristotelian grove. Two important, contested categories in the recent discussion are *substance/object* and *efficient causation*. In what follows, I have two aims. The first aim is to indicate very general analyses of these categories that I favor and to situate and motivate them within this recent discussion. These partial analyses leave open many difficult

¹ 'Pared-down' because they do not deploy Aristotle's central doctrine ofhylomorphism. There is a smaller but growing number of contemporary theorists who argue that jettisoning hylomorphism was a mistake, including thee contributors (Hauser, Koons, and Simpson) to this volume. See note 4 for brief discussion of hylomorphism's relation to the alternative analysis of objects proposed here.

questions of detail. My intention here is to say just enough to enable me to fulfill my second aim, which is to propose and defend a way of extending such an attractive, broad analysis to human persons and the power of deliberate choice, in a manner that undergirds an indeterministic account of free will.

I. Property and Object

In thinking about the metaphysical category of substance (or, as I shall often say, *object*), it is helpful to start by thinking about simple (noncomposite) entities. We don't know at present what are the simple entities that constitute the building blocks of our universe, or even whether they have the character of particles or fields (or both). For concreteness in what follows, let's suppose they include the known specific varieties of quark, lepton, and boson particles. On physical theory, each such particle type is defined by a privileged few invariant properties, which are characterized in turn in terms of the way the particles interact. The neo-Aristotelian takes the success of such theorizing as indication that the core defining features of each particle type constitute a real essence, and the functional/interactional means of identifying the sparse 'natural' properties should be taken as essential characterizations: they *are* 'causal powers'. To identify such properties as powers (better: as powerful qualities)² is to assert at a first pass that their

² There has been significant debate concerning the adequacy and/or intelligibility of a view on which natural intrinsic properties are 'pure powers', such that their dispositional tendencies exhaust their 'natures'. I follow those who maintain that such properties are at once qualities – characters that makes for objective, intrinsic similarity of objects – and dispositions towards effects. (See, e.g., Martin 2008, Jacobs 2011, Heil 2012, and Williams 2019, §5.3.)

essence in some manner involves potentiality. Objects that have them are necessarily disposed to interact with other objects in certain ways. Sometimes such interactions appear to be structured, such that one object or set of objects causes (or contributes to causing) certain effects in another, without reciprocation. But, as C.B. Martin (1993, 2008) and John Heil (2012) emphasize, at least often it will instead be a matter of mutual manifestation, with the interacting partners co-producing a shared state or process, as with the mutual repulsion of adjacent electrons in the absence of countervailing forces.

I will say more below concerning the metaphysics of (efficient) causation that grounds the varieties of true causal explanations. First, let us observe that for properties to play a fundamental role in our understanding of how the world unfolds – for properties to be causal powers – they need to be fundamental realities (contra nominalism) and immanent to things (contra Platonism). Whatever other uses they may serve, spatiotemporally transcendent Platonic universals are not suited to the needs of sober empirical theorizing (as Armstrong 1978 convincingly argued). How then should we understand the immanence of natural properties? Not as *separable* parts, surely! The very idea of an isolated quantity of mass that isn't the mass of anything is absurd – a seeming impossibility. E.J. Lowe (2012) and John Heil (2012) argue that from the premise that immanent properties (which they dub 'modes') are *inherently dependent* entities, not capable of independent existence, we should conclude that they cannot be constituents: entities that enter into the makeup of a thing, conferring a distinctive kind of structure to it, prompting the question whether a thing's modes collectively exhaust its being or instead conjoin with some further, non-qualitative ingredient. However, the inference from inherent dependence to non-constituency is unconvincing. The notion of constituency is not

analytically connected to that of real separability. Further, Lowe and Heil allow that modes are 'aspects' of objects, particular (while being such that distinct individuals can have exactly resembling modes), located where the objects are, perceivable in some cases, and partly responsible for objects having causal powers of various kinds. How can they fill all these roles without being (proper) constituents of the objects?

The case for constituency (in Scotistic terms, a real and not merely formal distinction between property and the object it characterizes) is bolstered by the fact that there is some overlap of properties among distinct basic kinds. For example, mass is a defining characteristic of many particle types. This is a case of a shared determinable where the types may vary in their specific magnitude of it. But there are also cases of shared determinates, as in the case of electrons and positrons, which possess identical values of mass, spin, and magnetic moment, differing only in the direction of their charge. That fundamental qualities of the same precise kind can enter into qualitatively non-identical individuals forces us to acknowledge that they are ingredients contributing to distinct kinds of structure.

That said, Lowe and Heil are right to underscore that these features of things are inherently *dependent* entities, not capable of existence apart from the objects they characterize. That dependency seems, firstly, more congruent with their being particular, rather than universals: 'tropes' that depend on the particular objects they help to constitute rather than Armstrongian immanent universals that exist in a plurality of scattered objects, more loosely dependent for

their existence only on there being some or other 'host' objects, and not on any particular object.³ Secondly, the ontological dependence of properties implies that the way they enter into the makeup of an object importantly differs from the way basic *objects* enter into the makeup of a composite object, enough so that we should understand property constituency to be a fundamentally distinct relation from the part-whole relation between objects.

We have two broad options for a theory of property constituency. The first option is to say that objects are (mere) *bundles of tropes*, unified by a primitive relation. Concerning this proposal I will merely echo the complaint of others that it implausibly suggests that tropes are, in the words of A.J. Ayer, 'junior substances.' I prefer an alternative, *stratum-attribute* account, on which individual basic objects consist in a substratum (a.k.a. bare particular or thin particular) being

³ I don't want to be diverted into a full-scale defense of the preferability of tropes, of which I have become convinced only recently. Armstrong is motivated not only by theoretical economy (he suggests that embracing universals allows us to analyze both exact and partial qualitative resemblance) but also by the needs of an austere reductive naturalism that eschews abstracta altogether. I take the latter project to be hopeless. If one accepts the need for abstract universal concepts (or an equally non-immanent surrogate), the small theoretical economy of immanent universals as against tropes appears to me to be outweighed by its internal challenges that Armstrong admirably acknowledges but fails to overcome. That said, if one brackets such challenges, much of what I will go on to propose could be paralleled within an immanent universals theory.

joined in a theoretically primitive way to a cluster of natural properties, the object's powerful qualities.⁴

Some critics have charged that the substratum-attribute theory of objects is incoherent. The theory requires that substrata 'in themselves' have no properties, and, say the critics, nothing can be like *that*. (And isn't the very assertion that a substratum lacks properties self-refuting?) This objection fails to recognize the complementary roles that ontology and ideology play in any theory. We of course can truly *say* some things about substrata. (If we couldn't, we wouldn't have a theory!) We can say, e.g., that substrata are inherently incomplete, particular entities; that they are necessarily joined in a primitive way with particular natural properties/powers, resulting

⁴ This view bears a family resemblance to Aristotle's hylomorphism, a structured view in which objects are said to be matter-form compounds, and Aristotle's distinctive theoretical concept of matter plays a somewhat similar role to individual substrata. Aristotle's view is complex and notoriously difficult to interpret fully, and I shall not attempt to make a detailed comparison here. For a helpful recent analysis, see Koons (unpublished ms). For recent arguments that hylomorphism is made plausible (somewhat ironically) by the advent of quantum theory in physics, see Koons (2014) and both Koons and Simpson in this volume. Finally, for trenchant discussion of the differences between a hylomorphic view and the sort advanced below on the nature of human beings, see Koons (2018). I recognize that hylomorphism has certain theoretical advantages, particularly in handling the crucial concept of essence, which issue I gesture at in the final paragraph of this section in the text. I hope to systematically compare substratum-object and hylomorphic theory in future work.

in individuals that interact with one another over time; and that the two categories of *substratum* and *attribute* play different roles in our thinking about objects (as reflected in the fact that powers, and not substrata, ground objective similarity and causal influence).⁵ We don't say that these statements are true in virtue of substrata' being joined 'in themselves' to a further, special class of tropes, or in virtue of a fundamental *join* relation – moves destined to be futile, as one cannot 'ontologize' all true predication.⁶ Instead, they constitute the theory's ideological machinery, a set of primitive truths that identify the theoretical roles of the theory's most basic categories.⁷

So, a basic object (one not composed of object-parts) is a structured unity featuring a substratum and a small number of particular powerful qualities (as the case may be, certain values of mass, charge, spin, and magnetic moment). A fully worked-out theory would provide some basis for saying that the substratum and each of the qualities of a given object *essentially* reside within it and for distinguishing the way essential and accidental properties enter into the makeup of an object. Doing so seems to require an account on which structured individuals are no less

⁵ Granted, the sortal concepts our theory permits us to apply to its posited substrata are few and informationally 'thin.' But the natural reply is that the simplicity/thinness of the concept appropriately matches its job description of mere individuation.

⁶ As Lewis (1983) observed, in criticizing the overweening ambition of Armstrong's own substratum-attribute theory, which has perpetuated some of the confusion. For just this reason, I reject David Armstrong's (1997, 2004) truthmaker-maximalist argument for states of affairs.

⁷ Cf. Sider (2006).

ontologically fundamental than their constituents. Although it is embedded in a different framework, Peter Simons' (1994) 'nuclear' bundle theory is suggestive of a direction this might go.

II. Time

One other issue that needs to be addressed before turning to neo-Aristotelian options for a metaphysical theory of causation is the nature of time. Of course, this is itself a large and vexed matter, with four broad views commanding some allegiance, each of which faces significant challenges. Here I will only gesture at reasons for neo-Aristotelians embracing the perspective on free will that I seek to elaborate below to limit their consideration to variants on two of these views, the choice between which I leave open for present purposes.

Four-dimensionalism maintains that natural reality encompasses the objects and events at all past, present, and future times; that time does not 'pass'; and that there is no ontological priority relation among objects and events based on their temporal ordering, any more than there is such a relation based on ordering along a spatial axis. This last thesis conflicts with the neo-Aristotelian's understanding of efficient causation as a fundamental generative relation.⁸

⁸ If one embraces a neo-Humean reduction of causation to facts concerning recurring deep patterns of some kind in the spatiotemporal distribution of qualities, then four-dimensionalism can allow for causal dependence of some events on others. But since causation reduces to non-causal facts on this view, it is not a fundamental feature of reality.

Three-dimensional eternalism accepts the first of the four-dimensionalist theses while affirming passage as a fundamental aspect of time. While objects and events at all times exist, there is a further fundamental and ever-changing fact about which such entities exist or occur *now*. This postulate at least opens up the possibility of robustly ontological past-future causal dependence. As critics have observed, *simply* adding the passage of time (a moving 'now', or present moment) to an ontology of objects and events over all times renders it a ghostly phenomenon; the ever-changing facts concerning what is happening in the metaphysical now have no discernible impact on events.⁹ Time may pass, but past entities remain as they were, such as Aristotle in all of his varying states of flowering youth and aging decrepitude, and likewise for entities in the far-off future. Such a view seems no more compatible with Aristotelian productive causation than is four-dimensionalism. But the strangeness of this picture and puzzles to which it gives rise have led recent proponents to add more fundamental change to objects themselves: only present entities are, we might say, fully *concretely* real, so the passage of time marks real and continuous change.¹⁰ Arthur Prior (who died in 1969) may exist, as does his storied painful experience at the dentist in 1954, but not as he and it did when they were present. Prior changed from being alive, talking, ambulatory, etc., to being none of these things; his toothache exists, but it is not the experience of pain within a flesh-and-blood human being. In general, such now-past entities exist only 'abstractly', as stripped-down loci that serve as referents of our true statements concerning the past. Puzzled questions concerning details needed to work out views of this sort will naturally occur to the reader. I here set these aside. I note that the broad approach does give footing for a

⁹ Sider (2011), 259ff.

¹⁰ See Sullivan (2012) and Cameron (2015) for different ways of working out such an account.

kind of irreducible productive causation. We may say that such causes, when present, make concretely real what had previously been merely abstract. (No sooner do events become real than they retreat to abstraction once again. 'From abstraction you came, and to abstraction you shall return.')

We might well question whether this provides the basis for a *satisfactory* account of productive causation. But I want to highlight a different reason for deeming it inadequate for the purpose I have set for myself in this chapter. The conception of free will that I aim to elucidate is one on which our free choices help to *settle* what the future will be (in the tiny corner of it that concerns ourselves and that is in the sphere of our direct and indirect influence). But this cannot be so if all future events exist and are fully determinate. On this conception of temporal reality, my choices may give (or contributing to giving) future events a concrete embodiment. It may also be that, were I not to have so chosen, different events would have occurred instead (contrary to one variety of fatalism). It may even be that some of my choices do not have sufficient antecedent causes (contrary to causal determinism). Even so, it remains that my choices do not settle what any subsequent aspect of an eternally determinate reality shall be, as there is no time at which the character of reality at subsequent times is not fully settled. (Even on eternalism, every proposition concerning a specific event is of course *made true* at a particular time or temporal interval, not by a prior choice or anything antecedent, but by the event itself. But whether there will be such an event is not metaphysically unsettled or 'open', as reality on eternalism is neither added to nor subtracted from.)

It seems to me in any case that modified three-dimensional eternalism is an unnatural stopping point on the road to a third theory of time. Given that past and future events are conceived as not having the fully concrete reality that they had or will have when they are present, the natural next

step is to embrace the more straightforwardly intelligible claim that causes bring their effects into being *tout court*, rather than merely 'making them to be concrete.' It is through the passage of time that concrete realities recede into a permanent, ghostly status. If the world is fully deterministic, then sufficient grounds for future truth reside in the dispositional structure of the present. If the world is *not* deterministic, then the claim that there is nonetheless fully determinate future *truth* is unmotivated. The neo-Aristotelian gives a non-deflationary understanding to the truism that the future will be what it will be because of the sum total of its antecedent causes. From this she should naturally conclude that, if the world's causes are not fully determining, what the future will be is not fully settled. With this last, we have arrived at a third theory of time, *Growing Block*. More exactly, we have arrived at a modified version of Growing Block theory, on which the reality of the past is downgraded to a skeletal structure providing minimal truthmakers.

A fourth theory, *Presentism*, ostensibly eschews altogether the reality of the past (and the future). However, under pressure to account for the grounds of truths concerning the past, recent theorists tend to postulate presently-existing surrogates, in the form, e.g., of primitive, past-referring properties such as *its having been the case that the dinosaurs once roamed*, and also including haecceities of individuals who have ceased to be. It is in virtue of such properties that our world is distinguished from a world whose *first* moment is a state identical to the present state of our world in all its non-tensed intrinsic properties. If the presentist also accepts the existence of a geometrically-defined manifold of spatiotemporal points (an essential part of the theory of

general relativity),¹¹ then the gap between modified growing block and modified presentism is quite narrow, with a similar stock of basic entities, differently arranged. I take both theories to be in need of further development that cannot be pursued here. The accounts below of the metaphysics of causation and then of free will are consistent with either of these two theories of time.

II. Causation

Contemporary neo-Aristotelians are united in thinking that efficient causation is a real and irreducible feature of the world. But they differ in their theoretical characterization of it. One dispute concerns whether there is a fundamental *relation* of causation. They also disagree concerning whether causes are substances/objects, properties, events, or facts. In addressing these questions, let us again focus for now on causal processes featuring (presumed) *basic* objects/substances. We will take up the question of composite powers when we consider our ultimate target of the powers of human beings (and in particular, the power of choice).

the relation of causation

John Heil (2016, 132ff; 2017, §5; and following Martin 1993, 2008) contends that causation never has the asymmetrical character of cause and effect but instead consists in the mutual manifestation of certain dispositional properties (causal powers) of substances. As an example of

¹¹ Dean Zimmerman (2011) proposes this as one of two options available to the presentist for developing an account that is adequate to the empirical basis of the theory as standardly interpreted.

what he takes to be a completely general point, it is at best misleading to say that a quantity of water exercised its power to dissolve some salt in a given situation; a more metaphysically perspicuous description will say instead that when the two are brought into contact, the distinctive powers in each substance jointly manifest themselves in the form of the solute. Heil further contends that since properties are inherently dispositional, or tendencies towards such manifestations, manifestations are always necessary in the appropriate context. In consequence, causation qualifies as an *internal* relation, grounded in its relata, rather than being a further, fundamental tie between them.

Heil notes that many will argue that this picture of the causal nexus is threatened by the success of physical theories on which certain fundamental processes are taken to unfold nondeterministically, as with the decay of radioactive particles. Some neo-Aristotelians see this as indicating irreducibly probabilistic causal tendencies. If there are such 'chancy' tendencies, their manifestation, when they occur, are not grounded solely in facts about the arrangement of powers. However, Heil argues that a more plausible (neo-Aristotelian) metaphysical interpretation of these stochastic phenomena is instead that they are uncaused – spontaneous occurrences that are 'sprinkled in' to an otherwise fully necessary, unfolding dispositional matrix. Each spontaneous occurrence then reverberates throughout the nexus in the fully necessitating fashion of mutual manifestations (2016, 134).

This is unconvincing. At the most general level, the neo-Aristotelian's rejection of the alternate neo-Humean vision of metaphysically independent ('loose and separate') events stems from the latter's countenancing of entirely groundless contingency, made worse by the 'cosmic

coincidence' of metaphysically independent events falling into deep regular patterns. Heil's proposal cedes ground to the neo-Humean: a steady stream of brute fundamental occurrences that nonetheless conform to statistical patterns (enshrined , e.g., in the half-life of radioactive substances). This concession is surely unwarranted, given the ready availability of an alternative account, according to which such substances are manifesting a non-deterministic, self-directed propensity, the character of which is well-defined (the emission of a nuclear particle), but whose timing is undetermined on each occasion and is (largely) impervious to external stimulus.

Heil proposed to reduce the ostensible relation of causation to the 'joining' of the relata in a spatiotemporal relation that simply *is* their mutual manifestation. Anna Marmodoro proposes to do so through an enriched ontology on which causal powers undergo *internal* transitions of state (from 'potential' to 'activated') in the presence of suitable partner-powers (2017, 59). If this is accepted, we are naturally led to ask what is responsible for such state transitions. Here the specification is vague: 'It is the "coming together" in appropriate conditions of the partner-powers that accounts for their mutual activation.' (65) *Accounts for* in what sense, and in what manner? As with Heil and Martin, so here language is used in places that suggests more than is offered, e.g.: 'Because of this mutual dependence, partner-powers manifest themselves in activities that are *co-determined, co-varying, and co-extensive in time*...It follows that if causation is explained in terms of causal powers, there is reciprocity in it in the sense that both causal partner-powers get activated, each "facilitating" the activation and the activity of the other.' (66, n21) 'Co-determining' and 'facilitating' the activity of the power-partner sounds relational, but the reality of a relation is disavowed: 'All there is to their causal "interaction" is their *mutual and simultaneous manifestation*...There is ...no relation bridging the two.' (70) It

seems that what we are left with, in this final analysis, is an account on which powers necessarily activate in diverse particular ways in the presence of structures of other powers of diverse kinds. This is a real internal change that happens of necessity in the right circumstance, but without there being a real relation between any aspect of the circumstance and it. What a power does is manifest *itself* in one of the ways of which it is capable; towards others, its presence is merely the occasion on which the other power manifests *itself* in a certain characteristic way. When the gloss of other-directed causal language is stripped away in favor of an austere metaphysical description capturing how the account sees things, all activity seems weirdly internal. It's a coherent description, as best I can judge, but one that is not highly motivated apart from a compelling theoretical reason for eschewing real relations altogether.

Lowe (2016) offers such a reason in the context of proposing yet another non-relational account.¹² He complains that real relations in general are 'ontologically weird,' since '[a] relational trope or mode would be an "abstract" particular that was dependent for its existence and identity on two distinct and quite possibly ontologically *independent* objects.' (111)

Applying it to the case of a causal relation between a power (or its bearer) and its manifestation in some distinct object, the complaint is that there would be a particular instance of *causing* that

¹² 'A manifestation [the effect] of *this* particular power could not exist in the absence of this power, even though this particular power could exist in the absence of this or any other manifestation of it.... We may say if we please that the power and its manifestation stand in a 'relation' of *asymmetrical existential dependency*, but such ontological dependency facts do not involve real relations, that is special relational universals or tropes.' (2016, 108)

could not exist absent the entities it relates, and yet without its existing 'in' either of them, in the way that a monadic power dependently exists in its bearer. Monadic tropes by their nature are 'adjectival' aspects of things that are grasped in thought by abstracting away from the thing's other aspects. That we cannot say something analogous for a relational trope vis-a-vis its two or more supporting substances brings out the weirdness of the very notion. (112)

Here we see a further consequence of our earlier rejection of Lowe's non-constituent understanding of tropes/powers. If, contra Lowe, these are not merely formal realities contemplatable through abstraction, but real entities in their own right, giving a distinctive kind of ontological structure to objects, then there is no mystery to overcome in there being real causal relations *between* objects as well, ontologically dependent on each of them. They are not entities affixed between the objects from outside, as it were; they are the *activity* of the one towards the other (perhaps matched by a corresponding relation flowing in the other direction, sometimes or always).¹³

the kind of entity causes are

¹³ Some philosophers seem to find implausible a productive, real-relation understanding of causation because they think it is wedded to a *punctiliar* picture of causal interactions, whereas much of modern science describes continuous processes. But (as many contemporary neo-Aristotelians emphasize) the basic picture can easily be generalized, allowing for both episodic and continuous manifestations of causal power.

According to some recent neo-Aristotelians, strictly speaking, neither substances nor the events they undergo are the causes of manifestations (effects), the constituent causal powers themselves are. For Marmodoro (2017), this thesis is a natural consequence of her having adopted a bundle theory on which objects are constituted by powers, a theory I rejected above. But Stephen Mumford and Rani Anjum (2011) also accept the thesis while embracing an ontology of enduring substances. They say that an account on which the substance that has the power is the cause of its manifestations does not tell 'a precise enough story. It is a *something about* the substance that does its causal work.' (2) Their point here is obscure. No one who embraces any form of neo-Aristotelian ontology featuring causal powers will deny that something about substances (i.e., their specific causal powers) is central to accounting for what they do: it is built into the very idea of substances as possessing distinctive powers to act in some ways and not in others. But in the particular framework of enduring objects/substances whose properties/powers are ontologically dependent on their bearers (in contrast to both bundle-theoretic and four-dimensionalist frameworks), enduring *objects* are the fundamental agents. In virtue of having the powers they do, they are powerful in particular ways. And they exercise those powers when in circumstances that stimulate, or remove obstacles, or enable, their acting, or interacting. To suppose otherwise is to conceive objects as mere skeletal arenas in and through which powers do their thing. We are back to the 'junior substance' picture that A.J. Ayer rightly derided.

Summing the above, I am led to the following understanding:

- objects (individually or collectively) cause the changing events that unfold over time, manifesting their powerful qualities;

- the exercise of power is a real/ontologically fundamental, external, and productive relation between an object(s) and an event(s); and
- there are, at least typically, necessary external and/or internal conditions (events) for every manifestation.

These elements are, in abstract terms, the fundamental ontological reality undergirding all true causal discourse.

the ordinary language of causation

How one identifies *what 'causes' what* in everyday conversational contexts is actually another question, or set of questions, because ordinary causal discourse – discourse that is not partly stipulative for specialized theoretical purposes, as with fundamental metaphysics – is partly answerable to the purposes behind ordinary language usage. When philosophers give metaphysical theories of 'causation,' they are *not* theorizing about an entity that is squarely in view in everyday discourse involving that term (although it is taken to figure centrally in the grounding of such discourse where true). There is often confusion on this point in much discussion. We need consider only the fact that it is perfectly unproblematic to say that my failing to water my neighbor's plant caused it to die, but no powers theorists will allow that *absences* exercise causal power, and such everyday statements are surely not evidence that most people are implicitly committed to the denial of any metaphysics that embraces causal powers. As with other matters, so here we may plausibly suppose that untutored thinkers' usage only

imperfectly tracks the features of fundamental reality that ground the truths of causal dependency that they express.¹⁴

Something similar applies even to the more rigorous usage of scientific discourse. Powers theorist Helen Steward (2012) helpfully suggests that, insofar as we are trying to be faithful to the full range of theoretical concerns driving scientific investigation, we should recognize that there is no *single* type of relation that is *the* causal relation (210) for such purposes. She proposes a three-fold division of the kinds of causes of interest, as follows:

movers: substances, collections of substances, or other *things* that act (e.g., fields)

makers-happen: events that trigger substances into action

(I take it that these are typically events of substances being 'joined' into configurations, or coming to acquire new powers.)

matterers: facts that that are causally relevant to other facts

(These capture general features that are invariant when certain types of effects are produced, mapping type-level property co-variations.)

All of these foci are of practical and scientific importance, answering to distinct concerns. And once one appreciates the ways that everyday causal assertions, scientific analysis, and

¹⁴ Cf. Ted Sider (2011), 15-16 and 75-76. E.J. Lowe (2008, 142, 144) is getting at a similar point, I think, when he suggests that event and substance causal descriptions are both unproblematic, and we can even see how to translate one way of speaking into another, while going on to contend that the most perspicuous ontological analysis will identify substances as causes.

metaphysical analysis both overlap and diverge, the path is clear to embrace the propriety of event-, fact-, *and* substance-causal statements, regardless one's metaphysical views concerning the fundamental dynamical structure of reality. All such discourse can be grounded in a causal powers ontology such as I have proposed.

III. Free Will

'Free will' refers to an apparent power of human beings to control our own intentional actions through deliberate choice, in such a way that we may properly be held morally responsible for those actions and their foreseeable consequences. Human beings are composed of several levels of nested parts that are integrated in a structured hierarchy, an organic (and thus necessarily dynamic) unity. So in asking how this power is best characterized, we need to consider in general terms the nature of macroscopic powers – the powers of composed objects.

Many composite powers are mere 'resultants' of the powers of an object's parts, with *mass* being perhaps the most straightforward example. The mass of a composite is the sum of the masses of each of its parts at any level of decomposition. A composite's exercising this power in a particular way in a particular context and on a particular occasion 'consists in' the individual exercises of power of each of its mass-bearing parts. There is a subtle and vexed issue lurking in the phrase that I've put in quotes: is this a plural identity, or an intimate-but-not-quite-identity relation of 'constitution', or some third such? Fortunately, we need not consider that issue here. It's plainly the case that, if human choice stands to the activity of neurons in executive control regions of the brain in the way that the exercise of the macroscopic power of mass stands to the masses of the composite's parts, then human beings lack free will. The exercise of free will,

whatever else it might be, cannot be a merely additive resultant of the exercise of a person's unthinking and unwilling parts, as it would then fail to be a distinctive kind of power.

What alternatives are there, for the case of conscious choice, to the austere reductionist model of composite power that mass exemplifies? For more than a century, the preferred English term for what we are after has been 'emergence.' The term is meant to signify a macroscopic-microscopic relation that involves both *dependence* and (distinguishing it from mere resultancy) *autonomy*. The task of spelling out each of these constituent features has proved challenging as well as controversial, and scientists and philosophers have done so in a wide variety of ways.¹⁵ But in recent years, a philosophical consensus of sorts is emerging that theories of emergence may be usefully grouped into one or the other of two broad families, often dubbed 'weak' and 'strong.' Composite powers are weakly emergent just in case (i) they exhibit some interesting kind of 'autonomy' (perhaps non-aggregativity, or multiple realizability, or distinctive efficacy) and (ii) in both existence and exercise, they are asymmetrically wholly determined by the powers and arrangements of their fundamental parts, consistent with the 'causal closure' of the fundamental physical realm.

Which specific account of weak emergence best characterizes real-world phenomena is controversial, but the existence of phenomena needing such characterization is not.¹⁶ It enshrines

¹⁵ For a thorough summary and analysis of extant views, see O'Connor (2020).

¹⁶ The assumption that a single characterization is adequate to all weakly emergent phenomena is common but nowhere adequately defended, and it seems to me that it ought to be resisted.

the central *physicalist* commitment of ontological reductionism, while eliding the latter's 'nothing-buttery' excesses by affirming the reality of composite powers that harness microscopic powers in ways that result in distinctive causal patterns. (It is disputed whether there is a place for irreducible weakly emergent powers within a sparse-property framework, such as the current one, but I will not press that concern here.¹⁷) Nonetheless, weak emergence seems insufficient as the basis for free will. If the full panoply of microscopic powers necessarily and asymmetrically determine *all* macroscopic powers and their exercise, then what our future actions shall be is settled fundamentally by non-rational and non-volitional forces. (Determination 'from below' is as much an obstacle to freedom as is determination 'from before,' i.e., causal determinism). What free will requires is of course as controversial as any philosophical question. Views leaning towards the more deflationary end of the spectrum can accommodate its being a merely weakly emergent power. My aim is not to defend the need for a more robust construal but rather to elucidate my own commitments within the neo-Aristotelian framework that is partially delineated above. As I maintain that free will does indeed require that through conscious choice we sometimes are fundamental, as opposed to constitutively-derivative, difference-makers,¹⁸ I need recourse to the general concept of strong emergence.

¹⁷ See O'Connor (2000) §3.1 for an overview of arguments pro and con.

¹⁸ One can run an argument for the incompatibility of micro-determination and freedom that parallels the much-discussed 'consequence argument' championed by van Inwagen (1983) and others for the incompatibility of causal determinism and freedom. In my (2000), I defend a version of the latter argument (Ch.1) and the need for a strongly emergent understanding of the power of free choice (Ch.6).

A composite object's power is strongly emergent only if it is fundamental, not being constituted or 'realized' by any structure consisting in the powers of its parts and their arrangement. This is its understanding of emergent autonomy. Given this, it is natural within our framework to characterize the other, dependence condition in causal terms: the composites parts, or some subset thereof, suitably arranged, jointly cause and sustain the existence of the fundamental power of the whole, even as the exercise of that power in turn has 'downward' effects on the composite's components.¹⁹

¹⁹ The existence of fundamental powers implies a greater kind of substantial unity to strongly emergent as against weakly emergent wholes. It plausibly implies that such wholes have distinctive substrata. It is a challenging problem to allow for such a fundamental substratum-of-the-whole melded to a suite of emergent powers *and* a dynamically-changing set of *object*-parts. There is some theoretical pressure towards recognizing an emergent individual entirely distinct from, albeit causally dependent on, the underlying system of physical parts. O'Connor (2018) frames this problem without resolving it. The significant and continuous causal dependencies on component-level processes for emergent-level function provide, I believe, the basis for arguing for an essential incompleteness of the emergent elements considered apart from the body. But I haven't the space to develop this suggestion here.

Along with some other theorists of action, I recognize a distinctive kind of occurrent mental state that is termed an 'intention.'²⁰ It's a state that strongly disposes the agent to a course of action (where actively formed, as in decision, its onset resolves prior uncertainty about what to do). It represent an action-type and perhaps also the purpose behind it. And ordinarily it is executive, leading directly to the attempt so to act and guiding its completion via perceptual feedback.

The power of choice, as I think of it, just is the power to form such an intention. In Jacobs and O'Connor (2013), I endorsed a view on which there was no general power to form choices, only a vast multiplicity of specific powers of choice, individuated by their intentional content (having the form *do X, do Y*, etc. – or perhaps, in at least some cases, *do X in order to further goal G*).

The guiding thought was that, within a sparse ontology, powers must always be fully determinate, never determinable. Given the plausible assumption that one cannot choose at a given time to perform an action for which one has no motivation whatsoever, or has no capacity to represent (owing to limits of information or imagination), it follows that one has a handful of *specific* powers to choose at any time from among the vast range of humanly possible such powers, and the suite of powers one has is constantly changing over time with the change of thoughts, desires, aims, and context. I now think that it was a mistake to deny the ontological reality of an enduring, more general power of choice in which are partly grounded the particular 'all-in' powers one variably has on any given occasion to choose this or that. We cannot give a satisfactory account of organisms (or any kind of complex system) without recourse to such

²⁰ This notion and its relevance to free will has been extensively explored by Al Mele; see, e.g., Mele (2009).

general capacities; any 'sparse' theory of immanent properties must be structured to accommodate this explanatory need.

By its embrace of such a fundamental and open-ended power of choice, my view can seem quite similar to those of a group of theorists of the will that are commonly described as 'noncausalists,' who also endorse a fundamental power of choice.²¹ We further agree that *free will* and determinism are incompatible. Choosing freely entails that all the causal conditions surrounding my choice were consistent with (at least) my intending to do A *and* my not so intending, and frequently also with my intending to do B or C, significantly distinct action types. This is of course consistent with recognizing that there are enabling conditions that are necessary but not sufficient for free choices (e.g., being aware of alternatives available to me, desiring to resolve uncertainty, and being motivated towards certain alternatives with variable degrees of strength).

But we characterize the power of choice differently. As they see it, the power of choice should be understood as a noncausal, 'spontaneous' power, whereas I understand it to be a specific kind of causal power: a power to cause an intention to act. (Furthermore, for some of them but not for me, its exercise is by its very nature not causally determined by antecedent factors.)

I have come to wonder just how substantive our disagreement is. I will explore this question

²¹ Representatives include Ginet (2008), Goetz (1988), McCann (1998), and Pink (2016). I discuss Lowe (2008) in the text since he develops his view within a metaphysical framework similar to my own.

in relation to the account proposed by E.J. Lowe (2008). (My discussion above of Lowe's views reveals the key differences between his neo-Aristotelian framework and mine, which concern the way powers immanently depend on substances and whether there is a relation of causation. I believe that these differences do not account for the disagreement I am about to discuss.)

Here is the key passage explaining why Lowe believes the will (or choice) is not a causal power:

A causal power is a power to cause some object to act in a certain way....The will, however, is not a causal power, inasmuch as its exercise does not *consist in* the causing of some relevant kind of effect, even though its exercise does normally *have* an effect of a predictable kind, namely, an *action-result* appropriate to the kind of action that the agent wills to perform....[it] consists, in itself, *merely* in my willing to do something... (2008, 149-50)

Lowe goes on to identify a distinct general category of power from causal power, 'spontaneous power', which is neither a causal power nor a causal liability, and for which there are no deterministic or probabilistic causes of its exercise. Alongside will itself, he includes the stochastic power of radioactive atoms to decay.²²

²² According to current theory, certain kinds of atoms have unstable nuclei which 'decay' by emitting subatomic particles. The decay of individual atoms is indeterministic and is largely impervious to its external conditions (while there may be general necessary conditions at play, individual particle emissions appear to lack stimulus conditions). For each type of radioactive substance, there is a general rate of decay for an aggregate sample of it that is indicated by its half-life, which specifies a time interval by which half of the sample will have decayed. But there

Lowe and I thus agree that when I freely form an intention, I exercise a power such that the intention is essentially a manifestation of this power and there is no prior set of conditions that trigger the manifestation to occur just when it does. Now, contrary to what Lowe states, I would have thought that its exercise *does* always result in a relevant kind of effect, with the only salient difference being that the characteristic effect (the onset of an intention) occurs *within* the acting substance, rather than an external object. (And we might say the same with regard to the non-rational analogue of particle decay.) So why not just distinct species of causal power? The distinctions between those powers that manifest within and those which manifest without, and (what may be orthogonal) between those that are necessarily 'triggered' into activity and those that are not, are significant ones, but I don't see in Lowe's remarks a convincing basis for seeing either distinction as demarcating a line between *causal* powers and another kind of power.

It may be that Lowe's analysis is partly driven by one further difference between our accounts of freely forming an intention (willing). I affirm, while Lowe denies, that there are antecedent conditions or influences that make contemplated possible choices more or less probable until a choice is made.²³ As I see it, these prominently include motivational states, alongside purely physiological internal states. Lowe, however, insists that we cannot think of the influence of

is no recurring pattern in the timing of individual emissions. (I note that there have been some recent claims of evidence that decay rates can be accelerated through energy excitation; whether this proves correct or not, the stochasticity of individual emissions remains unchallenged.)

²³ This makes particle decay more disanalogous to free choices on my view.

reasons on practical deliberation in causal terms. Given my own view, it is open to me to see the grasping of reasons for action and the having of desires as acting in tandem with the general capacity to form intentions, giving me 'all-in', more specific powers to intend to A, to intend to B, etc. Whereas on Lowe's account, there is *only* an open-ended power to form intentions. When he writes that 'its exercise does not consist in the causing of some relevant kind of effect,' by 'relevant kind' he might mean the very specific effect of intending to A (and not B). His view would then be that causal powers, indeterministic or not, are directed at specific effects, whereas the noncausal power that is will is open-ended, potentially being manifested in any number of intentions having very different contents.

The central drawback of the rejection of causal influence on the will's operation by Lowe and other 'noncausalists' is intimated in my title: we, with our various capacities that include will or choice, are embedded in (and plausibly are composed of) a network of interacting causal agents. And, taking a wider temporal view, the process by which there came to be reasoning and willing agents such as ourselves was a very gradual and incremental one. The strong emergence of a distinct category of power whose operation is not fully integrated with those surrounding it in its local region of the network is *a priori* implausible. Accordingly, the burden is heavy for the philosopher who would argue that such a commitment is necessary for a satisfactory account of our freedom.²⁴

²⁴ This publication was made possible through the support of a joint grant from the John Templeton Foundation and the Fetzer Institute. The opinions expressed in this publication are

References

- Armstrong, D. M. (1978). *Universals and Scientific Realism*, Vol. I: *Nominalism and Realism*, and Vol. II: *A Theory of Universals*. New York: Cambridge University Press.
- Armstrong, D. M. (1997). *A World of States of Affairs*. New York: Cambridge University Press.
- Armstrong, D. M. (2004). *Truth and Truthmakers*. New York: Cambridge University Press.
- Bird, Alexander (2007) *Nature's Metaphysics*. New York: Oxford University Press.
- Cameron, Ross (2015). *The Moving Spotlight: An Essay on Time and Ontology*. Oxford: Oxford University Press.
- Corry, Richard (2019). *Power and Influence*. Oxford: Oxford University Press.
- Ginet, Carl (2008). "In Defense of a Non-Causal Account of Reasons Explanations." *The Journal of Ethics* 12: 229–37.
- Goetz, Stewart (1988). "A Noncausal Theory of Agency." *Philosophy and Phenomenological Research* 49: 303–16.
- Heil, John (2012). *The Universe as We Find It*. New York: Oxford University Press.
- Heil, John (2016). "Causal Relations." In *The Metaphysics of Relations*, edited by A. Marmodoro and D. Yates, 127-137. Oxford: Oxford University Press.
- Heil, John (2017). "Real Modalities." In *Causal Powers*, edited by Jonathan Jacobs, 90-104. Oxford: Oxford University Press.
- Jacobs, Jonathan (2011). "Powerful Qualities, Not Pure Powers." *Monist* 94: 81–102.
- Jacobs, Jonathan (2017), ed. *Causal Powers*. Oxford: Oxford University Press.

those of the author(s) and do not necessarily reflect the views of the John Templeton Foundation or the Fetzer Institute.

- Jacobs, Jonathan and Timothy O'Connor (2013). "Agent Causation in a Neo-Aristotelian Metaphysics." In *Mental Causation and Ontology*, edited by R.D. Ingthorsson and Sophie Gibb, 173-192. Oxford: Oxford University Press.
- Koons, Robert (2014). "Staunch vs. Faint-Hearted Hylomorphism: Toward an Aristotelian Account of Composition." *Res Philosophica* 91: 1–27.
- Koons, Robert (2018). "Against Emergent Individualism." In *The Blackwell Companion to Substance Dualism*, edited by J. Loose, A. Menuge, and J.P. Moreland, 377-393. Oxford: Wiley Blackwell.
- Koons, Robert (unpublished). "Sorting Out Aristotle: A Comparison of Four Modern Models of Aristotelian Form."
- Lewis, David (1983). "New Work for a Theory of Universals." *Australasian Journal of Philosophy* 61: 343-377.
- Lowe, E.J. (2008). *Personal Agency: The Metaphysics of Mind and Action*. Oxford: Oxford University Press.
- Lowe, E.J. (2012). "A Neo-Aristotelian Substance Ontology: Neither Relational nor Constituent." In *Contemporary Aristotelian Metaphysics*, edited by T. Tahko, 229-248. Cambridge: Cambridge University Press.
- Lowe, E.J. (2016). "There Are (Probably) No Relations." In *The Metaphysics of Relations*, edited by A. Marmodoro and D. Yates, 100-112. Oxford: Oxford University Press.
- Marmodoro, Anna (2017). "Aristotelian Powers at Work: Reciprocity without Symmetry in Causations." In *Causal Powers*, edited by Jonathan Jacobs, 57-76. Oxford: Oxford University Press.

- Martin, C. B. (1993). "Power for Realists." In *Ontology, Causality and Mind—Essays in Honour of D. M. Armstrong*, edited by John Bacon, et al., 175-186. New York: Cambridge University Press.
- Martin, C. B. (2008). *The Mind in Nature*. New York: Oxford University Press.
- McCann, Hugh (1998). *The Works of Agency*. Ithaca: Cornell University Press.
- Mele, Al (2009). *Effective Intentions*. New York: Oxford University Press.
- Mumford, Stephen and Rani Anjum (2011). *Getting Causes From Powers*. Oxford: Oxford University Press.
- O'Connor, Timothy (2000). *Persons and Causes: the Metaphysics of Free Will*. New York: Oxford University Press.
- O'Connor, Timothy (2018). "For Emergent Individualism." In *The Blackwell Companion to Substance Dualism*, edited by J. Loose, A. Menuge, and J.P. Moreland, 369-376. Oxford: Wiley Blackwell.
- O'Connor, Timothy (2020). "Emergent Properties." *The Stanford Encyclopedia of Philosophy* (Fall 2020 Edition), edited by Edward N. Zalta. URL = [<https://plato.stanford.edu/archives/fall2020/entries/properties-emergent/>](https://plato.stanford.edu/archives/fall2020/entries/properties-emergent/).
- Pink, Thomas (2016). *Self-Determination: The Ethics of Action, Vol.1*. Oxford: Oxford University Press.
- Sider, Theodore (2006). "Bare Particulars." *Philosophical Perspectives* 20(1): 387–397.
- Sider, Theodore (2011). *Writing the Book of the World*. New York: Oxford University Press.
- Simons, Peter (1994). "Particulars in Particular Clothing Three Trope Theories of Substance." *Philosophy and Phenomenological Research* 54, (3): 553-575.
- Steward, Helen (2012). *A Metaphysics for Freedom*. Oxford: Oxford University Press.

Sullivan, Meghan (2012). "The Minimal A-Theory." *Philosophical Studies* 158: 149-174.

Williams, Neil (2019). *The Powers Metaphysic*. Oxford: Oxford University Press.

Zimmerman, Dean (2011). "Presentism and the Space-Time Manifold," in *The Oxford Handbook of Philosophy of Time*, edited by Craig Callender, 163-246. New York: Oxford University Press.