

“Actions of a body sentient”: Cavendish on the mind (and against panpsychism)

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0 Introduction

Margaret Cavendish has been hailed a heroine of panpsychism: she allegedly “takes thinking agents as her basic causal model in explanation” (Duncan 2014: 19), endorses “a form of panpsychism in the strong sense that every part of nature contains the same rational principle as humans” (Shaheen 2021: 636), holds that “bodies [are] intelligent and thoughtful from the start” and that “mentality is already among their immediate properties” (Cunning 2015: 73). I do not think these are right. Cavendish does not hold that matter thinks in anything like the sense that humans do, nor do plants, minerals, or other things that aren’t animals.

Cavendish’s account of matter is revisionary, but it is not a panpsychist one. Instead of mind, Cavendish takes what we might call the *organic* to be pervasive. Matter, which is substance structured by parthood and composition, is self-moving. Humans and other animals, the parts of animals, plants, minerals, all of which Cavendish calls ‘creatures’, are composed of parts that act so that they can survive, self-regulate, act, and interact with their environments. Cavendish calls all these capacities of creatures ‘knowledge’ and ‘perception’, and she argues that all creatures have them. But, I’ll argue, we have no reason to think that the knowledge and perception that kidneys, rocks, tables and trees have has anything further in common with human and animal cognition.

Animal cognition encompasses just a handful among truly infinite such ways that the infinite varieties of creatures live in the world, and it is a very deep mistake to project onto other creatures our own ways of doing that. In addition to warning generally against anthropomorphizing in natural philosophy, Cavendish warns against imagining that matter or creatures are minded in a specific way that animals are. What is distinctive about the kinds of animal and perception that we are likely to classify as cognitive, including sense perception, imagination, and reasoning, is that they involve creating inside the animal’s body something like internal representations, maps of the environment, or isomorphisms with external things. These processes are enabled by the material structures specific to animal bodies, especially sense organs and the brain. While Cavendish does not rule out the possibility that some non-animal creatures perceive and know in this way, she does not think we have reason to believe that they do, and she does rule out that all creatures do, and that matter does.

I cannot stress enough that while Cavendish thinks that these capacities are, as far as we know, unique to animals, this is not in order to mark them out as special in any other way. Cavendish provides a naturalized account of these kinds of perception and knowledge: they are adaptive capacities just like any others, highly dependent on the particular matter and structure of a creature, and they give us no special window onto reality. Like non-animal perception and knowledge, and like non-cognitive kinds of animal perception and knowledge, Cavendish

evaluates them in terms of how good they are at keeping us living and thriving. Sometimes they do better for us than a worm's knowledge of rain or wood's knowledge of how to be hard, but sometimes they don't, and in those cases, the worm and the wood are more knowing than Marie Curie and wiser than the Dalai Lama. They are not, however, thinking.

“Mind” is said in many ways, and as I'll suggest in the conclusion, there may be some fringe definitions of mind on which it may count as pervasive for Cavendish. But these are not what people mean when they say that Cavendish is a panpsychist. Most people, especially scholars of Cavendish, mean that Cavendish thinks that all natural phenomena require explanation in terms of representational, informational, or epistemic states. Some others, especially contemporary panpsychists wishing to recruit Cavendish to the cause, mean that she thinks that conscious experience or proto-experience is pervasive. I argue in this paper that neither is true.

Instead, the lessons that Cavendish has to teach us about philosophy of mind include: that the mind cannot be understood in abstraction from its organic basis, both in the body and in the environment; that to understand it we have to appreciate both the specificity of the brain and sense organs as well as what we have in common with other natural systems; that we should not allow a theory of what kind of metaphysical stuff there is dictate our theorizing about mind; that the mind should in the first instance be understood as a set of capacities, among others, that animals have to survive and act, rather than a window onto things in themselves or eternal truths; and that humans are no closer to gods than any other natural things.

1 Matter, materialism, monism

Cavendish holds that everything in nature is matter and that explanations in natural philosophy should be given in terms of the motions of that matter. She is hijacking the polemics of the so-called mechanical philosophy, according to which natural-philosophical explanations should be in terms of sized, shaped bits of matter, spatially arranged, subject only to changes in their location in space and rearrangement. But she is putting this rhetoric to her own use: ‘matter’ and ‘motion’ do not mean in her system what they do for mechanical philosophers like Descartes and Boyle.

Matter, according to Cavendish, is necessarily (1) substance; (2) divisible; and (3) self-knowing. Substance is what cannot be created or destroyed but only changed. All and only matter is divisible, and parthood and composition is the only metaphysical structure there is (GNP 45, 65). Matter's divisibility is a fundamental feature of it and not a consequence of its extension; more generally, Cavendish does not think, as many of her contemporaries did, that spatial facts carve nature at its joints. Putting aside for now the question of what self-knowledge is, we can define matter simply as divisible stuff.¹

¹ Peterman (forthcoming) defends this.

Beyond this, matter is (4) self-moving; (5) sensitive; and (6) rational, but it might not have been.² Cavendish articulates the contingency of (4), (5), and (6) by claiming there are in fact three 'constitutive parts' or 'degrees' of matter: inanimate matter, and sensitive and rational matter, which are both self-moving. However, these degrees are so thoroughly mixed that every part of nature contains all three. For Cavendish, matter is what the Aristotelians called a "*mixis*", or perfect mixture: it is a homogeneous substance from which the components cannot be recovered, but whose nature is nonetheless grounded in its components. So we may follow Cavendish in treating matter as homogeneous, with all three capacities (PL 1.33, 1.35, 2.4, 4.29).

That matter is self-moving means that it causes changes in itself. Since only matter exists, if change happens, it must be matter that causes it. Moreover, Cavendish seems to think that there is something incoherent in the idea of one thing's acting *on* another. One thing can influence or occasion another thing to act, so that, for example, a hand tossing a ball serves as the occasion for the ball to move itself skyward. And, as we will see in Section 2, a thing can act toward and with other things in virtue of being composed with them. But strictly speaking, a thing can only act on itself.

Cavendish distinguishes the constitutive parts of matter from the "effective parts" of nature, which are creatures, including you, Lassie, the sun, livers, and quarks if any there are. While matter is essentially divisible, Cavendish holds that the actual parts of nature is generated by self-motion (OEP 70). This sounds like Descartes's claim that individual bodies are generated in homogeneous matter by local motion, but it is very different. For Cavendish, generating parts and the changes in those parts is something that matter *does*, while for Descartes it is something that matter *undergoes*. Also, according to Cavendish, motion is not local motion, or change of place, but rather change in facts about parthood and composition.³ While there are many kinds of changes at the level of effective parts, Cavendish analyzes all fundamental change in terms of division and composition, so that "the chief actions of nature, are composition and division, which produce all the variety of nature" (OEP 140). So the diverse states of homogeneous matter simply *are* its actions (PL 2.11, 2.16), and the connection between motion and the variety of parts is clearer for Cavendish than it is for Descartes. Self-motion diversifies matter because it is matter dividing itself.

The intrinsic divisibility of matter, the complete mixture of the kinds of matter, and the ability of matter to act diversely are important sources of metaphysical structure, for Cavendish, because she hates properties. The natures of things and the changes in them should never be explained in terms of properties, qualities, forms, or the like. To fully explain this would take us far afield, but the basic idea is that these are "half-beings" and are therefore not matter, and that the distinction

² "This 'triumvirate' of the degrees of matter, is so necessary a constitutive principle of all natural effects, that nature could not be without it: I mean; nature considered, not what she might have been, but as she is, and as much as we are able to perceive by her actions".

³ Peterman (2019) defends this.

between a thing and its properties, not being a distinction between parts of matter, does not exist.⁴

Cavendish's characterization of matter as divisible stuff and her rejection of properties are very important for understanding what she means when she claims that only matter exists. She means that there is stuff, and that stuff has a precise kind of part-whole structure, which is all the structure that there is. Since there is change, matter is self-moving, or causes changes in itself by composition and division. Matter is not a physical posit but a metaphysical one, and Cavendish's materialism is not the claim that there is only physical substance, be that extended stuff or stuff with size, shape, or spin, or stuff with whatever properties are mentioned in a completed physics. It is not the claim that there is one specific kind of substance at all, especially not if the kind is characterized in terms of property types.⁵

This makes Cavendish unusual in a tradition where much metaphysics of mind is carried out in terms of property types. Monism, dualism, idealism, and even panpsychism and panprotopsyism are characterized, among both Cavendish's contemporaries and ours, in these terms. In his 1729 *Philosophisches Lexicon*, J. G. Walch defines materialism as the position that "all the occurrences and operations of natural bodies are derived from the bare properties of matter, as from its dimension, shape, weight, confrontation and mixing."⁶ In our own *Philosophisches Lexicon*, the *Stanford Encyclopedia of Philosophy*, Daniel Stoljar couches most of the versions of physicalism he entertains in terms of the relationship between physical and nonphysical properties. Most of them are claims that, for example, all nonphysical processes are identical, supervene on, or are grounded by physical properties.⁷

But Cavendish does not allow her account of the mind to be constrained by what kind of stuff there is. She is committed to the view that the structure and behavior of what there is, at the very deepest level, will explain rock behavior as well as human minds. But she neither argues from the nature of the stuff to the nature of minds, nor from the nature of minds to the nature of the stuff - other than that minds, since they are matter, must be structured the way that matter is.

So far I've ignored Cavendish's claims that matter is sensitive, and rational. This is one of three main reasons that people read Cavendish as some kind of panpsychist. The other two reasons are

⁴ Peterman (forthcoming) defends this.

⁵ Ibid.

⁶ As cited in Wolfe, "Materialism". In fact, "materialism" wasn't a widely-used term until the end of the 17th century, where it appeared primarily as an ill-defined term of abuse and run together with similarly ill-defined polemical terms like 'mechanism', 'Spinozism', 'necessitarianism', 'atheism', and 'Epicureanism'. It became increasingly common in the 18th and 19th centuries but was still extremely polysemous.

⁷ Today there are other characterizations of physicalism on offer, but even those don't explicitly reject property talk; it just isn't front and center. See, e.g., Ney ("Physicalism") or Dowell ("Formulating the thesis of physicalism").

that Cavendish argues that all creatures are perceptive and knowing, and that she frequently describes Nature and matter, along with creatures, in anthropomorphic terms. Section 3 argues that we should not take Cavendish's anthropomorphic characterizations of non-humans literally. Section 4 argues that the knowledge and perception of creatures in general is not mentalistic. And Section 5 argues that Cavendishian sense and reason are not mentalistic.

Part of the argument that perception and knowledge in general are not like animal mental states requires understanding how Cavendish explains animal mental states. This is the topic of the next section.

2 Animal perception and knowledge

Creatures are effective parts of nature that are made up of other creatures, or effective parts. Cavendish's model of humans, animals, plants, and even minerals is that of organism - each creature is some ordered parts which are themselves ordered, and the matter that constitutes those parts is self-moving. Cavendish frequently claims that nature's order requires that all creatures must perceive and know:

[K]nowledge and perception...are general and fundamental actions of nature; it being not probable that the infinite parts of nature should move so variously, nay, so orderly and methodically as they do, without knowing what they do, or why, and whether they move (OEP 139).

Perception is a species of knowledge - specifically, "knowledge of exterior parts and actions" (OEP 16). Cavendish does not define knowledge.

Like all other creatures, animals perceive and know in a wide variety of ways. But Cavendish details two specific kinds of animal perception and a variety of non-perceptual mental states like memory and imagination. So what follows does not exhaust animal perceiving and knowing, which, as we will see, includes, for example, knowledge of digestion and respiration. But represents Cavendish's attempt to say what is distinctive about how creatures with brains and sense organs interact with the world.

An animal mind, like every part of nature, "is matter moved" and thoughts are "nothing else but corporeal motions" (OEP 53). Besides claiming in general that the mind is just so much matter, Cavendish constantly describes states like knowledge, wisdom, memory, love, fear, and disagreement in terms of the structure and dynamics of matter (e.g. OEP 163).

2.1 Animal perception

In an animal, the "perception of its exterior senses, as Seeing, Hearing, Tasting, Touching, Smelling...is properly made by way of patterning and imitation, by the innate, figurative motions of those Animal Creatures" (OEP 15). In vision, for example, the matter of the eye "patterns out"

or “imitates” the “figure, motion, or action” of an external object (OEP 150, 169, 173). The object must exist and be in some sense present to a perceiver to occasion this patterning (OEP 171). It does not cause the patterning either by a purely physical process, as in the mechanical theories of Descartes and Hobbes, or via information-carrying intermediaries like ideas or scholastic sensible species (OEP 148, 174). Patterning is just what some parts of an animal do when the animal is around the relevant objects.

Sense perception happens entirely in the matter of the sense organ: the eyes see, the ears hear, and there is no need for what happens in a man’s eye, say, to be passed along to the brain or processed in any way for seeing to occur (OEP 151, 154, 175). There is also a kind of perception that Cavendish calls “rational perception”, which she characterizes as “purer”, “more general”, and “more penetrating” than sense perception; it also accounts for cross-modal integration.

It seems to me that this kind of animal perception is Cavendish’s attempt to account for the fact that some of the ways that animals interact with the world involve mapping it in their bodies. Patterns are isomorphic, to some extent, with their objects and they are, to some extent, truth-evaluable. The re-patterning of sensitive perceptions by the rational parts looks something like a mechanism for abstraction. To that extent, patterning involves representing the external world.

At the same time, Cavendish is intent on naturalizing these processes in some interesting ways.

First, the perception is an action of an animal’s matter. It is not an idea in the Cartesian sense of a mind-dependent object of perception.:

[I]n those perceptions which are made by patterning, the action of patterning, and the perception, are one and the same (OEP 178).⁸

Perception is a direct relationship with an object that exists without intermediary (G 8, 69). Sometimes Cavendish describes perception as a dance that a perceiver does with the object that is perceived.

Second, perceptions are highly dependent on the animal’s structure, on their role in the animal, and on the part of the animal that they occur in. Cavendish repeatedly stresses that the perceptions that a thing can have depend on how it is structured and what kinds of motions it can make (e.g. OEP 166). The dependence of the meaning of perceptions on their role is suggested by Cavendish’s fascinating discussion of patternings that are not perceptions. Like sense perception, she writes, echos, reflections, and pictures are “made by the self-moving matter, by way of patterning and copying out.” Nonetheless,

I cannot guess what their perceptions are, onely this I may say, that the air hath an elemental, and the glass a mineral, but not an animal perception (PL 1.24).

Both the human eye and a mirror pattern the face of a man, but this may be a perception in the human but not a perception in the mirror. This means that any so-called “information” contained

⁸ Michaelian also makes this point nicely (2009: 40).

in the patterns is not easily abstracted from that context and realizable in some other kind of thing - or even, she claims, in a very similar individual like another human being.

Perceptions are similarly dependent on the particular parts of the animal: “the Eye doth not know what the Ear knows, nor the Ear what the Nose knows...because they are composed differently” (OEP 185). So while Cavendish’s account of re-patterning is a way to capture, to some extent, the fact that animals sometimes go on to use perceptual representations in different ways, patterns are not easily abstracted from the part of the body they occur in. So re-patterning is perhaps better thought of as a way that the parts of an animal work together, rather than on the model of information-processing.

Third, Cavendish is far, far more likely to characterize sense perceptions as natural or unnatural than to characterize them as true or false. Her epistemic norm is naturalness, not accuracy. In one of my absolute favorite parts of the *Observations*, Cavendish critiques experimental philosophers who think that optical lenses give us special insight into the natures of things. In fact, they deform our natural sight, presenting creatures as “misshapen rather than natural: For example; a louse by the help of a magnifying glass appears like a lobster” (OEP 51). And under a microscope

If the edge of a knife, or point of a needle were naturally and really as the microscope presents them, they would never be so useful as they are; for, a flat or broad plain-edged knife would not cut, nor a blunt globe pierce so suddenly another body (OEP 51).

Do our natural eyes present a knife more accurately? No - just as the way the glass patterns the louse reflects the structure of the glass, the way my eye patterns the louse reflects the structure of my eye. But my eye, and not the microscope, is tuned to see things in ways that are natural to me. That naturalness is in turn important because it tracks usefulness:

if a Painter should draw a Lowse as big as a Crab, and of that shape as the Microscope presents...what advantage would it be to the Beggar? for it doth neither instruct him how to avoid breeding them, or how to catch them, or to hinder them from biting (OEP 11).

Human perception is for the “Subsistence, Consistence, and use of the Whole Man” (G 51). It is the same for other animals. The different species of birds, for example, are “better discerned by those that eat their flesh, than by micrographers that look upon their colours and exterior figures through a magnifying glass” (OEP 52).

To summarize: the patterning account of animal sense perception is Cavendish’s attempt to explain how animals come to have something like maps, isomorphisms, or representations in their bodies. At the same time, she’s always concerned to stress that these are first and foremost just some ways that animal bodies ensure their survival. I’ll argue in Section 4 that non-animal perceptions are like animal sense perceptions in being ways of ensuring a creature’s survival, but that we have no reason to think that non-animal perceptions are like animal sense perceptions in being representations of their environments.

2.2 Animal knowledge

First, however, let us consider Cavendish's account of non-perceptual animal knowledge, under which Cavendish includes "Thoughts, Conceptions, Imaginations, Fancy, Understanding, Memory, Remembrance, and whatsoever motions are in the Head, or Brain" (PL 2.18). An important difference between these actions and perception is that these are not occasioned, but "voluntary" or made "by Rote, and not by Example" (G 5.11).

In non-animal contexts, Cavendish is fairly consistent that there are two exclusive and exhaustive kinds of knowledges: perception, which is "exterior" or concerns other parts and actions, and what she calls a creature's self-knowledge, which is internal and concerns the creature itself. But an ambiguity arises in the case of animal knowledge. Conceptions and so on are not "exterior" in the sense that they are not occasioned by external objects, but can they nonetheless be *of* anything outside the animal's body?

Cavendish is quite aware of this ambiguity:

[T]his is the difference between exterior perceptions, and interior voluntary actions: . . . perceptions are properly concerning foreign parts, figures and actions, and are occasioned by them: but, the voluntary actions are not occasioned by any outward objects, but make figures of their own accord, without any imitation, patterns, or copies of foreign parts, or actions. . . the reason why I call the voluntary actions, interior, is, *because they have no such respect to outward objects, at least, are not occasioned by them*, as perceptions are, but are the figurative actions of sense and reason, made by rote; whereas perceptions do tend to exterior objects, and are made according to the presentation of their figures, parts or actions [my emphasis] (OEP 170-171).

Texts can be marshaled that suggest that some interior, voluntary conceptions can be of outward objects, and others can be marshaled that suggest that they cannot. I prefer the latter reading. I believe that Cavendish has the sense that perception grounds all the cognitive contact that animals have with the external world. Here are some reasons to think that.

First, Cavendish sometimes suggests that to the extent that certain non-perceptual states like dreams or memories are *of* anything at all, it is only in virtue of some original patterning. For example, remembrances are not occasioned, but they do "repeat some former actions" and so to that extent are connected with original patternings (GNP 101).

Similarly dreams are "those Corporeal Motions of Sleep, [which] make the same pattern of that Object in Sleep, as when that Object was present" (GNP 112). While dreaming happens strictly speaking by rote,

if the Self-moving Parts move after their own inventions, and not after the manner of Copying; or, if they move not after the manner of Human Perception, then a Man is as ignorant of his Dreams, or any Human Perception, as if he was in a [Swoon]; and then he says, he did not dream; and, that such Sleeps are like Death (GNP 112).

Without the connection to any human perception, a dream has no content.

In the case of other non-perceptual mental states, it is rare for Cavendish to characterize them in terms of what they are of. Instead, she usually describes them in non-representational terms, like this:

When [the] Rational Parts... divide in divers sorts of Actions, Man names it, Arguing, or Disputing in the Mind. And when those divers sorts of Actions are at some strife, Man names it, A contradicting of himself. And if there be a weak strife, Man names it, Consideration... When all the Parts of the Mind move regularly, and sympathetically, Man names it, Wisdom (GNP 101).

Perhaps the non-perceptual mental state that most interests Cavendish is creation. Man has the ability to “enjoy Worlds of his own making” and to “govern and command those Worlds; as also, dissolve and compose several Worlds, as he pleases” (GNP 103). But Cavendish is very much inclined to talk of these conceptions in the sense of begettings rather than in the sense of concepts, even playing on the word’s polysemy in a discussion of miscarriage (GNP 87). Conceptions are the offspring of brains.

What about the possibility that non-perceptual knowledge is of eternal truths, or numbers, or something else? Cavendish doesn’t think too highly of abstract or mathematical reasoning.⁹ She does say that we have some knowledge of God, but she is sometimes inclined to classify this as self-knowledge and sometimes as perception, which further suggests that she thinks of self-knowledge and perception as exhaustive (OEP 193). Other times she says the idea has no real content.¹⁰ Finally, it is wise to avoid worrying too much about God in thinking about Cavendish’s natural philosophy, since she tells us repeatedly that this should be left to theologians.¹¹

So Cavendish seems to have the hunch that our representations all have their roots in perception, or in actual interactions with external objects. This doesn’t mean that she is an empiricist, since there are non-sensory rational perceptions, although she does say that in a properly-functioning animal the sensory and rational perceptions work together, which suggests that she appreciates the special role that the sense organs have in generating our mental contents (OEP 179).

Non-perceptual animal knowledge like memory, hope, imagination, and love are some kinds of internal actions that we have in virtue of being structured the way we are - specifically, in virtue of having a brain. They are no better than other kinds of knowledge, and there is no sense in which humans represent the most complex or developed version of this:

Man may have a different Knowledg from Beasts, Birds, Fish, Flies, Worms, or the like; and yet be no wiser than those sorts of Animal-kinds (GNP 148).

⁹ For more detail about this, see Peterman 2019.

¹⁰ CITE

¹¹ CITE

Locating them in the brain is not an attempt to unify consciousness. In fact Cavendish regards it as absurd to think that “the mind chiefly resides but in one part of the body” (OEP 154) or that “one single part should be King of the whole Creature”, for a creature is “a Republic and not a Monarchy” (PL 3.24). Among the arguments she gives for this is that if blood “were the seat of the Soul, then in the circulation of the blood...it would become very dizzy by its turning round” (PL 4.2) - a most colorful critique of homuncular thinking. Indeed, “every particular Creature hath numerous souls” (PL 4.3) which are moreover not very distinct from other souls, since souls are matter, and no matter is fully distinct from other matter (PL 4.2). This includes us: “one man may have numerous souls, as well as he has numerous parts and particles” (OEP 191).

Sense perceptions, conceptions, and so on are only a few among many kinds of perception and knowledge in an animal body; others include “the motions of digestion, growth, decay, etc.” which

are as sensible, and as rational, as those five sensitive organs; and the heart, liver, lungs, spleen, stomach, bowels, and the rest, know as well their office and functions, and are as sensible of their pains, diseases, constitutions, tempers, nourishments, etc. as the eyes, ears nostrils, tongue, etc. know their particular actions and perception (OEP 151).

There are also countless perceptive and knowing processes in other creatures. I’ll turn to those in Section 4, but it will be helpful to first consider those metaphors of thoughtful teleology.

3 Anti-anthropomorphism

In addition to attributing knowledge and perception to all creatures, Cavendish frequently describes nature as a “Wise and Provident Lady” who governs her parts very wisely, methodically, and orderly” (OEP 105). Rational matter is the “architect” or the “most prudent and wisest part of Nature, as being the designer of all productions” (OEP 3). Many readers take these literally and think that for Cavendish, we cannot explain natural phenomena without appealing to the “ends of thinking, reasoning beings.”¹²

This is very puzzling, given that perhaps *the* primary normative dimension in Cavendish’s system is the natural (thumbs up) vs the artificial (thumbs down). Specifically relevant here is her observation that art “is but a natural creature or effect, and not a creator of anything” (OEP 193). If art is not a creator of anything, and matter and Nature are, why liken them to artificers? You might think that the limitation of our artifice is a matter of degree, as it is for Leibniz, and that the problem with art is just that humans are limited planners while Nature has all the power and sees the whole picture. But this doesn’t feel right. Leibniz doesn’t call art names like “Nature’s mimic or fool,” “nature’s foolish changeling child,” and “the insnarled motions of nature” (PL 2.13, 1.26, 2.12). For Cavendish, there is nothing intrinsically wrong with art: humans do stuff and make things, like spiders make webs. What she seems to think is bad about

¹² Goldberg 2017: 80; see also Jorati 2019: 487 and Detlefsen 2007: 188.

human artifice is that we take other creatures, Nature as a whole, and matter itself to act the same way. In contrast, Leibniz encourages us to think of God as an infinitely powerful workman.

The solution to this puzzle is pretty simple: Cavendish explicitly tells us not to take these literally. Of the notion that the actions of God or Nature may be understood by analogy with our own, she writes:

I am not of the opinion...that all natural effects may be called artificial, nay, that nature herself may be called the 'art of God'... for art is as much inferior to nature, as a part is inferior to the whole, and all artificial effects are irregular in comparison to natural; wherefore to say, God or Nature works artificially, would be as much as to say, they work irregularly (OEP 198).

When Cavendish contrasts the wisdom of Nature with "Divine Wisdom," it may sound like she does think that God, at least, is such an artificer. But 'divine', for Cavendish, often means something like "whatever thing that humans think makes them super-natural." Cavendish connects the view that God is an artificer with mechanism:

And as for 'mechanical motion'; that seems but a mechanic opinion: nor have those, who make God the 'First Mechanical Mover,' any other but an irreverent concept of the 'divine nature' (OEP 21-22)

Cavendish is attacking specifically the view that matter is inert and God, working from outside of matter, sets it in motion. That that is irreverent concept is "but a mechanic opinion" sounds like another allusion to an argument against analogizing with human activity.

Here is another warning against conceiving of Nature's wisdom on analogy with our own:

It is absurd to conceive the Generality of wisdom according to an Irregular effect or defect of a particular Creature; for the General actions of Nature are both life and knowledg, which are the architects of all Creatures, and know better how to frame all kinds and sorts of Creatures then man can conceive (PL 2.4).

And just as Nature is not literally a wise lady, rational and sensitive matter is not literally a builder. We should not imagine

that as a builder erects a house according to his conception in the brain, the same happens in all other natural productions or generations...if all Animals should be produced by meer fancies, [then] a Man and a Woman should beget by fancying themselves together in copulation (PL 4.2).

Here, Cavendish tells us precisely what is the difference between the literal and metaphorical builder. While a human builder erects a house "according to a conception in the brain," rational and sensitive matter does not.

We might wonder why Cavendish uses analogies of thoughtful teleology so much if she doesn't want us to take them literally. Here is one possible answer. Cavendish is indeed trying to emphasize the continuity between human beings and other natural things, down to minerals and planets. On that point, I agree with those who read Cavendish as a panpsychist. But the fact that we are made of matter, and that we are just one manifestation of nature's action, should cause us to reinterpret how we do things in light of how nature does things, and not the other way around.

What do we learn from this shift in perspective? One thing that we know about nature's actions is that they are all corporeal motions, so that is one lesson: our own willing, perceiving, and thinking are just so many corporeal motions. Beyond that, however, we do not have much insight into the infinite variety of ways that nature acts. In a passage that I'll cite in full in the next section, Cavendish writes that when she analogizes matter's capacities to human capacities (in at least one particular respect), she does so "to make my meaning more intelligible to weaker capacities." The point, which could have been made less rudely, seems to be that it is quite difficult to understand in what sense matter and Nature "plan" without such analogies. Nonetheless, that does not mean we should assume they do it like we do.

4 Perception and knowledge

As a natural philosopher, what is salient to Cavendish are not trajectories and collisions but digestion, respiration, generation, and growth; not solid bodies but animals, trees, and other self-moving, self-regulating systems of organized parts. Cavendish, similar to her mechanist contemporaries like Descartes and Boyle, wants to ground the creature-level in fundamental metaphysical structure. However, the structure that she finds both at the creature-level and the fundamental level is not spatial and geometrical structure, but compositional structure. Cavendish does not seem to take physics to be a bridge between the creature level and the foundational facts. She is interested in a theory of organism, not a theory of local motion.

I will argue in this section that her account of creaturely perception and knowledge should be understood in this context. In brief: an organism's perception is its ability to interact with its environment, and its knowledge is the ability to regulate itself. Ultimately, Cavendish thinks that these abilities are grounded in matter's self-motion. We have no reason to think that perception and knowledge at the level of creatures, or the perceptual and knowing abilities of matter, involve the internalization of information in the sense that animal sense perception and knowledge do.

4.1 Creaturely perception

Every effective part of nature perceives, including plants, stars, and mud, and the way that a creature perceives depends on how its body is constituted:

[E]very several kind and sort of Creatures, have several kinds of sorts of Perception, according to the nature and property of such a kind of sort of Composition, as makes such a kind or sort of Creature (GNP 69).

What is shared by every kind of perception is that it is (1) a knowledge of external parts, and (2) a kind of corporeal motion; (1) is just the definition of perception, and (2) is true because every natural action is a kind of corporeal motion (OEP 170).

What is *not* shared by every perception is that it is a kind of patterning or imitation:

there are as many different sorts of perceptions, as there are of motions; because every particular motion has a particular perception; and though in a composed figure or Creature, some motions may work to the patterning out of exterior objects, yet all the rest may not do so, and be nevertheless, perceptive: For, as a man, or any other animal creature, is not altogether composed of eyes, ears, noses, or the like sensitive organs: so, not all perceptive motions are imitating or patterning... (OEP 173)

If, as I argued in Section 2, patterning is Cavendish's account of how animals create something like naturalized representations, then Cavendish denies that ability to non-animal creatures. It is possible, of course, that they represent in some other way that counts as cognitive or mental, but it seems significant that she provides a detailed account of how animal bodies specifically achieve that, which is moreover specific to organs that non-animals lack.

Elsewhere, Cavendish makes clearer that we should not conclude, from the fact that animals perceive by creating representations, that this is how other things perceive. Cavendish poses this question to her account of animal perception:

Q: How is it possible that any perception of outward object, can be made by patterning, since patterning doth follow perception? for, howe can anyone pattern out that which he has no perception of?

This reflects a worry that some readers of Cavendish have had that her account of perception is caught in some kind of circularity.¹³ She claims that perception is necessary to ensure order, which makes it sound like it guides motion. But she also makes clear that perception, particularly in the patterning case, is caused by motions. That seems to imply that for the eyes, for example, to pattern an external object, the parts of the eyes must first perceive the object.

Given what I've argued so far, this is not strictly circular: the matter of the eyes, in rearranging to pattern an object, does perceive, but its perceptions are different from the perception of the eye and of the whole animal. However, if you are thinking of the perceptions of matter as like animal sense perceptions, you will find this account unsatisfying. If matter can perceive in the way that an animal does *without* patterning, then why does Cavendish need patterning to account for animal sense perception? She seems to be giving a corporeal-motion-based account of sense perception, but she is actually relying on some more basic capacity that matter has.

The reply to this is that the perceptions of matter are *not* like animal sense perceptions:

I answer, Natural actions are not like artificial; for art is but gross and dull in comparison to nature: and, although I allege the comparison of a painter, yet it is but to make my meaning more intelligible to weaker capacities: for, though a painter must see or know first what he intends to draw or copy out; yet the natural perception of exterior objects is not altogether after the same manner; but, in those perceptions which are made by patterning, the action of patterning, and the perception, are one and the same (OEP 178).

¹³ CITE

Human seeing, or patterning, just is one human way of acting with relation to an external objects. Specifically, it involves the creation of representations of objects in animal bodies. Natural perception is not a “seeing” or a “knowing” in this sense.

Cavendish sometimes characterizes perception without mentioning knowledge at all, for example, as an “exterior action, because it is occasioned by an object that is without the perceiving parts” (OEP 171). So while we don’t yet know what “knowledge” means, for Cavendish, we have a candidate way of understanding perception that does not rely on it: a creaturely perception is an action of that creature toward an external object.¹⁴ We have no reason to think that this action always reproduces, even in a very abstract sense, the figure of the object in the perceiver, or that every perceiving creature assimilates information about what it perceives.

4.2 Matter’s perception

Cavendish defines perception as the knowledge that one part has of another part, and so far, I’ve treated this as the claim that perception is the knowledge that one creature has of another. But it is very important that these creatures are *parts* of the body of nature. To be part of nature, for Cavendish, is to be connected in a unique way to the other parts of nature. Parts that were not connected to each other in this way (“single parts”, as Cavendish calls such parts) would actually not be parts at all, but atoms, which is the same as to say, so many independent worlds.

An organism’s perceptions are the ways that it has of orienting itself to other parts of nature. Cavendish grounds this in matter’s overall tendency to orient itself toward other parts. It has this tendency because matter has part-composition structure, and it is in the nature of this structure that parts are orientated to other parts. It is also in the nature of material parthood, according to Cavendish, that there are no completely divided parts or entirely composed units. Material parthood and composition is, you might say, metaphysically unstable, and this is the most basic metaphysical structure that there is. There is no question of part-composition priority: it is precisely the sort of structured relationship in which the question of priority does not arise, and this is an example of Cavendish’s nonhierarchical metaphysics and resistance to dependence relations.

Cavendish strongly associates knowledge with composition and ignorance with division: “ignorance is caused by division, and knowledge by composition of parts” (OEP 20). To the extent that one part is divided from another, it is ignorant of that part; knowledge can only be recovered - and never completely - to the extent that the parts form a composite. Laura Georgescu has beautifully argued that we can understand Cavendishian perception as just the ground of relations between parts of a composite, and there is no reason to think of this as

¹⁴ [Note to Uriah: is this footnote ok/useful?] The editor of this volume asks: “So kicking a tree is a way of perceiving it? That sounds a bit strange. Maybe it is a specific kind of action?” But for Cavendish there is only occasional causation between parts of matter. The kicker kicks, and the tree is damaged, but in fact any change in the tree is self-caused. It is indeed perception that connects these two actions.

“epistemic” in the usual sense (Georgescu 2021). I resist characterizing the connection between parts as a relation, but I agree that perception, for Cavendish, is the recovery of a connection between two divided parts of matter. And there is no reason to think of it as requiring thought, cognition, or consciousness.

4.3 Creaturely (self-)knowledge

I have offered a characterization of creaturely perception: it is the action of a creature toward other parts, which is has in virtue of being composed with them. In doing so, I put aside the question of what ‘knowledge’ means, for Cavendish, given that she defines perception as exterior knowledge. We must now ask what ‘knowledge’ means. Since Cavendish does not define ‘knowledge’, we’ll have to look at how she uses it, starting with how she describes the knowledge that creatures have. As I mentioned in Section 2.2, Cavendish usually treats perception, or exterior knowledge, and self-knowledge, or interior knowledge, as exclusive and exhaustive kinds of knowledge. Having treated perception, let us consider creaturely self-knowledge.

A composed creature as a whole has self-knowledge, which is knowledge of itself and of its parts.

A Whole may know its Parts...but no particular part can know its whole...I say, no particular part; for, when parts are regularly composed, they may by a general Conjunction or Union of their particular Knowledges and Perceptions, know more, and so judg more probably of the Whole; and...by the division of parts, those composed knowledges and perceptions, may be broke asunder like a ruined House or Castle (OEP 138).

Self-knowledge is “interior, inherent, innate, and, as it were, a fixt being”; it is “fixt” in that it exists as long as the creature exists, but being dependent on the structure of the creature, it can “alter as [its] own parts alter” (OEP 171).

This ‘fixt’, creaturely self-knowledge is “the ground of particular knowledges”, or knowings, of the creature, including particular self-knowings and particular perceptions. Particular knowledges are just so many corporeal figurative motions.

[P]articular figures have a variety of knowledge, according to the difference and variety of their corporeal figurative motions (OEP 177).

The corporeal figurative motions that are possible for a creature depends upon the structure of the animal:

[T]hough the Bell hath not an animal knowledg, yet it may have a mineral life and knowledg... and the Jack-in-a-box a vegetable knowledg...each in its own kind may have as much knowledg as an animal in his kind; onely they are different according to the different proprieties of their Figures (PL 2.13).

[A] tree, although it has sensitive and rational knowledge and perception, yet it has not an animal knowledge and perception; and if it should be divided into numerous parts, and these again be composed with other parts, each would have such knowledge and perception, as the nature of their figure required (OEP 171).

[T]he Sun, Stars, Earth, Air, Fire, Water, Plants, Animals, Minerals; although they have all sense and knowledg, yet they have not all sense and knowledg alike, because sense and knowledg moves not alike in every kind or sort of Creatures, nay many times very different in one and the same Creature (PL 2.7).

We may ask: what is this fixt self-knowledge of a creature, beyond its structure? Canvassing these and Cavendish's many other references to creaturely self-knowledge, I think the answer must be: *nothing*. The fixt self-knowledge of a creature is just its structure. To take just one vivid example of this, Cavendish says of a man who is born without the use of his legs that "his Leggs...have no knowledge of such Properties that belong to such Parts" (GNP 109). Similarly:

In a Human Creature, those Parts that produce, or nourish the Bones, those of the Sinews, those of the Veins, those of the Flesh, those of the Brain, and the like, know all their several Works, and consider not each several composed Part, but what belongs to themselves; the like, I believe, in Vegetables, Minerals, or Elements (GNP 81).

In virtue of their compositions, fish know how to swim, songbirds know how to sing, we know how to add and forage but also how to grow, reproduce, and digest; snow knows how to make crystals, how to make you cold, and how to be fun to slide on. The fixt self-knowledge knowledge that creatures have just is the way that they are; the fixt self-knowledge that our legs have how to move is encoded in their structure. The evaluative terms Cavendish applies to this kind of knowledge are about health, regularity, harmony, and naturalness, not truth, accuracy, or detail.

All of Cavendish's references to creaturely fixt self-knowledge make sense if we understand it simply as structure, and her references to particular self-knowledges make sense if we understand them as the corporeal figurative motions that arise from the self-motion within that structure. Moreover, on my reading of Cavendish, there is nothing else that fixt self-knowledge *can* be. Given Cavendish's picture of nature in terms of self-moving, composite stuff, there is no way for a creature to "contain information" other than in that structure. In the next sections - 4.4 and 5 - I argue that Cavendish's claim that matter is self-knowing, sensitive, and rational is consistent with this claim.

4.4 Matter's self-knowledge

Cavendish claims that self-knowledge is the "ground and fountain of all other particular knowledges and perceptions" (OEP 176). Many such passages can be read as concerning creaturely self-knowledge in the sense described in the previous section: the self-knowledge, or structure, of creatures is what grounds their particular knowings.

But sometimes it sounds like Cavendish means something else. Sometimes it sounds like she takes self-knowledge to be some intrinsic, fundamental feature of matter, necessary to explain why composite creatures can have creaturely self-knowledge and particular knowledges and perceptions in the first place. For example:

[S]elf-knowledge...cannot be divided from its own nature; for, as matter cannot be divided from being matter, or self-motion from being self-motion; so, neither can self-knowledge be divided from being self-knowledge; nor can they be separated from each other, but every part and particular of natural matter, has self-knowledge and perception, as well as it hath self-motion (OEP 163).

Cavendish also writes that inanimate matter has self-knowledge, and - what amounts to the same - that matter could have lacked self-motion and had self-knowledge (G 12). So it seems that self-knowledge is not, like particular knowledges, derived from self-motion, but it is fundamental to matter alongside self-motion.

A number of Cavendish scholars have argued that this kind of self-knowledge should be taken literally, as a body's knowledge of nature's norms (Boyle 2015; Detlefsen 2007), or as "know-how" (Michaelian 2009: 38). But as we have seen, Cavendish goes to great lengths to show how *particular* perceptions and knowledges are generated by self-motion. Here again, I appeal to Georgescu's detailed defense of a deflationary reading of perception and self-knowledge. A mentalistic account of self-knowledge like this, she writes,

[G]ets a dependency relation upside-down...self-knowledge is the ground of all particular knowledge, that is, all particular types of knowledge depend on self-knowledge, and not the other way around...On the know-how reading, we get an over-inflated concept of self-knowledge which, I believe, Cavendish does not endorse (Georgescu 2021: 633-634).

I would add to this that readings on which self-knowledge is some kind of intrinsic property or nature runs afoul of what I believe to be at the core of Cavendish's materialism: that talk of intrinsic properties is obscurantist and metaphysically indefensible. The different ways that matter can be all involve its composition facts, and the ways it can act involve changing those composition facts.

So, we should not understand matter's self-knowledge on analogy with the particular knowledges and perceptions of creatures. This would include thinking of it as a kind of knowledge of norms or as a kind of know-how. These are only effects of matter's self-knowledge. So then what *is* matter's self-knowledge?

Much of what Cavendish writes about self-knowledge makes it sound like identity. This is true, for example, in the passage cited four paragraphs above, that "self-knowledge...cannot be divided from its own nature" just as "matter cannot be divided from being matter."¹⁵ I believe that this is indeed the right place to start in understanding how Cavendish is thinking about matter's self-knowledge. In the counterfactual case that there were no self-motion and as a result no metaphysical structure, to say that matter is self-knowing is simply to say that it is self-identical.

In a world with parthood and composition, however, self-knowledge, precisely by being the principle of identity, also serves as the principle of composition: it is what identifies some parts

¹⁵ CITE

with one single composite thing. For Cavendish, composition is identity, namely, the identity of some parts with one thing: “a whole and its parts”, she writes, are “yet are one and the same thing, several ways” (OEP 193), and “a whole is nothing but a composition of parts, and parts are nothing but a division of the whole” (G 158).¹⁶ Since there is no thing which is a single or independent part (except nature as a whole), there is no thing which is entirely self-knowing or entirely perceiving:

As one part cannot be another part, so neither can one parts knowledg be another parts knowledg; although they may have perceptions of each other: When I speak of parts, I mean not single parts; for there can be no such thing (OEP 196).

[T]he infinite parts of nature have not only interior self-knowledge, but also exterior perceptions of other figures or parts, and their actions; by reason there is a perpetual commerce and intercourse between parts and parts; and the chief actions of nature, are composition and division, which produce all the variety of nature; which proves, there must of necessity be perception between parts and parts (OEP 140, see also 177).

We now have a way of making sense of Cavendish’s frequent claims that “knowledge and perception...are general and fundamental actions of nature” (OEP 139), without granting that matter is minded in anything like the sense that we are. Specifically, we can make sense of this claim without positing that matter does anything like animal representation. Composition and division are the general and fundamental actions of nature; self-knowledge is composition and perception results from the balance of composition and division. Perception is the capacity that a part of matter has to be oriented to the whole, in virtue of being part of it.

5 Sense and reason

I’ve argued that Cavendish’s claim that all creatures are perceptive and knowing does not mean that non-animals have mental states, and that her claim that matter is self-knowing does not mean that it has epistemic states like know-how or knowledge of norms. However, Cavendish also claims that matter itself is sensitive and rational. This makes it sound like Cavendish holds a version of panpsychism that we might call ‘hylopsychism’, following Cudworth’s coinage of ‘hylozoism’ to describe the view that matter is intrinsically living. (This is a useful coinage because unlike ‘panpsychism’, it makes explicit that it is a claim about the nature of matter, or the physical, as opposed, say, to idealism or world-soul-ism, or to Cavendish’s alleged view that all composite creatures have something like mental states.) In 5.1 and 5.2, I’ll offer an account of sense and reason which is not mentalistic. In 5.3, I’ll respond to some objections that arise from some of what Cavendish says about rational matter.

5.1 Self-motion, sense, and reason

¹⁶ As Georgescu puts the point: “Cavendish thus provides an account of self-knowledge and perception as metaphysical notions that allow each body to be simultaneously a whole and a relational part” (Georgescu 2021: 639).

Cavendish calls sensitive and rational matter ‘sensitive’ and ‘rational’, and identifies them as the grounds of creaturely knowledge and perception. She also describes them in terms of an anthropomorphic building metaphor: rational matter is an architect, sensitive matter a laborer, and inanimate matter the building materials.

However, while these kinds of matter, like the Aristotelian sensitive and rational souls, they do so not because they are themselves sensing or thinking, or because they have some additional feature, beyond self-motion, that makes them suited to sensing and reasoning when they come together in certain ways (‘hyloprotopsychism’, perhaps?). They do so because they are self-moving, and self-motion, as Cavendish writes, is the “Life and Soul of Nature.” Cavendish writes in the OEP:

All parts of nature are living, knowing, and perceptive, because all are self-moving; for self-motion is the cause of all particular effects, figures, actions, varieties, changes, lives, knowledges, perceptions, etc. in nature, *and makes the only difference between animate and inanimate matter* (OEP 191-192, my emphasis).

The *only* difference between animate (which includes sensitive and rational) matter and inanimate matter is that animate matter has self-motion.

This is confirmed by Cavendish’s derivation of the ‘triumvirate’ in the *Grounds*, where she distinguishes sensitive and rational matter from inanimate matter because they are self-moving, and distinguishes them from each other only in the degree to which each couples with inanimate matter:

Neither can there be more than two sorts of Matter, namely, that sort which is Self-moving, and that which is not Self-Moving. Also, there can be but two sorts of the Self-Moving Parts; as, that sort that moves intirely without Burden, and that sort that moves with the Burdens of those Parts that are not Self-moving: So that there can be but these three sorts; Those parts that are not moving, those that move free, and those that move with those parts that are not moving of themselves: Which degrees are (in my opinion) the Rational Parts, the Sensitive Parts, and the Inanimate Parts; which three sorts of Parts are so join’d, that they are but as one Body; for, it is impossible that those three sorts of Parts should subsist single, by reason Nature is but one united material Body (GNP 66).

Cavendish ultimately argues that we are in a world with all three kinds of matter, perfectly mixed together so that every part of matter has all three capacities. The mixture is necessary to explain both why change happens over time, why some things move quickly and some move slowly, and why we do not find fully animate things or fully inanimate things in the world; just things that change in some ways and stay the same in others.¹⁷

So, the fact that matter has “sensitive” and “rational” parts arises from the nature of matter combined with its relationship to self-motion, and there is nothing mentalistic that needs to be added to explain mental phenomena. Indeed, Cavendish often writes that there are just two kinds

¹⁷ For more detail on the mixture and its role in explaining change, see Peterman (forthcoming).

or degrees of matter: animate and inanimate (“as for matter itself, there are no more degrees but animate and inanimate; that is, a self-moving, active, and perceptive, and a dull, passive and moved degree” (OEP 30, see also 201)). That sense and reason are just self-motion is confirmed by Cavendish’s frequent claims that sense and reason follow immediately on self-motion (“wherever there is Self-motion, there is Sense and Reason” (OEP 169)), that sense and reason simply are self-motion (“Sense and Reason, which is self-motion” (PL 1.10, see also PPO 1663 298), and that perception is self-motion or that self-motion is the only cause of perception (“self-motion is the action of perception, without which, no perception could be; and therefore perception and self-action are one and the same” (OEP 178)).

It is easy to understand the other characterizations of sense and reason in terms of the relative encumbrance of rational and sensitive matter. Rational matter is freer and more “penetrating” because it is not being mixed with and therefore limited by inanimate matter, so it can move in a wider variety of ways: “The rational perception, being more general, is also more perfect than the sensitive; and the reason is, because it is more free, and not encumbered with the burdens of other parts” (OEP 166, see also 175, 181).

As for the building metaphor, both the architect and the builder are self-moving and thereby create the variety-in-composition that is the house, but with different degrees of freedom. The sensitive parts of matter are laborers inasmuch as they “bear the grosser Materials about them, which are the Inanimate Parts” (GNP 67). The architect, being unencumbered, is simply freer in his self-motions. Moreover, just as self-motion is the ultimate source of all the variety of forms and all change, an architect is the ultimate source of the form of the house and the motions toward building it. It has the power to do so because it is self-moving, which is to say, it can divide and compose:

But yet by reason this life and soul [of Nature] is material, it is divided into numerous parts, which make numerous lives and souls in every particular Creature, but all the parts considered in general, make but one soul of Nature; and as this self-moving Rational Matter hath power to unite its parts, so it hath ability or power to divide its united parts (PL 4.2).

Sensitive and rational matter are both just self-moving matter, and self-motion is the “Life and Soul of all Creatures” (PL 4.33). Cavendish diagnoses the denial that all matter is self-moving as another case of human hubris:

Thus some learned...are so much afraid of self-motion, as they will rather maintain absurdities and errors, than allow any other self-motion in nature, but what is in themselves: for, they would fain be above nature, and petty gods, if they could but make themselves infinite; not considering that they are but parts of nature, as all other creatures.” (OEP 112).

5.2 Order

Cavendish argues that creaturely knowledge and perception is widespread because “in all natural actions, there is a commerce, intercourse, or agreement of parts; which intercourse or agreement, cannot be without perception or knowledge of each other” (OEP 172). In order to explain

widespread knowledge, perception, and order, matter must be sensitive and rational. Can we understand this order without an ordering mind or minds? Yes.¹⁸

It is often suggested that Cavendish connects what she calls ‘order’ and ‘regularity’ with the lawlike or the typical, with conformity to kind or norm, or with predictability. But in fact Cavendish connects order at least as more tightly with *variety*:

Order and Distinction, are Regularities (GNP 208).

Meanwhile, confusion is associated with a lack of distinction and even with similarity:

[S]everal sorts, kind, and differences of Particular, causes Order, by reason it causes

Distinctions: for, if all Creatures were alike, it would cause a Confusion (GNP 79).

The importance of natural variety to Cavendish’s system cannot be overstated; she constantly emphasizes the infinite variety of creatures as well as the infinite power of matter to divide and compose. She observes often that nature is “delighted with variety” and never simplicity or predictability. In fact, she claims, “there’s not anything that has, and doth still delude most men’s understandings more, than that they do not enough consider the variety of nature’s action” (OEP 99).

To the extent that order is associated with variety, it is very easy to explain why sensitive and rational matter, understood simply as self-moving matter, are necessary for nature to be orderly: self-motion is what is responsible for variety. Without it, the world be “a dull, indigested and unformed heap and chaos” (OEP 207).

Now, Cavendish does sometimes suggest that variety alone is not sufficient for order, but rather a variety of “kinds and sorts”. That does make it sound like some kind of regularity in the sense of similarity is necessary for order, and Marcy Lascano has argued that disorder is relative to kinds (Lascano forthcoming: 120-125). But as Lascano points out, we should be careful not to reify these kinds and sorts: they are just functions of similarities in organisms’ bodily structures (Lascano forthcoming: 123). Moreover, Cavendish writes that there is always variety even between individuals of the same kind or sort:

Nature is so delighted with Variety, that seldom two Creatures (although of the same sort, nay, from the same Producers) are just alike...Nature is necessitated to divide her Creatures into Kinds and Sorts, to keep Order and Method: for, there may be numerous Varieties of sorts; as for example, Many several Worlds, and infinite Varieties of Particulars in those Worlds (G 149).

This passage also hints that Cavendish has an idiosyncratic conception of kinds and sorts. She assimilates them with worlds, and a world, for Cavendish, is something approximating a self-sufficient whole.

¹⁸ This is a very brief treatment of order, which as Boyle (2015) argues, plays a central role for Cavendish. Boyle’s book is an excellent and comprehensive treatment of order in her system, although I disagree that Cavendish’s reliance on order indicates fundamental thoughtful teleology.

What this all suggests is that Cavendish associates order with a “poise or balance” between multiplicity and unity: an orderly state is one in which there is a great variety of parts that are distinct from one another, but they are united into a whole. In fact, Cavendish often describes order precisely in this way:

The reason that variety, division, and composition, runs not into confusion, is, that first there is but one kind of Matter; next, that the division and composition of parts doth balance each other into a union in the whole (PL 4.3).

Where Unity is not, Order cannot be (GNP 67).

There is no need for a planning mind to ensure order.

5.3 “Rational matter is really weird”

Rational matter as I’ve interpreted it will strike some as too austere to do all the work that Cavendish makes it do. For example, Colin Chamberlain argues that Cavendish relies on the special capacity of rational matter to explain the phenomenological unity of some of our mental representations. To do that, one piece of rational matter must be able to have representational or at least qualitative structure that is not parthood structure: “a single portion of rational matter can see and hear and smell and taste at the same time” (Chamberlain, 31).¹⁹ For Chamberlain and others, rational matter is not just the grounds of perception but is actively perceiving.

I think it is an important part of Cavendish’s materialism that there is no structure that is not the structure of matter. Chamberlain will likely agree, and reply that the structure he is describing is the structure of matter, because it is structure that matter has. And I do not want to cling too tightly to one particular interpretation of material structure. I wholeheartedly agree that, as Chamberlain has put it to me, rational matter is really weird.

However, I do not think we can simply define material structure as whatever structure matter turns out to have. The fact is that Cavendish makes many comments that assert that there is “no variety but of parts” (OEP 18). She gives many explanations of mental life in terms of parthood structure, and is very concerned to emphasize that mental structure requires this kind of structure:

[T]he rational soul of every particular Creature is composed of parts (I mean parts of a material substance; for whatsoever is substanceless and incorporeal, belongs not to Nature)...not any Creature can have a soul without parts...that which makes so many confusions and disputes amongst learned men is, that they conceive, first, there is no rational soul but onely in man; next, that this rational soul in every man is indivisible. But if the rational soul is material, as certainly to all sense and reason it is, then it must not onely be in all material Creatures, but be dividable too (PL 4.2).

¹⁹ Chamberlain forthcoming: 31. Cavendish’s treatment of the mixture of the kinds of matter, and her insistence that there are no single parts in nature, should make us suspicious of the idea of a “single portion of rational matter.”

[I]n Nature there is but one life, soul, and body, consisting all of one Matter, which is corporeal Nature. But yet by reason this life and soul is material, it is divided into numerous parts, which make numerous lives and souls in every particular Creature... And thus Action and variety cannot be without division and composition (or, what is the same, motion) (PL 4.3).

Actions are divisions and compositions, and creaturely perceiving and knowings are actions.

As for the unity of experiences or of experience in general, Cavendish gives no indication that material composition is not sufficient to account for it:

[N]o Part of the Body, or Mind of a Man, knows each Part's perceptive knowledg, but by Confederacy (GNP 107).

In general, I do not take phenomenology to be an important source of data, for Cavendish. It is certainly true that in some respects, "reflection on one's own mind reveals what matter is like," as Chamberlain nicely puts it (Chamberlain forthcoming: 41). But what that reflection tells us is very basic: the mental is material and it is divisible. Beyond that, human ways of perceiving are highly dependent on the specificities of human structure and on our situation within our environment, and so we cannot simply attribute to matter whatever qualities we take ourselves to perceive it as having.

One objection to this comes from Cavendish's quality realism. Cavendish argues, for several kinds of perceptions, that if we perceive matter that way, it must be that way. For example, of who argue that heat is not really in fire, Cavendish writes that

They are so far in the right, that the heat we feel, is made by the perceptive motions of, and in our own parts, and not by the fire's parts acting upon us: but yet, if the fire were not really such a thing as it is, that is, a hot and burning body, our sense would not so readily figure it out, as it does, which proves it is a real copy of a real object, and not a mere phantasm (OEP 148).

Similarly of color:

Our optic sense could not perceive either the original, or copy of an exterior object, if it did not make those figures in its own parts: and therefore figure and color are both in the object, and the eye; and not, as they say, neither in the object, nor in the eye (OEP 147).

It is not obvious how color and heat, as we experience them, could be patterned by composition and division of parts. So you might think that Cavendish is positing some kind of intrinsic qualitative nature to matter that is at least protopsychic.

But I see no reason to think that Cavendish thinks these are protopsychic qualities. Her arguments show that they ways that matter must be to explain our experience of them, but there is no suggestion they are any different from, say, shape either in their relationship to matter or our ability to represent them. As for how to understand them metaphysically, they are only slightly uncomfortable for the view I am proposing. Sure, reality is qualitative - it is yellow and hot - but that does not mean that there is a metaphysics of qualities underlying that. And while I can't say exactly how color or heat qualify as "motions", I appeal to Chamberlain's dictum: matter is weird. But I don't think that means it is psychic or protopsychic.

6 Conclusion

I've offered an account of matter's sense and reason, and the knowledge and perception in nature, that does not rely there being anything like mental states in matter or in all creatures. Matter is structured by parthood and composition, and it is self-moving. The actions of a part, qua part, are a function of its own nature, which is its "self-knowledge" or compositional structure, and its orientation toward the composition of which it is a part, which is perception.

Humans and animals have many ways of knowing and perceiving, but among them are sense perception and conception, which, I've argued, are Cavendish's attempt to capture the distinctively cognitive. Cavendish does not deny that it is possible for some non-animals to perceive and know in this way - she expresses agnosticism about whether other kinds of creatures pattern. However, she does associate them with animal sense organs and brains, she does write that we have no reason to assume that other creatures perceive by patterning, and she does claim positively that patterning gives way to other kinds of perception in at least some creatures. The fact that other creatures do not or may not pattern makes us in no way superior to them.

Cavendish's account of sensitive and rational matter is not aimed at explaining human psychology. It is aimed at explaining natural order. Natural order requires that creatures be self-regulating, interdependent, self-moving, affective, but it does not require that matter have anything like mental states. And those capacities of creatures, Cavendish thinks, can be explained by self-motion alone.

Is Cavendish a neutral monist? I've argued that calling her a monist already does some damage to our understanding because she simply is not concerned with telling us what kinds of things or properties are possible, and furthermore not concerned to constrain her theory of mind thereby. Despite the alleged neutrality of neutral monism, it still begins in the assumption that "experiential phenomena cannot be emergent from wholly non-experiential phenomena" (Strawson 2019, 24). I do not think that Cavendish is worried about this.

There may be some versions of panpsychism on which the interpretation I've suggested counts. For example, you might think that Cavendish's account of perception sounds like a kind of teleofunctionalism, and the fact that everything perceives means that there is proto-mentality everywhere. Or perhaps it is a version of biopsychism, although I think it is important that Cavendish tries to mark out animal perception and knowledge from other kinds. Or Rovelli, in a recent article, claims that twentieth century physics vindicates a "very mild form of panpsychism" inasmuch as "it is not about how individual entities are by themselves. It is about how entities manifest themselves to one another... This implies that the most effective way of thinking about the world is not in terms of entities with properties, but rather in terms of systems

that have properties in relation to other systems” (Rovelli 2021, 32).²⁰ This sounds a lot like Cavendish, although I do not think it sounds a lot like panpsychism.

It is not important whether or not Cavendish merits the label. What is important is how to understand Cavendish diagnosis of man's “conceited prerogative.” Many readers of Cavendish think that our conceit is that only we have this very special capacity for experiencing and understanding nature that we find in ourselves. I think that our conceit is that it is very special. Instead, it is just one among a dazzling variety of ways that creatures interact with the world.²¹

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²⁰ Cavendish also holds that matter has genuine causal powers. Mørch (2020) has recently cataloged and defended arguments that this collapses into something like panpsychism.

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