The Power of Self-Motion in Cavendish's Nature

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50 Word Biography

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150 Word Abstract

Nature, according to Cavendish, has "an Infinite Natural power, that is, a power to produce infinite effects in her own self, by infinite changes of Motions" (OEP II.XIV: 220). While Cavendish mentions powers with respect to human beings, medicines, occasional causes, and other entities, these powers are really just the power of self-moving matter to cause changes in the world. This paper examines why Cavendish attributes the power self-motion to matter, what this power is, how it arose, how it is enacted, and its limitations. In doing so, I discuss her views on causation, perception, and motion, and argue that motion is not reducible to change in mereological facts.

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1. Margaret Cavendish
2. Self-Motion
3. Motion
4. Descartes
5. Hobbes
6. Occasional Causation
7. Perception
8. Power
9. Act

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Introduction

Nature, according to Cavendish, has "an Infinite Natural power, that is, a power to produce infinite effects in her own self, by infinite changes of Motions" (OEP II.XIV: 220).[1] This power of self-motion, which she sometimes refers to as 'life,' is what enables Nature to produce both the variety and the stability we experience in the world. She writes,

> …for were there no self motion in Matter, there would be no Perception, nor no variety of Creatures in their Figures, Shapes, Natures, Qualities, Faculties, Proprieties, as also in their Productions, Creations or Generations, Transformations, Compositions, Dissolutions, and the like, as Growth, Maturity, Decay, &c. and for Animals, were not

[1] The following abbreviations are used for Cavendish's texts

PL: *Philosophical Letters* (1664)

OEP: *Observations Upon Experimental Philosophy* (1668) with page numbers referring to Eileen O'Neill (Ed.), *Observations Upon Experimental Philosophy* (Cambridge: Cambridge University Press, 2001).

GNP: *Grounds of Natural Philosophy* (1668) with page numbers referring to Collette V. Michael, (West Cornwall, CT: Locust Hill Press, 1996).

> Corporeal Matter self-moving, dividable and composable, there could not be such variety of Passions, Complexions, Humors, Features, Statures, Appetites, Diseases, Infirmities, Youth, Age, &c. Neither would they have any nourishing Food, healing Salves, soveraign Medicines, reviving Cordials, or deadly Poysons. In short, there is so much variety in Nature, proceeding from the self-motion of Matter, as not possible to be numbred, nor thorowly known by any Creature. (PL II. XXII: 200)

While Cavendish mentions powers of self-motion with respect to human beings, medicines, occasional causes, and other entities, these powers are just one power – the power of self-moving matter. This paper examines why Cavendish attributes the power self-motion to matter, what this power is, how it arose, how it is enacted, and its limitations. In doing so, I discuss her views on causation, perception, and motion, and argue that motion is not reducible to change in mereological facts.

Why self-moving matter?

Why does Cavendish believe that nature is self-moving? The development of Cavendish's metaphysics can be seen, in part, as a reaction to the deficiencies of mechanical accounts of nature that were given by philosophers like Thomas Hobbes and Rene Descartes. According to the mechanical account of nature, matter is essentially inert and the motion we attribute to it given to it by God. There is a finite amount of motion to be in the world, which is preserved for all time. Parts of matter transfer motion to other parts of matter through impact. In her *Philosophical Letters*, we see her reaction to Hobbes' view of motion.

> Your author says, *He hath already clearly enough demonstrated, that there can be no beginning of motion, but from an external and moved body, and that heavy bodies being*

> *once cast upwards cannot be cast down again, but by external motion.* Truly, Madam, I will not speak of your Authors demonstrations, for it is done most by art, which I have no knowledg in, but I think I have probably declared, that all the actions of nature are not forced by one part, driving, pressing, or shoving another, as a man doth a wheel-barrow, or a whip a horse; nor by reactions, as if men were at foot-ball or cuffs, or as men with carts meeting each other in a narrow lane. But to prove there is no self-motion in nature, he goes on and says; *To attribute to created bodies the power to move themselves, what is it else, then to say that there be creatures which have no dependance upon the Creator?* To which I answer, That if man. (who is but a single part of nature) hath given him by God the power and a free will of moving himself, why should not God give it to Nature? (PL I.XXIX, 95)

Here, Cavendish first declaims Hobbes' attempts to prove that motion is preserved through demonstrations, which she claims not to understand, and portrays the mechanical account of motion as objectionable through the use of examples she finds antithetical to the easy motions of nature. She then wonders why philosophers should object to self-moving matter when they already hold that humans, who are just a part of nature, have been given self-motion.

Cavendish's often repeated objections to the mechanical philosophy include her worries about how motion is transferred and how mind-body interaction is possible on the Cartesian account and how causation and perception work according to the Hobbsian account. For the case of motion transfer, Cavendish thinks that Descartes is committed to the view that a mode of body must be transferred from one body to another when an impact occurs. However, she claims that if this were so, then modes either would have to be immaterial because they can exist apart from

body (and as a result cannot be properties of a body) or motion must be substantial rather than model (PL I.XXX, 97-101). In the case of the Hobbesian account of perception, Cavendish objects to the idea that, for instance, the perception of seeing of an external object is caused by particles of matter coming from the object and striking the sensory organ, which motion is then carried via the nerves to the brain. Cavendish claims that Hobbes impact account would lead to the sentient organs being "pressed to death." Her own account of self-moving matter gives her a way to solve these issues.

For Cavendish, the problem of motion transfer just does not arise. All matter is self-moving, so there is no problem with how motion gets into one body or another. While Cavendish claims that the transfer of substance can occur when two bodies collide in such a way that some of the matter from one composes with the other, this is not her general account of causation. Instead, she is committed to a type of occasional causation. She claims that when, for instance a hand throws a ball, the motion of the hand is not transferred to the ball (otherwise the hand would get smaller and the ball bigger with each throw!); rather the ball moves by its own self-motion. Her account of causation relies on the perceptive nature of matter. According to Cavendish, the ball has a certain type of perceptive power that is determined according to its internal and external corporeal figurative motions. This allows the ball to perceive the exterior corporeal motions of the hand and to move itself accordingly. For Cavendish, all animal perception (likely) involves what she calls "patterning." This is simply the idea that the exterior object is patterned or imitated, that is sensed, in the perceiver's own sensitive organs, which information is then (usually) patterned by the rational matter as a thought of the object. For Cavendish, both causation and perception can happen at a distance, as she says sight and hearing do, or by some

sort of contact, as in the case of touch or taste.[2] Since each portion of matter or individual moves of its own self-motion, there is no need for contact in order for perception to occur.

Cavendish's rejection of the mechanical philosophy stems from her belief that what we observe in nature does not happen by impact and force, but that nature exemplifies mostly gradual motion and change and that the order we observe requires both sense and reason in nature. So, she believes that sensitive and rational self-moving matter is a better explanation for the effects we

[2] But cf. David Cunning, *Cavendish* (London: Routledge 2017): 42-59. Cunning argues that Cavendish does not hold that there is action at a distance. He writes, "…Cavendish supposes that in patterning (1) an external body comes into contact with a sense organ, (2) the external body presents an image of itself at the point of contact, and (3) the bodies of the sense organ adapt to the image and make a copy of it" (42), and "Cavendish assumes that material things interact with material things only and that interaction is always by contact. That is to say, there is no action at a distance. There might be apparent instances of action at a distance, but if interaction is always by contact, any case in which two distant bodies interact is a case in which there are contiguous bodies in between" (58). But note the following sample of passages in Cavendish: "And hence it follows, that some parts may make perceptions of distant parts, and not of neighbouring parts; and others again, may make perceptions of neighbouring or adjoining parts, and not of those that are distant: As for example, in the animal perception, taste and touch are only perceptions of adjoining objects, whenas sight and hearing do perceive at a distance; for if an object be immediately joined to the optic sense, it quite blinds it" (OEP I.XXXVIIq15, 184); "… both the eye and the ear perceive at a distance…" (OEP I.XXXVIIq6, 160); "But yet, it is not necessary that perception must only be betwixt neighbouring or adjoining parts: for some parts may very well perceive each other at a distance, and when other parts are between; nay, some perceptions do require a distance of the object: As for example, the optic perception in animals, as I have declared before" (OEP I.XXXVIIq10, 167-8).

see in the world. She acknowledges that most people will not believe that such matter exists because we cannot directly perceive it. She writes,

> …this sensitive and rational self-moving Matter is the life and soul of Nature; But by reason this Matter is not subject to our gross senses, although our senses are subject to it, as being made, subsisting and acting through the power of its actions, we are not apt to believe it, no more then a simple Country-wench will believe, that Air is a substance, if she neither hear, see, smell, taste, or touch it, although Air touches and surrounds her: But yet the effects of this animate matter prove that there is such a matter. (PL IV.I, 418)

What are the effects of animate matter? According to Cavendish, wherever we find motion, we can know there is sense. This is so because portions of matter must accommodate each other in the plenum. As she says, if there were no sense and reason in portions of matter "they could not move in a concord or harmony, not knowing what they are to do, or why, or whither they move" (OEP III.III, 258). Cavendish claims that animate matter is the cause of all variety in nature as well as order.

> That every part has not only sensitive, but also rational matter, is evident, not only by the bare motion in every part of nature, which cannot be without sense, for wheresoever is motion, there's sense; but also by the regular, harmonious, and well-ordered actions of nature, which clearly demonstrates, that there must needs be reason as well as sense, in every part and particle of nature; for there can be no order, method or harmony, especially such as appears in the actions of nature, without there be reason to cause that order and harmony. (OEP II.VI, 207)

Without animate matter nature would be "a dull, indigested and unformed heap and chaos" (OEP II.VI, 207). Given both the variety and the order of the world we find, the best explanation is that

the world is filled with rational and sensitive animate matter. This matter is the basis of self-motion in all of nature. But Cavendish claims that there are actually three degrees of matter: animate rational, animate sensitive, and inanimate matter.[3] These degrees are completely blended so that there is no portion of matter in nature that does not contain all three.[4]

> Since Nature consists of a commixture of animate and inanimate matter, and is self-moving, there can be no part or particle of this composed body of Nature, were it an Atome, that may be call'd Inaminate, by reason there is none that has not its share of animate, as well as inanimate matter, and the commixture of these degrees being so close, it is impossible one should be without the other. (OEP To the Reader, 16)

Cavendish also tells us that "Infinite Matter in it self and its own essence is simple and 'homogeneous'" (OEP II.III, 199). Thus it is due to the complete blending of the three degrees of matter that all of nature is homogenous, rational (knowing), sensitive (life), and self-moving.

Since nature is imbued with self-motion, Cavendish is able to explain phenomena that cause difficulties for her mechanist contemporaries. Self-moving matter is crucial to her account of causation, perception, action at a distance, and mind-body interaction.[5]

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[3] In her works, through *Philosophical Letters*, Cavendish maintains that inanimate matter has no life or knowledge. However, in her last two works – *Observations Upon Experimental Philosophy* and the *Grounds of Natural Philosophy* – she holds that inanimate matter does have life and self-knowledge, but that it does not have an *active* life or a *perceptive* knowledge, which require self-motion.

[4] For discussion of the problems generated by the doctrine of complete blending, see Jonathan Shaheen, "Part of Nature and Division in Margaret Cavendish's Materialism" *Synthese* (2017).

[5] For more on Cavendish's views on these important issues see Deborah Boyle, *The Well-Ordered Universe* (Oxford: Oxford University Press 2018); Cunning, *Cavendish*; Eileen O'Neill, "Introduction," *Observations Upon*

What is the power of self-motion?

As Alison Peterman notes, "self-motion is the power that a bit of matter has to set itself in motion, and Cavendish frequently says that all actual motion is caused by self-motion" (Peterman 2019: 27). Indeed, Cavendish distinguishes the power of self-motion and the motions of matter in several passages:

> Nature must have both a United Knowledg, and a United Power. (GNP I.XII, 11)

> For nature is infinite in power, as well as in act; we mean, for acting naturally; and therefore, whatsoever is not in present act, is in the power of infinite nature. (OEP Arg Discourse, 37)

> For, if that which is in power, may be deduced into act, I see no reason, but the world, which is nature, may be said infinite in act, as well as in power. (OEP III.V, 269)

All of nature has the power of self-motion, and this power is the cause of all changes and alterations in nature. These changes and alterations are brought about by motions, or as Cavendish often calls them "corporeal figurative motions". Cavendish tells us that "motion is the action of a body" (OEP III.V, 268), and that there are infinitely many motions or changes that are due to the power of self-motion.

> For though I say in my Philosophical opinions, *As there is but one onely Matter, so there is but one onely Motion*; yet I do not mean, there is but one particular sort of

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Experimental Philosophy (Cambridge: Cambridge University Press, 2001); and Lisa Sarasohn, *The Natural Philosophy of Margaret Cavendish* (Baltimore: Johns Hopkins Press 2010).

> motions…but that the nature of motion is one and the same, simple and intire in it self, that is, it is meer motion, or nothing else but corporeal motion; and that as there are infinite divisions or parts of matter, so there are infinite changes and varieties of motions. (PL I.XXX, 101)[6]

While the nature of motion itself is corporeal motion, that is, the self-motion of matter, there are infinitely many particular motions in the parts of matter as well as several different types of general motions in nature. What is important to note here is that Cavendish is trying to provide a metaphysics that will ground the phenomena we observe in the natural world. According to Cavendish, the parts and alterations of matter are the *effects* of motion. In a passage commenting on the methodology of Robert Boyle in his studies of natural philosophy, Cavendish notes the following:

> But give me leave to tell you, that I observe, he studies the different parts and alterations, more then the motions, which cause the alterations in those parts; whereas, did he study and observe the several and different motions in those parts, how they change in one and the same part, and how the different alterations in bodies are caused by the different motions of their parts, he might arrive to a vast knowledg by the means of his experiments. (PL IV.XXII, 496)

Here, Cavendish claims that studying the alterations and parts of bodies will not give you knowledge about how the bodies work.[7] Rather, one must study the motions that are the causes of the alterations in the parts of bodies. This clearly shows that it is motion which is primary.

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[6] Cavendish is referring to her statement in *Philosophical and Physical Opinions* (London 1663), Part 1.c.5.

[7] Hooke is following Francis Bacon's method from the *Novum Organon*. There Bacon notes that one should pay special attention to change in bodies when trying to discover their forms.

This can also be made clearer by understanding that if matter were not moving, although it would be true that matter would still be dividable, there would be no changes in parts of nature.

From whence the power of self-motion?

Because Cavendish holds that nature is infinite and eternal, the power of self-motion always has been in nature.[8] Cavendish is aware that her view might make it seem that nature is equal to God or uncreated. Yet, she argues that there is nothing "atheistic" about it. Cavendish claims that God created nature by a supernatural act (which we cannot comprehend), and that God commanded nature to be orderly.[9] Cavendish argues that just as God can make a being that is without end, he can make a being without beginning. Likewise, she argues that although God cannot make another infinite and eternal immaterial being, he can make an infinite and eternal material being. These claims are somewhat complicated by the fact that Cavendish claims that no immaterial being, God included, can interact with a material thing. However, Karen Detlefsen has argued that God might rationally suggest the order of nature, which nature obligingly follows.[10] Regardless of how God might create eternal matter and give it order, it is clear that Cavendish holds that God gives nature the power of self-motion. She writes,

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[8] For one of Cavendish's discussions about the eternity of nature see PL 1.III, pp. 13-17. For a discussion of Cavendish's views on nature's eternity see Deborah Boyle, "Margaret Cavendish on the Eternity of Created Matter" in *Early Modern Women on Metaphysics*, ed. Emily Thomas (Cambridge: Cambridge University Press 2018), 111-130.

[9] See Cavendish (PL I.III, 15-16); Karen Detlefsen,"Margaret Cavendish on the Relationship Between God and World," *Philosophy Compass* 4 (2009): 421-438; Boyle, The Well-Ordered Universe, 80-83. Note that Cavendish thinks a rational suggestion is a motion, and so would require interaction between an immaterial and material thing.

[10] Detlefsen, "Margaret Cavendish on the Relationship Between God and World," 431.

> For though Matter is one and the same in its Nature, and never changes, yet the motions are various, which motions are the several actions of one and the same Natural Matter; and this is the cause of so many several Creatures; for self-moving matter by its self-moving power can act several ways, modes or manners; and had not natural matter a self-acting power, there could not be any variety in Nature; for Nature knows of no rest, there being no such thing as rest in Nature; but she is in a perpetual motion, *I mean self-motion, given her from God*. (PL II.XI, 164, emphasis mine)

In addition to this claim, in *Philosophical Letters*, Cavendish takes on Hobbes' view (held by many of his contemporaries) that motion, a mere mechanical property of inanimate matter, is added to some portions of matter by God at the time of creation and is preserved in the same proportion ever after. Cavendish argues "if man (who is but a single part of nature) hath given him by God the power and a free will of moving himself, why should not God give it to Nature?" (PL I.XXIX, 95). Cavendish holds that we cannot know how God creates nature since is it by a supernatural act, but she holds that every part of nature knows by an inner intuition that there is something above nature.[11]

What is self-motion?

Cavendish can be rather evasive when discussing what self-motion is. For example, she writes:

> But you would fain know, how Nature, which is Infinite Matter, acts by self-motion? Truly Madam, you may as well ask any one part of your body, how every other part of

[11] Boyle, *The Well-Ordered Universe*, 106-110. Boyle argues that Cavendish holds that knowledge of God's existence is a part of self-knowledge. However, I can find no definitive text to support this claim.

> your body acts, as to ask me, who am but a small part of Infinite Matter, how Nature works. (PL IV.I, 415).

We might chalk this up to epistemological modesty, and, indeed, Cavendish often claims that a part cannot know the whole of nature. So, she does not tell us exactly how nature's power of self-motion is actualized. But she does provide us with an account of the general types of motions that result from this power. For example, nature has "a self-power to contract and dilate, compose and divide, and move in any kind of motion whatsoever, as is requisite to the framing of any figure" (PL IV.XXIX, 512).

Cavendish does explain *how* nature moves – it composes and divides, contracts and dilates.[12] This has led some commentators to claim that all motion is really just a change in parthood relations for Cavendish. Alison Peterman has argued that composition and division are the only actual motions of nature – all other motions being reducible to these – and argues that Cavendishian motion is not motion at all, but "change of mereological facts."[13] However, it seems that some other motions might not involve change of parthood relations for Cavendish, in particular she notes that contraction, dilation, retention, and transformation may not involve a change in parts. Peterman argues that contraction and dilation do involve a change of parts. However, the passage she cites as evidence for dilation and contraction as an effect of parthood relations is not decisive. She quotes the following from OEP I.XXX, 124: "Wherefore all

[12] Cavendish mentions also respiration, excretion, pressure, reaction, sympathy, antipathy, etc. However, these are just particular instances of composition and division. In addition, she often notes that composition and division are one action, which is necessary in order to keep nature a whole and to avoid a vacuum.

[13] Alison Peterman, "Margaret Cavendish on Motion and Mereology," *Journal of the History of Philosophy* 57.3 (July 2019): 2. (Page # refers to draft not published article!)

contraction and dilation consists of parts, as much as body doth; and there is no body that is not contractive and dilative, as well as it is dividable and composable."[14] But in this section Cavendish is simply trying to argue that contraction and dilation belong to bodies and parts of matter and not "divine or supernatural things" (OEP I.XXX, 124). Cavendish sums her views on dilation and contraction on the next page as follows:

> The extension [dilation] of a body, is not made by an addition or intermixture of foreign parts, as composition; nor contraction, by a diminution of its own parts, as division; for dilation and composition, as also division and contraction, are different actions: the dilation of a body, is an extension of its own parts, but composition is an addition of foreign parts; and contraction although it makes a body less in magnitude, yet it loses nothing of its own parts. (OEP I.XXX, 125)

Peterman notes that Cavendish says, "there can be no contraction or dilation of a single part" (OEP I.XXX, 124).[15] But, of course, for Cavendish, this is true "by reason there is no such thing as a single or indivisible part in nature" (OEP I.XXX, 124). That is, nothing can happen in a single part because there are no atoms in nature. One of the difficulties in reading passages like these, of course, is that Cavendish's use of the term "part" is not always clear. Sometimes she uses it to refer to one or more of the three degrees (rational and sensitive animate and inanimate) of constituent matter as "the constituent parts," which when she is more careful she calls the "degrees," "sorts," or "kinds" of matter. Sometimes she refers to "composed parts" of matter, which are the macro objects of our everyday experience and are produced by actual motions of composition and division. However, she sometimes also uses the term parts to mean something

[14] Peterman, "Margaret Cavendish on Motion and Mereology," 21.

[15] Peterman, "Margaret Cavendish on Motion and Mereology," 21.

like *portions of matter* as when she writes, "for, parts are, as it were, the effects of body, by reason there is no body without parts" (OEP I.XXX, 124). This sort of claim is best read as saying that every portion of matter is divisible into parts and so all bodies have parts. Cavendish also talks about transforming actions in a way that makes then sound as if they may not involve a change in mereological relations.

> But it is well to be observed, that there is great difference between the actions of Nature; for all actions are not generating, but some are patterning, and some transforming, and the like; and *as for the transforming action, that may be without translation, as being nothing else but a change of motions in one and the same part or parts of Matter, to wit, when the same parts of Matter do change into several figures, and return into the same figures again.* Also the action of Patterning is without Translation; for to pattern out, is nothing else but to imitate, and to make a figure in its own substance or parts of Matter like another figure. But in generation every producer doth transfer both Matter and Motion, that is, Corporeal Motion into the produced. (PL IV.II, 420-1, emphasis mine)[16]

If translation is a motion that involves a change in the composition of matter, then Cavendish seems to hold that transformation occurs without it. It is certain that a change of parthood relations is an effect of the motions of composition and division for Cavendish, and that composition and division are, as she says, "the chief and general actions of nature," it does not seem that they are the *only* actions or motions in nature. What we do know is that Cavendish thinks that the motions of composition and division work towards the creation of individuals, but

[16] It is hard to determine from the text if transformation is a unique kind of motion for Cavendish (one that does not involve composition and division), but it seems to operate within parts rather than create parts. Rentention on the other hand, which she claims is a motion that consists in the holding together of parts as they are. This seems to be a distinct type of motion that does not involve change in parthood relations.

dilation, contraction, transformation, and retention might be motions of parts that do not involve a change in a portion of matter in relation to other portions of matter. This would seem to tell against reducing Cavendishian motion to mere change of mereological facts.

When it comes to the specific actions of creatures, Cavendish claims that their actions and abilities are due to the self-motions of their parts. According to Cavendish, individuals, like animals, are generated by the transferring of matter from another being (of several others) and the gradual composition of additional matter, which is the growth of the individual. The initial transfer of matter and motion from a particular member(s) of a natural kind (mentioned in the quote above from PL IV.II, 420-1) determines the natural kind that the new individual will become. Cavendish claims that natural kinds have different powers of sense and reason according to their *corporeal figurative motions*.

When Cavendish says that bodily motion is figurative, she is not referring simply to the exterior shapes of things, but to three-dimensional (or perhaps four-dimensional) structural processes that generate both the "interior motions" and functions of parts, which determine the "external motions and shapes" of things like a human heart, a cat, or a chaff of wheat.[17] These structural processes of objects determine the ways in which individual portions of matter are able to express rational and sensitive powers. For example, a particular portion of matter might have the figure of a human eye. Such a portion of matter will have interior motions that determine the

[17] In the "Appendix" to the *Grounds of Natural Philosophy*, Appendix, Second Part, Chapters IV-VI: 256-260, Cavendish implies that an individual is the collection of parts from its generation to its dissolution, which implies that the sequence of changes in portions of matter are part of what constitutes a particular individual.

matter to be structured as an eye, e.g. containing a pupil, lens, retina, optic nerve, etc.[18] In addition, the interior motions cause it to have the power of patterning external objects. These interior motions determine the exterior shape and motions of the eye as well. Cavendish claims that the interior rational motions are what cause the structural processes of the eye and the interior sensitive motions cause the perceptive abilities of the eye.

Cavendish is also committed to a transmutability thesis: any portion of matter can be transmuted by a change of interior motions from one type of individual (e.g. a tree, a cat, or a heart) into any other type of individual (e.g. a human, a goat, or a leaf). So while a portion of matter now may have the interior and exterior motions and figures of a human eye, that same portion of matter may be changed into a chipmunk's tail by means of a change in interior motions. When it has the interior motions and figures of a chipmunk's tail, it will have the rational and sensitive powers appropriate to that kind. Cavendish holds that one of the powers that all matter has is self-knowledge. Self-knowledge allows any particular portion of matter to know its current figurative motions and thus know how it is able to move and use its sense and reason. Self-knowledge is a type of immediate interior knowledge for Cavendish that does not involve patterning.

As we can see, for Cavendish all the powers of individuals arise from the self-motions of nature as a whole. As Cavendish says, "Self-moving matter by its self-moving power can act several ways, modes or manners; and had not natural matter a self-acting power, there could not be any

[18]Boyle notes that when Cavendish refers to "internal motions" that she means more than just motions "inside." Boyle takes these motions to be the inherent nature of a thing. See Boyle, *The Well-Ordered Universe*, 89. While we both agree that Cavendish holds that internal motions make a thing what it is, I believe that Cavendish is pointing to a complicated structural process in bodies that determines their ability to express their sensitive and rational abilities.

variety in Nature" (PL II.XI, 164). Next I will consider the ways in which the "infinite" self-moving power of nature is limited.

What are the limitations of the power of self-motion?

Cavendish tells us that the self-moving power of nature is infinite. But by this she does not believe that nature's power is "absolutely unlimited." Nature's infinite power allows her to perform an infinite number of actions, which Cavendish believes requires and infinite amount of time. But unlimited power is reserved for God. She writes,

> Indeed, to speak properly, there is no such thing as an absolute power in Nature; for though Nature hath power to move it self, yet not beyond it self. But mistake me not, for I mean by an absolute Power; not a circumscribed and limited, but an unlimited power, no ways bound or confined, but absolutely or every way Infinite, and there is not anything that has such an absolute power but God alone: neither can Nature be undividable, being Corporeal or Material; nor rest from motion being naturally self-moving, and in a perpetual motion. (PL II.VIII, 155)

Nature's power is limited to the power of self-motion and so is not "infinite in every way." Cavendish claims that nature is not able to rest, or become immaterial or undividable. She also claims that nature cannot work or move beyond itself, by which she means that motion, nor any other "quality" as other philosophers call them, cannot be separated from matter as it would make them non-material.[19] Cavendish also holds that the parts of nature cannot be properly said to have infinite power. She writes,

[19] This is to say that she denies the substance/accident distinction.

> All these Infinite actions do belong to the Infinite body of nature, which being infinite in substance must also of necessity be infinite in its actions; but although these Infinite actions are inherent in the power of the Infinite substance of nature, yet they are never put in act in her parts, by reason there being contraries in nature, and every one of the aforementioned actions having its opposite, they do hinder and obstruct each other so, that none can actually run into infinite; for the Infinite degrees of compositions hinder the infinite degrees of divisions; and the infinite degrees of rarity, softness, swiftness, &c. hinder the infinite degrees of density, hardness, slowness, &c. (PL I.XLV, 134)

As Cavendish says, "every part and particle of nature has the principle of motion within itself" (OEP III.V, 269). However, the actualization of the power of self-motion is often hindered in the parts of nature by other parts. This happens in two ways. The first is mentioned in the quote above: nature's motions are balanced in such a way that every dividing motion is also a composing motion, etc., this is due to the fact that nature is a plenum lacking any vacuum or void. The second way is by some parts blocking or overpowering others. As David Cunning has pointed out, since all of nature is a plenum, sometimes parts are forced to move or unable to use their motive power due to the motions of other parts.[20] As Cavendish explains:

> Yet do I not say, That there is no hindrance, obstruction and opposition in nature; but as there is no particular Creature, that hath an absolute power of self-moving; so that Creature which hath the advantage of strength, subtilty, or policy, shape, or figure, and the like, may oppose and over-power another which is inferior to it, in all this; yet this hinderance and opposition doth not take away self-motion. (PL I.XXIX, 95-96)

[20] Cunning, *Cavendish*, 157-160.

Portions of matter contain the power of self-motion, but they are limited in their movements by the general motions of nature and other portions of matter. This is not to say that the parts of matter are not always in motion, but some motions are "irregular." Cavendish refers to motions that are not usual or common as "irregular," and she tells us that irregularity is something that only applies to parts of nature and not nature as a whole.[21]

> Wherefore Irregularities do onely concern particular Creatures, not Infinite Nature; and the Irregularities of some parts may cause the Irregularities of other Parts, as the Regularities of some parts do cause the Regularities of others: And thus according as Regularities and Irregularities have power, they cause either Peace or War, Sickness or Health, Delight and Pleasure, or Grief and Pain, Life or Death, to particular Creatures or parts of Nature. (PL II.1, 238-9)

No parts of matter are ever able to fully actualize their power of self-motion. Sometimes they are barred from moving. Cavendish holds that "act includes power, so power is nothing without act," which explains why she believes that the power of the parts of nature is not properly called infinite, although the power of the whole of nature is infinite (PL IV.XVIII, 488). Only nature as a whole can be said to have infinite power as it is always unperturbed self-moving matter.

Conclusion

[21] For more on the debate about whether irregularities are "real" or only "apparent" in Cavendish, see Lisa Walters, *Margaret Cavendish: Gender, Science and Politics*, (Cambridge: Cambridge University Press, 2014): 85-86; Cunning, *Cavendish*, 153-157; Karen Detelefsen, "Reason and Freedom: Margaret Cavendish on the Order and Disorder of Nature," *Archiv für Geschichte der Philosophie* 89 (2007): 177; and Boyle, *The Well-Ordered Universe*, 23-29.

Cavendish claims that all of nature has the power of self-motion. All of the effects we see in nature are due to the power of self-motion in matter. This power is given to nature by God and is infinite in act in the whole of nature. The power of self-motion is found in every portion of matter and allows for the generation of motions and figures that constitute natural kinds which exemplify various kinds of rationality and sensitivity according to their corresponding figurative motions. In act, this power, which constitutes the life of matter, allows it to compose and divide, contract and dilate, and transform and retain, as well as generate all the particular effects we perceive in the world. The attribution of the power of self-motion to matter allows Cavendish to solve problems that she sees in mechanical accounts of nature as well as provide an explanation of the variety, order, and gradual change we find in the natural world.

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