

Kant on Plants: Self-Activity, Representations, and the Analogy with Life

Tyke Nunez

University of South Carolina

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§1 – Introduction

Do plants represent? For Kant, this question is closely connected to the question of whether plants are alive because one way that Kant explains life is in terms of the faculty to act in accordance with one's representations (specifically desires) (e.g., *MM*, 6:211). He also, however, explains life through self-motion (e.g., *MAN*, 4:544), and he often speaks of life as the interaction of a material body with an immaterial soul, where this soul is not merely a psychological being, but is also a supersensible ground of activity (e.g., *Met-M*, 29:904).¹

1. In the tradition, one finds an array of positions on whether plants are alive or have a soul. Arguably, the most common position attributes a soul as an inner principle of motion to them but denies them representations. (For a comprehensive history, see Ingensiep, 2001.)

Briefly, and with an eye to the main influences on Kant, the Stoics – physicalists – held plants had *pneuma* and in particular *phusis* (φύσις), or organic nature, but not *psuchê* (ψυχή), or a soul as a cognitive power. (E.g., Cicero, *De Natura Deorum*, 2.120–1; for discussion, see Annas, 1992, p. 54; thank you to Melissa Merritt for pointing me to these passages in Cicero and to Annas.)

Later, Suárez denied plants sense and appetite, but still held that they are alive (*De Anima* 1C4no8, *Opera* 3:494–5), while Arriaga held that life only applies to both plants and God equivocally (Des Chene, 2000, p.56). Even if late scholastic philosophers, following Aristotle (*de An.*, II.12), attributed a soul as a non-mechanical life-principle to plants, they held that the “vegetative soul is material” (Des Chene, 2006, p. 219; see Des Chene, 2000 for more on the notion of life in late scholastic philosophy, esp. ch. 3 on life in plants).

In the wake of Descartes's notorious position that animals lacked souls, in the controversies over the mechanistic explanation of living things, significantly more attention was paid to animals than to vegetative powers. Closer to Kant's time, influenced by Newton, researchers like Hales (1727) had argued for a mechanical conception of plant physiology, and Reimarus (1754, 1760) had argued plants were dead machines. Locke (*Essay*, Bk. II, ch. 27, §8), Duhamel (1758), and Bonnet (1766, 1760), however, took trees to be paradigmatic cases of organic or living beings (see Cheung, 2009). In these discussions, the focus was on the physiological powers of reproduction, growth (or assimilation), and self-maintenance. And although researchers would appeal to plant life or plant souls (e.g., Duhamel, 1758, Vol. 2, p. 165), this does not seem to mean more than the “material” vegetative soul of the late scholastics.

Even in the later epigenetic theories of Caspar Friedrich Wolff (b.1733–d.1794) and Blumenbach (b.1752–d.1840) – which were more vitalistic than the earlier mechanical epigenetic theories of Maupertuis (b.1698–d.1759), de Buffon (b.1707–d.1788), and Needham (b.1713–d.1781) – the *vis essentialis* of Wolff (1759) or the *Bildungstrieb* of Blumenbach (1781) seem to be merely material. In his 1787 *Institutiones physiologicae*, for example, Blumenbach distinguishes between different vital forces (*Lebenskräfte*), separating (i) the formative drive (*Bildungstrieb*) from the properties of the (ii) motion of the parts of

Thus, because of Kant's explanations of life, the original question opens up onto how he believes self-movement relates to having a supersensible soul or to having a psychological subject. In this essay, I argue that he is committed to reflectively judging that any organism that self-moves is alive, has a supersensible principle of life, and has a representing, desiring subject. This is because self-movement exhibits spontaneity, not in the full and proper sense of a free, original cause, but in the restricted sense of engaging in self-directed activity. The

organisms, and (iii) sensation, the latter two of which he attributes only to animals. Thus, if sensation is the beginning of the psychological, then the formative drive is material.

It is generally accepted that Kant holds the powers distinctive of organisms and living beings cannot be cognized in the way that the powers of merely dead matter can be. Rather, we can only treat these beings *as though* they had these powers. Kant makes this point by claiming that the attribution of these powers should only be through *reflecting*, and not *determining*, judgment. Still, we will see below that this reflective attribution is stronger than, say, the way Descartes could have claimed that it is *as though* animals had souls.

I argue that within the powers that Kant holds we should reflectively attribute to organisms and living beings, Kant divides between the material and the immaterial ones, and that this holds for plants as well. In my "Kant on Vital Forces and the Analogy with Life" (MS1, whose §2–4 overlap significantly with §3 of this essay), I focus on Kant's conception of the formative power of organisms. This power belongs to an *organism*, a material being. So I argue that if we could judge determinately that there was such a power, then we would take it to be material.

In this essay, however, I look beyond the material, natural world to the power of life. We will see that if we could judge determinately that there was such a power, then we would take it to depend on an immaterial life principle, and that Kant holds we should reflectively attribute such a supernatural principle to any living being. We will see that if plants are living beings, then Kant is committed to reflectively attributing representations to them. And so if plants are alive, then Kant would be breaking with most natural philosophers, ancient and modern.

For recent discussions of Kant and Wolff, see Goy (2014); of Kant and Blumenbach, see van den Berg (2009); for earlier discussions of Wolff, see Dupont (2007) and Huneman (2007); and of Blumenbach and Kant, see Look (2006), Larson (1979), Lenoir (1980, 1981), and Richards (2000, 2002). Finally, after this essay had been accepted for publication, Colin McLear brought Leland (2020) to my attention, which contains an extensive discussion of Baumgarten, Meier, Reimarus, and Kant on exactly these issues, and stresses a Leibnizian tradition on which all things are composed of representing, living monads, although only animals are conscious.

organism is neither a mere patient nor a mere agent, but is simultaneously its own patient and agent because it acts on itself.

I develop this interpretation by examining Kant's remarks on life and organisms. We will see that Kant holds matter is inert; it is only moved by external causes. In organisms, however, we encounter self-movement that seems to stem from an inner formative power to maintain itself, grow, and reproduce. This material causal power exhibits a reciprocal causal interaction between its parts and is characteristic of Kant's "natural ends". Interpreters often investigate Kant's analogy between organisms and artifacts in order to understand this causal power, but they neglect his comparison of the formative material power of organisms with life. By reflecting on this comparison, however, we will be able to see his account of organisms as natural ends in a new way. Specifically, we will see that their reciprocal causal structure is made more comprehensible through comparison with the way the soul and body work on each other through the instruments of the nerves.²

The picture that will emerge is one on which in living beings, a material body — an organism — is in communion with a supersensible soul that grounds a psychological subject. If we observe self-movement, then we can reflectively attribute to this being both a soul as its life principle and a psychological subject with a faculty of desire. Kant holds that we make these attributions through an analogy with our own case. We are conscious that our own self-movement has a supersensible soul as its cause, through the thinking and desiring subject that it grounds. Because we are rational, and conscious of standing

2. For the argument I make, it is critical that Kant divides the concepts of *<organism>* or *<natural end>* from *<life>*. It is quite uncommon, however, for interpreters to distinguish these. For example, Guyer (2005), Watkins (2009), and Breitenbach (2014) don't, and the list could go on. Not distinguishing these concepts blocks interpreters from taking seriously the climactic analogy with life passage of *KU*, §65. Three interpreters who distinguish these concepts and take this passage seriously are Ingensiep (2001, 2004, 2009), Zammito (2006), and Newton (2017). We will return to them in the next note. Leland (2020, §2) argues that whether Kant distinguishes the concepts of *<organism>* and *<life>* is underdetermined by the textual evidence. His arguments, however, hinge on dismissing the analogy with life passage as unclear, but as I hope will become evident, we can make good sense of this passage.

under the moral law, our supersensible soul is a free cause. This will not be true of non-rational living beings. Still, because they share with us the genus life, we will see that Kant holds we can reflectively judge that they have a soul and a desiring subject.

This will hold not only of non-rational animals like beavers and horses, but also of plants. They, too, after all, are organisms, have a formative power, and move themselves. For these reasons, Kant will be committed to them not only being alive and having a supersensible ground of this self-activity, but also to their having a simple psychological subject. We will find no evidence that he thought the plant subject was conscious in any way. In this respect, it will differ in kind from the subjects of non-rational animals, which have empirical consciousness. So all that will be left to the plant subject is simple subjective sensations of agreeableness and disagreeableness, along with correspondingly simple desires to pursue or avoid these, but with no consciousness at all of these inner states.³

3. I take the claim that Kant held plants have a psychological subject that represents to be the most controversial dimension of the interpretation I will develop, and most readers will find it *prima facie* implausible. This is born out in the interpreters who do distinguish the concepts of <organism> and <life>. Ingensiep (2004), Zammito (2006), and Newton (2017) all claim that we do not find Kant ascribing desire (or representations) to plants. (though they overlook at least one ascription of a faculty of desire to them (*Log-D*, 24:772)). And because “life is the faculty of a being to act in accordance with laws of the faculty of desire” (*KpV*, 5:9_n), they all conclude that although plants are paradigmatic organisms for Kant, he takes them not to be alive (Ingensiep, 2004, §II.6; 2009, p. 103, Zammito, 2006, p. 763, Newton, 2017, p. 520).

There is in Kant, however, a lot more that speaks in favor of attributing a psychological subject that has desires to plants than what these interpreters discuss. In the text of this essay, in line with this, I will be arguing that because Kant holds that plants move themselves through their formative power, and self-movement is indicative of life, it is more plausible than not that Kant held plants were alive and represent. (For further support, which focuses more on Kant’s pre-critical work, see Leland (2020).) There is also, however, a good deal to be said for the opposite position, and there is room for disagreement, both given Kant’s writings and philosophically. Indeed, I have often gone back and forth over which I find more compelling in writing the essay, and I think there is a deep and interesting tension in Kant’s view around this point.

My main aims in the essay, then, are threefold. First, I aim to bring out the way self-motion, life, a supersensible soul, a psychological subject, and

I begin (§2) by distinguishing three dimensions of life: (1) having an inner principle of self-motion, (2) having a faculty of representations (specifically desire), and (3) having a soul as a supersensible ground of activity. I use these to develop an interpretation of Kant’s analogy between the formative power in organisms and life (§3), before turning to the textual evidence related to plant souls on these three dimensions (§4, §5, and §6). I then (§7) turn to two arguments against ascribing desires and life to plants — their subjects do not seem to have the unity requisite for producing such representations and it does not seem plants are conscious, something required for pleasure and thus sensible desire — before arguing that the best way to reconcile the tensions over plant life is to take Kant to attribute to them simple desires but no consciousness (§8 and §9). Finally, I turn to why Kant does not focus on souls but on God in the *Critique of the Teleological Power of Judgment*, even if expositing the self-organizing power of organisms requires judging reflectively that they interact with a soul (§10).⁴

§2 – Three Dimensions of Life

What is life for Kant? Life, in the context of an embodied being, indicates the community of the soul with an organized body (e.g., A345/

self-activity — what is sometimes called relative spontaneity — are inter-connected for Kant. Second, I aim to illuminate what Kant would take to be the minimal powers that must be had by any living being with a psychological subject. And third, I aim to make the most compelling case that I can, both philosophically and textually, that plants are alive and represent. The places one could push back on this last point should be relatively evident to the reader, and I will even indicate some of these in the notes. Finally, in the conclusion, I will say a bit about why I take Kant to be pulled strongly both towards accepting and rejecting plant life and representations.

4. As a referee for this journal notes, Kant reserves ‘explain’ (*Erklären*) and ‘explanation’ (*Erklärung/Explication*) for what is derived “from a principle”, which he holds is not possible with final causes but only with mechanical ones (*KU*, 5:412). We can, however, offer an ‘exposition’ (*Erörterung/Exposition*) or a ‘natural description’ (*Naturbeschreibung*) of products of nature or natural ends, which exhibit the structure of final causes, through the reflecting power of judgment. Thus, I will use the latter and not the former terms to designate Kant’s descriptions of natural products or ends and their distinctive powers (*KU*, 5:412, 5:417).

B403, A384, A393, B415, A779/B807). This position from the first *Critique* is supported by the explanations consistently given across the metaphysics lectures.⁵ In these, Kant will distinguish *life*, as the interaction (*commercio*) of a material body with a soul, from the *principle of life*, which is this soul. To take one characteristic example, in the 1782/83 Mrongovius transcripts, he calls the connection of the soul and the body their “interaction <*commercium*>” and says this “constitutes life” (*Met-M*, 29:904, 908).⁶ He then claims that “thus the principle of life with human beings is not the body, but rather the soul” (29:914). We will return to the closely related discussion of these bodies, but for now, what are the ways in which the soul is a principle of life?

Kant’s focus is usually on our case. He contrasts his view with the “common concepts of our reason”, which ask how the subject stands in community with a body regarded as something “truly subsisting independently” of the subject (A389). By arguing that bodies do not so subsist, but are merely appearances, Kant argues that our cognition of bodies, including our own, is as immediate as our cognition of our inner states of mind. Thus, when Kant says the soul is immaterial, one contrast he has in mind is between the inner psychological subject that appears through inner sense and bodies as the physical, material appearances of outer sense.

Unlike the concepts of common reason, Kant attributes the “absolute and inner cause of external and corporeal appearances” (A394), as well as that of inner, non-corporeal appearances, to an unknown intelligible something (e.g., A538/B566). This something is supersensible. In the Second Paralogism, Kant hypothesizes that for human beings, it is the same bare supersensible Something that “is called a body in one

relation” that “would at the same time be a thinking being in another” (A359).⁷ This suggests that Kant also has another contrast in mind when he says the soul is immaterial. On this, there are the sensible objects of both outer and inner sense, which present us with the matter of (inner or outer) nature, and there is the soul as a supersensible ground of activity, which is neither an object of outer nor inner sense. This concept of the soul is empty (A400), it represents the soul as a bare “subject in itself without in turn being the predicate of another subject” (A401),⁸ and so the soul is an immaterial something of which we have no material, synthetic cognition.

In these two contrasts, we have three elements: the corporeal, the psychological, and the supersensible. Corresponding to these, there are three dimensions to the soul as the principle of life: (1) it is the ground of self-motion in a body, (2) it is the ground of representations in the subject, (3) it is the intelligible supersensible ground of activity. In his works on physics, anthropology, and practical philosophy, Kant develops each of these further as they relate to living beings generally.

Turning to the first dimension, one of the most significant passages for understanding Kant’s views on life is in the *Metaphysical Foundations of Natural Science*. There, he claims that “matter, as such, is *lifeless*” (*MAN*, 4:544). The Second Law of Mechanics, the law of inertia, states, “every change in matter has an external cause” (4:543) and “the inertia of matter is, and means, nothing else than its *lifelessness*, as matter in itself” (4:544). Furthermore, Kant will even claim that “the possibility of a proper natural science rests entirely and completely on the law of inertia” (4:544), which makes it critical to first become acquainted with

5. See *Met-L1*, 28:282–7; *Met-K2*, 28:753–5, 736; *Met-D*, 28:671; *Met-M*, 28:904–14; *Met-V*, 28:441.

6. Contrast, however, the mid-1770s L1 Notes, where Kant distinguishes “animal and spiritual life” in human beings (*Met-L1*, 28:286). In the 1782/83 Mrongovius transcripts, he seems to reject this second non-bodily life: “Thus were the soul separated from the body, its life power may indeed not stop, but its life would” (*Met-M*, 29:914). We will see, however, that in *Metaphysical Foundations*, some senses of life seem not to require embodiment.

7. Kant puts forward this hypothesis many places (e.g., *Met-M*, 29:904–5; *Met-V*, 29:1032). For a classic discussion of many of the relevant issues and texts, see Ameriks (2000, especially ch. 2 and 3).

8. When Kant speaks of the soul as a “subject” he is thinking first and foremost of the subordination of predicate to subject in a categorical judgment. The term “subject” then gets extended to mean both the metaphysical ground of activity (3) and the psychological representing subject (2). For the sake of clarity, I will tend to restrict my use to the “psychological subject,” although this restriction is admittedly artificial. For a nice discussion of how Kant’s use of “subject” is related to the category of substance, see Engstrom (2018).

the laws of matter as such, purged “from the admixture of all other active causes [*wirkenden Ursachen*]” (4:544).

Kant’s claim is hard to understand. Chemistry studies phenomena like acidification or combustion that result from “the inner powers [*Kräfte*] of matter” (*OP*, 21:453; see also *MAN*, 4:530; *Phys-D*, 29:161). These phenomena can seem to be changes in matter that do not have an external cause. To explain them, chemistry postulates concepts like the ideas of pure salt or pure phlogiston (A646/B674). These are mixed into things like earth, wood, or tin, and it is their separation that causes acidification or combustion. Because these elements are in the earth or the tin, they seem to be responsible for the inner causal powers of those things to acidify or combust. Yet these things are dead matter. So if some changes in lifeless matter have such internal causes, then what is specific to the inner causes of change indicative of life?⁹

We can find some help with this question in the *Foundations* passage:

Life is the faculty of a substance to determine itself to act from an internal principle, of a finite substance to change, and of a material substance [to determine itself] to motion or rest, as change of its state. (*MAN*, 4:544)¹⁰

Properly speaking, Kant presents three conceptions of life in this passage. The first, in terms of self-activity, will apply to finite and infinite beings. The second, as a self-active *change*, is restricted to finite beings. And the third, as self-active change in motion, is restricted to *material* finite things.¹¹ Here, the third will be our focus.

9. Kant comments on this question: “The inner formative forces (*vires interne formatrices*) can be either merely mechanical or organic formative. The latter are those which reciprocally combine the parts of bodies under one another as *ends* and *means* and as such make (*ausmachen*) organic *bodies* (for self-organizing matter is a non-entity)” (*OP*, 21:188–9).
10. Compare also, for example, *Met-L2*, 28:594; *Met-L1*, 28:275; *DSS*, 2:329, as well as many of the passages discussed below on the souls of non-rational animate beings.
11. The question of how ‘life’ could apply non-equivocally to plants and God was a vexed topic among the scholastics. For example, see St. Thomas Aquinas’s treatment (*ST*, 1Q18a3). The tension is also in Aristotle (see *de An.*, II.1&2 and

Substances have powers to both act on, and be acted upon by, other things. Active powers are powers to change the state of a substance. Passive powers are powers of a substance to have its states changed by a substance. We find both active and passive powers in inanimate beings: the sun (agent) shines on the stone (patient) and warms it. In the combustion of tin, the phlogiston reacts with the heat and is released into the air. It is the phlogiston that explains the power of the tin to burn. But neither the tin itself nor the phlogiston in it begins the combustion. That requires an external condition: heat. Of course, the inner powers of organisms, too, will require the presence of external conditions. But what we will see is that they act and strive in a sense that the tin does not. The tree strives to maintain an order among its parts, while the phlogiston in the tin simply reacts. In this, we will see that the tree is neither merely acted upon, nor merely acts on others, but *acts on itself*. That is, unlike the sun, we will see it is both agent and patient in its own *self-activity*. We will need to spell this out. But such *self-activity* will characterize the power of a living being to determine *itself*, with respect to motion and rest.¹²

Because the explanation of life here is in terms of motion and rest, it is proper to the science of extended nature — physical, movable objects — and it seems to allow that material beings can be alive. But as the rest of the *Foundations* passage attests, this is not straightforwardly so. In the next sentence, Kant turns to the issue of what exactly this internal principle of self-activity might be:

Now we know no other internal principle in a substance for changing its state except *desiring*, and no other internal activity at all except *thinking*, together with that which depends on it, the *feeling* of pleasure or displeasure, and *desire* or willing. (*MAN*, 4:544)

Met., XII.7). I know of no place where Kant comments on this directly, but the quote is quite suggestive.

12. Of course, this self-activity should not be confused with the self-activity of thinking (A68/B93).

Here, Kant is drawing on a further explanation of life. Recall that at the outset we saw Kant explaining life as “the faculty of a being to act in accordance with its representations”, where “the faculty of desire [*Begehrungsvermögen*] is the faculty to be, by means of one’s representations, the cause of the objects of these representations” (*MM*, 6:211). Similarly, in the *Critique of Practical Reason*, while delineating the notions that are to be borrowed from psychology, Kant says: “Life is the faculty of a being to act in accordance with laws of the faculty of desire” (*KpV*, 5:9n; *Met-M*, 29:894; *ÜGTP*, 8:181). Finally, in his notes on anthropology: “Life is nothing but the faculty of desire in its lowest exercise” (*R1034*, 15:465). Thus, for embodied beings to be alive is to have a faculty of representation, specifically desire, through which it can be the cause of the objects of its representations in the material world.¹³

In the remainder of the paragraph, Kant argues that we should not allow the explanation of life in terms of self-motion to lure us into thinking that matter as matter can be alive. Desiring, thinking, or feeling are internal actions. They are not something that we can represent through the outer senses, and we cannot directly see or touch them. According to Kant, however, matter is what is in principle perceivable by such senses, where this will include things like magnetic matter, which is in space although not perceivable by us (*A226/B273*, also *KU*, 5:467). Acts of mind, however, are not in space. So matter as matter — what is in space — cannot be endowed with the powers to act in these ways. It would be tantamount to matter being both in and not in space. Kant calls the contradictory position that endows matter with these powers *hylozoism* (*MAN*, 4:544). And because it is contradictory, he claims that “if we seek the cause of any change of matter in life, we will have to seek it forthwith in another substance, different from matter, yet combined with it” (*MAN*, 4:544).¹⁴

13. Although less clear than with the first class of explanations, there also may be multiple levels of determination to this class. Both finite and infinite beings act in accordance with representations. For finite beings, there is also a gap between choosing and enacting. And a being whose faculty of choice is pathologically affected will sense and be embodied.

14. Also, e.g., *DSS*, 2:327_n. Kant makes this argument often, although usually it is

In this *Foundations* passage, two dimensions of souls are present: They animate and they represent. These dimensions are also present when Kant attributes souls to non-rational animate beings at the ends of his metaphysics lectures.¹⁵ For example, he says:

All matter is lifeless, this is the principle of physics, without this there is no natural science at all. But now what can produce alterations in itself is called living. Living beings *<lebende Wesen>* are called animals *<animalia>*. The principle *<principium>* of life must not be represented as material. Each principle *<principium>* of life must have a power of representation *<vim repraesentativam>*. Life means having a faculty for practicing actions in conformity with one’s representations. (*Met-L2*, 28:594, see also *Met-D*, 28:679)

Relevantly for our topic, in this passage, Kant seems to simply identify being alive with being an animal, and in another, he makes a similar identification because an animal “has a faculty to alter its own state as a consequence of its own representations” (*Met-V*, 28:449).¹⁶ So passages like these might seem to give us reason to think Kant excludes plants from the living.

Still, there is a fairly straightforward reason to hesitate before drawing this conclusion. After all, perhaps plants *are* animals, at least in the relevant sense, because they are alive.¹⁷ Kant often used Latin for the

compressed.

15. (*Met-Her*, 28:115–7; *Met-L1*, 28:274–8; *Met-M*, 29:878, 29:906; *Met-V*, 28:448–9; *Met-L2*, 28:594; *Met-D*, 28:679–80, 28:689–90). For a classic discussion of these passages in relation to the minds of non-rational animals, see Naragon (1990); for a more recent discussion, see McLear (2011) and now also the essays in Allais and Callanan (2020).

16. To these, one should add *KU*, §82, where Kant seems to say that carnivores “can only be nourished by what lives” (5:426). Leland (2020, p. 2–3) gives a nice argument for why this is not decisive.

17. This would echo Plato, *Tim.*, 77a–b, which is brought out nicely by Galen (1934, 76e7–77c5). Thanks to Kosta Gligorijevic for pointing me to Galen, and to Tom Marré for suggesting this interpretive move.

key terms in these and related passages, and he seems to be explaining life in terms of having a soul (*anima*) or being an animal (*animal*). For example, at the outset of the Paralogisms, he says that through the interaction (*commercium*) of the thinking substance with bodies, we represent “the thinking substance as the principle of life in matter, i.e., as a soul <Seele; anima> and as a ground of **animality** (*Animalität*)” (A345/B403). Of course, non-rational animate beings don’t strictly think, although they have a soul (*Seele; anima*), and we saw him claim that “living beings are called *animalia*” (*Met-L2*, 28:594). Following Baumgarten (*Metaphysica*, §792–5), Kant will refer to the souls of non-rational animals as *anima bruti* (*Met-D*, 28:690; *Met-L1*, 28:274; R4728, 17:689; R5481, 18:195). And in general, he seems to use the term ‘*anima*’ for a soul or principle of life in a being, as in the *Dohna* lectures of 1792–3: “Soul <*anima*>, one could call soul <Seele>, the subject of sensation [*Empfindung*], mind <*animus, Gemut*>, the subject of thoughts, and spirit <*spiritus, Geist*> — as the subject of spontaneity.”¹⁸ In these passages, then, to be an *animal* looks like it is just to have an *anima*.

Throughout these passages, with ‘*anima*’ or ‘*Seele*’, Kant seems to have in mind more than just the soul (1) as that which animates the animal. After all, ‘*Seele*’ is a “subject of sensation”,¹⁹ and he attributes to non-rational animals a “subject of representations” (*Met-D*, 28:690), or, more commonly, an “analogue of reason” where this is the complex of all of the lower cognitive powers (*Met-V*, 28:450).²⁰ These passages suggest, then, that the soul, as a life force or vital power, is (2) also a representing subject — a topic of study for empirical psychology (e.g., *KU*, 5:461; *PM*, 20:308).

18. My translation: “anima, könnte man Seele, das Subjekt der Empfindung, animus, Gemüth das Subjekt der Gedanken, und spiritus Geist — als Subject der Spontaneität — nennen” (*Met-D*, 28:679–80; also see *Met-K2*, 28:753; and contrast *Anth-C*, 25–6; *Anth-P*, 25:247; *Anth-F* 25:474).

19. See also *DSS*, 2:332, where it is implied that plants are not “sensible subjects”.

20. See also *KU*, 5:464n; *Met-Her*, 28:83–8; *Met-L1*, 28:276; *Met-L2*, 28:594; *Met-K2*, 28:740; *Met-D*, 28:690. Kant picks up the phrase from Baumgarten, *Metaphysica*, §640; *Ethica*, §202.

In calling the soul of a non-rational animal an “analogue of reason”, however, Kant is further adverting to the soul (3) as a supersensible ground of activity. We infer that animate beings have this causal ground through an analogy with our own principle of life. Human beings are conscious of standing under the moral law, and because freedom is a condition of being necessitated by this law, we cognize the freedom of our will from a practical point of view (*KpV*, 5:42–3; *Eth-V*, 27:504–7).²¹ As free beings, we cognize ourselves not merely as we appear to ourselves through inner sense, but as spirits or intelligences that are responsible for what we do. And we are responsible because we are original causes. We are not necessitated by sensible natural causes existing in space or time, but are supersensible beings, belonging to an intelligible world with “the absolute spontaneity” required to be a free cause (e.g., *KpV*, 5:99). Thus, because we are conscious of the moral law and are free, we infer there is a supersensible ground of our activity. And it is through our reason that we think of ourselves as intelligible beings outside the causal order of sensible nature, yet able to freely originate acts within it.

Kant holds, with Leibniz, that non-rational animate beings lack absolute spontaneity and are not intelligences, but are spiritual automata with the freedom of a turnspit (*KpV*, 5:97; R3855, 17:313; *Met-L1*, 28:267). After all, non-human animals seem to lack reason (*Met-M*, 29:906), and so do not cognize the moral law, but it is through this cognition that we infer freedom in our own case. For this reason, we do not think of their souls as supersensible grounds of free activity in the way we do our own. Nonetheless, animate beings have an inner principle of motion. And through their faculties of desire, they act in accordance with their representations. Because of this, they exhibit a

21. Because we cognize ourselves through pure apperception, Kant will claim it is obvious that we are also intelligible beings (A546/B574). Still, because we see non-rational animate beings move themselves, but lack first-person access to their minds and don’t believe they have pure apperception, it is our practical consciousness of our supersensible selves that will be relevant to the analogy.

kind of self-activity through their souls, even (relative) spontaneity²² that is analogous to the kind of self-activity we exhibit, except that it is not free.²³ We will see below that this relative spontaneity is sufficient for the attribution of a supersensible soul to non-rational animals. The grounds we have for attributing such a soul to plants will clearly be no stronger than the grounds we have for this attribution. If we find that there is reason to attribute supersensible souls to non-rational animals but not to plants, however, then there may be reason to think Kant held only animals are alive.

§3 – Organisms as Natural Ends and the Analogy with Life

Before we turn to whether plants exhibit these three dimensions of life, we should examine Kant's most significant discussion of plants, where

22. Both in Kant's earlier work and at the end of his life (e.g., *DSS*, 2:327n; *Met-L1*, 28:275; *OP*, 21:566, 17:592), he will call all living beings self-active (*selbst thätig*), even spontaneous (*Spontaneität*). In the unpublished introduction to the third *Critique*, he divides the way purposiveness in nature is regarded into "intentional" and "natural (*forma finalis naturae spontanea*)" (*KU*, 20:235). Finally, at the end of this *Critique*, immediately before discussing the generation of maggots, he says that in seeking the ground of the possibility of a natural end, it is necessary to conceive of a particular kind of causality for it that is not, unlike the mechanism of natural causes, found in nature, since to the receptivity to various and different forms than those of which matter is capable in accordance with mechanism there must be added the *spontaneity of a cause* (which thus cannot be matter) without which no ground of those forms could be given. (*KU*, 5:411, my emphasis)

Thus, even if in this passage it is not quite clear what the "particular kind of causality for it" is that imbues natural ends with the spontaneity of a cause that cannot be material, throughout Kant's life he held that all organisms, as natural ends, exhibit a spontaneity that dead matter does not.

23. An anonymous referee for this journal pressed me to clarify whether it is our freedom in the negative or the positive sense that is analogous to the lower powers of the non-rational animal. Freedom in the negative sense, remember, is independence from external causal influence, while freedom in the positive sense is a power for *self-determination* (e.g., *KpV*, 5:33). In the next section, we will see that through their lower powers, as an *analogon rationis*, non-rational animals can *seem self-determining*. In this respect, since their acts *seem* to originate in their own powers, it is *as though* they were free not only in the negative but also the positive sense, and the analogy is with freedom in the positive sense. Of course, in actuality, they are free in neither sense: Instincts, or instincts and habits, are the ultimate grounds of their self-activity.

he relies on a distinction between living beings and organisms. Kant holds that matter, as matter, is inert; it is moved only by external forces or chemical powers. Organisms, however, are physical beings that seem to *move themselves* in a teleological way, which looks paradoxical. To exposit this apparent self-motion, and in developing his conception of organisms as natural ends, Kant relies on a number of analogies. The most prominent, for example, is Kant's comparison of organisms to artifacts and his repeated claims that it is as if organisms were made through the intention of an infinite intellect, like God's.²⁴ Throughout the third *Critique*, Kant also develops an analogy between natural beauty and the inner natural perfection of organisms.²⁵ He draws an analogy between the parts of a political state and an organism (*KU*, 5:375_n). And in places, Kant compares the self-organizing powers of natural ends to our own rational powers (*KU*, 5:375).²⁶

Given what we have seen above, however, we might also expect Kant to appeal to life in order to exposit the distinctive motion of organisms. And in fact, he does this in his main discussion of the power that grounds this motion in §65 of the *Critique of the Power of Judgment*. Still, after considering this analogy, he concludes that "strictly speaking", the self-organizing powers of organisms are "not analogous with any causality that we know" (*KU*, 5:375). It seems that in part because of this, and in part because it is uncommon to attend to the distinction between the concepts of <life> and <organized matter> (or <organism>),²⁷

24. Prominent interpretations stressing this include McLaughlin (1990, 2014) and Ginsborg (2001, 2004). Ginsborg, for example, takes nature to be like an artifact, and the creator of nature (an infinite intellect) to be like an artifact's maker. She argues that it is as if organisms were created by the infinite intellect through an idea of their species, in an intentional act of will.

25. Interpreters who have stressed this include Zuckert (2007) and Ginsborg (1997).

26. Breitenbach (2009, 2014) has recently developed an interpretation of natural ends through this analogy with the faculty of practical reason as itself goal-directed and self-organizing.

27. Even Ingensiep holds that Kant does not always keep the contrast in view (2004, p. 115). We can avoid attributing this confusion to Kant, however, if we take him to hold that all organisms are alive.

the analogy with life has received less attention than other analogies. Nonetheless, through plants, we will see that the analogy with life is fundamental to Kant's explanation of the formative powers of organisms, and it is no accident that he has placed this analogy at the center of his explanation of natural ends.

Before we can turn to interpreting this analogy, however, we need to introduce Kant's notion of a natural purpose or end (*Naturzweck*). He does this in §64 through the example of a tree and the way it exhibits the three causal powers particular to natural ends: reproduction, growth, and self-maintenance (or preservation). Roughly put, something is a natural end or purpose, according to Kant, if "**it is cause and effect of itself**" (*KU*, 5:370). This explanation includes two components, one of which natural ends share with artifacts, the other of which is distinctive.

First, take a watch: "In a watch one part is the instrument [*Werkzeug*] for the motion of another" (*KU*, 5:374). There is a common form that unites all of the parts together into the whole, and this form ensures that each part is "present for the sake of the other". In this way, then, there is an organization among the parts of the watch that ensures all of the parts have a reciprocal dependence on one another in bringing about the overall functioning of the watch. We find something similar in organisms: We take the roots and leaves of a tree, together with its other parts, to exist "only **through** all the others, thus as if existing **for the sake of the others** and **on account of** the whole, i.e., as an instrument (organ)" (5:374).

Second, we not only conceive of a natural end as organized, we also conceive of it as "**self-organizing**" (*KU*, 5:374). So unlike the watch, which cannot repair, grow, or reproduce itself, each part of the tree is productive of the other parts (5:371–2). It has the power to circulate sap, take in oxygen, repair damage, create seeds, etc. In this respect, an organized being is more than a mere machine, because it not only has "a **motive power**" (*bewegende Kraft*) but also "a **formative power**" (*bildende Kraft*) (5:375), where the latter power, by organizing it, communicates a form to matter that does not have it.

In section §65, Kant presents his concept of a natural end as a "determinate concept" in order to make precise this sense in which natural ends are related to themselves, reciprocally, as both cause and effects of themselves (*KU*, 5:370). In the case of the watch, the cause of the order and motion of the parts is external to it. It lies in the watch maker and her intention to build the watch according to her concept of it. This is the origin of the form of the watch. In this respect, the concept is the cause but not the effect of the watch. A natural end, however, is natural. We know of no natural cause that could imbue its parts with their form or their causality. Rather, as natural, its parts must be cause and effect of their form and of each other through that form. It is as if the watch and its parts were themselves the watch maker — as if they were the cause that brought the form into each other.²⁸

To describe the peculiarity of this kind of material causality, it will help to look at Kant's notion of an end (*Zweck*). As Newton notes (2017, p. 521), Kant defines an end both (1) as "the *concept* of an object insofar as it at the same time contains the ground of the reality of this object" (*KU*, 5:180, my emphasis) and (2) as the "*object* of a concept insofar as the latter is regarded as the cause of the former" (*KU*, 5:220, my emphasis). In the case of the watch, say, the end will be both the *concept* the watch maker has — through which she produces the watch — as well as the *watch* itself that is produced. In the case of the tree, however, there is no known maker or intention. As Kant puts it, the "being that would possess the causality according to concepts appropriate for such a product" is unknown (*KU*, 5:373). For this reason, there is no end, as a concept, that we cognize as the intention through which the tree is produced.

28. An anonymous referee for this journal asks: While reproduction, growth, and self-maintenance are characteristic of formative powers as we find them, does the concept of a natural end or its formative power *per se* dictate that these must be its activities? Since the natural end is *natural*, its activities will work on physical matter. Since it is an *end*, there will be a form that the power preserves and propagates. But whether reproduction, growth, and self-maintenance are the only ways in which a formative power might preserve and propagate this form in physical matter is a difficult question.

Still, as many have noted, Kant holds that we judge that it is *as though* the organism was intentionally created in accord with a concept we posit, as if by some supernatural creator. This concept or universal is the species-form of the organism.²⁹ And one mark of an objective end like a watch or a tree is the order, or “perfection” (*KU*, 5:375; *FI*, 20:228), found in it. This order in the object is measured against “the concept of **what sort of thing it is supposed to be**” (*KU*, 5:227; *FI*, 20:228). In the tree, this concept serves as a normative standard by which we measure not only the order or perfection in the organism, but also its behavior. The quince tree should bloom in the spring and lose its leaves in the fall. If it fails to bloom, then we need to seek the ground of this failure outside its nature as a quince — say, in the composition of the soil or in a disease. In this respect, the species-form serves as a model (end as concept or idea) against which to measure the behavior of the organism (end as object or product). Insofar as the species-form is supposed to be more than a mere model however — insofar as it is also supposed to be, like the concept of the watch, the *ideal cause* of the organism — we know of no causal power that can bring this natural product about.

The reason is not merely that this product exhibits an order for which we cannot find a cause, but that it seems to be its own cause. The organism, as a natural end or purpose, is cause and effect of itself insofar as, like the watch, the parts are conceived of as existing for the sake of all of the other parts on account of the whole, through their form. In this respect, Kant compares the parts of the natural end to instruments (*Werkzeugen/organs*) or gears (*KU*, 5:374) which the maker combines to make the product (e.g., the watch or end as object) in accordance with the idea of it (e.g., the watch plan or end as concept). But unlike the watch (and its gears), the parts of the natural end must also *produce* the other parts, in accordance with their form as organs (e.g., roots, leaves, etc.), and *produce* the organism (e.g., tree) as the combination of these parts. In this respect, these organs are not merely

29. Other interpreters who stress the normativity of the species-form concept include Ginsborg (2001, 2004), Huneman (2014), and Newton (2017).

brought together through the idea of an end in an external maker, but make themselves and their form, insofar as they both bring the form of the organism (end as concept) into matter that didn’t have it to create organs and bring this form into the organism as a whole (end as object).³⁰

It is in this that the formative power of the quince tree differs from the tin’s power to combust. In the case of phlogiston, we posit the idea of an element as the ground of combustibility in order to unify the powers of metals and non-metals. Whether the power to combust is actualized depends *merely* on the presence or absence of certain external conditions (heat, etc.). Because of this, it is mechanical. There is no principle in the thing itself that works to bring about or avoid these conditions — there is nothing in the tin which makes it so that it ought to burn or not. But (a) in the case of the quince (end as object), it seems as if its parts *should* be ordered according to its species-form (end as concept). The quince fruit’s astringent taste puts off many would-be foragers, and the tree as a whole seems to work to maintain this order among its parts, etc. It thereby causes motions in matter to achieve these ends.³¹ In this respect, (b) it is as if the quince *determined itself* to motion and rest according to how instances of its species should be. For this reason, it is as if the quince were self-active or spontaneous — as if it were the origin of the movements in its parts — while the tin is inert.³² Finally, (c) it is non-accidental that self-active powers are

30. This sketch of Kant’s account of the structure of the causal powers found in organisms combines elements from McLaughlin (1990, 2014), Ginsborg (2001, 2004), and Teufel (2011).

31. The claim that it is distinctive of living beings, including plants, that they work to bring about ends can be traced back at least to Aristotle (e.g., *Physics*, II.8), as can the claim that living beings exhibit self-movement or self-activity (*Physics*, VIII.4–6). Thanks to A. G. Holder for discussion.

32. Kant discusses this kind of movement involved in growth at *KU*, §64. Specifically, he discusses how the “plant first prepares the matter that it adds to itself with a quality peculiar to its species, [...] and develops itself further by means of material which, as far as its composition is concerned, is its own product” (*KU*, §64, 5:371). This matter, then, is not a mere educt, but is a product of the organism’s own species-form, and it is clear that Kant holds that this form will control and limit the plant’s growth. On this peculiarity of organic growth,

self-directed. The burning tin may happen to burn itself, but its power to burn can burn anything. If it also happens to suffer its own burning, that is not properly self-activity because the tin can equally burn other things. In contrast, the formative power of the quince is self-active because it is the power of its parts to work on one another.³³

Now, even considering only the natural formative power, Kant thinks we should be wary about claiming that organisms actually *are* natural ends. Being an end entails a creator with an intention, and with organisms we do not have insight into such a creating cause (e.g., *KU*, 5:400). In line with this, although Kant titles §65 “things, as natural ends, are organized beings”, he often seems to treat *<organized being>* or *<organism>* as empirical concepts, while he treats the concept *<natural end>* as an *a priori* idea of reason (e.g., *KU*, 5:405; *FI*, 20:233).³⁴ This *a priori* idea seems to then be specified in the empirical ideas of specific species-forms (e.g., *KU*, 5:373), and we judge that it is *as if* organisms fall under the concept *<natural end>* or the more determinate concept of their species-form.³⁵ Still, because we don’t cognize the intention-

compare *de An.*, II.4, 416a1–20, where Aristotle makes a similar point: It is the soul that controls motion and growth in the organism, and that explains why the natural motions of the fire and earth in the plant do not tear it apart.

33. This entails that powers to act on the world are not self-active powers, which might seem surprising. After all, in exercising my power to act, I don’t have merely the power to move my limbs — to, say, lift my arm — but also the power to, say, lift my glass. Still, in exercising these powers, I am acting on *the glass* (or *the world*), not on myself. It is thus no wonder that these powers are not *self-active*. Nonetheless, nothing precludes externally directed powers, like the power to lift a glass, that presuppose a self-active power, like the power for self-movement. Thanks to Kathryn Lindeman for conversation on this point.
34. For discussion of the importance of respecting this distinction, see Kreines (2005).
35. Goy calls these “empirical *a priori* concepts of reason” (2017, p. 223). This is a *contradictio in adjecto*. Still, she is after the way that the *a priori* idea of a natural end (as concept) is made concrete in an empirical species-form. Kant often, however, takes *a priori* concepts (e.g., *cause*) to be made concrete in corresponding empirical ones (e.g., *warming*) — so much so that these are just empirical concepts. I discuss the case of *cause* and *warming* in detail in my “Kant and the Vicious Circle: Kant’s account of Particular Causal Cognition” (MS2). I discuss the general importance of making more abstract concepts

ally acting cause that created organisms, we are not permitted to make a judgment about how the thing in fact is — i.e., about the intention with which it was in fact made — but can make only a judgment that guides our investigations into it, *as if* it were made in accordance with the species-form we posit.

It is after he has developed the concept of a natural end through the analogy with an artifact that Kant asks:

Perhaps one comes closer to this inscrutable property [i.e., the material causality particular to organisms] if one calls it an **analogue of life**: but then one must either endow matter as mere matter with a property (hylozoism) that contradicts its essence, or else associate with it an alien principle **standing in communion** with it (a soul), in which case, however, if such a product is to be a product of nature, organized matter as an instrument of that soul is {either}³⁶ already presupposed, and thus makes that product not the least more comprehensible, or else the soul is made into an artificer of this structure, and the product must be withdrawn from (corporeal) nature. Strictly speaking, the organization of nature is therefore not analogous with any causality that we know. (*KU*, 5:375–6)

In the first part of this passage, Kant quickly considers hylozoism in relation to organisms, and again rejects living matter as contradictory, presumably for the same reason we examined above: Life involves inner powers and acts that are not spatial, and so cannot be physical. Because it is contradictory, this version of the analogy isn’t going to be of any use in helping us exposit the apparently self-active material causality particular to organisms.

concrete for Kant’s theoretical philosophy in my “Kant on Defining the Categories” (2014).

36. The Cambridge edition is missing the “either”: “jener Seele **entweder** schon voraussetzt” (my emphasis).

In the second part, Kant considers two options for how the immaterial soul³⁷ could stand in communion with the organized body. On the first, the soul uses the body like a tool, as though it were, say, a pilot in a ship. He rejects this as a way of understanding the formative power of organisms because it doesn't actually make this power more comprehensible. It is like trying to comprehend the self-maintaining powers of a horse by appealing to its rider. What we want to understand is the power in the body (the horse) to organize and produce itself. Proposing that there is an immaterial principle wielding or piloting that body is a non-sequitur. Such a principle presupposes the body (ship or horse) is already given, with whatever formative powers of self-maintenance it may have. For this reason, although not contradictory, it's not going to help us comprehend these self-active material powers.

The second option Kant considers is that the soul is itself the craftsman of the body. Continuing with the ship analogy, we might think of the soul as either the ship's builder or an engineer repairing engine damage while the voyage is underway, or both. Kant rejects this option because on it, "the product must be withdrawn from (corporeal) nature" (*KU*, 5:375). But while it is clear why this proposal would withdraw the *producer* from material, physical nature, why would it also withdraw the product? After all, the product is the organism, and organisms are in the natural world. Well, as we just saw, in an organism, the parts are both cause and effect of each other. They are both producer and produced. So the product is itself, in turn, the producer. But

37. Although it is not explicit, Kant must be conceiving of the soul here as a supersensible life principle, not as a psychological subject. This is because only a supersensible life principle can be the *ultimate* ground of any power, especially any self-active power (be it the physical formative power of an organism or the psychological representative power of a subject).

Notice then, if that is right, that just as how the analogy with life can illuminate the formative power of organisms, the same argument, applied *mutatis mutandis*, should illuminate the representing power of any representing subject. For this reason, the relationship between the formative power of an organism and the organism is analogous to the relationship between our "determining Self (the thinking)" and "the determinable Self (the thinking subject)" (A402). So it is no surprise that there is a close connection between our rational powers and the self-organizing powers of natural ends.

if that is the peculiar structure of the formative power in organisms as material beings, then because on our analogy the producer is immaterial, the product would need to be immaterial also. But that would remove the product from material, physical nature, and make the kind of causality in question not so much that of life (a soul's communion with a body), as that of the connection between two immaterial things.

Since the self-organizing power is not analogous to life in either way, the kind of causal powers we encounter in living beings as living beings cannot explain the natural self-organizing power found in organisms. This power is an inner power of self-motion. So the self-organizing power cannot be accounted for through the mere mechanism of nature: matter's outer or inner forces. Yet matter, as matter, is also inert. This puts Kant in a paradoxical situation. Certain material beings present us with a kind of self-motion that cannot be explained, either by the powers found in dead matter, or by appealing to immaterial powers, since these can't figure in a science of such matter.

Nonetheless, outside the context of *natural* teleology, Kant will sometimes appeal to life to exposit the inner motions of organisms. For example, in 1782/83, in presenting why pre-established harmony is a worse view of the interaction between mind and body than physical influx, he claims that "the soul avails itself of the nerves as instruments [*Werkzeuge*] and through these immediately influences the remaining parts of the body; on the other hand the nerves are also the instruments [*Werkzeuge*] through which the body influences the soul" (*Met-M*, 29:908). Here, the body and the soul work on one another, each being the product and the producer of the other.³⁸

This is strikingly similar to the way Kant has described the causality of the formative power, insofar as the parts of the organism are instruments (*Werkzeuge*) of one another and the whole (*KU*, 5:374), and the nerves are instruments (*Werkzeuge*) of the body and soul (*Met-M*, 29:908). This then suggests that the nerves are analogous to the parts of the body that are being *used* as instruments. The parts of the body

38. Compare Aristotle on "the moved, the mover, and the instrument of motion" (*Physics*, VIII.5, 256b14).

that are *using* the nerves would be analogous to the parts of the body that are *using* its other parts. And the soul that is acting on the body through the nerves is analogous to the whole organism, with its formative power, that is ordering the parts of the body in relation to one another through these parts.³⁹

In this way, the third option for understanding the analogy with life can help make the formative power more comprehensible, even if it is not strictly analogous and is not admissible in *natural* teleology. But so long as the context allows abstraction from the soul's immateriality and the body's materiality (as in psychology), it is permissible to appeal to the way that the soul grounds motions in the body. What we will see through examining the case of plants is that although cognitive judgments about souls are not admissible in natural science, the analogy with life is critical to Kant's reflective exposition of the self-active formative powers of organisms. Specifically, souls provide a cohesive account of their psychological, supersensible, and physical powers and thereby account for their paradoxical self-motion, even if this account is not a natural one.

§4 – In Favor of Attributing an Inner Principle of Motion to Plants

Above, we saw that Kant attributes life to beings both because they move themselves and because they desire. Ingensiep claims that plants show that these two grounds of attribution are in tension and that as a result, Kant's notion of life, and even spontaneity, is up in the air (2004, p. 127–8). This is because he holds that plants move themselves but don't desire, while he holds that desire entails self-movement. The second seems right. After all, any species that can desire — that can cause the objects of its representations — will have a means of causing these objects. For embodied beings, since at least some objects they desire are physical, they will cause changes in extended matter,

39. Indeed, this analogy is so natural that from Kant's standpoint it looks quite easy to equivocate between the material formative power and the life power, as arguably vitalists (like Blumenbach) or Aristotle do.

and this entails self-movement. The other direction, however, is more controversial. As a result, we should look at the evidence for attributing life to plants on the basis of their motion before turning to the evidence for their representing or desiring.

The formative power of plants to reproduce, grow, and maintain themselves seems to be an inner principle of self-motion, and so makes them alive in our first sense. After all, as we've seen, through their formative powers plants cause motions in matter that seem to be guided by their species-form. They move water, sap, cellulose, chlorophyll, etc. This motion has its ground in the plant itself, not in something outside it. So merely because plants are organisms, they seem alive in the first sense.

Perhaps, however, the kind of self-motion requisite for life is more robust. In the early 1766 essay *Dreams of a Spirit Seer*, Kant discusses *voluntary* motion as the "undisputed characteristic mark of life" (*DSS*, 2:330), which is something plants lack.⁴⁰ Such motion is indicative of a faculty of choice, but not always *free* choice (*MM*, 6:213). If Kant thought voluntary motion or a faculty of choice were required for life, then he would deny plants the relevant kind of principle of motion. Although at first it sounds like he thinks voluntary motion is required (*DSS*, 2:327_n), as he goes on, it is clear he doesn't. He claims that even though plants will lack this "external characteristic", they do contain within themselves "a principle of inner life, namely, vegetation" (2:330–2). So although voluntary motion is the *undisputed* mark of life, in this work Kant takes life to extend further — to plants — and presumably this is because their nutritive activities involve (non-voluntary) self-motion.⁴¹

40. This distinction in kinds of motion is like the one found in Aristotle between "movement and rest in respect of place" and "the movement involved in nutrition" (*de An.*, II.2). Aristotle also denies plants voluntary motion or "the power to do or not to do" (*NE*, VI.12).

41. I have found one passage from around the same time where Kant might be read as endorsing voluntary motion as a criterion for life (*Met-L1*, 28:275), but in these same lecture notes, he is also reported as claiming: "I do find a transition from the mineral kingdom into the plant kingdom, which is already a beginning of life" (28:205).

If one were to interpret Kant as holding plants are not alive, one would

A bit earlier than *Dreams*, in Herder's Metaphysics lecture notes, Kant is reported to have claimed, "the imperfect raises itself to the more perfect through the smallest degrees of perfection. E.g., the lifeless — plants, living plants, polyps, oysters, animals, until human beings" (*Met-H*, 28:42). It's not clear here what divides mere plants from living plants — maybe he means to pick out Venus flytraps, etc. Still, at least some, if not all, plants are living, and although he doesn't spell out what life involves, presumably it is at least an inner principle of motion.

In the *Opus Postumum*, at the end of Kant's life, we see something similar:

An organic (articulated) body is one in which each part, with its moving force, necessarily relates to the whole (to each part in its composition).

The productive force in this unity is life.

This vital principle can be applied *a priori*, from consideration of their mutual needs, to plants, to animals, to their relation to one another taken as a whole, and finally, to the totality of our world. (*OP*, 21:211)⁴²

In this late passage, Kant seems to claim that all organic beings or organisms are alive and have souls, and that this is an internal immaterial

lean on the first of these, together with Kant's identifications of living beings with animals. One would argue that, in fact, the attribution of *voluntary* motion is required for the attribution of life, a supersensible soul, and a psychological subject. And one would then need to argue that the internally active formative power and its corresponding nutritive self-movement is insufficient for life, despite the explanation of life from *Foundations*. The key to all of this would likely be an argument that empirical consciousness is required for both life and for the unity of any psychological subject, and that the kind of account of unconscious plant desires and subjectivity that I present below is ultimately unworkable.

42. Still, two (quite similar) conflicting *Opus Postumum* passages where Kant contrasts vegetative with living bodies are 21:541 and 21:565. A number of others, however, suggest that all organic beings, including plants, have souls and are alive (e.g., 22:97; 22:99; 22:59).

principle of motion. So here, he seems to hold that if plants are organisms, then they are alive.

Another nice piece of evidence that plants have a soul that entails at least a principle of self-motion can be found in the 1795 text that was included as an appendix to Samuel Sömmerring's *On the Organ of the Soul*. Sömmerring's work speculates on the role of ventricular liquid (*Gehirnwasser*) in facilitating mind-body interaction. Although Kant wants to avoid the contradiction of ascribing a place in space to something that is merely inner, he endorses Sömmerring's claim that the ventricular liquid is "the matter that makes possible the unifying of all sensory representations in the mind" (*Sömmerring*, 12:32).⁴³ Kant even suggests that it is the chemical decomposition of the liquid that might make the requisite complex causal processes possible, and gives as evidence the following:

If one also considers what an immeasurable manifoldness of partly volatile matters the realm of plants produces from that ordinary water, presumably through decomposition and other kinds of connection, then one can imagine what manifoldness of tools the nerves encounter at their ends in the water of the brain (which might be nothing more than ordinary water). (12:34)

Here, of course, Kant is not directly claiming that plants have souls. He is only drawing an analogy between their use of water and the use of ventricular liquid or "brain water". Nonetheless, because he is defending the claim that it is the decomposition of ventricular liquid that is the matter that is the material condition for the unification of sensory representations in us, it isn't much of a stretch to think the

43. The idea of a fluid medium is not new to Kant with Sömmerring. (E.g., *FEV*, 1:212; *KU*, 5:349; *Anth-F*, 25:625; *Met-K2*, 28:753; compare also Kant's discussions of nerves (e.g., *Met-H*, 28:854) and their close association with irritability and the vital or vague sense involved in, say, shuddering (e.g., *MM*, 29:882).) This thought that water is the key to the vitality of plants is also new with neither Kant nor Sömmerring. For example, it is critical to Wolff's (1759, Pt. 1) extensive discussion.

decomposition of water in plants is supposed to be the material correlate of whatever kind of psychological subject they have.

§5 – In Favor of Attributing Representations to Plants

For these reasons, insofar as any being with an inner principle of self-motion is alive, it seems Kant would attribute life to plants. But would Kant also claim plants represent or desire? Or as Kant might put it, do plants “have psychological instead of mechanical causality” in that they “produce actions by means of representations and not by bodily movements” (*KpV*, 5:98)? This is what interpreters like Ingensiep, Zammito, and Newton would deny, in part on textual grounds. The texts where Kant directly discusses whether at least some plants sense or desire, however, do not conclusively favor this denial.

In *Dreams of a Spirit Seer*, Kant refers to the “irritability” (*Irritabilität*) of some plants (*DSS*, 2:331), and holds that explaining irritability in terms of the physical, mechanical properties of the body is dubious (*Met-K2*, 28:753). In one of his early (1754–5) logical reflections, he discusses sensitive plants [*empfindliche Pflanze*] (*R1570*, 16:7), and these texts suggest he thought some plants could sense.⁴⁴ Still, his use of the subjunctive in describing a sensitive plant [*empfindliche Pflanze/Planta sensitiva*] in the *Physical Geography* suggests it is merely “as though it had sensations” (*PG*, 9:364). And in the *Metaphysics of Morals*, he seems to deny sensation to plants: “The first (nonhuman) objects can be mere inorganic matter (minerals), or matter organized for reproduction though still without sensation (plants)” (*MM*, 6:442). Overall, I take the evidence to suggest that Kant denied sensation to plants.⁴⁵

When it comes to desires, there is less direct evidence. Still, in the margin of a fragmentary transcript of his 1792 lectures on logic, Kant is reported to have said: “Faculty of desire. This holds for plants, too, the

44. See also *Anth*, 7:175, where he suggests plants do something like sleep. Thanks to Jonas Indregard for reminding me of this passage.

45. Compare Locke, for whom “perception puts the difference between animals and vegetables”, but who took the movements of plants to be merely mechanical (*Essay*, Bk. II, ch. ix, ¶11&12).

flytrap. They seek air and sun and water” (*Log-D*, 24:772). This seems in line with the powers Kant attributes to plants in core texts like the *Critique of Judgment*, at least interpreted one way. As we saw, there he claims we must at least take plants to have a formative power (*bildende Kraft*), and this is arguably a drive (*Trieb*), because he seems to identify it with Blumenbach’s formative drive (*Bildungstrieb/nisus formativus*) (*KU*, 5:424).⁴⁶ If this power is a drive, then because Kant will identify drives with instincts (*Instinkte*) (e.g., *Anth-DW*, K0249; *Anth-F*, 25:613; *Met-D*, 28:690), and classify these as a kind of desire (*Begierde*) (*Anth-F*, 25:584), then drives are also desires.⁴⁷ So if the formative power in plants is a drive, and drives are instincts, then plants have a kind of desire, and thus a faculty of desire. Finally, if plants have drives, then they have desires, and in this respect, they represent. Thus, although the textual evidence is somewhat inconclusive, overall it seems to suggest the strange position that plants have desires but not sensations.⁴⁸ This is strange because on a traditional way of thinking, desire presupposes sensation or perception,⁴⁹ and for good reason: A faculty of desire — a

46. Although since Kant calls it a drive *only* when discussing Blumenbach, who calls it a drive, we might take that as evidence that Kant did not, in his own voice, think of it as one. Further, as we saw in note 1, Blumenbach seems to treat this “drive” as a merely material principle, and not as indicative of a perceiving or representing soul, so not clearly as a desire in Kant’s sense. And in this discussion at *KU*, 5:424, there is nothing other than his calling it a “drive” that suggests it is more than merely physical.

47. Instincts have an interesting structure. On the one hand, they are actual desires that can be for an object one has never known (*Anth-DW*, K0249; *Anth-F*, 25:584). On the other, they can ground inclinations (e.g., *FS*, 2:60) or drives (*Anth-F*, 25:584), and in this sense they are like innate propensities that in the right circumstances ground inclinations (e.g., *Anth-F*, 25:580; note: the Cambridge edition of the Anthropology Lectures translates both ‘*Trieb*’ (drive) and ‘*Instinct*’ as ‘instinct’). (Also, compare Leland (2020, §7) on Kant’s instincts.)

48. If this is right, then Kant would agree with Blumenbach that plants don’t have sensation, as was noted in note 1. We will see that Kant might still, however, attribute subjective sensation or feeling to them.

49. This is how Aristotle was generally understood, because: “The nutritive faculty alone belongs to plants; both this and the perceptual faculty belongs to others. But if the perceptual faculty, then also the desiderative faculty: desire is appetite, spirit, and wish” (*de An.*, II.3, 414a33–b1; also II.2, II.12). Notice, though, that although Aristotle will often infer from sense-perception

capacity for making the object of desire actual — seems to presuppose a faculty to represent what is actual. We will return to this and to the philosophical case for plants representing below.

§6 – The Supersensible Souls of Plants?

We ascribe souls to beings on the basis of self-motion or representations, and usually ascribe representations on the basis of such motion. Another inference we draw on the basis of such motion is to the existence of a soul as a supersensible ground of activity, if we hold there is one. There are two main arguments for why we should not draw this inference in the case of plants. Both, however, will also apply to any non-rational being. So the same reasons that would lead us to attribute a supersensible soul to non-rational animals also apply to plants.

The first argument against attributing a supersensible ground of activity to plants holds that in the *Critique of the Teleological Power of Judgment*, it can seem that Kant claims we cannot attribute souls to any non-rational organisms but can only treat them *as if* they had such souls, for the sake of our investigations. After all, he denies that we can make determinative teleological judgments about material beings, including organisms, at least insofar as these would be theoretical judgments, not practical judgments about free beings (*KU*, 5:417). With ourselves and other human beings, we do cognize their intentions and their free causality from a practical point of view (*KU*, 5:484). This justifies a moral teleology in our case (*KU*, 5:461), although not a theoretical one. But as spiritual automata, non-rational animate beings are like a clockwork that some other being wound up (*Eth-V*, 27:505). They lack freedom, and so they lack the moral principle on which our teleology is grounded. From a theoretical point of view, although it seems we can affirm the existence of a “supersensible substrate of nature”, we can determine nothing affirmative about it “except that it

to pleasure and pain, and from there to desire (*de An.*, II.3, 414b1–5; II.2, 413b20–24), he does not, as far as I can find, infer from pleasure and pain to sense perception. If he doesn’t, that leaves open the possibility of a creature that has *something like* pleasure and pain and desire, but does not have sense-perception, which is the view that will be in question for Kant.

is the being in itself of which we know merely the appearance” (*KU*, 5:422, 412, 409). And although we will see this isn’t right, it can seem that one thing we cannot affirm about this substrate is that it includes the supersensible souls of organisms.

Furthermore, Kant claims that we can attribute minds to other beings only through an analogy with our own case (e.g., A353–A354; A346/B404). In this, we can abstract away from certain features of our minds — e.g., self-consciousness — when thinking about other kinds of subjects, e.g., those of non-rational animals (*KU*, 5:464_n; *Log-D*, 24:772; *Met-V*, 28:449; *Met-H*, 28:116). But in all cases, even with respect to other people, the inference seems somewhat speculative insofar as it is “empirical” (*JL*, 9:133).⁵⁰ Presumably, this becomes more attenuated the greater the differences. And when the representational powers in question are as distant from our own as a plant’s, we should expect the attribution to be quite tentative.

These two arguments are connected. Kant will claim that analogical inferences are made through the reflective power of judgment and that they “do not determine the *object*, but only the *mode of reflection* concerning it, in order to attain its cognition” (*JL*, 9:132). This *mode of reflection* is exactly the kind of reflection we engage in when we observe the motion of animals, attribute representations to them, and form teleological judgments about them that guide our mechanical investigations. Because of this, the first point about the ascription of souls is an instance of the second, and our merely reflective teleological judgments about plants and animals are grounded in an analogy with our own cognitive moral teleology.

Still, the first argument will not stand as stated. Although Kant takes our reflective teleological judgments about non-rational animals and plants to merely guide our mechanical investigations, he would resist concluding that we cannot ascribe supersensible souls to them. As we’ve seen, in many passages he attributes a principle of life to them, and in many of these he thinks of this not merely as a ground

50. Note: Not all analogies are empirical. Mathematical ratios are not, nor are the Analogies of Experience. Thanks to Maya Kronfeld for discussion.

of self-motion or representations, but also as a supersensible being.⁵¹ This is especially clear when he claims animate beings might be immortal (*Met-M*, 29:906–7; *Met-H*, 28:116–7; *Met-L1*, 28:276). It is also clear here:

Any principle of life must be counted among the intelligibilia, thus the soul as well. But one knows nothing about the intelligible except its relation to the appearances in the sensible world for which it is the substrate. [...] This is also the ground of our ignorance with regard to all organized beings and beings that organize matter, the possibility of which, since it rests on a principle of life, cannot be understood. (R4534, 17:585)⁵²

Here, Kant is claiming that we can know that souls, as principles of life, are supersensible objects and that we cannot know anything about this object except that it is the substrate of the organism with which it is associated.

Of course, the attribution of a supersensible soul to organized beings happens by way of an analogy with our own case. When we act, we freely choose to move our bodies. This motion is grounded in a spontaneous free will and reason. Kant holds that we describe the actions of non-rational animals, like beavers, through an analogy with this free cause. We cannot infer that its acts are free — at best, it has only an analogue of reason — but through the shared genus of <living being> we can attribute representations to it (*KU*, 5:464_n).⁵³ This attribution, since it happens through the genus life, also seems to warrant the attribution of a supersensible soul or life principle. Because both of

51. Just as Kant holds we *can* know from a theoretical point of view that we have a supersensible soul, although we cannot have any *material, synthetic* knowledge of it (compare, e.g., A355).

52. Also compare “we do not have insight into” “the growth of plants” (*Log-BI*, 24:133). Thanks to Tom Marré for pointing me to R4534.

53. Kant consistently contrasts his own view with Descartes, claiming Descartes was wrong to think of animals as mere machines (e.g., *Met-V*, 28:449; *Met-L2*, 28:594).

these attributions happen by way of this analogy, both are merely reflective; both can only regulate natural investigations, not be the result of them. And the same will hold for plants. Nonetheless, with respect to the supersensible, non-rational animals and plants are on all fours. Just as Kant attributes life to the beaver on the basis of its self-motion, he would attribute life to a quince tree on the basis of its self-movement, and in both cases this seems to involve the reflective attribution of a principle of life as an intelligible supersensible ground of activity.

Perhaps, however, with respect to representations, there is a relevant disanalogy that can help us develop our second argument concerning the large degree of difference between us and plants. In the case of the beaver, Kant holds it has an analogue of reason because of its “artistic actions” and “constructions” which are like our own (*KU*, 5:464_n). In the case of a quince tree, however, we find an organism that does not build anything other than itself or its quinces. And in this respect, its products at most exhibit a unity like that of our own body, whose autonomic functions do not seem to require representation by their possessor. For this reason, although the quince and the beaver both warrant the reflective attribution of supersensible souls, perhaps only the beaver warrants the reflective attribution of representations.

§7 – Against Attributing Representations to Plants

We’ve seen that the textual evidence does not clearly favor denying representations or desires to plants. Still, there are also two philosophical arguments that might seem to support such a denial.

The first argument holds that plants lack the unity required to be a subject of representations and thus to have representations at all. In the Second Paralogism, Kant makes clear that thinking requires a certain unity to the thinking subject (see especially A352 and B407–8; *Met-M*, 29:905). In the early 1790s K2 transcripts, Kant extends the same argument to the representations of non-thinking subjects. There, he argues that “all representations refer to one subject” and that a “unified representation can occur in one subject only as a unity. A being

can therefore have no representations without this absolute unity of the subject" (*Met-K2*, 28:754).⁵⁴

Now, the powers that account for this unity of the subject in a non-rational animal, and which give it its analogue of reason, are its reproductive imagination and faculty for apprehension.⁵⁵ Apprehension, however, requires empirical consciousness (see, e.g., *B202*; *Anth*, 7:134_n), and there is no evidence that Kant attributes reproductive imagination, apprehension, or empirical consciousness to plants.⁵⁶ If plants do not have these powers, and do not have the kind of unified subject of sensation that non-rational animals possess, then that would seem to be sufficient evidence for denying them representations.⁵⁷

54. This unity of the subject need not entail (3) a single supersensible soul. So long as there is (2) a unified subject of representations, the thinking intelligible being itself can be as composite as any material being (A353). This goes for plants, non-rational animals, and even us, from a theoretical point of view.

55. It is more usual for Kant to refer to their reproductive imaginations, as say in the discussions of the brute soul in the metaphysics lectures, but he will also refer to their faculty for apprehension, as in the 1792 letter to Beloselsky (11:345).

56. There is one argument for Kant's attributing a kind of consciousness to plants, beyond simply tollensing the ponens. As Newton notes (2017, p. 522), plants separate out and assimilate nutrients like water and minerals while not taking in substances that do not further their formative powers (*KU*, 5:371). Such separation and assimilation may be a simple kind of acquaintance (*kennen/nocere*), insofar as this is a matter of distinguishing a thing from others through comparison (R:2394, 16:343). Acquaintance is so closely related to perception and representing with consciousness, however, that sometimes Kant does not seem to distinguish them (e.g., *Log-W*, 24:845–6). So this could seem to suggest a sense in which plants are conscious. Still, in other places, Kant divides acquaintance from consciousness, and both usually seem to entail not just distinguishing and comparing things, but also *representing* things "as to their identity and diversity" (*Log-D*, 24:730; *Log-Ph*, 24:418), and it seems doubtful that plants do this. So overall, if plants do exhibit a simple kind of acquaintance with things, it would seem to be a kind of acquaintance that does not also count as perception or involve consciousness.

57. If this were Kant's view, then it would look reminiscent of how Aristotle is generally understood because of claims like this:

Perception is what is capable of receiving perceptible forms without the matter, as wax receives the seal of a signet ring without the iron or gold [...] this is why plants do not perceive, even though they have one psychic part and are affected in a way by the objects of touch, since they are cooled

The second argument, implicit in Newton (2017, p. 520), is more direct. Kant holds that pleasure (*Lust*) is a conscious state (*KU*, 5:220). Specifically, it is feeling the furtherance of our life activities (*KU*, 5:278; also *Anth*, 7:231), or "the consciousness of the causality of a representation with respect to the state of the subject, **for maintaining** it in that state" (*KU*, 5:220). "**Life** is the faculty of a being to act in accordance with laws of the faculty of desire" (*KpV*, 5:9_n). And in places, Kant will claim things like "each desire <*appetition*> is grounded in the sense of anticipated pleasure <*sensum voluptatis praevisi*>" (*Met-L2*, 28:587). On this basis, the second argument holds that since desires are grounded in anticipated pleasure and pleasures are conscious states, all desiring beings are capable of such states. Plants, however, are not capable of conscious states. So plants don't feel pleasure or desire, and are not alive.

§8 – Plant Desire

We saw above that at least in *Dreams*, Kant thought plants do not have a faculty for voluntary motion or animal choice. We also just saw that we do not have reason to attribute pleasure as a conscious state to them. Nor did it seem we had sufficient grounds to attribute to them a unified representing subject, at least in any sense we are used to. For these reasons, the temptation should be strong to conclude that Kant thought plants lacked the requisite kind of psychological causality for the attribution of life, even if he held that they have a vegetative soul.

Nonetheless, I think there is good reason to resist this temptation and hold that Kant would reflectively ascribe representations to plants, in much the same way as non-rational animals. The arguments of the last section are compelling only if a creature must have a faculty of empirical consciousness in order to be capable of representing. Perhaps this is true, but perhaps not. Non-rational animals have an analogue of reason because they have the powers of reproductive imagination,

and heated. The reason is that they do not have a mean, nor do they have the sort of principle for receiving the forms of perceptible things; rather, they are affected with the matter. (*de An.*, II.12, 424a33).

apprehension, and empirical consciousness. Plants will lack these, and thus also lack pleasure and desire, as they are explained in the passages just quoted. Nothing in the first argument, however, shows that plants lack another kind of unity of subject. Moreover, there is evidence that there are forms of pleasure and desire that do not require consciousness. For example, Kant claims:

The feeling that urges the subject to remain in the state he is in is agreeable [*angenehm*]; but the one that urges him to leave it is *disagreeable*. Combined with consciousness, the former is called *enjoyment* [*Vergnügen*] (*voluptas*), the latter lack of enjoyment (*taedium*). (*Anth*, 7:254)

Here, enjoyment (*Vergnügen/voluptas*) is explained in very similar terms as pleasure (*Lust*) above, but agreeableness seems to lack consciousness.⁵⁸ And while plants lack consciousness, if Kant is committed to them representing, then it seems he would attribute to them a simple faculty of feeling — capable of feeling agreeableness, and a correspondingly simple faculty of desire — that we might characterize as a faculty of drives to pursue the agreeable.

Is he, however, committed to their representing? In the passage above from the *Metaphysical Foundations*, we saw that Kant claims “we

58. As a first pass at what Kant could mean by the merely agreeable, again, the comparison with Aristotle might be helpful. Aristotle holds that plants undergo heatings and chillings, which are the physical states that he takes to accompany pleasures and pains (*MA*, 701b19–702a1). He also holds that there are states that are good or bad for them, in virtue of the nutritive part of their soul. Thus, if, as it sometimes seems, pleasure for Aristotle was merely the “unimpeded activity of a natural state” (*EN*, VII.12, 1153a14–5), then plants would feel it. But they don’t. And the reason seems to be that they lack awareness or the perceptual mean, as we saw in the last note. This is because Aristotle holds “that being pleased and being pained are the actualization of the mean of the perceptual faculty in relation to what is good or bad insofar as they are such” (*de An.*, III.7, 431a10–2). So although plants do not feel pleasure or pain because they lack a perceptual faculty, they will strive for what is good for them and avoid what is bad for them. Insofar as this activity is unimpeded, it will be like Kant’s state of agreeableness. The question is how much more there is to this state, since Kant, too, denies plants awareness, after all. Thanks to Chris Frey for discussion of the issues raised in this note.

know no other internal principle in a substance for changing its state except desiring” (*MAN*, 4:544). And in attributing desire on the basis of internal motion, he goes further:

An internally active power in a being is called life, our own state is a state of representation <*status repraesentativus*>, accordingly in a living being we can always imagine a power of representation <*vim repraesentativam*>; motive powers cannot work otherwise than by outer causes, they are therefore also determined only externally, internally I cognize nothing, but should it be living then it has a faculty for acting from an *inner* principle, and this principle is a subject that has powers of representation <*vires repraesentativas*>. (*Met-V*, 28:448–9)

This suggests that any time we find a being with an internally active power or principle, we can also (at least reflectively) judge that it represents, and that any such being is a subject that has powers of representation (see also *Met-L2*, 28:594). If that is right, then not only does desiring entail self-motion, but also any being with an inner principle of self-motion has a faculty of representation, specifically desire. So because plants have an inner principle of non-voluntary self-motion, it seems that Kant holds we should reflectively judge that plants represent.

For these reasons, despite the somewhat inconclusive textual evidence of §5, I think we should hold that Kant would attribute representations to plants, if we can find a plausible account of what these representations would be and can respond to the objections of the last section. As we saw, Kant did comment on phenomena like phototropism, sensitive plants, and Venus flytraps. Here, we see plants responding to their environment, and as a result, perhaps Kant would admit that these phenomena are indicative of some minimal sensory faculty. Nonetheless, we saw him claim in the *Metaphysics of Morals* that plants do not sense. And not all dimensions of reproduction, growth, or self-maintenance seem to involve representing things outside of

the organism. So if we are going to find a plausible account of plant representations, it would be best if *any* growth or self-maintenance would warrant their reflective attribution.

Still, by the end of §5, we were in the strange, even philosophically uncomfortable position of attributing simple desires, but not sensations, to plants. Here, I think the distinction between objective and subjective sensations from Kant's introduction of the agreeable at the beginning of the third *Critique* can help.⁵⁹ He explains the agreeable as "that which pleases [*gefällt*] the senses in sensation" (*KU*, 5:205). But he points out that the word "sensation" (*Empfindung*) can designate either an objective or a subjective representation of the senses:

The green color of the meadows belongs to **objective** sensation, as perception of an object of sense; but its agreeableness belongs to **subjective** sensation, through which no object is represented, i.e., to feeling, through which the object is considered as an object of satisfaction (which is not a cognition of it). (*KU*, 5:206)

In this respect, all agreeableness is subjective sensation. Because this is incapable of yielding cognition, however, Kant calls it "feeling" and reserves the use of "sensation" for objective sensation.⁶⁰ In the passages back in §5, the kind of sensations Kant seemed to have in mind were objective sensations, not feelings. If that is right, then although plants don't generally have objective sensations, they may still in a minimal sense feel.

If the mere feeling of agreeableness is the kind of "sensation" plants could have, what kind of desire might they be capable of? "The faculty of desire is the faculty to be, by means of one's representations, the cause of the objects of these representations" (*MM*, 6:211) — in this way, Kant defines the faculty of desire as the power that operates through a distinct *form* of representation: one that causes the actuality

59. Thanks to Colin McLear for suggesting this.

60. Aristotle, too, holds sensation is outwardly directed (*de An.*, II.5, 417a3). Still, he denies plants feeling (*On Sleep*, I.1 454b28).

of its object.⁶¹ Of course, sometimes there are impediments. But even when I am impeded, desire moves me. It is efficacious representation. It is a "*striving* (*nisus*) to be a *cause*" (*MM*, 6:356; also *Anth-F*, 25:577). This is the form that all desiring shares.

Specific kinds of desire are efficacious in different ways. For God, there is no distinction between desiring and cognizing — no distinction between practical and theoretical representation. By knowing his own will, God knows what is. And there is no gap between his knowledge and its object: In knowing, it is, and it is done.

For this reason, God is not affected by objects, and so lacks a faculty of feeling. Feeling "is the effect of a representation [...] upon a subject" (*MM*, 6:212_n). Agreeableness and pleasure are kinds of feeling. We saw above that agreeableness "urges the subject to **remain** in the state he is in" (*Anth*, 7:254). And pleasure (or enjoyment) is agreeableness with consciousness of this agreeableness (*KU*, 5:220).

Although human beings have a faculty of feeling, in the *Critique of Practical Reason*, Kant is careful not to build into his definition of the faculty of desire that the feeling of pleasure must ground its determination (*KpV*, 5:9_n). His ambition is to show that pure reason can be practical, that it can move us to act, and that it can therefore determine our faculty of desire. If Kant succeeds, then he will have shown that we are free to choose whether our faculty of desire is, at a given moment, rationally or sensibly determined. But building in that pleasure must determine the will would rule this out.

In us, either pleasure or practical reason is the determining ground of desire. Since pleasure is conscious, either way the determining ground of desire involves awareness or consciousness. For non-rational animals, since they lack reason, there is no freedom. Their faculty of choice is always determined through feeling. Because they have a capacity for empirical consciousness, they will feel pleasure. So in addition to the bare agreeableness of, say, the taste of an apple, both my pleasure and the pleasure of a horse involves an awareness of this

61. I have borrowed this point from Engstrom (2009, p. 27).

agreeableness. Further, this consciousness of the agreeableness of eating the apple leads us both to anticipate more pleasure if we keep eating our apples. This present pleasure, and this anticipation of future pleasure, both ground our sensible desires — our inclinations — to eat apples. Because both this pleasure and this anticipation are conscious, the desire they ground is conscious, too. For this reason, the capacity for empirical consciousness will be distinctive of both inclinations. But whereas I am free to ignore my inclination in order to do what I ought, the horse has no conception of ought, and so is not.

Now, in the formative powers of plants, we find them working for the sake of ends. This is *striving*. The quince tree and its parts take in nutrients, sustaining and growing further parts, so as to bring about and maintain an order dictated by its species-form. Such self-active striving, we saw, is the kind of inner self-motion that separates organisms from dead matter. Further, we saw that any inner activity warrants the attribution of a representing subject. Because of this, and because the inner activity is striving, the representations attributed to this subject are desires. And so just as we attribute desires to non-rational animals on the basis of their striving, we should also attribute desires to plants on the basis of theirs. But as we do not find grounds to attribute free choice to non-rational animals, we do not find grounds to attribute consciousness to plants. They have efficacious representations that bring about and maintain their states, but no awareness. For this reason, just as Kant claims faculties for representing (especially desiring) in non-rational animals are different in quality, not merely in degree or quantity, from the faculties of human beings (*Met-L2*, 28:594; *Met-D*, 28:690; *Met-L1*, 28:276), the faculty of desire in a plant will be different in quality, not merely in degree, from that of a non-rational animal.

What, however, is the structure of plant desire? The agreeable, remember, is a feeling that urges the subject to remain in the state he is in, while the disagreeable is the opposite. They concern a present state of the subject. And because these feelings are unconscious, plants could have them. In the case of pleasure, in addition to agreeableness there was consciousness of this agreeableness, which engendered

anticipation of future pleasure. Such consciousness and such anticipation will be absent in our quince. So the anticipatory component of the horse's desire will also be lacking. All that is left to the quince's desires are representations that (a) are a striving to remain in a state that produces an agreeable feeling, or (b) are a striving to leave a state that produces a disagreeable feeling.

An example: Suppose it's been dry lately. Our quince's parched state is disagreeable. So it strives to seek out water, to change its disagreeable state. Suppose a creek runs to its left, and its left roots absorb more water than its right. This state is agreeable, and so the tree puts its energies into growing its roots on its left not its right, so as to keep its left side in the state that it is in. It is, then, the quince's desires to flee its dehydrated state and to remain in its hydrated state that cause this lopsided growth.⁶² But the quince does not objectively sense the water flowing past its roots, anticipate sucking up the water, or remember its parched state later.⁶³

§9 – The Representing Subjects of Plants

Still, what of the first objection: What kind of unity should we reflectively attribute to the plant subject, given that it only has these limited faculties of feeling and desire? We reflectively hold that the plant is an organism, so acts as a natural end. This means that through its formative power, it seems to order its parts according to its species-form. We just saw that part of how it seems to do this is through simple desires. But how does it coordinate these desires? How is it that the quince, through its desire for water, grows on its left but not its right side?

What if each part of a plant is imbued with its own subject? What if because the roots on the left come into contact with more water, desire in their subject is strong and lots of growth is stimulated, but desire in the subject of the right side roots is weaker, and so less growth is

62. Although the example is with pleasure and nerves, not plants, compare *Anth-F*, 25:559.

63. In conversation, Alexandra Newton has suggested to me that Kant has a place for plant habituation, and so the *simulation* of memory. This may be.

stimulated? Kant would reject this. Immediately prior to the argument that any representation requires some unity of subject, he points out:

A living being has only one soul, this is a principle in psychology. The consciousness of the unity of my soul follows already from the consciousness of my subject. Even if we think several principles of life in the body, which are unified, so that much life is united in one, then this is still only one soul. One wants to explain irritability from the mechanical properties of body. This is still dubious. Perhaps an overflowing fluid of the nerves, which looks like slime and clothes the muscles, is the cause of it. With its head, a cut-up wasp grabs its stomach, and the latter defends itself with its stinger. The land crab can leave its claw, and this still continues to pinch the body that it has grabbed. It is therefore not unlikely that multiple lives are concentrated in the body under a single principle. Just because several principles of life are in various parts of the animal, there are not on that account several animals. (*Met-K2*, 28:753)⁶⁴

Although in most contexts, Kant just identifies the principle of life with the soul, here he distinguishes them. In §2, we saw life was the interaction between a material body and an immaterial soul. This immaterial soul was both a psychological subject and a supersensible ground of activity. In this passage, however, the principles of life seem to be (3) the supersensible grounds of activity, while the soul is (2) the psychological subject. After all, there may be multiple principles of life in an organism, each controlling the inner motion of a part, yet there is only one soul.⁶⁵

64. See also *OP*, 22:481, 22:418 and Aristotle, *de An.*, II.2, 413b17–24.

65. This is not unlike Leibniz's dominant monads, except the unity of subject is not grounded in the singularity of (3) an intelligible being. Rather, it is (2) a very minimal merely "logical" unity, analogous to the merely "logical identity of the I" (A363), but if the being in question were a plant, it would be stripped of all capacity for consciousness.

For these reasons, if plants are alive and have a subject of representations, there would only be one soul, one subject of representations. Because we can grow a new plant from a cutting, or because we can graft one part of a plant into another, we can attribute multiple principles of life to them. Nonetheless, there would be only one subject under which the actions of the other life principles are ordered. In this way, only the quince as a whole, not its roots and its leaves, would represent. And this is what we might expect given that the left side roots grow more than the right, and the quince must coordinate the use of its formative power.

But should we attribute such a subject to plants, and in what sense might there be a subject at all without consciousness? The inclinations in me and the horse seemed to at least involve consciousness both of the state to be attained and of not being in this state. Further, it can seem critical to such inclinations that there is an associative, anticipatory relationship between representations and at least some empirical consciousness ordering these in inner sense. After all, it is through smelling the roast and the loaf, anticipating the pleasure of eating either, and comparing these (in empirical consciousness) that the dog goes for the roast (*FS*, 2:60). But how are representations to be coordinated if not through, at least, obscure consciousness?

As a first pass, it is worth noting that the species-form of the plant will determine which states are agreeable or disagreeable. The material conditions of the plant's formative power fixes the plant's needs. This does not seem to require that plants represent their species-form. That form, through the physical operation of the formative power, is inscribed in their organisms. It is built into their bodies because they are an instance of their kind. It is because of this species-form that plants will have the instincts that they have. And it is these instincts that will ground their simple desires.

Still, how can the quince grow in this direction and not that? How can it sometimes put more energy into growing its leaves than its roots? At this point I can only speculate as to Kant's answer, but indulge me for a moment. The subject of non-rational animals,

through its representations, acts on itself through not only moving its limbs — its body — but acts on itself through *attending* to representations simultaneously and *comparing* them, as with the roast and the loaf. Because the dog anticipates a greater pleasure, it *chooses* to go for the roast. The plant, however, has no power for attention, comparison, or choice. This is because it lacks empirical consciousness and inner sense, which are requisite for all three.

For this reason, we are pushed to hold that plants cannot combine representations, outside perhaps the generation of specific desires from specific feelings. Can we then, perhaps, divide the powers of the non-rational animal from the plant by claiming that the plant subject can, through its representations, act *only* on its organism, not on other representations? Might Kant hold that its powers of representation are capable of working through its representations only on its organism, but not capable of working through its representations on other representations, except in a very limited way? If he did, then the way in which the plant is self-active would be quite restricted.⁶⁶

Suppose these questions were answered affirmatively. How would this plant subject coordinate its activities? Perhaps a solution can be found by returning to the “immeasurable manifoldness of partly

66. In examining our mind’s cognitive faculties, Kant explains its spontaneity as its “faculty for bringing forth representations itself” (A51/B75) and later clarifies that “among all representations combination is the only one that is not given through objects, but can be executed only by the subject itself, since it is an *actus* of its self-activity” (B130). If the speculations of the above paragraph are correct, then the plant’s cognitive faculty might be said to be *entirely* passive. After all, *ex hypothesi*, it at most combines representations in diffuse feeling/desire pairs. On their own, these feelings or desires do not seem to involve combination within themselves, as both intuition and concepts seem to. Because this is the only means by which its faculty for representing might be said to act on itself, and arguably the engendering of a desire through a feeling does not genuinely *combine* these representations because there is not one combined pleasure-desire, the plant subject might be said to be incapable of self-activity, or entirely passive. Still, it can both be affected by the plant’s bodily states and affect these states, and so is a subject capable of representations. And even if this *subject* is entirely passive, that does not conflict with the *subject and organism* together exhibiting another kind of self-activity, insofar as the former acts on the latter.

volatile matters” that Kant holds plants produce from water (*Sömmerring*, 12:34). Perhaps otherwise isolated representations of the plant subject work on this water, producing these volatile matters; these matters react physically with other matters, and those matters work on the soul, producing representations. If that were right, the plant subject would lack unity, apart from the physiological unity of its organism.⁶⁷

This need not commit Kant to multiple subjects *simultaneously* being connected to the same organism. The same subject would be the ground of all feelings of agreeableness and disagreeableness, as well as all corresponding desires that these give rise to at any given moment, without there needing to be any (even merely associative) temporal unity of the plant subject. This temporal disunity, however, would not commit Kant to a corresponding spatial one. As an organism, the quince unifies its spatial parts into a whole, and the quince subject is the subject posited as the ground of the coordination of motion of its parts.

The lack of any kind of inner sense for the plant subject, however, would not merely mean they could not connect representations undergone at different times, extensively, but also that the intensity of their representations at a single moment is of a fundamentally different sort than we find in animals. Consider the following objection to our account. Kant describes sensations as representations with consciousness (A320/B376) and claims, “now every sensation has a degree or magnitude, through which it can more or less fill the same time, i.e., inner sense in regard to the same representation of an object” (A143/B182). We already saw that plants don’t have empirical consciousness, don’t have inner sense, and don’t generally have objective sensations. Nonetheless, one might take these passages to further imply that for Kant, *feelings*, too, have intensity, that this intensity depends on empirical consciousness (A167/B208), and that even if one can have unconscious feelings, this depends on the degree of consciousness of these feelings being below a certain threshold. Because, however, even

67. I owe the thought that the physiological unity of the organism could help here to a suggestion from Alexandra Newton.

unconscious feelings must have an intensity of some degree, only creatures capable of consciousness can have them, and so plants can't feel.⁶⁸

While perhaps one could respond by arguing plant feelings always have only a low degree of consciousness, a more plausible route is to concede plant feelings are non-conscious. After all, it seems they would be qualitatively different than the feelings found in non-rational animals. Still, in discussing Mendelssohn, Kant claims all powers of the soul, not just consciousness, have an intensity (B414; also *MAN*, 4:542–3). He argues for this from the elanguescence of consciousness — its possible diminution to zero. This might be taken to imply that all psychological powers are grounded in consciousness. Nonetheless, I do not think we need to take this final step. Consciousness can illuminate this feature of psychological powers without it grounding them. Kant holds that consciousness is our best means for cognizing the degree of reality of the soul, but this does not entail that all psychological powers of the soul must be conscious powers.

Still, if all faculties of the soul, even non-conscious ones, have an intensity, how do we make sense of the intensity of non-conscious plant powers? Because our representations have a conscious component, we will struggle here. Perhaps, however, the physical movement of the plant can help. Although the psychological faculties of the supersensible soul are Kant's focus in the Mendelssohn passage, when he claims that *all* powers of the soul have an intensity, he does not seem to have only these in mind. The formative power of the younger quince might, for example, exhibit more vitality than the older quince because it grows faster, heals more quickly, and produces more quinces. This more ardent activity of the younger quince, in turn, might be indicative of more intense desires and correspondingly more intense feelings of agreeableness and disagreeableness grounding these. If plants have faculties of desire and feeling, then the intensity (or

68. It was by reflecting on a question from Béatrice Longuenesse that I was led to consider this objection and the Mendelssohn passage in this connection. I hope I've stayed true to the spirit of what she was asking.

intensive magnitude) of these (along with their acts) would not seem to be a matter of the intensity of consciousness, but there seems to be nothing further to be said about the potential intensity of plant powers and acts, beyond that the only grasp we have on this intensity is through the motions they produce.

At this point, however, if the extensive coordination of representations across time happens only by way of their physical organism, and if even the intensity of their psychological states can be inferred only on the basis of their self-movement but is not a matter of the degree of consciousness in them, why hold that plants have representations or a subject at all? Why not hold that the physical — mechanical and chemical — actions and reactions of their parts are sufficient grounds for their self-movement? Why aren't representations vestigial?

We can sink more deeply into this quandary if we consider that in the *Opus Postumum*, Kant seems to indicate plants do not have a (2) subject, precisely because they do not exhibit the requisite unity: "The physical organized body is animated matter that is either (vegetatively or animally) animated; that is, either only through the combination of many substances together, or through an absolute unity — ensouled" (*OP*, 22:399). This finds further support in the *Critique of Judgment* when, commenting on the healing power of plants, Kant points out that:

[A]n eye from the leaf of one tree grafted into the twig of another brings forth a growth of its own kind in an alien stock, and similarly a scion attached to another trunk. Hence one can regard every twig or leaf of one tree as merely grafted or inoculated into it, hence as a tree existing in itself, which only depends on the other and nourishes itself parasitically. (*KU*, 5:371; also *OP*, 22:418)

This all suggests that Kant held animals coordinate the activities of their organism via their (2) soul as subject, but plants do not, because their unity stems *only* from their shared body, their organism, and they are otherwise only a combination of many substances, nourishing themselves parasitically on one another.

Yet, this cannot really be indicative of Kant's considered view. After all, the leaves of the quince *are not* parasites. The leaves, branches, trunk, and roots form one tree, one organism. And part of what this means is that the quince coordinates the life activities of its parts in the operation of its formative power. Furthermore, if a part of a plant (or of a hydra, or whatever) is severed from the main organism and yet stays alive, this is because a principle of life is found in it that can now take up this coordinating role, and thereby seems to exhibit the unity of a subject (R1530, 15:957).

This coordination of its activities and parts is also why representations are not vestigial. Kant is concerned, remember, not to commit himself to hylozoism: He does not want to imbue extended matter of any sort with a property or power that can belong only to what is not extended. That is why nerves are at most material conditions for the mind, and the mind is not located in space. Any being with an internally active power is alive. Through its formative power, the plant determines itself to motion or rest, as change of its state, and so has such an internally active power. Matter as matter is dead. An internally active power is called life, and for this power one must look outside matter to an alien principle standing in communion with it. This principle is not only a supersensible soul, but also a subject that has powers of representation. Thus, for Kant, although in the plant the chemical decomposition of water is the material condition of its subjecthood, the subject has to be there even if it is disconnected and diffuse.

This is why Kant would reflectively attribute a soul and unconscious desire to plants, despite the disanalogy between the beaver and the quince. After all, the quince does exhibit unity: it orders its parts as though it were made in accord with its species-form. And although the order in the quince does not warrant attributing to it the kind of desire we find in the beaver, because we find the quince striving to order its parts in a unified way, we should ascribe non-conscious desires to it. After all, such unified striving is something we find in our own case, which seems indicative of life, and which seems to thereby provide a

generic concept common to all animate beings that is more determinate than "thing in general" (KU, 5:464_n).

Further, it is because all self-organizing matter must involve such an immaterial principle that Kant lauds Blumenbach for declaring

it to be contrary to reason that raw matter should originally have formed itself in accordance with mechanical laws, that life should have arisen from the nature of the lifeless, and that matter should have been able to assemble itself into the form of a self-preserving purposiveness by itself. (KU, 5:424)

Mere dead matter cannot be the cause of something self-moving, self-active, or immaterial. Rather, Kant holds that if we seek the ground of this kind of self-activity, exhibited by the formative power of organisms, we must seek it outside of nature. And for this reason, while the reflective judgments of natural teleology rely on the reflective attribution of a formative power to the organism, these judgments themselves point outside nature, towards (2) a soul as subject and (3) as a supersensible ground of self-activity.

§10 – The Absence of Souls in Kant's Teleology

If the above considerations are correct, then it can seem striking and strange that Kant does not discuss the desires of plants or their souls in his teleology. After all, if we can reflectively ascribe desire to plants, then that would seem to be useful for investigating their inner motion. And if we can reflectively ascribe supersensible souls as the ground of this motion, then why doesn't Kant discuss this? Why does he instead turn to God or nature in general as the medium of God's creation?

A quick initial answer might be that in natural teleology, neither (2) the psychological subject, nor (3) the supersensible soul is part of its topic. Nonetheless, God is supernatural and does have a role, at least through reflecting judgment. So why don't supernatural souls figure in a similar way?

The answer lies in Kant's account of organisms as natural *ends*. Note that it isn't just plant souls and desires that are conspicuously absent from the explanations of goal-directed activity or the supersensible grounds of organized matter in the discussion of the *Critique of the Teleological Power of Judgment*. Non-rational animal desires and souls also barely make an appearance, and arguably plants make more of one because Kant's primary example is of a tree. This is because of the phenomena Kant is interested in accounting for and the nature of the teleology in question. We've seen that we can reflectively attribute desires to both the beaver and the quince through an analogy with our own case. This can perhaps ground a kind of reflective psychological teleology of them that accounts for their acts through their desires. But psychology is not Kant's topic. Rather, he wants to investigate how there could be such organisms in the first place.

Digging into this, the beaver and the quince, but not the tin, seem to be natural ends. We form a concept (end, as concept) against which we measure what sort of thing (end, as object) they are supposed to be (*KU*, 5:227, 5:180, 5:220). In the case of organisms, considered as natural ends, the concept in question is of the species-form. It is *as if* they were created according to this. Thus, we treat this species-form not only as providing the normative standard for the order and behavior of the organism and its parts, but also as if it was the cause of the individual. That is, we treat this species-form as if it were the cause of the tree and its leaves through the *intention* of a being who wanted them to accord with the order dictated by this form.

On the account given, we can think of the soul, reflectively, as an immaterial artificer of the organism that works to enact its desires, ordering its parts according to its species-form. Even still, the *intention* to cause or create an organism that orders its parts according to its species-form could not belong to the soul of the quince, the beaver, or even us, at least in the relevant sense.

We can see why this would be in each kind of case. The quince has the desire to order its parts according to its species-form. But the quince lacks a faculty of choice, and so its inner motion is not voluntary.

It finds itself in an environment and strives to grow, heal, and reproduce. The environment is either conducive to this or not, in various ways. And this is evident, say, in the direction the leaves grow. But because plants do not choose, they do not intend.

The beaver or the dog can choose. The dog smells the roast and the loaf, compares these sensations, and goes for the roast (*FS*, 2:60). The dog anticipates the more intense pleasure of tasting the roast. The desire grounded on this overpowers the desire for the loaf. And in this way, the dog chooses the roast. Still, the dog does not choose the roast freely — it is a spiritual automaton — but it is only freely chosen ends that will be intentions.

We, however, do freely choose. We author our own actions, means, and, even to an extent, ends. And thus, we intend. Insofar as we, not nature, set our ends, Newton is right that there is a sense, perhaps, that it is up to us to constitute our own life-form through reason (2017, p. 525). Still, we are born with a body, an organism, and have certain needs — certain subjectively necessary ends — in relation to it. We can further determine these needs by, say, cultivating our tastes and freely choose to do this. And we can even choose to forsake these needs for some higher good. Nonetheless, these needs, like the need to eat, are given by our species-form. We find ourselves with them, and as natural ends they are not something we can freely choose. We might through breeding, say, work to modify the needs of a species — even our own. But it is beyond our power to directly choose the ends given us by our bodies, and to create natural ends *ex nihilo*.

In all three cases, then, if organisms were created through an intention that they order their parts, according to Kant, this intention belonged to God. This is the reason Kant does not focus on the souls of organisms as the supersensible grounds of organized beings in the *Critique of the Teleological Power of Judgment*. Appeals to souls could not account for how it could be *as if* organisms were created through an intention — *as if* they were natural *ends*. Only God's intentions (through the medium of nature) could do this.

§11 – Conclusion

At the end of §3, Kant was faced with a paradox: Matter, as matter, is inert. Yet organisms are material beings that seem to move, not merely in accord with mechanical and chemical laws, but themselves, as though they are natural ends. Considered as natural ends, they were both cause and effect of themselves, like a self-maintaining watch or ship. In this respect, the parts of the organism are instruments (*Werkzeuge*) of one another and the whole (*KU*, 5:374), just as the nerves are instruments (*Werkzeuge*) of the body and soul (*Met-M*, 29:908). We've seen how the analogy extends to all organisms, even plants, except that in them, nerves are replaced by the "partly volatile matters" produced from water (*Sömmerring*, 12:34). I have argued that inner self-movement, a supersensible principle of life, and a psychological subject come as a package. In the Second Paralogism, we saw Kant's hypothesis as to why: The same supersensible ground that is the physical body in one relation may be the psychological subject in the other (A359). Still, recognizing that organisms interact with a soul that represents and is a supersensible ground of their activity does not tell us more about the intention with which they may have been created. Nonetheless, just as we can fill out our explanation of the dog's going for the roast through anticipation of the pleasure of its taste, we can fill out our explanation of how the quince orders its parts through a simple kind of desire. Because this cause is psychological, it will not figure in an explanation of its physical formative power, and for this reason, it will not yield cognition. Nonetheless, this attribution can help guide our natural, physical investigations. And while these desires cannot be counted among the mechanical causes of motion, they can help account for the difference between plants and tin, or life and phlogiston. For these reasons, through examining Kant's remarks on plant life, we have seen that living beings move themselves, that they have a supersensible ground of their activity and desire, and that the concept of life is a common genus shared by plants, non-rational animals, and human beings.

Throughout, however, I expect the reader will have noticed various places that someone who interprets Kant as denying representations and life to plants might resist. As I mentioned in note 3 above, I think there is room for informed disagreement on this point, and there is a reason for this tension in Kant's view. On the one hand, the traditional view since Aristotle has been that plants are alive and have souls but do not represent. Kant, however, endorses a modern conception of physical motion, governed by the principle of inertia. This makes the kind of self-active motion we find in organisms mysterious. The obvious solution is to posit that organisms have minds and corresponding desires, through which they move their bodies. But then what of plants? One is now pulled between the view that their self-motion can be accounted for in the same way as one accounts for the self-motion of other organisms, on the one hand, and the traditional view that they do not have minds and do not desire, on the other. In this respect, with plants, two sides of Kant's thought come into tension. But because it is contradictory to imbue physical matter with the self-active powers indicative of non-physical representing beings, the most promising resolution is to interpret Kant as holding that plants represent non-consciously.⁶⁹

69. Although I began to get sucked in to thinking about plant representations while puzzling over consciousness and the various hierarchies of cognition that Kant presents across his logic lectures (e.g., *JL*, 9:64–5), it was finding the passage where Kant attributes a faculty of desire to plants at *Log-D*, 24:772 that got me searching out the relevant discussions. Around this time, in 2012, I had an exchange with Andrew Chignell in which he encouraged me to develop my findings into a paper. I didn't return to the topic, however, until I prepared a short essay for the 13th International Kant Congress held in Oslo, in August 2019. In the process of preparing that essay and the corresponding presentation, I received helpful feedback on the essay from Tom Marré, Kosta Gligorijevic, and Robbie Howton. I would like to thank the audience in Oslo for their insightful questions, comments, and discussion, both during the session and after (especially Janum Sethi). I then spent the fall completely revising, restructuring, and lengthening the essay. During this process, Colin McLear gave me two rounds of extensive comments that were invaluable in pushing me to develop the essay further. In June 2020, I presented the essay to the biennial meeting of the North American Kant Society, where Alexandra Newton gave a truly excellent set of comments in reply. It was in thinking over these comments, as well as the superb questions that I received on that

Note on Kant's texts and abbreviations

When available, I have usually stuck to the Cambridge edition translations of Kant's works, although some translations are my own. I have used either the *Kantian Review* or the *Kant-Studien* abbreviations of Kant's works. Because there is no work on pure general logic authored and published by Kant, I have generally corroborated claims from the logical works using multiple sources.

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occasion (especially from Clinton Tolley and Béatrice Longuenesse), that §8 and 9 blossomed into their current form. In this, its final stage of development, I also received feedback from a number of other colleagues and friends that were quite helpful in shaping the essay. These included comments from Houston Smit, Kathryn Lindeman, Matthew Kisner, Kim Frost, Thomas Land, and Chris Frey. I'd like to thank an anonymous referee at this journal both for their insightful suggestions and their enthusiastic response to the essay. And finally, I'd like to thank Maya Kronfeld and A. G. Holdier, who commented on the essay in a symposium session for the Central APA in 2021, as well as the audience of a Queen St. Symposium here at the University of South Carolina.

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