Leibniz's Youthful Flirtation with Physical Occasionalism

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Abstract

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Keywords: Leibniz; physical occasionalism; body-body causation; mechanism; Weigel

1. Introduction

The study of Leibniz's philosophical development is a fascinating and a seemingly bottomless enterprise. It is fascinating because Leibniz has bequeathed us a perplexing multitude of works, essays, letters and notes oftentimes hastily written down for future elaboration. While most of these remain unfinished much to the frustration of Leibniz scholars, they allow us insights into the intellectual struggle of none other than one of the luminaries of early modern philosophy. Studying Leibniz's philosophical development seems bottomless because of the sheer amount of Leibniz's writings, on the one hand,

and the oftentimes complicated business of understanding them and putting them into perspective, on the other hand.

One of the aspects of the young Leibniz's philosophical formation that is particularly puzzling are his views on causation. It is, of course, well-known that the *mature* Leibniz from (at least) the mid-1680s onwards endorses his own theory of causation, that is, pre-established harmony (previously called 'the hypothesis of concomitance,' see Garber, *Leibniz*, 79f).[1] That the mature Leibniz is a staunch critic of occasionalism is equally well-established.[2] What is less clear and what interests me in this article is what the young Leibniz's relation to occasionalism was. Focussing on the period from 1668 to 1676, I will argue that Leibniz strongly approximated physical occasionalism in the *Confession of Nature Against the Atheists* (*Confessio naturae contra atheistas*) (1668) and in the correspondence (in 1668/69) with his former teacher, Jakob

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[1] Lodge argues that "Leibniz became committed to the pre-established harmony sometime between 1679 and 1682" ("Leibniz's Commitment to the Pre-established Harmony," 293). He thereby proposes a middle way between the commonly received view that Leibniz first endorsed pre-established harmony in the *Discourse on Metaphysics* (1686) and Mercer's claim that Leibniz already adopted pre-established harmony by the end of his Paris years, that is to say, around 1676. None of these options goes against my interpretation of the young Leibniz's flirtation with occasionalism as long as Leibniz's *Pacidius Philalethi* from 1676 is itself excluded to fall into the period in which he became truly committed to pre-established harmony.

[2] Leibniz publicly argues against occasionalism (inter alia) in *A New System of Nature*; *A Specimen of Dynamics*; *On Nature Itself*; and in the *Theodicy* (§61, §§383-403). Leibniz's critique of occasionalism has been analyzed by Woolhouse ("Leibniz and Occasionalism"), Sleigh ("Leibniz on Malebranche on Causality,"), Rutherford ("Nature, Laws, and Miracles"), Lodge ("Leibniz on Created Substance and Occasionalism") and Jolley ("Leibniz and Occasionalism").

Thomasius.[3] Leibniz more determinately endorsed physical occasionalism in the *Pacidius Phialethi*.

Leibniz's youthful flirtation with occasionalism is philosophically and historically important because (for instance in a letter to l'Hospital from 30 September 1695) he later presents his own system of pre-established harmony as a more advanced alternative to occasionalism (Sleigh, "Leibniz on Malebranche on Causality," 166; Woolhouse, "Leibniz and Occasionalism," 165).[4] A better understanding of Leibniz's flirtation with occasionalism in his early career will therefore shed some light upon the development of pre-established harmony—one of the most important early modern causal theories.[5] Moreover, it allows us to get a better idea of how the young Leibniz dealt with the problem of body-body causation.

Occasionalism is the theory that in its most forceful form maintains that secondary causes, both finite minds and bodies, lack any kind of causal power whatsoever. Rather, they are mere occasions that prompt the only truly efficient cause, the first cause or God,

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[3] I do not mean to suggest that occasionalism was the only causal theory that the young Leibniz considered. I therefore agree with Lodge ("Leibniz's Commitment to the Pre-established Harmony," 304) that "Leibniz was exploring a number of different options regarding substantial causation." I confine myself to the perhaps most salient instances of Leibniz's youthful flirtation with physical occasionalism without suggesting that these are the only ones. A consideration of the whole of the young Leibniz's works insofar as they touch upon the issue of causation, however, exceeds the scope of this article.

[4] Favaretti ("Occasionalism at a Crossroads") shows how important occasionalism was as an inspiration for Leibniz's own mature philosophy.

[5] Leibniz's attempt to ground bodily forces in primitive forces of monads in order to account for the spontaneity of substances provides another important motivation for the theory of pre-established harmony. I would like to thank Jean-Pascal Anfray for raising my awareness on this issue.

to act. Body-body or physical occasionalism, more specifically, rejects both real efficient-transeunt causation between bodies (that is, that bodies truly cause other bodies to move) and that any kind of immaterial but finite principles (such as angels or a world soul) produce motion in bodies. According to physical occasionalism, the only true cause of all bodily motion is God.

While the young Leibniz's views on natural philosophy (more generally) have been studied quite extensively, the topic of occasionalism has received but little attention. Let me give a few examples: Kabitz (*Die Philosophie des jungen Leibniz*) pioneered the study of the young Leibniz's philosophical development. However, he confines his investigation to what he calls 'the first phase' of Leibniz's philosophy excluding Leibniz's Paris sojourn (ibid., 3). Not only does he thereby miss out on the *Pacidius Philalethi*, he does not even mention the issue of (physical) occasionalism, nor that of causation in general in Leibniz's earlier works. Beeley (*Kontinuität und Mechanismus* 67-81, 119-136) studies Leibniz's *Confession of Nature* and his correspondence with Thomasius in 1668 but he, too, remains silent about both causation and occasionalism. Mercer (*Leibniz's Metaphysics*) has presented an insightful book-length study of Leibniz's philosophical development emphasizing his indebtedness to eclecticism, Aristotelian-scholasticism and Christian Platonism (in particular, that of his teachers Adam Scherzer and Jakob Thomasius). While she mentions the issue of occasionalism, she dismisses it without much further ado.

One of the few exceptions is Garber. He points out that "Leibniz seems to have flirted with some variety or another of occasionalism in his youth" (*Leibniz*, 191). More specifically, Garber claims that "Leibniz advanced what we can recognize as an occasionalist view of motion in physics [i.e., physical occasionalism] in the important letter to his teacher Jacob [sic] Thomasius from 20/30 April 1669" (*Leibniz*, 191). In the

Pacidius Philalethi, too, Leibniz, according to Garber (*Leibniz*, 193), "clearly presents a version of occasionalism."[6]

Part of the reason (I believe) why scholars have given the possibility of the young Leibniz's flirtation with (physical) occasionalism little thought is because they take his familiarity with occasionalism to date back to his Paris years or an even later reading of occasionalist 'classics' such as Malebranche's *Search after Truth* (1674/75) or the works of other French occasionalists, such as La Forge and Cordemoy. That is, by reducing Leibniz's possible exposition with occasionalism to *French* occasionalism, and by being unaware that Leibniz's own teacher Erhard Weigel (1625–1699) strongly defended occasionalism, the influence of occasionalism on Leibniz's early intellectual formation is considered unlikely. Introducing new evidence—that is, showing Leibniz's intellectual proximity to *German* occasionalism—will help us put Leibniz's remarks from 1668/69 and l676 in perspective and to better understand his early views.

The structure of this article is as follows: I will first explain Leibniz's *German* occasionalist background which is vital for understanding his early exposition to

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[6] It needs to be noted, however, that Garber spends merely four and a half pages of his entire book on an explicit study of Leibniz's flirtation with occasionalism. Kulstad ("Causation and Pre-established Harmony") has also touched upon the matter arguing that "a possible strong dependence on the occasionalism of Malebranche and Geulincx during Leibniz's Paris period turn[s] out to be weaker than they might at first have seemed; even so there is some evidence that Leibniz at least briefly adopted a basically occasionalist position a few years after the Paris period" (ibid., 95). However, Kulstad seems not so much concerned with physical occasionalism, which I consider probably the most wide-spread and therefore most like form of occasionalism for Leibniz to adopt. Also, he focuses on a later period than I do, that is, the years 1677 to 1679. Like Garber, Anfray, too, suggests that "during his early years (up to the *De summa rerum*), he [Leibniz] was inclined to accept it [occasionalism]" (personal communication).

occasionalism (Section 2). After this, I will analyze Leibniz's *Confession of Nature* (Section 3) and his correspondence with Jakob Thomasius in 1668/69 (Section 4). By showing how similar Leibniz's position here is to that of Weigel, we will understand that Leibniz at least strongly approximates occasionalism. I will then turn to the *Pacidius Philalethi* (Section 5). As Garber points out, in this work "Leibniz clearly presents a version of occasionalism" (*Leibniz*, 192). A conclusion will summarise and condense the results of this study (Section 6).

2. A Crash Course in the History of German Occasionalism

When Leibniz studied at the University of Jena in the summer of 1663, he not only chose one of the more progressive German universities but also a teacher whose occasionalist conviction influenced generations of students to come: Erhard Weigel (1625–1699). I am not suggesting that Leibniz chose Weigel *because of* Weigel's occasionalist beliefs. This would obviously beg the question against what I wish to show in this section. That is, that it is probable that *prior to his Paris sojourn* (his exposition to French occasionalism), Leibniz was already familiar with *German* occasionalism, i.e., that of Weigel. It seems reasonable to assume that Weigel's occasionalism left its mark on the young Leibniz such that when he wrote his own philosophical works in the years to come (1668 to 1676 according to the scope of this article) an occasionalist foundation of mechanical philosophy was already on his mind. Had Leibniz chosen Weigel *because of* his occasionalist convictions then we would have to assume that Leibniz was already acquainted with some kind of occasionalism. For obvious reasons this would mean that we would be turning in circles and we would have to face the further question how

Leibniz would have become acquainted with (that alleged other kind of) occasionalism then.[7]

Mercer notes that "[b]esides Thomasius, Weigel was Leibniz's most influential teacher" and one of the "contemporaries who most influenced the development of his [Leibniz's] core metaphysics" (*Leibniz's Metaphysics*, 38; 471 n24, respectively). I could not agree more. Weigel's occasionalism, in turn, finds expression in his *Pansophic Physics* (1672) and in his proof of God's existence where he argues for God's continuous *re-creation* of the world. Importantly, Leibniz remembers this proof in the *Theodicy* (§384):

> Herr Weigel, I say, communicated to his friends a certain demonstration of the existence of God, which indeed amounted to this idea of continued creation […] he said that the foundation of the demonstration was this beginning of the Pythagorean Table, *once one is one*. These repeated unities were the moments of existence of things, each one of them depending upon God, who resuscitates, as it were, all things outside himself at each moment: falling away as they do at each moment, they must ever have one who shall resuscitate them, and that cannot be any other than God (*Theodicy*, §384, 355).[8]

Weigel's proof touches upon the doctrine that *conservation is but continuous creation* (CCC). Scholars have distinguished strong from weak CCC. Strong CCC entails that God not only maintains the bare existence of creatures at any time (else, they would fail into

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[7] For what it is worth, I do believe that Leibniz chose to study with Weigel because of Weigel's reputation as a mathematician and philosophical innovator. For Weigel's life and reputation, see (among others) Dorschner ("Erhard Weigel in seiner Zeit") and Spieß (*Erhard Weigel*). Moll (*Der junge Leibniz*) explores Leibniz's relation to Weigel.

[8] Emphasis in original. The translation follows E. M. Huggard's *G.W. Leibniz, Theodicy*. For more on the hardly discussed case of Weigel's occasionalism, see Specht, "Deutsche Occasionalisten," 102-105.

nothingness) but also conserves/re-creates every modification or state of every creature at any point in time.[9] Weak CCC is confined to the claim that God merely conserves the bare existence of any creature irrespective of its particular modifications.[10] Now if Weigel's proof of God's existence implies strong CCC, then this makes him an occasionalist—I will argue elsewhere extensively that both must be the case. If God re-creates every creature and all its properties at every point in time, then (provided there are no genuine cases of causal overdetermination between God and creatures) God is the only true cause in this world. No causal work is for creatures. The ensuing discussion of Weigel's understanding of CCC in Leibniz's *Theodicy* shows that Leibniz, too, interpreted his former teacher in this way.[11]

Further evidence for how influential Weigel's occasionalism was is provided by the fact that a number of his students later also became occasionalists. I have in mind here the cases of Johann Christoph Sturm (1635–1703), professor of physics and mathematics at the University of Altdorf, and Georg Albrecht Hamberger (1662–1716), professor of physics and mathematics and Christian Wolff's (1679–1754) teacher at the University of Jena.[12]

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[9] For the purposes of this article, it does not matter whether God does this by means of particular volitions or a single general volition.

[10] For discussions of strong versus weak CCC, see (inter alia) Sleigh, "Leibniz on Malebranche on Causality," 172; and Anfray, "Continuous Creation, Occasionalism, and Persistence," 216.

[11] Leibniz discussion of Weigel's position (which strongly resembles that of Pierre Bayle), too, is subject to the aforementioned forthcoming work of mine.

[12] For Sturm's occasionalism, see Sangiacomo ("Sturm's Natural Philosophy") and Henkel ("Mechanism, Occasionalism and Final Causes"). Wolff remembers the occasionalism of both Sturm and his teacher Hamberger in his *Horae subsecivae marburgenses. Trimestre vernale* (1729, §10, 210): "None of the

Interestingly, Johann Paul Hebenstreit (1660(?)–1718), a German theologian and another one of Weigel's students though not an occasionalist, recalls that he was almost suffering from occasionalist indoctrination at the University of Jena: "once as a student and colleague at the *Academy of Jena*, this opinion [i.e., occasionalism] was drummed into me time and again by a most celebrated professor" (*Systema theologicum*, first part, §3, 354). That is, (I believe) no one else but Weigel.

Now to be slightly historical: Weigel taught at the University of Jena from 1653 onwards. Sturm, one of Weigel's first prominent occasionalist disciples, enrolled here in 1656. Leibniz went to Jena in 1663. Hebenstreit, who reports occasionalist indoctrination at the University of Jena, enrolled in 1679. Hamberger, finally, studied in Jena from 1684 onwards.[13] All of these—setting aside the case of the young Leibniz for the moment—are either occasionalists themselves: Weigel, Sturm, Hamberger; or report occasionalist teaching content: Hebenstreit. This shows that the University of Jena under Weigel was indeed an occasionalist stronghold for more than four decades. I believe that this makes Leibniz's early familiarity with occasionalism (i.e., German occasionalism) even before he went to Paris to meet Cordemoy, Malebranche and other French occasionalists highly

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Protestants caused Johann Christoph Sturm trouble although he used the system of occasional causes as a hypothesis for explaining the cause and communication of motion and the commerce between the mind and the body, he even demonstrated God's existence through it. No one caused Hamberger, a most celebrated professor of mathematics and physics in Jena during his lifetime, trouble either, who, in turn, explained and defended the same system of occasional causes in his physics lectures." The translation is my own.

[13] For these matriculation dates, see Jauernig, *Die Matrikel der Universität Jena 1652-1723*: Hamberger, 351; Hebenstreit, 368; Leibniz, 463; Sturm ('Sturmius'), 800.

likely. It also renders plausible the idea that Leibniz himself flirted with occasionalism in his early career. Let us now study Leibniz's own position first-hand.

3. The *Confession of Nature Against the Atheists*

Leibniz's aim in the *Confession of Nature Against the Atheists* (A VI.1, No. 13) is to show that the mechanical philosophy, which he endorses at this stage of his career, is in itself incomplete. That is to say, while Leibniz thinks that bodily phenomena can be explained mechanically in terms of size, shape and local motion, these, in turn, require an immaterial principle as their ultimate cause (ibid., 490). This immaterial principle—indeed the only one Leibniz considers in this work—is God as the subtitle of the *Confession* already claims: "That the ground [*ratio*] of corporeal phenomena cannot be given without an incorporeal principle, that is, God" (ibid., 489).[14] Now, Leibniz offers two reductio arguments to the effect that (1) the origin of shapes and magnitudes of bodies lies outside the realm of bodies and that (2) the origin of motion lies outside the realm of bodies. I will consider these two arguments in turn, but before doing so we need to familiarize ourselves with Leibniz's definition of bodies. This will also make it clear how he arrives at his two reductio arguments.

"The definition of body is to exist in space [*spatio inexistere*]" (ibid., 490). Leibniz is quick to point out that this definition contains two crucial terms (i) space and (ii) inexistence (*inexistentia*). From space, we get the bodily features of size (*magnitudo*) and shape (*figura*); from inexistence (in space), we get local motion, since "when a body begins to exist in a space different from the one before, it is moved from it [the earlier

[14] All translations from the *Confession of Nature* and the *Outline of the Catholic Demonstrations* (see below) are my own.

space]" (ibid., 490).[15] "Motion is change of space," Leibniz tells us (ibid., 491). Perhaps, Leibniz could have been more accurate by saying change of spatial location, but be that as it may.

Regarding the first part of the definition, Leibniz wonders how a body acquires a certain size and shape because "matter [as such] is indifferent [*indeterminata*] to whatever shape whether square or round" (ibid., 490). That is to say, he asks what the (sufficient) reason is for a body to be so-and-so shaped (and therefore of such and such a size).[16] This leads him to develop the *first reductio argument* (ibid., 490):

(P1) Either a body has a certain shape (e.g., being square) eternally (*ab aeterno*) or from the impact of another body (*ab alterius corporis impactu*).

(P2) To say that a body has a certain shape (e.g., being square) eternally is not to give a reason (*non rationem assignas*).

(P3) To say that a body acquires a certain shape through the motion of another body raises the question where the motion (and the shape) of that body come from. If from yet another body, then this again raises the question where the motion (and the shape) of that (third) body come from.

(C) Neither P2 nor P3. Therefore, not P1.

Leibniz himself concludes that "It will therefore be clear that from the nature of bodies a reason [*rationem*] of a certain shape and size in them cannot be given" (ibid., 490).

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[15] For the discussion to follow, it does not matter what view of space Leibniz endorses here.

[16] I agree with Kabitz (*Die Philosophie des jungen Leibniz*, 36) that the whole argumentation of the *Confession* is based on PSR. Around the same time, i.e., in the *Outline of the Catholic Demonstrations* (*Demonstrationum Catholicarum Conspectus*), Leibniz openly subscribes to the principle that "nothing is without a reason" (*nihil est sine ratione*) (A VI.2, No. 14, 494).

Leibniz's reasoning implies that no (reasonable) philosopher would either accept a *petitio principii* (P2) because this plainly violates PSR (one of the foundational principles of philosophy) nor be happy with an infinite regress as the one entailed by (P3). The ultimate (sufficient) reason for a body's shape and size will lie outside the realm of bodies itself, or so thinks Leibniz.

Having pointed out that the 'default state' of bodies which results from their existence in space is rest,[17] Leibniz moves on to his *second reductio argument* (ibid., 491):

(P1) Every body is moved either eternally (*ab aeterno*) or by another contiguous and moved body (*corpore continguo et moto*).

(P2) To say that a body is moved eternally does not explain why it does not rather rest eternally (*cur non potius quieverit ab aeterno*). Time itself (even if infinite, i.e., eternity) as the cause of motion of a body cannot be made sense of (*intelligi non potest*).

(P3) To say that a body is moved by another raises the question why that second body is moved, if by a third etc. But if by a third, this raises the question how that third body is moved and so on without end.

(C) Neither (P2) nor (P3). Therefore not (P1).

Same as before, Leibniz's reasoning implies that (P3) leads to an infinite regress, which is undesirable, and (P2) begs the question thereby violating PSR. Leibniz concludes for both arguments that "I believe that it has been sufficiently demonstrated therefore that a

[17] Leibniz puts it as follows: "Actual motion does not originate from existence in space [*inexistentia in spatio*], but rather from a body left to itself the opposite of it [motion], to wit, permanence in the same [space] or rest originates" (ibid., 491).

determinate shape and size, [and] any motion can indeed not at all be in bodies left to themselves" (ibid., 491).

Setting aside Leibniz's discussion of the issue of the coherence of bodies, he ultimately claims:

> It is clear that nature cannot be free from God's help in the ultimate analysis [*resolutio*] of bodies. Since we have demonstrated that bodies cannot have determinate shape and quantity nor indeed any motion unless an incorporeal Being has been posited, it is easily clear that that incorporeal Being is one for all, [that] on account of which there is harmony of all [things] between themselves, particularly because bodies have motion not each from its own incorporeal Being but mutually from it. […] Such an incorporeal Being will be the Mind which governs the whole world [*erit Mens totius Mundi Rectrix*], that is, God (ibid., 492).

Leibniz thinks that precisely because the realm of bodies does not provide a sufficient reason for the origin (and, perhaps, the transfer) of motion, an incorporeal principle as the only remaining solution—given some kind of underlying type substance dualism—is required. In light of the well-coordinated behaviour of bodies in cases of collisions, Leibniz reasons that this incorporeal principle must be one for all bodies. However, Leibniz stipulates rather than proves that this can only be God rather than any less perfect incorporeal being such as a world soul.

Now, in the *Outline of the Catholic Demonstrations* (*Demonstrationum Catholicarum Conspectus*) (A VI.2, No. 14) written at approximately the same time (1668-69), Leibniz not only cautions that "the origin of motion is not in bodies" (*in corporibus nulla sit origo motus*) (ibid., 494). He also states that "motion cannot happen without continuous creation" (*motus fieri non possit sine continua creatione*) (ibid., 494). Mercer (*Leibniz's Metaphysics*, 90 n70) claims that Leibniz's "position is not that of

occasionalism." I am not arguing that Leibniz's position is fully-fledged, water-tight occasionalism. However, I think it is plausible to read Leibniz's position in both the *Confession* and the *Outline* as strongly approximating physical occasionalism. From a philosophical perspective this is because motion does not seem to pertain to the bare existence of bodies but designates a body's relation to a certain place in space. When God moves bodies by (re-)creating them, he cannot do so by simply maintaining them in existence (weak CCC) but he must change their spatial location, i.e., he must bring about a certain (relative) property of bodies. This, in turn, suggests that Leibniz might have had in mind strong CCC and, therefore, occasionalism. From a more historical perspective, given that Leibniz's influential occasionalist teacher Weigel endorses strong CCC (in combination with mechanism), Leibniz's position as an instance of flirtation with German occasionalism gains plausibility.

4. The 1668/1669 Correspondence with Thomasius

In the letters from 26 September/06 October 1668 (A II.1, No. 9) and 20/30 April 1669 (A II.1, No. 11) Leibniz tries to convince his former mentor Jakob Thomasius that the new mechanical philosophy can be reconciled with (a certain interpretation of) Aristotle. In so doing, however, he makes a number of philosophical moves that strongly remind of his German occasionalist teacher Weigel. In a nutshell, these are (1) a mechanical reinterpretation of substantial forms in terms of mere modifications or dispositions of matter, (2) arguing that these modifications come about through motion, (3) claiming that matter is not self-moving, (4) explaining that God is responsible for the origin and (perhaps) the transfer of (every) motion in the world. This, in turn, lends support to the main claim of this article, to wit, that Leibniz was flirting with occasionalism (in at least some of his writings) between 1668 and 1676. For the sake of brevity, I will go through (1) to (3) relatively quickly as (4) is at the heart of this article.

(1) Leibniz claims that "prime matter is that self-same mass in which there is nothing other than extension, antitypy or [*seu*] impenetrability […] There is in fact mere homogeneity in it; no diversity except through motion" (A II.1, No. 11, 26).[18] Form, in turn, "is nothing other than shape" (ibid., 27; see also A II.1, No. 9, 18; see also Garber, *Leibniz*, 8). Hence, structured matter does not harbour any active principle. (2) Leibniz then explains that "all changes can be explained through motion" (A II.1, No. 11, 29) and that shapes, too, originate through motion (A II.1, No. 11, 27, 31). (3) "Matter itself is void of motion" (A II.1, No. 11, 31). In agreement with Aristotle (or so Leibniz believes) motion comes to bodies from outside (*ab extrinseco*) meaning that bodies are not self-movers (ibid., 32). (4) Leibniz then claims that "the principle of every motion is a mind" (*Motus omnis principium, Mens*) (ibid., 31). In the previous letter to Thomasius written in autumn of 1668, Leibniz had been more specific pointing out that "the motion of matter is from an intelligence, that is, God" (*Motus materiae ab intelligentia est, id est, Deo*) (A II.1, No. 9, 18). This surely sounds like (crypto-)occasionalism.[19]

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[18] All translations from Leibniz's letters to Thomasius are my own. Slightly later, Leibniz explains that antitypy consists in the mere fact that two bits of matter cannot occupy the same space (A II.1, No. 11, 36). As far as I can see, antitypy therefore does not designate any inherent force of resistance in matter.

[19] It is interesting to see that the mature Leibniz himself would have perhaps taken the young Leibniz's position to be that of occasionalism. For in a letter to De Volder cited (and translated) by Lennon ("Leibniz and Occasionalism," 132) the mature Leibniz explains that "if the principle of change were external to all [substances] and internal to none, there would be none at all [i.e., no natural principle of change], and we should have to turn back with the occasionalists to God as the only agent." In the passage just cited in the main text, motion is taken to be extrinsic to bodies and God is invoked as the cause of motion.

There is one complication regarding Leibniz's view: he is somewhat less clear than is desirable about whether (i) God is merely the first principle of motion, the prime mover, who instilled motion in the realm of bodies but allowing for genuine cases of causal interaction between bodies, or whether (ii) God is the constant and direct efficient cause responsible for moving all bodies. (i) is no doubt the weaker and less controversial position. It might well be what Descartes had had in mind (Schmaltz, *Early Modern Cartesianisms*,167-171). (ii) is the stronger claim and entails occasionalism. Now when Leibniz says that a mind 'that is God' is responsible for 'every motion' this seems to lend support to the idea that Leibniz endorses (ii). After all, if God is in charge of bringing about every motion and if causal overdetermination is thought to be implausible, then there is no causal work left to be done by bodies (nor other minds for that matter). Alas, slightly later Leibniz seems to row back maintaining that "the first principle of motion […] is a Mind [*Mens*]" (A II.1, No. 11, 32). Given the capitalization of 'mind', we can be sure that Leibniz is still talking about God. But if God is only the *first* principle of motion, then surely there could be second principles of motion, such as bodies or perhaps even finite minds.[20]

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[20] Mercer (*Leibniz's Metaphysics*, 125), for one, believes that "Leibniz's conception of substances in the April 1669 letter to Thomasius is not an extreme version of occasionalism." I am not sure what Mercer means by an 'extreme' version of occasionalism. In any case, I disagree with her in ruling out that Leibniz's position can be understood as (a flirtation with) occasionalism. Her reading according to which God produces a first form (*figura*) in matter thereby conferring to bodies a capacity to move themselves strikes me as a misreading of the text. It is true though that when Leibniz published a second version of the letter to Thomasius as part of the edition of Marius Nizolius' *De veris principis et vera ratione philosophandi contra pseudophilosophos* in 1670, he replaces God as the only principle of motion with incorporeal principles. My focus, however, rests on the original letter to Thomasius.

I do believe, however, that one further passage and the historical similarity between Leibniz's position and that of Weigel together tip the scale in favour of a more occasionalist reading of Leibniz's opinion here. Further down in the letter from 1669, Leibniz argues that "properly speaking motion is not given in bodies as a real being in them, but I have shown that whatever is moved is continuously created" (A II.1, No.11, 36). This sounds familiar. But Leibniz's remark that motion is nothing real might even add to the discussion we had earlier in section 3. This is because if motion is nothing ontologically real like a substance or a modification of a substance, then it could not be transferred from body to body. Furthermore, given that motion comes to bodies from outside but is nothing ontologically real, bodies will not produce motion themselves—after all, what is there to be produced? From this analysis, it emerges that Leibniz did not have in mind a transfer-model of motion such as physical influx, nor occasional causation, nor indeed a model according to which motion essentially belongs to bodies.[21] The only option left seems to be occasionalism. That is to say, for Leibniz at this point of his career, God is the one who recreates bodies in different (discontinuous) places.[22]

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[21] For the causal theory of physical influx, see O'Neill, "Influxus physicus". Occasional causation must not be conflated with occasionalism. According to the theory of occasional causation, a body produces motion on the occasion of another body colliding with it, and is therefore an active efficient cause. According to occasionalism, on the occasion of two bodies colliding, it is God as the only efficient cause who produces motion in the second body, since bodies are merely passive substances. For the distinction, see Nadler, *Occasionalism*, 33-37. Conway would be the case of a philosopher according to whom motion essentially belongs to bodies (*Principia*, 11, 25, 51, 71).

[22] I agree with Arthur (*Monads, Composition, and* Force, 184) who points out that: in his correspondence with Thomasius from 1669, "Leibniz conceives of a body's motion to consist in its being created at each assignable instant, and to be non-existent for the unassignable intervals between the instants."

A brief study of Weigel's *First Specimen of a Pansophic Physics* (*Physicae Pansophicae Specimen Primum*) (henceforth: PP) (1672) reveals that the young Leibniz might reasonably be thought to have inherited his convictions in physics from his teacher Weigel.[23] While Weigel's physics appears later than both Leibniz's *Confession* and his correspondence with Thomasius, there can hardly be any doubt that Weigel's thoughts—bearing in mind that he had taught physics and mathematics for almost twenty years by the time he published the *Pansophic Physics*—precede those of Leibniz.

(1) Weigel believes that prime matter is indeterminate, able to be formed or determined in various ways (PP, 102f). "[F]orm is nothing but a modification of matter" (PP, 106; see also, PP, 139).[24] (2) These forms conceived as modifications of matter come about through different spatial arrangements of parts (PP, 111). It is clear that arranging matter in various ways is due to local motion. (3) Weigel then explains that motion comes from outside a body (*motus ab extra tantùm accedens*) (PP, 125). He adds that bodies are not self-movers: "bare bodies, unless they are moved from without (*ab extraneo*), do not change place" (PP, 158), which is what motion consists in (i.e., change of place; *Mutatio sitûs est Motus*) (PP, 157). (4) Weigel argues:

> Motion is nothing other than the change of position […], that is, the act of transporting a body [*actus quasi traductorius corporis*] from one place to another; it is clear that a body left to itself and for itself can execute such an act of transporting much less than

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[23] Note that I am not claiming that Weigel and Leibniz agree in all details. An in-depth study of the commonalities and differences in physics between Weigel and Leibniz exceeds the scope (and the space) of this article. I do maintain, however, that the essentials of their physics agree and that this lends support to the idea that Leibniz was highly influenced by Weigel's physics and his occasionalist conclusion.

[24] All translations from Weigel's PP are my own.

> it is itself accustomed to execute the continuation of its existence […], much more power is required for this [the continuation of existence] than for that [the act of transporting a body from one place to another]. Besides the fact that local motion entails the continuation of existence of the thing moved from one moment to the next, it also includes the continuation of place between bodies and indeed the substitution of one place for another. And this duplication provides testimony for the BEING of BEINGS (PP, 183).

Weigel's reasons that since more power is required for a body to conserve its existence—a power bodies already lack—than to move from one place to another, bodies cannot move (either themselves or other bodies). Even more, local motion presupposes continued existence, the stability of a place from which to depart, and a place at which to arrive. These seem to exceed what bodies can reasonably be thought to be able to do (or so thinks Weigel). Conserving bodies' existence and moving them about, in turn, provide evidence for the real cause of performing these two tasks, that is, God (the being of all beings).[25]

The mechanization of substantial forms together with the idea that motion is extrinsic to bodies (that bodies are not self-movers) leads Weigel to an occasionalist conclusion. It seems as obvious to Weigel as it does to the young Leibniz that no other finite immaterial principle could do the job. Leibniz's highly probable familiarity with Weigel's physical occasionalism renders an interpretation of Leibniz's own view in terms of physical occasionalism even more plausible.

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[25] Henkel ("Mechanism, Occasionalism and Final Causes") has shown that Johann Christoph Sturm, one of Weigel's occasionalist disciples, reasons in much the same way. This lends further support to Weigel's influence at the time.

Let us now turn to the final piece of evidence for Leibniz's flirtation with physical occasionalism between 1668 and 1676, i.e., the *Pacidius Philalethi*.

5. The *Pacidius Philalethi*

The main aim of the *Pacidius Philalethi* (A VI.3, No. 78)—written as a Platonic dialogue and with the ambition to show the usefulness of the Socratic method—is to study motion. Pacidius, the protagonist of this dialogue and Leibniz's spokesman, tries to guide his conversation partners to a correct understanding of motion in terms of *transcreation*. According to transcreation, a body 'moving' (from a phenomenal point of view) is in metaphysical fact annihilated at one point and recreated at another point in close proximity. It is God who is solely responsible for the annihilation and re-creation of bodies. Let us take a closer look.

Globally speaking, Pacidius and his interlocutors Charinus (a young man with a particular interest in geometry and mechanics), Theophilus (an old man who—after having dedicated his best years to public affairs and honorary positions—now spends his time to cultivate piece of mind and to venerate the divinity) and Gallutius (an extraordinary man well-versed in experiments and the properties of bodies) (A VI.3, No. 78, 530) discuss three theories of motion: (1) continuous motion: whether as truly continuous or as consisting of moments of rest and moments of continuous motion (2) the 'no-motion theory' (as I call it), and (3) motion as transcreation. For the sake of stringency, I will only touch upon (1) and (2) and why they are ruled out. The focus is on (3).

According to (1), motion is continuous in that a moving body moves in a certain number of moments of time through a certain number of points of space. Pacidius summarizes this opinion proposed by Charinus as follows: "You say, Charinus, that motion is nothing other than the aggregate of momentary existences of a thing in two

proximate places" (ibid., 546). (1a) Whether an interval of motion *I* consists solely of continuous motion or (1b) whether it consists of smaller intervals *i* some of which are intervals of rest i_{rest} and some of which are intervals of motion i_{motion} does not essentially alter this account so long as i_{motion} are intervals of continuous rather than instantaneous motion (ibid. 542). (1b) is ascribed to "Empedocles among the old ones and learned men among the more recent ones" (ibid.). Note, however, that if (1b) were to entail instantaneous, discontinuous motion, then this would be tantamount to accepting (3), i.e., the theory of transcreation. According to Leibniz, the main problem with (1) is precisely that of conceiving continuous motion *qua* continuous: "If you admit this, all the difficulties which are brought to bear regarding the composition of the continuum distinguished under the famous name of the labyrinth, will befall you in one army" (ibid., 548; see also, ibid., 551, 555f). That is to say, if one chooses to conceive of motion as continuous one needs to explain how a true continuum is possible. For the sake of stringency, I will leave this issue to one side.[26]

According to (2), "there will only be rest, no body progresses at all, and motion will be removed from nature" (A VI.3, 556). This (seemingly Parmenidean) idea receives no uptake, and we are therefore led to think that it is taken to be plainly absurd, perhaps because it violates our common experience.

According to (3), "a mobile *E* when it was in place *A* at some time is destroyed [*extingui*] and annihilated, and in moment *B* it emerges again and is recreated; we can call

[26] A study of this issue in Leibniz can be found in Arthur (*Monads, Composition and Force*, 190-196).

this kind of motion *transcreation* [*transcreationem*]" (ibid., 560; see also, ibid., 567).[27] Motion is therefore understood as discontinuous and instantaneous (see also ibid., 556). The search after the cause of this kind of motion reveals God as its author:

> That, therefore, by which a body is moved and transferred is not itself a body, but a superior cause which is not changed while acting, which we call God. From this it is clear that a body on its own [*sponte*] cannot even continue [its] motion, but that it is continuously in need of God's impulse who nevertheless acts constantly and for his highest wisdom according to certain laws (ibid., 567).

Since motion is but continuous re-creation and creation is a power only God has, bodies are not able to 'continue' their own motion; they do not act (ibid., 566). Rather, God (and God alone) recreates bodies successively in proximate but different places and thereby causes the sensation in us that they move. Leibniz's idea here seems similar to that of stop-motion in early movie making. In one frame of film a body exists at x_1, in the next frame it exists at a (slightly) different place x_2 and so on. If God 'plays' these frames at a certain speed, the body seems to us to be moving by itself although *sensu stricto* motion will be 'metaphysically discontinuous' (Arthur, *Monads, Composition, and Force*, 184).

By pointing out that God acts in lawful ways and by making it clear that this metaphysical stop-motion only applies to smaller bodies (*apud minutiora quaedam corpora*), Leibniz (through his spokesman Pacidius) rebuts the objection (launched by Charinus) that this looks like a miracle (ibid., 560). Transcreation cannot be understood in such a way (as Charinus does) that "I am transferred to Rome in a moment without any

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[27] Emphasis in original. Arthur (*Monads, Composition, and Force*, 193f) notes that Leibniz's already defends this conception of motion as transcreation in the slightly earlier pieces *De motu et materia* (April 1676) and *Numeri infiniti* (first half of 1676).

intermediaries" (ibid., 560). That is to say, according to the theory of transcreation, macrophysical objects are not discontinuously transported or 'beamed' to distant places, such that they appear out of nowhere. Furthermore, Leibniz explains that the leap (*saltus*) of a body being annihilated in one place and being recreated in another place happens between two very proximate places. While this might invite the problem of how to conceive of the continuum back in, it seems to be God's problem as he is the cause of motion. God's infinite mind, in turn, although Leibniz does not bother to say so explicitly, might be able to solve the continuum problem and be undisturbed in producing motion.

Another objection—this time raised by Gallutius—is that if a body's state (of motion) does not follow from its previous state, because God (rather than bodies) produces motion, then this not only violates an axiom which Gallutius ascribes to Aristotle according to which "*Whatever thing is once moved will always be moved in the same ways unless an impediment comes about*" but also the principle of sufficient reason (ibid., 568). Interestingly, this sounds much like what the mature Leibniz has to say about the doctrine according to which conservation is but continuous creation (CCC) which he ascribes to Descartes and his followers (*Theodicy*, §383). Here, Leibniz points out that:

> [I]n fact it does not follow *of necessity* that, because I am, I shall be; but this follows *naturally*, nevertheless, that is, of itself, *per se*, if nothing prevents it. It is the distinction that can be drawn between the essential and the natural. For the same movement endures naturally unless some new cause prevents it or changes it (*Theodicy*, §383, 354).[28]

Gallutius and the mature Leibniz argue that while there is no necessitation that a body, which was in a state of motion previously, shall continue to be moved, or that because

[28] Emphases in original.

I existed earlier, I shall exist now, these things follow naturally. There might not be any logico-metaphysical necessitation such that the opposite implies a contradiction. But the laws of nature—and Aristotle's axiom seems to amount to such a law—mandate that *ceteris paribus* bodies continue to move. Gallutius adds that:

> This axiom [that ascribed to Aristotle] can be demonstrated based on the fact that no reason can be given [*nulla ratio potest reddi*] why it [a moving body] ceased [to move] in this present moment but has not already ceased [to move] a little earlier (A VI.3, No. 78, 568).

I take this to mean that if there is no ground in a moving body telling us why it stops, then it becomes entirely unintelligible why it stops moving now rather than earlier (or later).[29] Grounding a body's motion entirely in God's "perpetual creation" (ibid.) (as Theophilus calls it) violates PSR, or so Gallutius reasons.

Now, we need to be clear about two things (1) transcreation violates PSR if and only if for every state of motion of a body, its ground(s) needs to be sought solely in the realm of nature, or, more specifically, in a body's previous state of motion.[30] That is to say, transcreation violates PSR if and only if PSR mandates *complete and thoroughgoing naturalization* such that all grounds adduced are within the realm of nature (rather than in God). (2) The young Leibniz himself (through Pacidius),

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[29] Jean-Pascal Anfray pointed out to me that Hobbes provides a similar justification in *De corpore* (Ch. viii, n.19).

[30] Rutherford ("Natures, Laws and Miracles") has convincingly shown that the violation of the intelligibility of nature principle, according to which every natural effect must have a sufficient natural cause as its ground, is at the heart of the mature Leibniz's critique of occasionalism. The young Leibniz's transcreation story amounts to occasionalism.

however, explains that while the previous state of a body is *a* ground for the future state of a body, it is not *the whole sufficient ground*:

> That a thing existed a little earlier is not a [sufficient] ground why it also exists now, but only indicates some ground [*aliquam rationem*] why it also exists now or a ground which makes it such that it is, exists from a little earlier to now (ibid., 569).

Interestingly, the young Leibniz in 1676 clearly uses PSR but at this point PSR does not yet entail *complete and thoroughgoing naturalization*.

To sum up, in the *Pacidius Philalethi*, Leibniz endorses physical occasionalism. Leibniz argues that motion is but the recreation of bodies in different places and that bodies (let alone other finite minds) are void of causal power. According to the young Leibniz, God is the only true cause of the origin and transfer of motion. At this point of his career, Leibniz's deeper motivation for this account of motion are considerations regarding the labyrinth of the continuum which are outside the scope of this paper.[31]

6. Conclusion

Leibniz's motivations for flirting with physical occasionalism in the *Confession of Nature Against the Atheists* and the correspondence with Thomasius on the one hand, and again

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[31] Regarding the issue of the continuum in Leibniz's *Pacidius Philalethi*, see Levey, "Matter and Continuity," 89-91; The Interval of Motion"; "Time and the Dichotomy", "The Continuum in Leibniz", 127-135; "Arthur, *Monads, Composition, and Force*, 190-196. "In rejecting the view that space and time are composed of indivisible points, he does, however, set himself apart from his teacher Weigel (and from his own earlier views of 1669) for whom the idea that time itself is discontinuous is at the heart of his occasionalist conclusion as I argue elsewhere and as is reflected in Leibniz's rendition of Weigel's occasionalism in the *Theodicy* quoted at the outset of this paper.

some seven years later in the *Pacidius Philalethi* are different. Earlier Leibniz was mostly driven by the need to find metaphysical grounding for the mechanical philosophy of the *novatores* that he endorsed. Later Leibniz struggles with the nature of motion itself and comes to conceive it as discontinuous, instantaneous due to God's transcreation of bodies. Either way, Leibniz's flirtation with physical occasionalism reveals a more personal involvement with the system of occasional causes which he later so arduously criticizes. It is also interesting that after his Hobbesian period in the early 1670s, Leibniz would once more return to occasionalism. It could not have seemed such a bad idea for Leibniz at that time.

On a more historical note, Leibniz makes for an interesting case in the understudied history of German occasionalism. Indeed, his early occasionalist leanings might very well be due to the influence of his teacher Erhard Weigel and his *Jena school*. What the relative weight of German and French occasionalism (à la Malebranche or Cordemoy) are when it comes to Leibniz's return to occasionalism in the *Pacidius Philalethi* would merit an independent comparative study. Due to the kind of re-creationism that Leibniz defends, I am inclined to assign greater weight to the influence of German occasionalism.

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