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Alexander's Dictum and the Reality of Familiar Objects

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Alexander's Dictum at first appears to be entirely reasonable, and almost too bland to be of interest. Who could possibly want to claim reality for entities which cannot, even in principle, produce any manifestation of their existence? It seems hard to deny that there might *be* some such entities, lurking somewhere in the world. So perhaps Alexander's Dictum should not be regarded as a constitutive principle of ontology. But its status as a regulative principle seems unassailable.

How surprising, then, that Alexander's Dictum can readily appear to require breathtaking revisions in the ontology of common sense. For when combined with familiar worries about causal exclusion (see, e.g., Heil and Mele 1993, Sturgeon 1998), it can readily appear to entail that there are in the world no familiar medium-sized objects at all, but only the microparticles which—as common sense would put it—jointly compose those familiar objects. When combined with less familiar worries about the causal inefficacy of historical properties (Antony 1996, Enç and Adams 1992), Alexander's Dictum can appear to entail the non-existence of a specific sub-group of familiar objects, namely those which if real are essentially characterized by historical properties—a group which arguably includes all organs and all artifacts (Millikan 1984, Elder 1996, Elder forthcoming).

In this paper I examine mainly the more general, but also the more specific, challenge to the ontology of common sense. I argue that both challenges rest on confusions. Alexander's Dictum is as bland and as true as it appears to be, and is no reason for us to lose our Moorings in ontology (to borrow a phrase from David Lewis).

I

The idea that familiar medium-sized objects have causal powers must lose all plausibility unless we can maintain that from time to time such objects actually *do* cause things to happen. But widely discussed worries about causal exclusion suggest that whenever familiar objects appear to cause things, the real causing is being done by microparticles. In this section I set forth these worries.

The current discussions of causal exclusion generally[1] focus on apparent examples of *mental* causation—on the case in which *A*'s wanting *x*, and believing *p*, bring about an appropriate action on *A*'s part (Heil and Mele 1993, Macdonald and Macdonald 1995). But the worries I have in mind apply equally to any case in which *any* familiar object appears to bring about some result. Thus suppose that over some centuries a glacier carves a cleft in a range of mountains. Or suppose that a deciduous tree, as it grows, weakens and eventually wipes out a colony of sun-loving ground plants which had occupied the place where the seedling sprouted. In all such cases there is a very close connection between the gradually-produced macro-result—the cleft that appears in the mountain range, the weakening of the colony of plants—and a vast array of movements and state-changes successively undergone by a vast number of microparticles, exactly where that macro-result emerges. Some hold this close connection to be simply a matter of identity (Davidson 1967, 1969). But others (e.g. Kim 1969, Kim 1980) argue that such a ruling individuates events too coarsely; the connection is rather that the vast array of microparticle events *composes into* the establishment of the cleft, or that the establishment of the cleft (at least weakly) *supervenes on* that vast array. Such relatively fine-grained individuation of events is presupposed by the current worries about causal exclusion. But it independently is the more plausible position, as I elsewhere have argued (Elder 2001a).

Now for the nerve of the causal exclusion worries: it seems undeniable that any event, simple or complex, which qualifies as a cause of such an enormous succession of microparticle movements and state-changes *thereby* qualifies as a cause of the supervening macro-outcome itself—the establishment of the cleft, the weakening of the colony. Now the story of macro-causation tells of a single event (the

movement of the glacier, the growth of the tree) which, according to the story, brings about the macro-outcome. But it seems intuitively obvious that whenever a familiar object does manage to bring about a familiar outcome, the microparticles *within* the familiar object must, by *their* several movements and state-changes, have managed to bring about the complex micro-outcome which composes into the familiar macro-outcome.[2]

What seems to follow is that whenever a familiar medium-sized object appears to cause a familiar macro-outcome, it sets up a rival claim, to having caused that very outcome, on the part of its component microparticles. Which of these rival claims is the stronger? There are powerful reasons for answering: the claim lodged by the microparticles within the familiar object.

For one thing, many would hold that whenever an individual event *a* truly causes individual event *b*, the succession of *b* upon *a* must instance, or be underwritten by, general laws of nature (Davidson 1970). Now no law of microphysics says that whenever there occurs, in just *that* sort of sequence, just *those* sorts of microparticle movements as in fact were instanced when the glacier moved, there follows, in just *that* sequence, just *those* sorts of movements and state-changes as were instanced in the micro-outcome which composed into the cleft. Even so, it seems that individual laws of microphysics link every *individual* microparticle event which figured in the glacier's movement—link it via many intermediate steps—to every *individual* microparticle event which figured in the establishment of the cleft. And these laws of microphysics are precise and exceptionless, or as close to preciseness and exceptionlessness as any that nature will yield. In contrast, the only "laws" that would spell out the effects wrought by movements of glaciers as such—or by the growth of deciduous trees—will be imprecise and hedged by numerous *ceteris paribus* clauses. So, if a claim to having caused an outcome depends on the lawlikeness of the generalizations that are instanced, the microparticles in the glacier have a better claim to having caused the cleft than the glacier itself does.

For another thing, glaciers and trees, like any familiar medium-sized objects, appear to be compositionally vague.[3] That is, it seems that the removal from such an object of a single component microparticle always leaves that object still existing. But then sorites arguments show contradictions to

follow from the very idea that there are such objects; whereas individual microparticles are immune to such arguments, since they are not compositionally vague. Now there are, of course, ways to resist the paradoxical conclusions of such sorites arguments. But none is wholly without problems. So if it turns out that we *need* not affirm the existence of familiar objects, on account of the causal work they apparently do, we can simply allow the sorites arguments to stand. Here then is a second reason to favor the claim to causation that is lodged by the microparticles.

Thus we are left with the disturbing conclusion that whenever a familiar object appears to cause anything, it sets up a *superior* claim, to having caused that very outcome, on the part of its component microparticles. Then unless we are willing to envision causal overdetermination, or engage in some other form of special pleading, we will have to concede that familiar medium-sized objects never really cause anything. So they cannot plausibly be said to have causal powers. So, by Alexander's Dictum, there actually are no such objects in the world.

II

The causal powers which common sense attributes to familiar medium-sized objects include many which by nature can be exercised only over long periods of time. It takes time for a glacier to carve a cleft through a range of mountains, and time for a deciduous tree to provide a full circle of shade. Even people have powers which by nature can be exercised only over long periods of time. Each normal person has for example the power to acquire competence in a natural language, but this power can get exercised only given years of exposure to appropriate linguistic cues.

Philosophers who would use Alexander's Dictum to banish familiar medium-sized objects from our ontology will say: any causing which such an object seems over time to do is really done by some plurality of microparticles. But *which* plurality of microparticles? The too-easy answer is: just those microparticles which, at the various moments in the familiar object's career, jointly occupy exactly that volume of space which the familiar object itself occupies. This answer is too easy since if, objectively,

there are in the world no such objects as glaciers and trees and people, there is in the world no such feature as a volume's being occupied by a glacier or a tree or a person.

If any outcome which seems to be caused by a tree or glacier or person is objectively caused by some plurality of microparticles instead, there must be some objective fact of the matter as to *which* microparticles are thus jointly involved in the causing. This fact of the matter need not be precisely defined; "the problem of the many" (Unger 1980; cf. van Inwagen 1990, pp. 214 ff.) suggests that there is no precise fact of the matter, at the level of microparticles, as to which microparticles compose a given familiar object, and which lie outside its bounds. And certainly this fact of the matter need not be defined once-and-for-all for each familiar object; my point in focussing on causings which by nature take time is precisely to remind us that, in respect of many of the causal powers which common sense attributes to familiar objects, the banishers of familiar objects will have to award exercise of those powers to *shifting* pluralities of microparticles.

But it remains true that the banishers of familiar objects will have to find something in the way the world is, or the way the world works, *in virtue of which* at each successive moment it is *these* microparticles and not *more* or *fewer* which jointly participate in causing the outcomes which common sense attributes to a familiar object. It is not enough for the banishers to use the familiar adverbial construction—e.g. to say that whatever common sense supposes a tree to cause is instead caused by microparticles "tree-wise arranged" (Rea forthcoming, pp. 80, 81, 127; van Inwagen 1990, section 11, passim). Some account of *what it is* for microparticles to be "tree-wise arranged" is needed, which unmistakably does not quantify over trees.

To make this challenge as vivid as I can make it, I will shift the example from that of a tree or a glacier to that of a person (whom I will call "Max"). But I will not tax the banisher with telling us which microparticles were jointly involved, during one stretch of time or another, in the long labor of building Max's competence in English. I will merely ask the banisher to say which microparticles are *now* there, where *I* think Max exists, ready jointly to cause whatever *I* think Max causes—and to cause it over however short a term. If the banisher cannot do even this, without quantifying over Max himself, it will

be clear that he is even less able to inventory the *shifting* plurality of microparticles which might be claimed to have brought about, over the years Max was growing up, Max's competence in English.

III

The challenge which I set the banisher, then, is this. What is granted is that in the general area where common sense thinks Max exists, there is a vast sea of microparticles. What needs to be explained or analyzed is that within this sea some plurality of microparticles gets assembled as a unified subject of causation—as *together* causing, or *between them* causing, everything common sense credits Max with causing. The response to this challenge must identify some relation which links each microparticle within the plurality to all and only the rest. Or, if there is ineliminable vagueness about just *which* microparticles together bring about the effects which common sense credits to Max—if there is no precise fact of the matter as to which microparticles "the rest" encompasses—the response will identify some relation which ties each microparticle within Max to all others up to a vague border, ties each to no microparticles beyond that vague border, and neither definitely does nor definitely does not tie each microparticle in Max to at least some microparticles that lie within that border.

But before attempting to identify this relation let us remind ourselves just which microparticles we want to see brought together in its grasp. Behold then Max, running to catch the bus. Despite the hair gel Max uses, his hair is flying in the wind; also, his glasses are starting to slip on the bridge of his nose; and his scarf is flapping behind him. Max should be more warmly dressed: he is fighting a cold, and rhinovirus organisms are present in many of his alveoli.

What relation obtaining between the microparticles within Max—as common sense would put it—connects them, and only them, in a way that remains even after Max is subtracted? One answer that can quickly be dismissed is that the relation is "fellow-travelling"—the relation which obtains between microparticle *a* and microparticle *b* just in case there is a reliable connection between *a*'s moving rapidly south or north along the sidewalk and *b*'s moving rapidly south or north along the sidewalk. For the

microparticles in Max's hair gel "fellow travel" with those in Max's heart, every bit as much as do the microparticles in Max's scalp; so too do the microparticles in Max's scarf, in the molecules of air trapped within the scarf, and in the rhinoviruses in Max's lungs. At the same time at least some microparticles in Max's facial epidermis fail to "fellow travel" with these others: they are abraded by the wind as Max runs.

What the banisher needs to identify, it seems, is a relation which is not merely spatial but causal. We need not pause to debate whether "…is a cause of…" is transitive.[4] For even if it is non-transitive, we can define an ancestral of it such that if an alteration in microparticle *a* causes an alteration in microparticle *b*, and an alteration in microparticle *b* causes an alteration in microparticle *c*, the alteration in microparticle *a* bears this ancestral causal relation to the alteration in microparticle *c*. "Exerts some measure of causal influence over" might be a good name for such a long-reaching relation.

But it seems hard to believe that events befalling an individual microparticle within, say, one of Max's hairs do exert some causal influence over what happens to some individual microparticle in Max's kneecap, while events befalling an individual microparticle in Max's hair *gel* do *not*. It is even hard to believe that there is some one *degree* of causal influence such that the state of an individual microparticle in an individual hair exerts influence of that degree or greater, on the state of an individual kneecap microparticle, while an individual microparticle in Max's hair gel exerts an influence of only a lesser degree. It seems, rather, that an individual microparticle within, say, Max's heart exerts about as much causal influence over what happens to an individual microparticle in the bows of Max's glasses, as over what happens to any individual microparticle in Max's eyelids. For the laws of microphysics which underwrite such causal influence take no account of whether an individual microparticle being causally influenced, or an individual microparticle exercising such causal influence, are located in a plastic object or in an organic one.

Now I do admit that *this* seems plausible: that if *all* the microparticles composing Max's heart were suddenly to undergo some cataclysmic alteration, this *would* soon make some large difference in the careers of the microparticles composing Max's eyelids, a difference greater than any difference made in

the careers of the microparticles composing Max's glasses. But can the banisher at this point trade upon this thought? The view he is trying to articulate is that familiar objects—including even hearts and eyelids!—do not really cause anything, and do not indeed exist. Instead certain pluralities of microparticles cause all the effects commonly attributed to familiar objects. But these pluralities have determinate, if imprecise, membership; and the banisher's task at present is to say what it is for just *those* microparticles, and not more or fewer, to make up such a plurality, and to say this in a way which does not quantify over familiar objects. So the challenge which the banisher faces in regard to Max himself is a challenge which he also faces in regard to Max's heart and eyelids and glasses. He needs to *earn* the right to speak of "all the microparticles composing Max's heart".

The way for him to earn such a right—the right to speak of all the microparticles which lie within the bounds of a familiar object, even though there are no such things as familiar objects—is, to repeat, for him to identify causal relations which tie individual microparticles within that object to other microparticles within it, and to no individual microparticles outside it. But the prospects for doing this are poor. An individual *cell* in Max's eyelids can undergo a rich variety of changes, both healthy and unhealthy, and this is a large part of the reason why Max's heart can exercise great causal influence over the state of such a cell—far greater influence than it exercises over the state of Max's glasses. But an individual *microparticle* in Max's eyelids can undergo only a narrowly-defined range of state changes and motions. Hence there are only a *few* ways in which an individual *microparticle in* Max's heart can influence the state of an individual microparticle in Max's eyelids; it only can, in an extremely indirect and mediated way, influence motions or state changes in that individual microparticle. But it can, in an equally indirect and mediated way, influence motions and state changes in an individual microparticle just beyond (what common sense sees as) the surface of Max's skin, or even well beyond it; and an individual microparticle outside Max's body altogether—say, in the air blowing on Max's eyelid—can likewise influence the individual microparticles in Max's eyelids.

I will now lay my cards on the table: no causal relation holds each of the microparticles within a familiar medium-sized object together with all and only the others—not even *roughly* all and *roughly*

only the others. So the banisher cannot make out the claim that all the causing which a familiar object *appears* to do *really* is done by some plurality of microparticles instead. For he cannot say *which* plurality preempts the claim to causation lodged by the familiar object. So even if Alexander's Dictum is true, it does not follow that there are in the world no familiar objects.

IV

But there is one sort of case—exceptional but not unthinkable—which may make the position I have just laid on the table seem exaggerated. Suppose that Max stares so intently at the bus he is chasing that he runs full-speed into a waist-high post. Or suppose, less unpleasantly, that a billiard ball is struck sharply by a cue stick. In either case microparticles at the point of impact undergo very sharp alterations in their energy states. They then exercise considerable causal influence over neighboring microparticles, altering their energy states in turn. Thus are causal chains launched which at length embroil, let us suppose, every last microparticle within Max or the billiard ball. Finally let us suppose that these chains at length *converge* on a single microparticle within Max or within the ball. Then that one microparticle has been causally influenced, to a high degree, by all and only the other microparticles in the familiar object which common sense recognizes. The microparticle membership of that familiar object has been recaptured at the level of a causal relation between microparticles.

But note two things about such an example. First, only one microparticle within the familiar object is causally influenced by every last other microparticle within it, and by only those others. The vast majority of microparticles in the familiar object, even on the fanciful hypothesis of convergence, are causally influenced by (and themselves in turn causally influence) only *some* other microparticles within the object. Those at the point of impact moreover are highly influenced by microparticles *not* within the object. Second, the one microparticle which does momentarily stand in a relation reflecting the exact microparticle composition of the familiar object does so only now, only once. It is *too* fanciful to suppose

that on other occasions of impact, that very microparticle will again be *the* one on which all causal chains converge.

What far, far more commonly happens is that relations of causal influence link an individual microparticle within a familiar object now to some others within the object, now to different others within it, now to microparticles largely outside the object. There is no causal relation which, as a general matter, joins individual microparticles within a given familiar object to all and only the others that are within it. *At the level of microphysics, the microparticle membership of a familiar medium-sized object is causally invisible*.

But if so, the claim I made earlier involves no exaggeration after all. The philosopher who seeks to award the causation apparently exercised by familiar objects to pluralities of microparticles instead, and who intends in this way to snatch the rug of existence out from under the familiar objects, ends up unable to say which pluralities of microparticles receive the awards.

V

At this point the philosopher I have just described—"the banisher", as I call him—may be tempted by moves we have not yet considered.

His contention is that wherever a familiar object appears to cause some outcome, what really is causing that outcome is some plurality of microparticles instead. We have supposed that the banisher would seek plausibility for this contention by following a simple strategy: he would hold that the plurality of microparticles which does the real causing is, in each case, the plurality found just where the familiar object appears to exist—the plurality which, as common sense sees things, composes the familiar object. But strictly speaking he need not say this. He is free to say that the real causal agent is a plurality which occupies only part of the volume of the putative familiar object, or a plurality which comprises both microparticles within that volume and microparticles without it, or even a plurality which comprises microparticles widely scattered.

We have also supposed that the banisher would agree that when a familiar object appears to bring about some result over a long stretch of time, *some* protracted causation is occurring, and we have supposed he would seek to attribute this causation to a *shifting* plurality of microparticles found (at the various moments in this stretch) just where the familiar object appears to be. This response seemed to make the difficulty of his position more vivid: if the only easy way for him to say which microparticles together do the work attributed to a familiar object, at a given time, involves identifying some volume of space as the volume *occupied by the familiar object*, then tracing the membership of a *shifting* plurality of microparticles across a *stretch* of time would make him rely all the more heavily, it seemed, on the spatio-temporal career of the familiar object itself.

But again the banisher is not forced to respond in just this way. He could dispute the idea that there really are any cases of protracted causation, and thus save himself the effort of identifying shifting pluralities of microparticles to be the agents of such causation. He could argue that the only outcomes that really get produced in the world are momentary: momentary microphysical outcomes, which compose into momentary macro-arrangements. When common sense views a series of such arrangements, it supposes, e.g., that it witnesses the establishment of a cleft in a mountain range, the weakening of a colony of ground plants, the development of linguistic competence in a human. But the banisher's new position would be that he need not identify any microphysical agent of the causation which produces these drawn-out outcomes, because these drawn-out outcomes are not really produced. What is produced, he would say—by one plurality of microparticles or another—are momentary stages of mountain-shapes, of plant nutrition, of speech dispositions.

These new responses are available to the banisher, but they are unavailing. A claim of causal exclusion can engender real worry only when its proponent places the *true* causes, in which she wants us to believe, in the very places and roles we supposed occupied by the false causes in which we formerly believed. We can be made to worry that the work we commonly attributed to a given familiar object is really being done, instead, by microparticles located *just where* that object appears to exist. If the proponent of causal exclusion instead tells us that microparticles both within and without that familiar

object together are causing those familiar effects—or, more radically, that microparticles widely separated from one another are together causing those familiar effects—we naturally start to wonder why we should believe that microparticles thus distributed *together* cause *anything*. It is natural to suspect that we are being invited to commit the Fallacy of Composition (Elder 2000).

Similarly, if a proponent of causal exclusion tells us that the very outcomes we every day see being produced are being produced by causes we had not suspected, she commands our worries. But if she tells us that drawn-out outcomes which we *think* we all the time see being produced by familiar objects *really* are not produced at all—and that this helps show that since Alexander's Dictum is true, familiar objects do not exist—she engenders scepticism rather than worry. A position which defends itself by simply asserting that mountain passes do not get carved over time by glaciers, or that people do not over time acquire linguistic competence, is too close to one which merely asserts that there are no mountains and no people to qualify as a persuasive *argument* to that effect.

VI

Causal exclusion arguments constitute a direct attack, launched from Alexander's Dictum, on the reality of familiar objects. But an indirect attack can also be launched from Alexander's Dictum, which targets at least *some* familiar objects. The route here lies through properties: one argues that Alexander's Dictum shows that certain apparently familiar properties do not really exist, and one then points out that these properties are *essential* properties of certain apparently familiar objects—properties which those objects must have, in order to exist at all. One concludes that the objects in question do not exist at all.

A step that has actually been taken along this indirect route is to claim that *historical* properties do no causal work (following Enç and Adams 1992, pp. 637-638; cf. Antony 1996, pp. 72-73, Slutsky 2001, pp. 596-598), from which it would follow, by Alexander's Dictum, that there are no such properties. This in turn could be said to have two consequences for the ontology of common sense. The consequence harder to explain is that there are in the world no beliefs and no desires (Millikan 1984,

Millikan 1986). The more straightforward consequence is that there are no organs or other biological devices (and no artifacts either, though that again is harder to explain; see Elder forthcoming).

I now will set forth the thinking that animates this attack on familiar objects—on only *some* familiar objects, but *very* familiar ones at that—but will do so in only a brief and incomplete way. For the first question to which we should give *detailed* attention is the prior question of what, exactly, Alexander's Dictum does say about properties.

Biological devices appear to fall into natural kinds—there are human hearts, eagles' eyes, etc.—and the devices in each kind appear to be essentially characterized by distinctive functions (Elder 1995, Elder 1996). Human hearts are supposed to pump blood. The double-lensed eyes of eagles are supposed to enable the detection of prey from distances as great as 900 feet. But individual devices which have a certain function may not perform it, and may not be able to perform it. There are malformed hearts and malformed eyes, and these really are hearts and eyes, even though they do not do what they are supposed to. This sort of point leads a number of philosophers to suppose that the functions of a particular biological device cannot be analyzed as dispositions of that device. Rather they must be analyzed in historical terms. Biological devices are by nature the products of certain processes of copying or replication, and if what has caused past devices (tokens) bearing a particular shape to get copied over and over again has been that those devices often enough did φ, then present devices (tokens) bearing that shape are *supposed* to φ, they have φ-ing as their "proper function" (to use Ruth Millikan's term; Millikan 1984). Hence human hearts are essentially characterized by a certain historical property—they have been copied from similarly-shaped items as a causal consequence of those items' having pumped blood. Eagles' eyes likewise are essentially characterized by a historical property. If Alexander's Dictum entails that there really are no historical properties, there really are no human hearts or eagles' eyes.

But *does* Alexander's Dictum really entail this—just what *does* it say about properties? "Being is said in many ways", Aristotle taught us, and just so Alexander's Dictum must be said in different ways. As said of properties, I shall take it that it says this: for a property to be real—for it to be a genuine *way* things can be—is for it to bestow upon the things that have it causal powers.

But then is Alexander's Dictum, as applied to properties, still so bland as to be scarcely worth stating—or is it so strong as to be scarcely believable? The question arises because many properties, which intuitively seem decidedly real, also seem to bestow on their bearers no causal powers in particular. Colors, for example—assuming *arguendo* that colors are properties[5]—seem not to make any particular difference in the ways their bearers *act*. Neither do tastes or smells. That a leaf is dark green rather than light green seems to make no difference in how much shade it provides or how much water it traps; that certain leaves have a skunky smell, rather than a grassy smell, seems to make no difference in how much nutrition they provide their hosts.

Or rather an object's color or smell or taste *can* carry consequences, but only consequences mediated by the responses of one or another sentient creature. Colors provide camouflage and hence protection; smells attract pollinators or repel herbivores. Redness can cause a flower to get picked by a human seeking to make a bright bouquet, and lilac-smell can cause a different flower to get picked by humans fond of a certain scent. There seem to be many genuine properties, then, which *directly* and *proximally* bestow only *one* causal power on their bearers: they bestow on their bearers the power to elicit true perceptual judgements (or more generally true occasion-judgements) to the effect that they are present in their bearers—or that *other* properties are present which, in bearers of that kind, accompany those properties.[6] All further consequences that such properties bear are functions of the desires and dispositions of the sentient agents that detect them.

Is it enough to satisfy Alexander's Dictum, that a property bestow on its bearers the power to make minds detect, or respond to, its presence? On that interpretation the Dictum is as bland as it seemed at the outset of this paper, and as undeniable. Who would want to affirm the reality of properties the presence of which cannot, even in principle, be detected—not via any associated powers over non-sentient entities, *and* not via responses to that property by sentient creatures?

But philosophers inclined to suppose that Alexander's Dictum rules out the reality of biological devices—or, by a route I have not space to narrate, of beliefs and desires—evidently give a far stronger reading to it. For they cannot plausibly maintain that historical properties cannot ever be *detected*. They

must in particular admit that we *can* empirically determine which performances it is, for which at least some biological devices (types) have been naturally selected—which performances are the proper functions of these devices. To deny *that* would be to deny that evolutionary biology is an empirical science! Rather, these banishers of historical properties must be reading Alexander's Dictum as saying that to be real, a property must not just be detectable, but must confer causal properties not mediated by its detection (or by any responses which it causes in sentient creatures).

On such a reading the Dictum no longer is bland; but it no longer is believable, either. For compare: just what powers are bestowed on a thing by its being three feet in diameter, or 4'8" tall, or oval in shape? Well, at the least, the powers to pass the various tests that might be devised, for diameter and height and shape. But what *further* powers? It seems that any further consequences of these properties will, in general, depend on the desires and interests of the testers. In a woodsman intent on milling planks that are 2½ feet wide, a tree trunk's being three feet in diameter will trigger not just detection of its own presence, but destruction of the tree. But failing an appropriate perceiver, the tree trunk's being three feet in diameter will have no "consequences" that are not simply equivalent (under natural law) to its *being* three feet in diameter.

The reasonable reading is that with properties as with property bearers, Alexander's Dictum is so bland as to be scarcely worth stating. By no routes does it shake the Moorings of our common-sense ontology.

Footnotes

[1] Exceptions include Sturgeon 1998, e.g. at p. 418 ("a physicalism that is both general and severe"), and Yablo 1992.

[2] Jaegwon Kim's widely-known presentation of the causal exclusion worry goes just a bit differently. To have caused the cleft in the mountain range, Kim would say, the movement of the glacier would have had to cause the complex sequence of microparticle movements which subvened the establishment of the cleft (Kim 1998, p. 35 ff.). But the set of microparticle movements which subvened the movement of the glacier itself has an unassailable claim to having caused the cleft-subvening sequence. So, barring causal overdetermination, the movement of the glacier cannot itself have caused that sequence, and hence cannot really have caused the cleft to get established. Where my presentation differs is in avoiding the sort of claim presented in the first sentence. Stephen Yablo has shown that causes must be "commensurate" with their effects (Yablo 1992), and from this it follows that the first sentence may voice an *unfair, exaggerated* requirement. *Of course* the movement of the glacier was not sufficient to ensure just *that* microparticle version of the establishment of the cleft; at best, it sufficed to ensure the occurrence of *some* microparticle version *or other* of a cleft-establishment.

[3] Peter Unger, who twenty years ago used compositional vagueness to argue that "There Are No Ordinary Things" (this is the title of Unger 1979), did also recognize various *unfamiliar* medium-sized objects. These are essentially characterized by precise boundaries, and as such are immune to the sorites paradoxes mentioned here in the text. Recent papers on "the problem of coinciding objects" have recognized kindred unfamiliar medium-sized objects; some or all of these are likewise immune to sorites paradoxes. (There is for example the *parcel* of gold, found exactly where the golden statue is, which cannot survive the removal of even a single gold atom; there is also the coinciding *mass* of gold, which can survive dispersal but ceases to exist if even one component atom is destroyed—see fns. 1 and 2 in Burke 1994). Moreover, all these unfamiliar objects, including Unger's, are untouched by the points I make below about the shifting microparticle membership of familiar medium-sized objects But common

sense attributes causal efficacy not to any of these unfamiliar medium-sized objects, but only to the familiar ones. That is why I discuss only the familiar medium-sized objects—"familiar objects", for short. (But I should add that there is reason to think medium-sized objects of all these *unfamiliar* sorts do not really exist; Elder 1998).

[4] In fact my position is that causation is non-transitive: see Elder 2001a, Elder 2001b.

[5] In fact I think there are no such properties as colors. The reason is that sameness in color does not amount to an objective sameness among the objects which bear it to one another; the physical features which produce perception of a given color are simply too diverse (Clark 2000, Chapter 6). But had the perception of a given color corresponded to a single, simple property in the things in which it is perceived—e.g. to a single wavelength of light—I would think there to be no argument against the reality of colors, their causal flabbiness notwithstanding.

[6] It is somewhat artificial to speak of bees making perceptual judgements, because this suggests that bees have beliefs—and that the belief / desire contrast applies to bee psychology. The more plausible claim is that bees' thoughts belong to a simpler kind, a primitive ancestor of *both* beliefs and desires, which is neither purely a belief nor purely a desire. Ruth Millikan calls such thoughts "pushmi-pullyu representations" (Millikan 1996). So a crisper (though more cumbersome) statement of the thought in this paragraph is that many properties *directly* and *proximally* bestow on their bearers only the power to elicit, from some sentient creature or other, representations which *under their indicative aspect* are judgements that that property—or another associated with that property—is present in the bearers. (Under its indicative aspect, the bee's representation says "nectar here now"; under its other aspect, its imperative aspect, it says "insert mouth and suck here now".)

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