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# Leibniz's Metaphysics and Adoption of Substantial Forms

Between Continuity and Transformation

 Springer

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Adrian Nita  
Editor

# Leibniz's Metaphysics and Adoption of Substantial Forms

Between Continuity and Transformation

 Springer

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# Contents

<b>1</b>	<b>Introduction. Leibniz's Metaphysics and the Adoption of Substantial Forms .....</b>	<b>1</b>
	Adrian Nita	
<b>2</b>	<b>The Individual in Leibniz's Philosophy, 1663–1686.....</b>	<b>11</b>
	Lucio Mare and Roger Ariew	
<b>3</b>	<b>Substance, Unity and Identity in Early Leibniz's Work.....</b>	<b>27</b>
	Adrian Nita	
<b>4</b>	<b>Hylomorphism (Even) Without Matter? Transtemporal Sameness and the Rehabilitation of Substantial Form in Leibniz's Theory of Substance .....</b>	<b>43</b>
	Stefano Di Bella	
<b>5</b>	<b>Essential Differences. Or, an Exercise in Symptomatic History of Philosophy .....</b>	<b>59</b>
	Enrico Pasini	
<b>6</b>	<b>Affects and Activity in Leibniz's <i>De affectibus</i> .....</b>	<b>73</b>
	Markku Roinila	
<b>7</b>	<b>Presumption and Leibniz's Metaphysics of Action.....</b>	<b>89</b>
	Andreas Blank	
<b>8</b>	<b>Corporeal Substances as Monadic Composites in Leibniz's Later Philosophy .....</b>	<b>107</b>
	Paul Lodge	
<b>9</b>	<b>The Souls of Seeds.....</b>	<b>125</b>
	Pauline Phemister	



<b>10</b>	<b>The Relativity of Motion as a Motivation for Leibnizian Substantial Forms</b> .....	143
	Richard T.W. Arthur	
<b>11</b>	<b>Monads on My Mind</b> .....	161
	Daniel Garber	

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# Abbreviations

- A Leibniz. (1923–). *Sämtliche Schriften und Briefe*, Reihe I–VII. Herausgegeben von der Berlin-Brandenburgischen Akademie der Wissenschaften und der Akademie der Wissenschaften in Göttingen. Berlin: Akademie Verlag.
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- FC Leibniz. (1857). *Nouvelles lettres et opuscules inédits*. Intr. Louis Alexandre Foucher de Careil. Hildesheim and New York: Olms. Reprint, 1971.
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- GP Leibniz. (1875–1890). *Die Philosophischen Schriften*. Ed. C. I. Gerhardt. Berlin: Weidman. Reprint, Hildesheim: Olms, 1965.
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- L Leibniz. (1969). *Philosophical papers and letters*. A selection trans. and ed., with and intr. Leroy E. Loemker. 2nd ed. Dordrecht: Reidel.
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# Chapter 1

## Introduction. Leibniz's Metaphysics and the Adoption of Substantial Forms

Adrian Nita

In his letter to John Frederick, Duke of Brunswick-Hanover, from 1679,<sup>1</sup> Leibniz embraces an apparently scholastic theory of substantial forms about which modern philosophers were very critical. This is the reason why the years 1678–1679 are important in Leibniz's development, for it was during this time that Leibniz, thinking within the frame of substantial forms, developed the theory of corporeal substance and laid the groundwork for his theory of monadology.

As is known, the mature structure of the theory of substantial forms appears in the *Discourse on Metaphysics* (1686) and in the writings and correspondence from middle years. The new theory of substance is based on identification of being in the primary sense with substance, like in Aristotle.<sup>2</sup> However, even though the two philosophers consider the ontological principle along the same lines, Leibniz imparts some new elements to it: substance is what subsists in itself; it is the *substratum* of accidents and also responsible for activity in terms of primitive active and passive powers. In addition, substance is indivisible and, having an expressive or representational function, is something like the self.

Within this frame, the problem of the relationship between body and soul is put into a new perspective: the soul is the substantial form both in relation to the person and in relation to the body. Only if human beings have an immaterial principle, they have unity, being, and the other attributes mentioned above; only in virtue of being endowed with a nonmaterial principle is the body not a simple phenomenal aggregate.

Based on these theoretical foundations, Leibniz can extend the theory of substantial forms toward an elaborated theory of corporeal substances, and after

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<sup>1</sup>Leibniz to John Frederick, Duke of Brunswick-Hanover (1679); A II, 1, 749–759, especially p. 754; L 259–262, especially p. 261.

<sup>2</sup>Aristotle, *Metaphysics*, VII, 1, 1028b.

1695 toward his special theory of monadology. Let us note that in his late philosophical theory which adopted the monads, the term “substantial form” is pretty much non-existent. Even if the monad is something simple, an entelechy, or something soul-like, it is a metamorphosis of the substantial form; Leibniz avoids the expression “substantial form” because of the scholastic and extra-philosophical implications of this expression.

In addition to his adherence to modernism, scholasticism, atomism, Platonism etc., Leibniz also goes on his own path. He adopted modern philosophical ideas, but permanently renounced some aspects of them. He accepted many ideas of scholastics, but at the same time changed their meaning when using them in his philosophical system. Even when he declares his adherence to one party or another, his sentences have to be taken with a precaution because of his idiosyncratic interpretations. Leibniz was a modern philosopher, not only in the sense that he was a man of its time, but even more in the sense that he embraced from the beginning the philosophic and scientific aims of his contemporaries. Even though he did not study the modern philosophers at school, Leibniz was captivated, from a very early period of his life,<sup>3</sup> by the possibility of mathematical knowledge of the world on the ground of the laws that governed nature. The appeal of the moderns (Descartes, Newton, Digby, Cordemoy, Gassendi etc.) to shape, size and motion leads to the understanding of the fact that the old philosophy, on the basis of qualities, essences and causes, cannot be in harmony with the mathematical approach of nature, grounded in quantity and becoming.

The initial modernism of Leibniz in the period 1661–1679 was prevalent with respect to his scholasticism. Leibniz declares that he was taken by the modern spirit already in 1661, feeling that there was no place for substantial forms in understanding of the world. According to Descartes, we sense colors, sounds, smells etc. in a confused fashion, but we sense shape, size and motion clearly and distinctly.<sup>4</sup> In contrast, for an adept of scholastic philosophy, substantial forms are needed both for the knowledge of physical matters and for metaphysical considerations. However, apart from their benefit for the knowledge of physical matters, the appeal to shape, size and motion was not very useful for metaphysical and theological matters, such as the mysteries of Christian Church – the mystery of Eucharist was in peril.<sup>5</sup> Descartes’s more or less direct attack on substantial forms came to be condemned in 1671 and 1691.<sup>6</sup>

From 1668 on Leibniz sought a solution to a complex set of problems in the reconciliation between Aristotle and the moderns. He was ready to accept what was valuable in both approaches hoping in particular that he could resolve the mysterious nature of the body, that is, the question of relationship between body and soul, and the problem of Eucharist. The knowledge of the corporeal world in terms of shape, size and motion was adequate for understanding mechanical “details”, but it

<sup>3</sup> See Leibniz’s letter to Remond from 10 January 1714, GP III, 606.

<sup>4</sup> Descartes, *Meditationes de prima philosophia* III.

<sup>5</sup> See Arnauld’s objection to *Meditationes de prima philosophia* 4.3.

<sup>6</sup> Roger Ariew, *Descartes and the Last Scholastics* (1999, 155–171).

was insufficient from a metaphysical point of view because it excluded the principle that maintains a body in movement. Such a principle Leibniz saw first in God<sup>7</sup> and later in spirit or mind (*mens*).<sup>8</sup>

God is an intelligent substance, endowed with the principle of action for all bodies in the universe; at the same time, he perceives his own action in himself.<sup>9</sup> The meditations on mind from 1672 to 1676, whether divine or human, show many of the ideas Leibniz continued to develop in his philosophy. Mind is the principle of the movement of body which retains the perception of the action of body in the memory of its own perceptions.<sup>10</sup> Given that it is simple, without parts, the mind cannot be destroyed – so it has an unlimited duration. Also, the affirmation that “there are innumerable minds everywhere”<sup>11</sup> is almost identical with what is said about the souls in the *Monadology*.<sup>12</sup>

In Leibniz's writings from 1671 to 1672, *Theoria motus abstracti*, *Theoria motus concreti*, *Confessio philosophi*, and others, the body appears in connection with the conatus. Leibniz argues that the extension cannot represent the essence of the body, as the modern followers of Descartes maintained. The essence of the body should be movement, which is more than extension. The body consists in movement and thinking consists in conatus. So, a body is a kind of a momentary mind, that is, a mind without memory.<sup>13</sup> Always united with a body, the mind has a substantial character; so it is mind that gives being and unity to bodies in the world.<sup>14</sup>

In these texts Leibniz understood the mind (*mens*) as something simple, like a point and the center of a circle where the radii converge,<sup>15</sup> but he needed an important addition, namely, that in order to be a principle of movement, the mind should be understood in terms of *potentia*, power or force. This identification of the active primitive power with the entelechy or soul begins in 1678–1679, that is, at the same time as the adoption of substantial forms. Correspondingly the body appears as what has resistance, impenetrability etc. and can be understood in the terms of passive derivative force.

Leibniz is interested in the capacity of the mind to move from one idea to another or, as he also says, from one perception to another. Something permanent is needed that will not change when the mind moves from an idea to another, and this permanent thing should be the same as that which provides unity to bodies and that underlies their substantial character; substance is not what has the attribute of

<sup>7</sup> *Confessio naturae contra atheistas*, GP IV, 109.

<sup>8</sup> *Theoria motus abstracti*, GP IV, 230.

<sup>9</sup> *De summa rerum*, A VI, 3, 474–475.

<sup>10</sup> *De summa rerum*, A VI, 3, 474.

<sup>11</sup> *De summa rerum*, A VI, 3, 477; Parkinson 31.

<sup>12</sup> “It is clear from this that there is a world a creatures, living beings, animals, entelechies, souls, in the smallest particle of matter” (*Monadology* 66, GP VI, 618; L 650).

<sup>13</sup> *Theoria motus abstracti* 17; GP IV, 230; L 141. See also To Arnauld, November 1671, GP I, 71; L 149.

<sup>14</sup> *De summa rerum*, A VI, 3, 524; Parkinson 85.

<sup>15</sup> To Arnauld, November 1671, GP I, 71; L 149.



thinking or extension, *pace* Descartes, but what is a primitive force of action, as Leibniz said in his letter to Foucher from 1675.<sup>16</sup>

The evolution from the physics of bodies to the metaphysics of substance is present more deeply in his writing *The Elements of Physics* (1677–1678). Leibniz maintains that physics needs a metaphysical foundation, such as the principle of equality between cause and effect. This principle requires a treatment of force or *potentia* calculated through the quantity of the effect: the power (*potentia*) of the effect is equal to power (*potentia*) of the cause.<sup>17</sup> Since powers or forces are not contained in purely material entities, one is led to consider the role of the forms or souls in this context, as well as the view that all is animated. If there is no soul or form, the body would have no being.

It is obvious that Leibniz's new concept of substance was in greater accord with piety than was the theory of substance promoted by Descartes. It is significant that from the beginning Leibniz tried to find an element that would complete the mechanical philosophy from this point of view. In the *Demonstrationes catholicae* (1668–1669), where Leibniz formulates his philosophical and theological program, he demands that there should be an incorporeal principle to ground the mechanical qualities of bodies. This principle plays an important role in Leibniz's demonstration of God's existence and immortality, but also in his seeking for an agreement between the Catholic and Protestant doctrines about Eucharist. Leibniz's adoption of substantial forms is clearly an important step in his rational justification of belief. In his preoccupation for metaphysics, theology, science, and law, the justification of belief and the new mechanic are the themes which are constantly present.<sup>18</sup>

The adoption of substantial forms was at the same time a restoration (reintroduction, recalling) and a rehabilitation. Referring to forms Leibniz declares that he was somehow forced to reintroduce them. This restoration was associated with the fact that he banished the forms from his earlier philosophy under influence of modern philosophers. On the other hand, substantial forms were rehabilitated with the qualification that Leibniz changed some accents so that these forms, in his sense, were not used in an explanation of unknown things from nature, but served as a metaphysical ground for understanding the natural world. Given that they could ground the mechanical philosophy, the substantial forms promoted by Leibniz appeared with a role very different from that of the substantial forms used by Aristotle, Thomas Aquinas and in general the scholastics. Substantial forms were rehabilitated in the sense that the Cartesians banished them on the ground that they were not required for knowledge of the natural world. This banishment posed problems to the pious attitude since the Eucharist cannot be understood in terms of shape, size and motion.

It is difficult to have a simple and unequivocal answer to the question of which reason for the adoption of substantial forms comes first in Leibniz's eyes. For

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<sup>16</sup>Notes on the reply of Foucher to the criticism of his criticism of the *Recherche de la verite*, L 155.

<sup>17</sup>VE 651–652. In order to see more details, see Fichant (1998, 196–197).

<sup>18</sup>Fichant (1998, 2021), Garber (2009, 225–226).

instance, in the letter from 1679 to Duke John Frederick, Leibniz maintains that the restoration of substantial forms will be helpful for Jesuits and other theologians; given that the nature of the body does not consist in extension, but has to be seen in the terms of substantial forms, the theologians can explain the mystery of Christianity.<sup>19</sup>

The problem of the nature of body was also discussed in his *Discourse on Metaphysics* and in the correspondence with Arnauld. In maintaining that a body is a substance and not a simple phenomenon, Leibniz referred to substantial forms, thinking that his contemporaries did not have a satisfactory notion of the substance and individuation. Even more importantly, the new theory of the structure of the world would help to understand the constitution of the community of all living bodies and recognize God as its emperor.<sup>20</sup>

In *A New System of the Nature and the Communication of Substances*, substantial forms are introduced in the context of the problem of unity. In simple extended matter, such as is presented by Descartes and the moderns, there is no principle of true unity. We will have it only by accepting that a body has a nature that consists in force.<sup>21</sup>

In his letter to Remond from 10 January 1714, the explanation of resurrection of substantial forms is presented in an irenic context. Leibniz explains that simple substantial forms are the only true substances whereas material things are phenomena. Through this appeal to substantial forms and later to monads, Leibniz aims to harmonize the party that supports the efficient causes with the party that accepts metaphysical entities. According to him, both sides are right, for all is mechanical and metaphysical at the same time in nature, seeing that the source of mechanics is metaphysics.<sup>22</sup>

The chapters of this volume come primarily from the *Oltenia Colloquium in Early Modern Philosophy*, held on 15–16 May 2013 at Bucharest under the title *Between Continuity and Transformation: Leibniz on Substance and Substantial Forms*. In their essay 'The Individual in Leibniz's Philosophy, 1663–1686', Lucio Mare and Roger Ariew show that the notions of being and unity are mutually supporting; as Leibniz said to Arnauld: "I hold this identical proposition, differentiated only by the emphasis, to be an axiom, namely, that what is not truly *one* being is not truly *one being* either." The authors shed light on Leibniz's changing notions of substance and being by concentrating on his changing views about unity and the individual, from his early Bachelor's thesis (*Disputatio Metaphysica de Principio Individui*, 1663), to his middle period treatise *Discourse on Metaphysics* (1686). In the process, the authors also discuss Leibniz's views about individuation in *De Transubstantiatione* (1668), *Confessio Philosophi* (1672–1673?), *Meditatio de Principio Individui* (1676), some of his correspondence with Jakob Thomasius

<sup>19</sup>To Duke John Frederick, 1679; A II, 1, 754; L 261.

<sup>20</sup>DM 10–12; GP IV, 434–436; L 308–309.

<sup>21</sup>NS 2–3; GP IV, 478–479; L 453–454.

<sup>22</sup>To Remond, January 10, 1714; GP III, 605–607; L 654–655.

(1668–1669), *Notationes generales* (1683–1685?) and his Notes on Cordemoy (*Ex Cordemoii Tractatu de Corporis et Mentis Distinctione*, 1685), among others. Along the way, the authors discuss the relation of Leibniz's views with those of others, especially seventeenth-century Scholastics.

In 'Substance, Unity and Identity in Early Leibniz's work' Adrian Nita addresses the question of continuity and discontinuity in Leibniz's philosophy of substance, unity and identity. The author gives an indirect answer to the question of how to decide between these alternatives, discussing the unity and identity of substance in the frame-work of the relationship between the notions *anima* and *mens*. So, the major question of the paper is: what is the place of the new evaluation of substantial forms in 1678–1679 from the perspective of the unity and identity of substance in their relationship with *anima* and *mens*? After some introductory remarks, the author deals with the revival of substantial forms and focuses on the question of the unity of substance from the perspective of the relation between *anima* and *mens* and lastly on identity and individuation from the same perspective.

In his contribution, 'Hylomorphism even without Matter? Transtemporal Sameness and the Rehabilitation of Substantial Forms in Leibniz's Theory of Substance', *Stefano Di Bella* deals with the question of why Leibniz, in the *Discourse on Metaphysics*, advances the unexpected intention of rehabilitating one of the most decried tools of Scholastic philosophy: the concept of substantial form. Usually – and correctly so – Leibniz's move has been related to his discoveries in the field of dynamics and their metaphysical interpretation, and hence also with the controversial issue of the corporeal substance in the philosophy of his 'middle years'. The core elements in this recovery of substantial form, however, seem at least in part independent of the theories of matter and corporeal substance which Leibniz will endorse in the course of time. The author wants to identify the problem of diachronical sameness as the decisive issue for which the idea of substantial form is invoked to answer by Leibniz. So, the author tries, on one hand, to determine the repercussion on the issue of corporeal substance and, on the other, to indicate the essential features of this model which persist even in a purely monadological view.

In 'Essential differences. Or, an exercise in symptomatic history of philosophy', *Enrico Pasini* examines why in a letter to Conring dating from March 1678, Leibniz puts forward the following rhetorical question: "Formas substantiales quis neget, id est differentias essentielles corporum?" ("Who would ever reject substantial forms, that is to say, the essential differences of the bodies?"). The author tries to clarify this unusual locution, as a possible symptom of some more general and, perhaps, more interesting issue. The two distinct puzzles that are posed by this quote – one concerning the first two words, namely "essential differences", and the other concerning the specification 'of the bodies' – is considered in the light of Leibniz's reflections of the years 1677–1678 on incorporeal substances, and on essences and reality, that culminate with the theory of 'individual substances' presented by Leibniz in the *Generales inquisitiones* and the *Discourse on Metaphysics* at the denouement of this elaboration period. Due attention is given to the definitions of "essential differences" available in some relevant Scholastic sources, both from

thirteenth century high Scholasticism and from late Scholastics, as the relevant linguistic and conceptual terms of reference for a better understanding of Leibniz's 1678 expression.

In 'Affects and Activity in Leibniz's *De affectibus*', Markku Roinila discusses the doctrine of substance that emerges from Leibniz's unpublished early memoir *De affectibus* of 1679. The memoir marks a new stage in Leibniz's views of the mind. The motivation for this change can be found in Leibniz's rejection of the Cartesian theory of passion and action in the 1670s. Leibniz's early Aristotelianism and some features of Cartesianism persisted, to which Leibniz added influences from Hobbes and Spinoza. His nascent dynamical concept of substance is seemingly a combination of old and fresh influences, representing a characteristically eclectic approach. The author argues that the influence of Hobbes is especially important in the memoir. To do that, he examines Leibniz's development in the 1670s up to the *De affectibus* and considers the nature of affects in the memoir, especially the first affect which starts the thought sequence. This first affect of pleasure or pain is the key to Leibniz's theory of active substances and in this way to the whole of Leibniz's moral psychology and ethical metaphysics.

In his contribution, 'Presumption and Leibniz's Metaphysics of Action, 1678–1680', Andreas Blank shows that in notes from the period between 1678 and 1680, Leibniz discusses the role of ontological requisites for the metaphysics of the agency of individual substances. In these notes, Leibniz takes up some considerations from his writings from the period between 1669 and 1671. In both periods, Leibniz connects the analysis of the ontological notion of requisite with the epistemological notion of presumption. According to Leibniz's suggestion in both periods, we should presume that other persons will take the course of action that has the smallest number of requisites. In this context, Leibniz uses one of the traditional conceptions of presumption derived from the juridical tradition: the conception of presumption as an evidence-based conjecture concerning the agency of persons. Such presumptions were taken to be true unless and until contrary evidence becomes available. The author argues that Leibniz's views concerning such action-related presumption and those concerning the ontological requisites of actions are closely linked. Very much as action-related presumptions can be revised in the light of additional evidence, requisites can be prevented from leading to the actions that they would bring about taken in isolation through the occurrence of further requisites – be they internal or external. Therefore, Leibniz's metaphysics of the agency of individual substances in the period between 1678 and 1680 should be understood much more in the context of an experience-based ontology that allows for interaction between internal and external requisites of action than in the context of Leibniz's later, speculative ontology that excludes causal interactions between substances.

In 'Corporeal Substances as Monadic Composites in Leibniz's Later Philosophy', Paul Lodge shows that in a famous passage from his letter to De Volder of 20 June 1703, Leibniz appears to characterize entities composed of a dominating monad and a plurality of subordinate monads as "corporeal substances" (the M-Composite View). This reading has been subject to a number of criticisms by Brandon Look

and Donald Rutherford in the introduction to their translation of Leibniz's Correspondence with Des Bosses. The author argues that there is room for the claim that the M-Composite View accurately captures Leibniz's intention in this passage, and, contra Look and Rutherford, that at this time in his career Leibniz was sincere in his assertion that entities of this kind are substances. The author finishes by presenting, as a working hypothesis, the suggestion that Leibniz may have been happy with the M-Composite View throughout the remainder of his life.

In her contribution 'The Souls of Seeds', Pauline Phemister argues that Leibniz's pre-established harmonious unfolding of individuals' essences is rightly granted a pivotal role in his metaphysics. Most commonly understood in terms of the unfolding of monadic sequences of perceptions and appetitions, the closely related theories of organic-body preformation and the unfolding into visibility of plants and animals from their seeds have until recently largely been ignored. The author questions why, despite the thoroughgoing mechanical preformation of organic bodies, Leibniz insisted that the preformed seeds of animals and other living things must contain souls, entelechies, or substantial forms. The issue is raised through contrast with Malebranche's doctrine of preformation that makes no such claim.

In 'The Relativity of Motion as a Motivation for Leibnizian Substantial Forms', Richard Arthur argues that one of Leibniz's motivations for reintroducing substantial forms was to save the reality of motion. Already in 1676 Leibniz had established that motion, understood geometrically (i.e. as change of situation), is merely relative, and therefore a pure phenomenon or appearance. True motions, on the other hand, according to Leibniz, are identifiable by reference to their causes and these are determined by appeal to the most intelligible hypothesis for understanding the phenomena. Arthur argues that the introduction of substantial forms, reinterpreted as enduring primitive forces of action in each corporeal substance, allows Leibniz to found the reality of the phenomena of motion in force, and thus avoid reducing motion to a mere appearance. Arthur maintains that the entelechies of Leibniz's mature philosophy continue to serve this same function, in opposition to the view that his middle-period realism gave way to an idealist stance on motion.

Bringing the volume to a close, Daniel Garber shows in his 'Monads on My Mind' that monads were very much on Leibniz's mind in the late 1690s. In these crucial years between about 1695 and 1700, Leibniz was beginning to work out the details of the monadology, what monads are, and how they are to function as the ultimate building-blocks of his metaphysics. In this essay, Daniel Garber looks carefully at the development of the argument in those years, as Leibniz's view was undergoing what has to be regarded as a major shift. He begins by reviewing what he takes to be Leibniz's position in what he has called his middle years, the years between the late 1670s and the mid-1690s, before monads, when Leibniz's view of the world was grounded in corporeal substances. He then traces at least one of the paths by which monads came into Leibniz's world during those important years of transition.

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## Chapter 2

# The Individual in Leibniz's Philosophy, 1663–1686

Lucio Mare and Roger Ariew

In his *Leibniz: Body, Substance, Monad* (2009), Daniel Garber works through, in great detail, the twists and turns in Leibniz's thought, from his early idiosyncratic Hobbesian views, to those he developed in his middle years, and ultimately to the later *Monadology*. Garber reconstructs Leibniz's concerns, almost day-by-day, and the modifications he makes to his views, as he delves into issues about body, motion, and force within diverse philosophical, physical, metaphysical, mathematical, and theological contexts. This, of course, constitutes a concrete repudiation of the kind of history of philosophy, such as Benson Mates' study of Leibniz that strives to produce a "syncretic" picture of the thinker's thoughts. In *The Philosophy of Leibniz* (1986, 7), Mates asserts that "Leibniz did change his mind on many topics, as would be expected. Indeed, he himself tells us about some of these changes, mostly having to do with his views on matters of physical science." However, Mates continues: "But on the fundamentals points of his philosophy, his constancy over the years is little short of astonishing. From the first of his publications, at age 17, to the end of his life he never wavered in holding to the rather unusual and implausible doctrine that things are individuated by their 'whole being'; that is, every property of a thing is essential to its identity." Mates concludes: "Consequently, in this account of the elements of Leibnizian philosophy I have felt free, on the whole to cite him without paying much attention to the date of the passage cited."<sup>1</sup> We wish to emulate

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<sup>1</sup>It would be unusual, of course, if Leibniz could change his views on matters of physical science and remain constant on the fundamental points of his philosophy. And, in fact, if Garber is right about Leibniz's changes with respect to body and substance, one would also expect changes with respect to individuation. Following Aristotle, most medieval philosophers commonly endorsed the principle that unity does not add anything to being (Aristotle 1910–1952, *Metaphysics*, book Γ, 1003b 30–32). In this Aristotelian framework, the axiom refers to the convertibility of unity and being, unity (or oneness) as a transcendental property of being. The notions of being and unity are thus mutually supporting. Leibniz echoes this; as he says to Arnauld, "I hold this identical

Garber's method in tracing Leibniz's views about individuation, his twists and turns, his 180° shifts, over a host of disparate theses; but we also wish to limit our story to the period of Leibniz's early to middle years, from his 1663 (deeply Scholastic) bachelor's thesis, *Disputatio Metaphysica de Principio Individui*, to his more mature work, *Discours de Métaphysique* (1686); in the process we will also discuss his views of individuation in a number of his other essays, including the *De Transsubstantiatione* (1668), *Confessio philosophi* (1672), and *Meditatio de Principio Individui* (1676).

Let us start with our endpoint, that is, the notion of individuation Leibniz marshals in the *Discourse*. As Leibniz says there, God chooses the perfect world, one made up of individuals with actions and passions, given that actions and passions properly belong to individual substances – *actiones sunt suppositorum* (DM § 8). What God creates are subjects, that is, individuals, like Alexander, whose individual notion or *haecceity*, God sees. And what God sees in this individual notion or *haecceity* is “the basis and reason for all the predicates that can be said truly of him, for example, that he vanquished Darius and Porus; he even knows *a priori* (and not by experience) whether he died a natural death or whether he was poisoned, something we can know only through history” (DM § 8). Among the “notable paradoxes that follow,” as Leibniz calls the propositions to which he is committed, are the claims that “every substance is like a complete world and like a mirror of God or of the whole universe” (DM § 9) and that no two substances can resemble each other completely and differ only in number – *solo numero*. Given that two substances cannot differ only in number, Leibniz formulates his positive view as: “what Saint Thomas asserts on this point about angels or intelligences (that here every individual is a lowest species [*quod ibi omne individuum sit species infima*])<sup>2</sup> is true of all substances” (DM § 9). Thus, in the *Discourse on Metaphysics* Leibniz weaves together three disparate notions – at least in provenance – about individuation: Thomas' *species infima*, a Scotist *haecceity*, and the complete concept view of substance. Leibniz's complete concept view of substance, with the specific notion of individuation employed by it, entails the thesis of the identity of indiscernibles.<sup>3</sup>

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proposition, differentiated only by the emphasis, to be an axiom, namely, that what is not truly *one* being is not truly *one being* either” (30 April 1687, GP II, 97; AG 86). Oneness in this famous Leibnizian aphorism on the convertibility of being and unity has to be understood as pointing at the same time to the indivisibility of the being (by excluding any composition through the addition of parts) and to the uniqueness of that which is the only being that is what it is.

<sup>2</sup> See Thomas Aquinas (1964–1976), *Summa Theologiae*, I, q. 50, art. 4.

<sup>3</sup> The mature Leibniz will not be as positive about these Scholastic remnants. Putting a negative twist on the “notable paradox” that two things cannot be perfectly similar, the mature Leibniz will say: “The vulgar philosophers were mistaken when they believed that there are two things different in number alone, or only because they are two, and from this error have arisen their perplexities about what they called the *principle of individuation*” (GP VII, 395; AG 334). One can see this as Leibniz's answer to the issue of individuation in his confrontation with Locke and the revival of the problematic of individuality and singularity in the *New Essays*. Leibniz echoes a passage in which the principle of individuation is said to be something of concern merely in the schools, “where they torment themselves so much in seeking to understand what it is.” In his response he asserts: “The *principle of individuation* for individuals reduces to the principle of distinction. [...] If two individuals were perfectly similar and equal and (in a word) *indistinguishable* in themselves, there would be no principle of individuation” (GP V, 214).



The seemingly disparate notions can be found together elsewhere in Leibniz's writings in the 1680s.<sup>4</sup>

We should emphasize two points about the three elements concerning individuation, which, for Leibniz in the 1680s, entail the identity of indiscernibles. The first is that seventeenth century Scholastics usually distinguished the three from one another. For example, in his *Metaphysics*, Scipion Dupleix (1610) discusses three main opinions about the principle of individuation, that of the Thomists, with their *signate* or quantified matter, of the Scotists with their *haecceity*, and of another group which he does not identify with anyone in particular. He grants that the Thomists have the authority of Aristotle behind them, but argues that quantity cannot reveal “the proximate and true formal cause of the individuality and unity of the essence of singular things,” since quantity is always an accident and accidents do not operate at the level of essences.<sup>5</sup> Dupleix's preferred position is the general Scotist position that “in order to establish the individual essence of Socrates, Alexander, Scipion, and other singular persons, we must necessarily add for each one of them an individual and singular essential difference which is so proper and so peculiar to each of them for themselves, that it makes each of them differ essentially from all the others.”<sup>6</sup> His third, anonymous group consists of those who base the principle of individuation on the “multitude of accidents,” given that this multitude “is never found together in any other subject.”<sup>7</sup> Dupleix (1610) has no problem rejecting this opinion using the same argument he used against the Thomists: accidents cannot be the principles of the essential constitution of substances.<sup>8</sup> So

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<sup>4</sup>Leibniz argues, in *Notationes Generales* (Summer 1683–1685?), that singular things are ultimate species, that there can never be two singular things similar in every respect, and that the principle of individuation is always a specific difference; he adds that this is what Saint Thomas said of intelligences, but applied to all individuals. Leibniz considers the example of two eggs and asserts that one should be able to say of one egg something that cannot be said of the other; otherwise, they could be substituted for each other and there would be no reason not to say that we are dealing with one and the same thing. “Hinc porro sequitur Singularia esse revera species infimas, neque unquam dari posse duo singularia per omnia similia et proinde principium individuationis semper esse differentiam aliquam Specificam, quod S. Thomas ajebat de intelligentiis, sed idem est verum de individuis quibuscunque [. . .] exempli causa duo ova, necesse est enim aliqua de uno dici posse quæ de altero dici non possint, alioqui substitui sibi mutuo possint, nec ratio erit cur ita non potius dicantur esse unum et idem” (A VI, 4A, 553).

<sup>5</sup>Scipion Dupleix (1992), *La Metaphysique*, 233.

<sup>6</sup>Dupleix (1992), *La Metaphysique*, 235.

<sup>7</sup>Dupleix (1992), *La Metaphysique*, 232.

<sup>8</sup>René de Ceriziers similarly refers to two groups: (1) those who accept “a real difference that determines the thing's particular nature, in the way Rational restricts animal to the species of man,” presumably the Scotists, and (2) those who “think that the principle of individuation is nothing more than the concurrence and multitude of the accidents that befall the substantial being of the individual” (De Ceriziers 1643, *Le Philosophe Français* 3, 31). De Ceriziers rejects both of these principles of individuation. Théophraste Bouju also gives a similar argument, but from a Thomist perspective, against those who hold that something is singular by its essence and by its accidents all together, which, he claims, would be not different from the Scotist view that the thing is individuated by its essence alone. Bouju asserts: “The singularity of the thing would be distinguished only rationally from the whole thing, which would amount to things being neither universal nor singular by themselves, but through the consideration of the understanding” (Bouju 1614, *Corps de toute la philosophie*, 237).

Dupleix (1610) distinguishes the Scotist position he favors from both the Thomist and the third (this latter position can be considered as a forerunner of Leibniz's complete concept, in which the principle of individuation is nothing more than the multitude of the accidents that befalls the individual). Dupleix (1610) rejects these two alternatives because he thinks that quantity and quality cannot provide the basis for the individuality and unity of singular things, since they are accidents and accidents do not operate at the level of essences.

The second point is that the views represented by Leibniz's three notions were rejected by him in his 1663 thesis, two of them explicitly and one implicitly; implicitly also, he did not subscribe to the identity of indiscernibles at the time. Leibniz's 1663 *Metaphysical Disputation* was a youthful Scholastic exercise.<sup>9</sup> It begins with a preface written by Jakob Thomasius, Leibniz's professor at Leipzig, which shapes the thesis. The preface provides a guide to the underlying conceptual framework and strategic aim of his student's dispute.

With an expeditious gesture, Thomasius dismisses the controversial problem of individuation as being "more subtle than necessary," while the thesis which his student will defend (the individual being individuated by its whole entity) is characterized as "the most simple and true," set to avoid many thorny difficulties (A VI, 1, 8). Moreover, the preface advances the Nominalist *tota entitate* principle as the most exemplary treatment of the problem, a thesis notably maintained by Francisco Suarez in his *Disputationes Metaphysicae* (1998). For Thomasius, ancient Greek philosophy can be divided into four sects, sharing an essentially pagan component. In attempting to explain finitude and the origin of evil, Platonists, Aristotelians, Zenonists, and Epicurians, all resort to the same dualistic, "manichaeist" program according to which *ex nihilo nihil fit* and thus posit matter as a second metaphysical principle, alongside God, uncreated and coeternal with him.<sup>10</sup> According to this historical reconstruction, the Aristotelian-Thomistic idea of individuation through *signate* matter originates within this ontological setting and is thus unsatisfactory from the point of view of a Christian philosophy. Thomasius argues that since the Thomistic individuation thesis limits itself to corporeal substances, Scotus' *haecceity* should be favored as the more general solution to the problem of individuation.<sup>11</sup> As Thomasius sees it, Aquinas and his followers cannot contribute to a general solution because they hold a principle of individuation for simple creatures, such as angels, different from the one they hold for corporeal creatures. For Thomas, spiritual creatures are altogether simple in their essence, but have a dual composition of essence with existence and of substance with accidents. Corporeal creatures are

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<sup>9</sup>The full title is *Disputatio Metaphysica/De/Principio Individvi./Quam/Deo O. M. Annuente/Et/Indultu Inclytæ Philosoph. Facultatis/In Illustri Academiâ Lipsiensi/Præsidi/Viro Excellentissimo et Clarissimo/Dn. M. Jacobo Thomasio/Eloquent. P. P. Min. Princ. Colleg./Collegiato/Præceptore et Fautore suo Maximo/Publicè ventilandam proponit/Gottfredus Guilielmus/Leibnuzius./Lips. Philos. et B. A. Bacca./Aut. et Resp./30. Maji Anni MDCLXIII.* As one can see, Thomasius is given "top billing" (in the largest font); Leibniz's name comes in second (and in smaller font). For more on the relations between Thomasius and Leibniz, see Mercer (2002).

<sup>10</sup>A VI, 1, 6. This judgment on Greek thought is taken up again in Jakob Thomasius (1665).

<sup>11</sup>A VI, 1, 6 and note.

composed in addition of potency and act, that is, of matter and form. Thus, the principle of individuation for corporeal creatures, namely *signate* (or quantified) matter, relies on something that angels do not possess. (Each angel, as a result, constitutes its own species.) Given the division of labor between teacher and student, Leibniz is charged with the critique of the Scotistic principle of individuation through *haecceity*, which receives the longest treatment in his bachelor thesis.<sup>12</sup>

As a result, in the *Metaphysical Disputation* (1663), Leibniz follows the path traced out by his teacher. He dutifully sets aside Thomas' solution as not furnishing a single principle of individuation for both material and immaterial substances (A VI, 1, 11, §3). He discusses four other possible solutions to the problem, rejecting three of them, including the Scotist answer, and defends as best the "whole entity" principle of the nominalists.<sup>13</sup> Perhaps the one novel element in Leibniz's contribution to the issue of individuation is the taxonomy he provides. Either a single general principle of individuation for all individuals can be given or, because different principles for material and immaterial individuals must be provided, it cannot. With respect to the general principles, the whole entity can be proposed as a principle or something less than the whole entity can be proposed. Within the category of "something less," the principle can be expressed by negation or by something positive added to the essence. Two views have been proffered for the positive principle, that is, existence and *haecceity*, depending upon whether a physical part or a metaphysical part is added. Since Leibniz disposes negatively of non-general principles (one of which he identifies as Thomas'), he discusses four primary options: (1) whole entity; (2) negation; (3) existence; and (4) *haecceity*. The young Leibniz attributes the first principle he discusses, "whole entity", to some older and to some recent Scholastics, including Suárez. Further, he classifies the principle as that of the terminists or nominalists and defends it against the attacks of the Scotists (identified as such). There is no mystery about this principle of individuation. Leibniz claims that the whole entity of a composite being is simply its matter and form; he states that he uses the term "whole entity" rather than "matter and form" merely because he wants the principle to be general and to cover immaterial substances (A VI, 1, 12, §4). Moreover, by "matter and form" he does not include accidents, which he specifically omits from the discussion (A VI, 1, 14, §10). If Leibniz's principle works at the level of matter and form without any consideration of accidents, then Leibniz in 1663 does not hold the complete concept view of substance and thus he is not committed to the identity of indiscernibles; clearly he also rejects versions of both Thomist and Scotist principles of individuation.

<sup>12</sup>Thomasius is representative of a powerful revival of Aristotelianism on the side of Reformation. His polemic against the Scholastics and the Scotists, in particular, is constant; he regards contemporary metaphysical systems such as Clemens Timpler's or Suárez' to be ontologically deviant in their lack of theological premises. For more on his judgment of Scotism, see Thomasius (1665).

<sup>13</sup>It is generally recognized today that Leibniz constantly endorsed or adhered to a nominalist ontology or epistemology. See Fichant (1998, 147), but also Mugnai (1990). The passage in the correspondence with Arnauld is also a statement of one of the main tenets which make up Leibniz's "provisional nominalism": the specific claim to a particularist ontology that only individual substances exist. In a text from 1688 entitled *De realitate accidentium*, Leibniz defines himself as a nominalist, at least "per provisionem", see Grua II, 547.

A few years later, in 1668, in the theological context of finding a philosophical explanation for the Eucharist, Leibniz changes his mind and accredits individuation to the substantial form viewed as an active principle directly enacting a divine idea: more specifically, he asserts that bodies are not substances apart from a concurring mind because a substance is a being that “has a principle of action within itself” and “*actiones sunt suppositorum*.” Substance is union with a mind and bodies that lack reason are substances through a union with the universal mind or God. Transubstantiation thus involves the mind of Christ taking on the accidents (bread and wine) in the sacraments, substituting its special concourse for the general concourse of the divine mind. Thus the transubstantiated accidents would have numerically the same substantial form as Christ’s body and since they would not be changed in any respect besides the substantial form of the concurrent mind, they would retain and realize their accidents. Leibniz states in a scholium: “These theorems of ours differ very little from the accepted philosophy. In Aristotle, nature is the principle of motion and rest. But substantial form is properly nature in the same philosopher. Hence Averroes, Angelus Mercenarius, and Jacob Zabarella also assert that substantial form is the principle of individuation” (A VI, 1, 510; L 117). In the 1663 thesis, Mercenarius and Zabarella were cited as supporters of the Scotist view; they are now among those who agree with Leibniz, which places Leibniz in the Scotist camp.<sup>14</sup> In case the point is not fully understood, Leibniz also refers to “Those who locate the nature of subsistence in the union of matter and form, like Murcia” (A VI, 1, 510; L 117), thereby distancing himself from that position. Of course, in 1663, Murcia was among those who agreed with Leibniz in holding the “whole entity” principle of individuation. Leibniz emphasizes that he is using the terms substance, transubstantiation, accident, species, and identity in the same sense which the Council of Trent favored, that none of his conceptions are innovations, that he demonstrates “the numerical identity of substance from the numerical identity of the substantial form, in conformity with the principle of the noblest Scholastic and Aristotelian philosophers, for whom substantial form is the principle of individuation.”

Despite his 1668 explanation of transubstantiation claiming that substantial form is the principle of individuation, Leibniz almost immediately began rejecting substantial forms.<sup>15</sup> In 1668 and 1670, Leibniz advocated a nominalistic, particularist

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<sup>14</sup>Leroy Loemker realized this; in a footnote to the passage he writes: “Leibniz’s departures from Thomism are significant; his view of individuality and of the soul here is Scotistic, though he had earlier rejected Scotus’ principle of individuality. The unity of matter as an aggregate is never itself material but logical and mental. The soul itself, in turn, has its own matter, distinct from its body” (L 120). Loemker is right in thinking of the view as a kind of Scotism, even though, of course, it says nothing about individuals as common nature plus *haecceity*, two things asserted to be formally distinct. Substantial form as principle of individuation would have been considered by Leibniz in the category of “something less” than whole entity, with a metaphysical part being added to the essence.

<sup>15</sup>In 1668, Leibniz adds a Neo-Platonic spin to his conception of substantial forms: substantial forms are ideas in the mind of God.

ontology and rejected any universals, substantial forms, and real qualities.<sup>16</sup> The 1668 account of transubstantiation presents several stumbling difficulties which lead to the rejection of substantial forms in Leibniz's 26 September/6 October 1668 letter to Thomasius and his preface to Nizolius (1670). The Academic edition of Leibniz's works transcribes four fragments or samples under the common title of *Demonstratio possibilitatis Mysteriorum Eucharistiae*: the first three fragments from 1668 (among which is *De transsubstantiatione*) start with a critique of English philosopher Thomas White. While these three fragments preserve the use of substantial forms, the fourth one (1671) does not mention substantial forms any more, only referring to them negatively as the "fictional and monstrous entities" of the Scholastics (same fragment: A VI 1, 516). Moreover, in the letter to Thomasius from 26 September/6 October 1668, Leibniz shows his support toward the new mechanistic philosophy and accordingly sets up the program of reconciling Aristotle and the *novatores*. Leibniz adopts as a common rule of mechanism the simple formula that all corporeal properties of bodies have to be explained through their primary attributes, i.e. magnitude, figure, and motion. Even though in 1668–1670 Leibniz's adoption of this rule is not yet paralleled by a carefully formulated natural theory, he uses it as the grounds for a renovation of the proof of the existence of God as Prime Mover. This renewed demonstration was supposed to be a part of chapter 4 of the first part of the plan of his *Catholic Demonstrations*.<sup>17</sup> A preliminary version of it can be found in the introduction to *De Arte combinatoria* (G IV, 32–33). Each body or corporeal nature receives its mechanistic features and primary attributes from a unique and incorporeal principle or being: God as governor of the material world. A mechanistic explanation of nature requires a Prime Mover, since the cause of motion in the universe cannot be a principle physically immanent to the corporeal nature of bodies. Bodies do not move because each of them would possess an immaterial entity or internal principle of activity responsible for their autonomous motion, but as a consequence of reciprocally transmitting or transforming motion through their primary attributes.<sup>18</sup> Despite its apparent Aristotelianism, Leibniz's attempt at renewing the proof of the existence of God as Prime Mover is quite un-Aristotelian: for Aristotle, the unmoved mover causes the motion of other bodies through final causation and not as an efficient cause.<sup>19</sup> In Leibniz's case, the unmoved mover, God, is a "full" efficient cause, responsible for all efficient causation in the universe. The notion of God he marshals in this early period is that of

<sup>16</sup>This does not seem very different from Leibniz's earlier adherence to nominalism in the earlier *Disputatio*. Yet, explaining the reasons for Leibniz's rejection of substantial forms in 1668–1670 enables an understanding of the larger context which ultimately led him to positing an external principle of individuation in the *Confessio philosophi* of 1672.

<sup>17</sup>"Demonstratio ex eo principio, quod in corporibus nulla sit origo motus" (A VI, 1, 494).

<sup>18</sup>*Confessio naturae contra atheistas*, GP IV, 108–109: "[...] cum corpora motum habeant, non singula ente incorporali, sed a se invicem."

<sup>19</sup>The prime mover causes the movement of other things as a final cause and not as an efficient cause: it is the purpose, the end of the moving. For Aristotle, an efficient cause imprinting motion onto the world would itself be affected by that movement or push, which it cannot since it is an unmoving cause, Aristotle (1910–1952), *Metaphysics*, book Λ, 1072 a26–b4.

mechanist philosophy, conceiving the primary relation between God and the world of corporeal substances in terms of an overarching, external principle imprinting motion onto bodies. In conclusion, Leibniz rejects the traditional Scholastic interpretation of substantial forms both on the count of their unnecessary multiplication and because mind-like substantial forms which would enable bodies to move through themselves, without an incorporeal mover outside of them, would shut off the proof of the existence of God as Prime Mover (A II, 1, 11).

On the other hand, in his 1669 program-letter on natural philosophy,<sup>20</sup> discussing the origin and generation of forms, Leibniz reiterates the Scholastic *dictum* that forms have to be “educated from the passive power of matter” and not directly from the active power of God.<sup>21</sup> Leibniz condemns those who, like Scaliger, Sennert or Sperling, believe that forms are created not from the passive power of matter, but from the active power of the efficient cause (A II, 1, 14). This, he argues, would imply that God is the prime matter of all things and that, furthermore, extended, physical matter would act through itself *qua* matter. Both these consequences are unacceptable for Leibniz, since he claims that the pre-existing matter, from which substantial forms are derived, is a non-being – purely passive (and objective) potentiality (A II, 1, 16). The unnecessary multiplication of substantial forms is an ontological blunder of which Scholastics and contemporary *novatores* are equally chargeable: countless incorporeal entities glued onto the extended body of each substance would risk introducing thought into matter and leading to a divinization of nature.<sup>22</sup> Both his attempt at construing a valid, reformed mechanistic philosophy (against and with the *novatores*) and his adherence to the tenets of a nominalistic ontology that back it up, explain why Leibniz gave up substantial forms early on, after his essay on transubstantiation.

In 1668 Leibniz was keenly interested in keeping substantial forms, but to this purpose he had to use an opposite strategy to that of the *neo-Scholastici*, the liberal Jesuit (and mostly Spanish) Scholastics of the Counter-Reformation. Despite the reference to the common Scholastic adage *actiones sunt suppositorum*, Leibniz subverts the medieval concept of substantial form by conceiving it in a much more Neo-Platonic than Aristotelian way. Forms assume ontological reality only as instruments of God’s own action, since bodies have to rely on their direct enactment of divine ideas for both their potentiality towards motion and the principle of activity of said motion.<sup>23</sup> There is even a slight imprecision in Leibniz’s recourse to *actiones sunt suppositorum*: his argument that the substance or being subsisting by

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<sup>20</sup>It is worth noting that Leibniz chose to publish the text of this 1669 more extended letter as an Appendix to his own *Dissertatio preliminaries* to Marius Nizolius’ *De veris principiis et vera philosophandi* (republished in 1670).

<sup>21</sup>The “education” of forms from the passive power of matter was a theory held by the majority of medieval philosophers, Aquinas in particular, but also sixteenth century textbook authors, such as Franciscus Toletus and Benito Pereira.

<sup>22</sup>A II, 1, 22: “Ita reditur ad tot deunculos, quot formas substantiales [...]”

<sup>23</sup>Divine ideas are the substance of things: “Ideae Dei et Substantiae rerum sunt idem re [...]” (A VI, 1, 513).

itself, taken individually, is the support for the accidents and actions belong to these supports.<sup>24</sup> Generally speaking, the majority of substances are considered to be *supposita*. In *On Transubstantiation* the difficult issue that Leibniz's explanation of the Eucharist has to face concerns Christ's body, its corporeal substance. The substance of the body of Christ is not a *suppositum*. His divine nature is, because this corporeal substance subsists in the person of the divine *logos*. If in order to show that substances have a principle of action within themselves Leibniz makes all substances *supposita*, the immediate unwanted consequence would be that he is submitting to Nestorianism while attempting to explain transubstantiation, allowing two persons in Christ.<sup>25</sup> Yet, there are other reasons which, given Leibniz's choice for a principle of individuation in 1668, make his explanation of transubstantiation turn out to be even more problematic. First, he has to explain the temporality and succession of forms and second, to find a way of reconciling his account of transubstantiation *via* substantial form with one of the basic principles undergirding the "provisional" nominalism adopted in the Preface to Nizolius (1670), where he rejected the existence of universals, forms, and real qualities.

In *De transubstantiatione* (1668), Leibniz had stressed his continuity with the Tridentine Council with regards to defining substance, accidents, species and transubstantiation.<sup>26</sup> The Council of Trent stated that, given the unique and miraculous nature of transubstantiation, the operation it involves cannot be explained in terms of similar natural transformations or transmutations. Since in the Eucharist a part of common matter is "consecrated", transubstantiation involves a complete conversion: as striking as it may seem on a sensible level, the substances of both bread and wine disappear entirely.<sup>27</sup> As a consequence, examples of physical transformation such as natural accretion (in food digestion)<sup>28</sup> or fermentation (the transformation of wine into vinegar), are not considered adequate in conceiving transubstantiation. Complete conversion is a conversion not only of the substantial form of a substance into the substantial form of another substance, but also a change of matter: from the matter of the bread and wine to the corporeal substance of Christ's body. Thus, this conversion cannot be defined as a mere variation or succession of substantial form, but as a change occurring in the corporeal substance or matter of things. The matter and form of the species make a complete passage into the corporeal substance of Christ. It is unclear how the succession between God's general concourse and Christ's concurrent mind could represent a viable solution in explaining

<sup>24</sup> That is, according to the Aristotelian-Thomistic dictum. "Nam Ens per se subsistens seu substantia hæc vel illa in individuo sumta est Suppositum. (Scholastici enim in usu habent Suppositum definire individuum Substantiale). Iam actiones sunt Suppositorum" (A VI, 1, 497).

<sup>25</sup> The conspectus of *Catholic Demonstrations* included, in its 3rd part, a chapter on the Augustinian *congruentia incarnationis* and a reference to Saint Anselm's *Cur Deus homo*. The next chapter, on incarnation, was planned: "contra Arianos et Nestorianos" (A VI, 1, 497).

<sup>26</sup> *Scholia*, A VI, 1, 510.

<sup>27</sup> *Catéchisme du Concile de Trente*, Marbeau-Charpentier (1923), II, XIX, 1.

<sup>28</sup> In the first fragment on the Eucharist from 1668, Leibniz had specifically criticized Thomas White's analogy between transubstantiation and *augmentatio*: A VI, 1, 501.

transubstantiation, since in this case, Leibniz's particular choice of an individuating principle for inanimate bodies involves the risk of drifting dangerously close to pantheism and conceiving God as a world soul. The significant issue here is theological more than metaphysical; it involves ascribing to non-human corporeal substances like the Eucharistic bread and wine not yet informed by the mind of Christ, ideas-forms that share the same separate status with God's concurrent mind: accidents and species *sub specie aeternitatis*.

Secondly, what is the ontological status of accidents in a non-realist, nominalist ontology whose main assumption, among others, is resolutely anti-Platonic: do only individual substances exist? In the *Isagoge*,<sup>29</sup> Porphyry gave a dual definition of accident, leaving open the possibility that accidents could possess an existence or reality separately from substance. Some accidents (like "sleeping", in the case of man) are separable, while others (the "being black" of a raven) are inseparable. Following this definition, the nominalist tradition had tried to redefine accidents according to the metaphysical presuppositions of its own singularist ontology. Ockham's *Summa Logicae* (1975, 102–104) put forward four different meanings of accident: first of all, the accident is something really inhering in a substance the way "heat really inheres in the fire and whiteness in wall." In this sense, an accident is something which cannot be subtracted from its underlying subject without corrupting or annihilating it. In its second influential sense, accident would be a predicable and thus it would not amount to something absolutely inseparable from the subject, but would attach itself to different substances. In this latter meaning, an accident could be separable (at least through the power of God) or inseparable from its subject. The nominalists, including Ockham, share a common task in proving that this second meaning of accident only possesses a mental reality and that accidents only exist in nature as inherent to substances. The issue of the separability of accidents on a natural level is an authentic *cul-de-sac* for Nominalist ontologies as it is for Leibniz, who adopts the first understanding of the concept of accident, one that is intimately related to his conception of individual substance. If accidents are just modifications of their respective substances, inherent to and inextricably bound to their subjects, then they can have no existence outside these substances; a separated accident would merely be an abstract thing with no reference to the things themselves. It is difficult to see not only how Leibniz would reconcile this view with the separability of accidents – the *sine qua non* condition for any eligible explanation of the Eucharist in an Aristotelian-Thomistic framework – but also with the manifestation of these accidents under the form of the species at the sensible, phenomenal level.

In both the notes annexed to *On transubstantiation* (A VI, 1, 513) and in a closely dated text on hypostatic union (*De incarnatione Dei seu de unione hypostatica*, 1669–1670), Leibniz seems to argue that the Scholastics have uselessly complicated their explanations of transubstantiation and hypostatic union, notions he had re-grounded on the presupposition of God's mediated action through minds or substantial forms. Right after his rejection of substantial forms in the letter to Thomasius

<sup>29</sup> Porphyry (1998, 15), *Isagoge*, V, 1.



(26 September/6 October 1668) and the preface to Nizolius (1670), Leibniz once again dismisses substantial forms, this time in the context of finding an appropriate philosophical solution to the problem of resurrection. Surprisingly enough, in the first part of his paper “On the resurrection of body” (1671), Leibniz claims that atomism could cope with bodily identity problems related to resurrection better than hylomorphism. He takes into account the Scholastic view of matter and form, but does not consider that it provides an adequate framework to explain the resurrection of the same body: “For since the Scholastics think that the essence of each thing consists in matter and a certain substantial form which is extinguished by the corruption of the thing and since they assume that there is no return from privation to possession, they have been unable to grasp how the same flesh can return.” (A II, 1, 183). There is no return from privation to possession – *a privatione ad habitum non dari regressum* – yet again the problem of the temporality, duration of substantial forms, is particularly problematic in the case of bodily resurrection. Leibniz invokes here another Scholastic *dictum*, based partly on Aristotle's *Metaphysics*, book H, 1044 b34–1045 a6 and found in the works of thirteenth century Thomas Aquinas and Roger Bacon.<sup>30</sup> The *reditus* or return principle states that privation and habit subsist differently and are as opposed as affirmation and negation are. As a consequence habit can change into privation, but not the other way around: a blind man, Aristotle says, cannot recover sight.<sup>31</sup> What is deprived of substantial form cannot regain it: no natural thing can be restored with numerical identity in the event that it undergoes corruption or annihilation. In order for numerical identity to be restored something other than substantial form is needed.

As evidenced by the previous passage as well as the fourth fragment on transubstantiation (1671) and its general rejection of the “fictional and monstrous entities” of the Scholastics (A VI 1, 516), whatever its meaning for Leibniz, substantial forms tend to disappear from his vocabulary after 1671.<sup>32</sup> All the difficulties implied in postulating substantial form as a principle of individuation lead to Leibniz's radical departure from the common Scholastic, internal principle of individuation in the *Confessio philosophi* (1672–1673): identifying *haecceity* as the principle of individuation consisting in the external spatio-temporal circumstances. Leibniz further emphasizes the distinctiveness of his interpretation and his break with Scholasticism by having his interlocutor assert: “You speak of astounding things, which, I believe, have not come into the mind of any Scholastic even in a dream, but which, nevertheless, no one can disavow, for they are taken from practical

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<sup>30</sup>Aristotle also exposes this principle in the 10th book of his *Categories*. For a detailed analysis of the use of this principle as a weapon against atomism, see Newman (2006, 50–54; 104–105; 115–116).

<sup>31</sup>Aristotle (1910–1952), *Categories*, X, 13 a 17.

<sup>32</sup>Even though his reflection on the *Elementa de Mente* and *de Corpore* continues to develop (as announced in the 1668–1669 plan of the *Catholic Demonstrations* – A II, 1, 175–176). This also raises doubts whether anything like a primitive theory of complete concepts is developed at an early stage in Leibniz's thought.

experience.”<sup>33</sup> He also starts his discussion by distancing himself from the traditional way of posing the problem: “This question seems difficult, but more because of the tortured manner of asking the question, than from the nature of the problem. It touches upon the very thorny consideration of the *principle of individuation*, that is, of the discrimination of things differing solely in number.” The example Leibniz uses is that of two eggs similar in every way such that not even an angel can observe a difference; he asks “yet who can deny that they differ?” and replies:

At least they differ in this: that one is this one, the other, that one, that is, they differ in *haecceity*, or because they are one thing and another thing, i.e., because they differ *numerically*. But what do we mean when we count, that is, when we say *this* (for to *count* is to repeat *this*). What is *this*? What is it to determine something? What is it except the perception of time and place, i.e., of motion either, on the one hand, of a given thing in relation to us or to a thing already determined, or, on the other hand, of our own movement (e.g., the motion of our hand or the finger by which we point), or the motion of some already determined thing, like a stick, in order to point to a given thing? There you have it, what may amaze you, the principle of individuation, outside the thing itself. For between these eggs no difference can be assigned either by an angel or, I have the audacity to say, by God (given the hypothesis of the greatest similarity possible) other than that at the present time this one is at place *A*, and that one is at place *B*. (Sleigh 2005, 103)

In the 1663 *Disputatio*, confronted with both Scotism and nominalism, Leibniz had interpreted Scotus’ *haecceitas* as a formalistic element (privileging form over matter).<sup>34</sup> Later reinterpretations of the concept seem to insist on its realistic elements: identification with quantity or synonymy with numerical difference consisting in the perceptions of time and place (*sensus temporis et loci*).<sup>35</sup> The originality and directness of the *Confessio* consist in Leibniz’s commitment to the idea that the principle of individuation of a thing is not internal to itself.<sup>36</sup> Thus he accepts

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<sup>33</sup>Sleigh (2005, 104–105). The paragraph continues: “For no man reasons otherwise when he must distinguish things that are entirely similar.” Leibniz’s distancing himself from the Scholastics in the *Confessio* takes on greater import when one considers his deep knowledge of Scholasticism, knowledge he himself is proud of. In a 1678 letter to Herman Conring, Leibniz felt he needed to defend himself against the accusation that he simply did not know any Scholastic philosophy: “You say that my estimate of the Schoolmen’s metaphysics would be more favorable if I had read them.” Leibniz responded: “Yet I esteemed [the Schoolmen’s metaphysics] most favorably, for I had written to you, if you remember well, that I believe many excellent metaphysical demonstrations are to be found in them which deserve to be purged of their barbarism and confusion. And I could not have said this if I had not wanted you to believe that I had read them.” Leibniz claimed that he had examined the writings of the Scholastics, and done so even “more immoderately and eagerly” than his teachers approved, so that they “feared that he would cling too tightly to these rocks.” He also claimed that when he began to study philosophy at the universities he made “some original and profound comments” on Scholastic topics, such as “the principle of individuation,” and he “never since regretted having sampled these studies” (GP I, 197–98; L 190).

<sup>34</sup>A, II 1, 16: Leibniz introduces the 13th c. medieval distinction between the form of the whole and the form of the part, while considering haecceity to be “more like form since it contracts and distinguishes.”

<sup>35</sup>*Confessio philosophi*, A VI, 3, 147.

<sup>36</sup>The concept of *haecceity* will further evolve up until the period of the *Discourse on metaphysics* and afterwards, when Leibniz would define individuals as *haecceities*: “where there is space and time.” *De divisione praedicati*: “Individualia seu haecceitates ubi locus et tempus” (A VI, 4A,

a radically reconsidered notion of *haecceity* and does not fully embrace a complete concept view of substance or the identity of indiscernibles.<sup>37</sup>

In the Parisian period, once Leibniz advances his criticism of Descartes' theory of extension and expounds upon the concepts of space and time as mere relations or orders of coexistence and non-simultaneity, the external spatio-temporal individuating circumstances will be ready to be internalized, as contained in their complete concepts.<sup>38</sup> We can see the beginnings of Leibniz's more mature view encompassing the thesis that two substances cannot resemble each other completely and differ only in number in an essay from 1676 entitled *Meditatio de Principio Individui*. There Leibniz considers two rectangles or two triangles coming to constitute two indistinguishable squares, as an example of different causes producing an effect that is perfectly the same. Of his two squares Leibniz asserts "neither of these can be distinguished from one another in any other way, not even by the wisest being." Based on the principle that the effect involves its cause "in such a way that whoever understands some effect perfectly will also arrive at the knowledge of its cause," Leibniz argues that "if we admit that two different things always differ in themselves in some respect as well, it follows that there is present in any matter something which retains the effect of what precedes it, namely a mind." Thus, for matter to be individuated, it has to be connected to a mind that will retain the memory or traces of its construction. Leibniz concludes: "This argument is very fine and proves

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927). Thus Leibniz reinstates the Scotistic principle of *haecceitas* in an un-Scotistic fashion, as quantity, understanding the latter in a vaguely realistic sense, as the true "principle of individuation" for physical beings. He states, as definitions in another 1672 essay: "Quantitas est modus, quo res cogitator determinate, aut potius quo res cogitator tota. [...] Seu quantitas est ipsa haecceitas, qua res cogitator haec. Qualitas est modus, quo res cogitator mutabilis seu posse agree et pati. Quo res cogitator cum relatione non ad sensum, sed intellectum. Quantitatis enim est conceptio relationis rei ad sensum. Hinc ratio patet cur sola ex accidentibus quantitas auferri non possit, continet enim ipsam rei haecceitatem" (A VI, 2, 488–489). This kind of conflation between haecceity and quantity, or haecceity as the spatio-temporal circumstances which individuate a substance (in the *Confessio philosophi*, 1672–1673) brings to mind the Neo-Platonic residues in the final corollaries of the *Disputatio*, where Leibniz considers that the essences of things are like numbers or that matter possesses its own *actus entitativus* and is *realiter* identical with quantity. It might be interesting to see, in this regard, what influence Erhard Weigel, Leibniz's other philosophy teacher, might have had on him; see Piro (2005, 10).

<sup>37</sup>We can now reaffirm the inference that Leibniz did not hold the complete concept view of substance and the identity of indiscernibles in 1663.

<sup>38</sup>Leibniz's critique of extension is yet again concerned with temporality. Extension is not a constituent element of things, but the diffusion, extending of one thing. Leibniz believes there is a central difficulty in Descartes in conceiving the relationship between substance (to which extension is an attribute) and duration (which is but a mode). Extension cannot account for substance since it is temporally bound to the present and merely sequential: it reflects only a precise moment in the successive state of things, as a sequence in the development of phenomena. Therefore it cannot account for all present and future states or developments of a substance. This is where the need for the internalization of spatio-temporal individuating accidents (*Confessio philosophi*) and something of a mind-like nature, endowed with memory and a history, intervenes. This temporal aspect of substances will be later fulfilled by the concept of force: derivative force both *is* and expresses the present state of a substance. Force expresses the present state of a substance by being the link between its past states and its future ones.

that [...] we cannot think of anything by which matter differs, except by mind. [...] This principle is of great importance.”<sup>39</sup> Of course, the mind Leibniz is referring to could be either inside or outside the thing, a universal soul or a mind, individual soul, substantial form, or individuating form, that is, a *haecceity*. Leibniz chooses to locate the principle of individuation inside the thing and thus derives something like the identity of indiscernibles: “unless we admit that it is impossible that there should be two things which are perfectly similar, it will follow that the principle of individuation is outside the thing, in its cause.”<sup>40</sup>

In the 2-year period between 1670 and 1671 the concept of substantial form is overshadowed. The concept of mind and its interpretation through indivisibles or points takes its place. Although between 1672 and 1676 Leibniz had not yet developed an elaborate physical theory, an idea guides his Parisian writings: matter is always connected to mind, held together by a mind or a mind-like substance; it only exists in virtue of a relation to mind.<sup>41</sup> It is after this fruitful period of confrontation with Cartesianism that the views Leibniz had developed on mechanics in his physical theories of *Theoria motus abstracti* and *Hypothesis physica nova* (1671) became subject to a drastic revisionism. This revision of his first physical theories was initiated after the Parisian period and his return to Hanover through a reconsideration of the laws of motion between colliding bodies. In 1676 (in *De Arcanis motus* and *Meditatio de Principio individui*), Leibniz believes he has arrived at a possible solution in reconciling the empirical laws of motion and an *a priori* principle of conservation: this “Ariadnic thread” was the regulative principle of the equipolence between full cause and entire effect. The *Meditation on the Principle of the Individual* (1676) is particularly important not only because it gives an overview of Leibniz’s views on individuation at a crucial time, but also through the fact that the text itself is an early formulation of the principle of equivalence between full cause and entire effect, equivalence which is maintained through phenomenal changes. Leibniz’s mature view about individuation also develops through the revival of the Aristotelian concept of primary substance and a reinterpretation of the Thomistic angelic principle of individuation as *species infima*. In the *Discourse on Metaphysics*, the individual for Leibniz corresponds to the Scholastic last species he had declined

<sup>39</sup>A VI, 3, 491; also Parkinson (1992, 51–53).

<sup>40</sup>Leibniz, A VI, 3, 491; Parkinson (1992, 51). The argument is repeated as late as 1685 in Leibniz’s “Notes on Cordemoy’s Treatise *On the Distinction between Body and Mind*,” as a criticism of Cordemoy’s atomist solution to the Cartesian problem of individuation; although he appreciated Cordemoy’s criticism of Cartesianism, Leibniz thought Cordemoy had not gone far enough with his solution. As Leibniz said, “These are difficulties for Cordemoy himself: let us suppose two triangular atoms come into contact and compose a perfect square, and that they rest next to each other in this way, and let there be another corporeal substance or atom, a square one equal to the other two. I ask, in what respect do these two extended things differ? Certainly no difference can be conceived in them as they are now, unless we suppose something in bodies besides extension; rather they are distinguished solely by memory of their former condition and there is nothing of this kind in bodies” (A VI, 4, 1799; Arthur 279). The example of the two triangles, reconsidered in three dimensions, continues to play a role in Leibniz’s thinking even in the 1690s, in an argument against atoms separate from the issue of individuation (see GP VII, 284–85).

<sup>41</sup>See, in particular, his *Notes on Science and Metaphysics* (18 March 1676, Arthur 55).

to discuss in the *Disputatio*. Its particularity is that each individual is, in itself, its own last species – not an exemplar of a specific essence, but a unique one with all its accidents. Leibniz's main originality is that to this individual essence or last species there corresponds a complete concept.

We have traced Leibniz's views on individuation from 1663 to 1686. We can say without equivocation that the only constancy about individuation during these years is Leibniz's willingness to change his mind completely about a host of issues, as he works through various problems of disparate provenance and adjusts his thinking accordingly, using one result in one domain against another in another domain and then reversing himself, repeating the process.

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# Chapter 3

## Substance, Unity and Identity in Early Leibniz's Work

Adrian Nita

The rehabilitation of substantial forms in 1679 is a very important part in the evolution of Leibniz's thought.<sup>1</sup> It can be seen as a case of break or continuity, depending upon one's arguments and points of view. The theory of substantial forms is, of course, of great metaphysical significance and is connected with important topics of Leibniz's philosophy such as existence, being, identity, consciousness, freedom, and the existence of God. Even if I do not intend to give a direct answer to the question of continuity or discontinuity, I shall offer an indirect one by discussing the unity and identity of substance from the point of view of the notions of *anima* and *mens* in Leibniz's works.

### 1 Unity and Mind

In his letter to Duke Johann Friedrich from 1679, Leibniz maintains that he revives substantial forms, using the present tense and not the past tense as he does in many other places when he talks about the periods of his thought. Leibniz describes to the duke his planned work called *Catholic Demonstration* where he intends to give a demonstration for the existence of God, a demonstration of immortality, a proof of the Christian mysteries, and a demonstration of the authority of the church and the Scriptures. This theological setting is present in the same sentence in which Leibniz

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announces the revival of substantial forms: “There is another important thing in my philosophy which will give it access to the Jesuits and other theologians. This is my restoration of substantial forms, which the atomists and Cartesians claim to have exterminated”.<sup>2</sup> The subordination of philosophy to theology seems even clearer in the variant L2 of this letter.<sup>3</sup>

This is by no means the only traditional idea in Leibniz’s philosophy; one can say that there is no part in his philosophy without ideas from the scholastics.<sup>4</sup> This influence co-existed with an indisputably modern aspect of Leibniz’s thought. He adopted the mechanical philosophy without reserve, even though he accommodated it to his ideas on theology and philosophy. The young Leibniz<sup>5</sup> stressed the possibility and even necessity of a symbiosis between scholastic and modern thought in his correspondence with his teacher Jakob Thomasius (from 2 October 1668 and 30 April 1669) or with Conring (19 mars 1678):

Whenever I discuss matters with the Cartesians, certainly, I extol Aristotle where he deserves it and undertake a defense of the ancient philosophy, because I see that many Cartesians read their one master only, ignoring what is held in high esteem by others, and thus unwisely impose limits on their own ability. I do not at all approve of throwing words around too freely against the old philosophy, nor do I approve of the argument which a certain friend in this neighborhood has divulged; I have told him so in a letter, I think that the two philosophies should be combined and that where the old leaves off, the new should begin.<sup>6</sup>

The aim of the new science in Leibniz’s view is to explicate the possibility to know the world through size, shape and motion, but mechanics can neither offer the principle of its basis nor elevate itself to the universality of philosophical thinking. In the plan for a work on the elements of natural science, *Conspectus libelli*, from 1678 to 1679, Leibniz argues that natural philosophy should treat not only observations and experiments, but also, or especially, the first principles of things: “There follows now a discussion of incorporeal matters (*de incorporeis*). Certain things take place in a body which cannot be explained from the necessity of matter alone. Such are the laws of motion, which depend upon the metaphysical principle of the equality of cause and effect.”<sup>7</sup>

Leibniz thinks that mechanical philosophy does not give a good answer to the problem of the nature of the body, and he associates this with its banishing from philosophy the knowledge of the soul, mind, God, and in general all that is about the spiritual side of our lives. He holds that the body is not a simple extended substance and that the union between soul and body is unsatisfactorily treated by modern theories. Neither the dualist Cartesian theory nor the occasionalist theory of causal interaction between mind and body satisfies Leibniz’s search. He explains that in order

<sup>2</sup> Leibniz, To Duke Johann Friedrich von Hannover, autumn 1679; A2.1.754; L 261.

<sup>3</sup> Leibniz, To Duke Johann Friedrich von Hannover, var. L2; A2.1.757.

<sup>4</sup> See McCullough (1996). See also Ariew (2009, pp. 95–115).

<sup>5</sup> See Kabitz (1909), Brown (1999), Kulstad et al. (2009).

<sup>6</sup> Leibniz to Conring, 19 March 1678; GP I, 198–199; L 190.

<sup>7</sup> *Conspectus libelli* (summer 1678–winter 1678/1679 (?)), A VI, 4, 1988; L 278–279.

to discern the body and the physical objects, we need a principle that can explain being, unity and identity.<sup>8</sup>

Leibniz's early thinking included other constructive elements as well, particularly the invention of dynamics. It is significant that he reformed dynamics, to use Michel Fichant's expression,<sup>9</sup> simultaneously with the revival of substantial forms. For Descartes, the assumptions about the facts of nature were demonstrable through an appeal to size, shape and motion. The quantity of motion, Descartes's famous expression ( $mv$ ), together with the principle of the conservation of the total quantity of motion in the universe, explained mechanically all changes in nature on the basis of extension, which was the constitutive attribute of the bodies, and motion, through which the extensional parts were distinguished. Leibniz sought a new definition of force through the measure of its effect by substituting the square of the velocity ( $mv^2$ ) for the simple velocity in the Cartesian formulation. This revision in *De corpore concursu* from 1678 was an important contribution to the revival of substantial forms, given that the principle of bodies is something of the nature of a force.<sup>10</sup> The conception of body in terms of active and passive forces, developed in the late 1670s, persisted in Leibniz's thought to the end of his career.<sup>11</sup>

Leibniz's interest in the conciliation between the scholastics and the moderns and the conciliation between the Churches and confessions<sup>12</sup> influenced his reformation of dynamics as well as his new conception of substance in 1678–1679, which was innovative from Leibniz's point of view and also in relation to the other theories of substances, either old or new. Some Leibniz scholars maintain that substance is defined through unity (*unum per se*; i.e. an entity that has the principle of unity in itself; unlike multiple things or aggregates), concreteness (an entity that inheres in no other thing as in a subject; unlike abstract objects), and completeness (an entity that falls under a complete concept, unlike a mode).<sup>13</sup> In my opinion, the new theory of substance has in its core the concepts of unity (in order to be a being), identity (according to Quine's famous criterion: no entity without identity) and activity (given that the substance is defined in the terms of active and passive force).<sup>14</sup>

In order to reject Cartesian dualism, Leibniz revives substantial forms and in this way sustains the unity of beings,<sup>15</sup> a central theme in his mature metaphysics.<sup>16</sup> In the middle period (1680–1695), Leibniz advances, in the *First truths*, the hypothesis

<sup>8</sup> *Ibidem*, L 279–280.

<sup>9</sup> Fichant (1994, pp. 9–68).

<sup>10</sup> Fichant, (1994, pp. 15–17); see also Fichant (1998, pp. 163–204).

<sup>11</sup> Garber (2011, pp. 409–421).

<sup>12</sup> This is the reason that Christia Mercer speaks about Leibniz's "conciliatory eclecticism" (Mercer 2001, p. 47; Mercer 2004, Chap. 1). Andreas Blank remarks that while Leibniz's philosophy is conciliatory, is not eclectic; see Blank (2005, p. 63).

<sup>13</sup> Palkoska (2010, p. 94).

<sup>14</sup> For a close view on these matters, Woolhouse (2010, pp. 17–21).

<sup>15</sup> For a different view that emphasizes some sort of dualism, see Blank (2005, Chap. 5).

<sup>16</sup> Ishiguro (1998, pp. 538–541).



of concomitance<sup>17</sup> in order to keep the unity of substance. God has planned both the soul (*anima*) and the body in such a way that what happens in one corresponds perfectly to whatever happens in the other; this is true of all substances in the whole universe.<sup>18</sup>

In his *Discourse on Metaphysics*, Leibniz argues that the nature of body does not consist merely in extension as in the mechanical philosophy, but “there must necessarily be recognized in it something related to souls (*aux ames*), which is commonly called a substantial form, although this form makes no changes in the phenomena, any more than does the soul of beasts if they have one”.<sup>19</sup> The new notion of substance is grounded in the complete concept of an individual substance: everything that happens to the soul (*l’ame*) and to each substance follows from its concept, so that the soul (*l’ame*) expresses what happens in the world and more particularly in the body to which it is united.<sup>20</sup> In this way, what makes a compound being a unity is the substantial form which is taken to be something of the nature of soul:

Assuming that the bodies which make up an *unum per se*, for example man, are substances and that they have substantial forms, and assuming that beasts have souls (*des ames*), we must admit that these souls (*ames*) and substantial forms cannot entirely perish any more than can atoms or the ultimate parts of the matter in the opinion of other philosophers. For no substance perishes, although it may become entirely different.<sup>21</sup>

In the later years (1696–1716), Leibniz explains the unity of substance through an appeal to the true unities, “real unities”,<sup>22</sup> and “formal atoms”,<sup>23</sup> that is, substantial forms explained analogously to the concept of soul.<sup>24</sup> In the first variant of his

<sup>17</sup> Later this was labeled as the hypothesis of pre-established harmony; see the letter to Basnage de Bouval, 3/13 January 1696, A II, 3, 7897.

<sup>18</sup> *Primae veritates* (1680–1684); Couturat, 521; L 269.

<sup>19</sup> *Discours de metaphysique* (1686) 12; GP IV, 436; L 309.

<sup>20</sup> *Discours de metaphysique* (1686) 33; GP IV, 458; L 324–325.

<sup>21</sup> *Discours de metaphysique* (1686) 34; GP IV, 459; L 325.

<sup>22</sup> See the letters to Foucher, 5/15 July 1695, A II, 3, 7828 and 12 September 1696, A II, 3, 7856–8.

<sup>23</sup> “Augustinum puto Pythagoreae et Platonicae scholae placita secutum. Nam per Pythagoram inprimis de Mentis immaterialitate et immortalitate dogma ex oriente allatum in Graecia inclaruit. Plato autem longius progressus vidit, non alias vere substantias esse quam Animas, corpora autem in perpetuo fluxu versari. Cogitata horum emendavit atque etiam auxit Augustinus ad normam christiana sapientiae, hunc Scholastici, sed longo intervallo, sunt secuti. Mihi summa rei videtur consistere in vera Notione substantiae, quae eadem est cum notione Monadis, sive realis Unitatis et ut ita dicam Atomis Formalis; vel puncti essentialis, nam materialis Atomus dari non potest, unde frustra in materia quaeritur Unitas, et punctum Mathematicum non est essentielle sed modale, unde continuum ex punctis non constat, et tamen quicquid substantiale est ex unitatibus conflatur” (Leibniz to Fardella, 3/13 September 1696, A II, 3, 7964).

<sup>24</sup> *Système nouveau* (1695) 3; GP IV, 479; L 454. See also the letter to Foucher, 12 September 1695: “Mais dans les réalités où il n’entre que des divisions faites actuellement, le tout n’est qu’un resultat ou assemblage, comme un troupeau de moutons; il est vray que le nombre des substances simples qui entrent dans une masse quelque petite qu’elle soit est infini puisqu’outre l’ame qui fait l’unité réelle de l’animal, le corps du mouton (par exemple) est subdivisé actuellement c’est à dire qu’il est encor un assemblage d’animaux ou de plantes invisibles, composés de même outre ce qui fait aussi leur unité réelle, et quoique cela aille à l’infini, il est manifeste, qu’au bout du compte

*New System for explaining the nature and communication of substances, as well as the union between the soul and the body* (1695), the unity of substance is very clearly maintained. Leibniz shows that in order to distinguish a unity from a multiple entity, we need a principle. Without such a principle, a portion of matter would be without unity and could not be called a substance. In corporeal nature, there must be true unities, and for this it is necessary that what makes the corporeal substance be something corresponds to what we call "I" in us, that is, something indivisible and however acting. According to Leibniz, in all organic species there must be something like the soul, which is called "substantial form" by philosophers and "primitive entelechy" by Aristotle and which Leibniz calls "force primitive".<sup>25</sup>

In the *Monadology* Leibniz formulates the most abstract variant of the theory of substantial unity, in which the soul represents an intermediate level of the existence between simple entelechies and spirits:

All simple substances or created monads might be given the name of *entelechies* ... If we wish to designate by soul (*l'ame*) everything which has perceptions and appetites in the general sense which I have just explained, all simple substances or created monads could be called souls (*les ames*). But since sentiment is something more than a simple perception, I agree that the general name of monads or entelechies is enough for simple substances which have only perception and that only those should be called souls (*les ames*) in which perception is more distinct and accompanied by memory... But it is the knowledge on necessary and eternal truths which distinguishes us from the simple animals and gives us *reason* and the sciences, lifting us to the knowledge of ourselves and of God. It is this within us which we call the rational soul (*l'ame*) or *spirit*.<sup>26</sup>

This view of the unity of substance in the soul (*anima, l'ame*), found in Leibniz's mature and later works, can be contrasted with the view of the young Leibniz (1663–1679). While the conception of the unity of substance is close to that of Suarez in Leibniz's *Disputatio metaphysica de principio individui*,<sup>27</sup> in other writings from the 60s the unity is given by the mind (*mens*) in the sense that the mind is the principle of order: if bodies as such are compound, without organization and order, only an active attitude of the mind can offer the unity of things.<sup>28</sup>

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tout revient à ces unités; le reste ou les resultats, n'estant que des phenomenes bien fondés" (A II, 3, 7857).

<sup>25</sup>"Cependant puisqu'il faut necessairement qu'il se trouve dans la nature corporelle des veritables unités, sans lesquelles il n'y auroit point de multitude ny de collection, il faut que ce qui fait la substance corporelle, soit quelque chose qui reponde a ce qui s'appelle *moy*, en nous, qui est indivisible et pourtant agissant, car estant indivisible et sans parties, ce ne sera plus un estre par aggregation, mais estant agissant, ce sera quelque chose de substantiel. ... Il paroist meme que dans toutes les especes organiques, il y doit avoir quelque chose qui reponde a l'ame, et que les philosophes ont appellée forme substantielle, qu'Aristote appelle entelechie premiere, et que j'appelle putestre plus intelligiblement la force primitive pour la distinguer de la secondaire qu'on appelle force mouvante qui est une limitation ou variation accidentelle de la force primitive" (*Systeme nouveau pour expliquer la nature des substances et leur communication entre elles, aussi bien que l'union de l'ame avec le corps* (1695), GP IV, 473).

<sup>26</sup>*Monadologie* (1714) 18, 19, 29; GP VI, 609–611; L 644–645.

<sup>27</sup>*Disputatio metaphysica de principio individui* (1663) § 5, A VI, 1, 12.

<sup>28</sup>*Dissertatio de arte combinatoria* (1666), GP IV, 32; L 73.

In *The confession of nature against atheists* (1669), Leibniz presents reasons obtained from natural science in order to see whether knowledge on the basis of sensation and experiment can offer a satisfactory view of the world without the hypothesis of an incorporeal cause. He maintains that “bodies left to themselves” lack unity, size, shape and motion, being unable to constitute a unity. The principle of unity is God as the supreme mind ruling the world:

But since we have demonstrated that bodies cannot have a determinate figure, quantity, or motion, without assuming an incorporeal being, it readily becomes apparent that this incorporeal being is one for all because of the harmony of things among themselves, especially since bodies are moved not individually by this incorporeal being but by each other. But no reason can be given why this incorporeal being chooses one magnitude, figure and motion rather than other, unless he is intelligent and wise with regard to the beauty of things and powerful with regard to their obedience to his command. Therefore such an incorporeal being will be a mind ruling the whole world (*mens totius Mundi Rectrix*), that is God.<sup>29</sup>

The second part of Leibniz’s treatise contains a demonstration for the immortality of human mind (*mentis humanae immortalitas*) on the basis of an argument derived from other arguments: the human mind (*mens humana*) is a being, one of whose actions is thinking; thought is a thing that is immediately perceptible since the mind (*mens*) is immediate to itself when it perceives itself thinking; if something has for one of its constituents a thing without parts, one of its actions must be other than motion; a being whose action is not motion is not a body; the essence of a body is being in space; whatever is not a body is not in space; whatever is not in space is not movable; whatever is immovable is indissoluble; everything indissoluble is incorruptible; everything incorruptible is immortal; therefore, the human mind (*mens humana*) is immortal.<sup>30</sup>

The demonstration of transubstantiation (1668) of the bread and wine into the body and blood of Christ has in its core a notion of the body which, even if it shows terminological similarities to that of scholastics, is embedded in a new theory. The miracle is conceptualized as a change of the substantial form of the bread and wine into the substantial form of the body and blood of Christ: the forms of bread and wine coming from the concurrent divine mind are replaced by the substantial form of the body of Christ. If a body is considered without a substantial form, it is a simple accident, not a substance; it is an appearance, not a being, and it is an aggregate, not a unity:

Something is a substance when taken together with a concurrent mind (*mente concurrente*); something taken apart is accident. Substance is union with mind (*cum mente*). Thus the substance of the human body is union with the human mind (*cum mente*), and the substance of bodies which lack reason is union with the universal mind (*mente universalis*), or God. The idea is the union of God with creature.<sup>31</sup>

<sup>29</sup> *Confessio naturae contra atheistas* (1669), GP IV, 109; L 112.

<sup>30</sup> *Confessio naturae contra atheistas* (1669), GP IV, 109–110; L 113. Note that in translating *mens* by *l’esprit*, Lucy Prenant loses the point in which I am interested. See *Témoignage de la nature contre les athées*, in *Oeuvres* de GW Leibniz, translated by Lucy Prenant, vol. 1, Aubier Montaigne, Paris, 1972, pp. 69–74.

<sup>31</sup> *De transsubstantione* (1668), A VI, 1, 509; L 116.

It is good to remember that according to Thomas Aquinas, substantial form is united with designated matter, so that every individual is a compound of form and matter. When a man dies, the form leaves the body which ceases to be a designated human body and becomes a simple cadaver, without its former unity, being or identity. Leibniz does not agree with this last point in *On transubstantiation* since the matter of bread and wine does not individuate them as in Aquinas; in his mature metaphysics he maintains that the body retains its unity even when the individual dies, because the substantial form continues to ensure the unity. This problem had a long career and led to Leibniz's appeal to *vinculum substantiale* in the correspondence with des Bosses.<sup>32</sup>

In the beginning of the 1670s, before Leibniz's arrival at Paris, he replaced the model of divine ideas by what is called "the mentalization of body".<sup>33</sup> Elements of this trend can be found in *The new physical hypothesis* (1671), a treatise of two parts: *The theory of abstract motion*, dedicated to the French Academy, and *The theory of concrete motion*, dedicated to the British Royal Society. In the study of abstract motion Leibniz presents a purely geometrical theory of the laws of motion with discussions of central theoretical concepts such as conatus, impact, cohesion, the angles of collision etc. In order to explain the presence of two contrary conatus in a single body, he states that every body is a momentary mind (*mens momentanea*). The mind as a non-extensive substance of simple bodies is the principle of motion without consciousness, sense, and memory. He argues that on this basis we can obtain a new picture of the distinction between mind and body.<sup>34</sup> The mind as the principle of unity is something like an unextended point and as such imperishable, whether in simple bodies, animals or humans, as we can see in the abstract from a letter to Arnauld (with a strong influence of Hobbes)<sup>35</sup>:

I demonstrated that the true locus of our mind [mentis] is a certain point or center, and from this I deduced some remarkable conclusions about the imperishable nature of the mind [mentis], the impossibility of ceasing from thinking, the impossibility of forgetting, and the true internal difference between motion and thought. Thought consists in conatus, as body consists in motion. Every body can be understood as a momentaneous mind (*mentem momentaneam*), or mind without recollection. Every conatus in bodies is indestructible with respect to direction; in mind (*mente*) it is also indestructible with respect to the degree of velocity. As the body consists in a sequence of motions, so mind (*mentem*) consists in a harmony of conatuses. The present motion of a body arises from the composition of preceding conatuses; the present conatus of a mind (*mentis*), that is, will, arises from the composition of preceding harmonies into a new one or through pleasure. If this harmony is disturbed by another conatus impressed upon it, the result is pain.<sup>36</sup>

During his stay in Paris in 1672–1676, Leibniz learns French and begins to use it in his writings and correspondence. Since *anima* is rendered by *l'ame* in French and *mens* by *pensée* or *l'esprit*, this may have influenced Leibniz's thought about the

<sup>32</sup>Look (1999), Blondel (1893), Boehm (1938), Robinet (1969, pp. 83–103).

<sup>33</sup>Garber (1982, pp. 168).

<sup>34</sup>*Theoria motus abstracti* (1671), G IV, 230.

<sup>35</sup>Letter to Hobbes, 13/22 July 1670, GP I, 82–85; L 105–107.

<sup>36</sup>Letter to Arnauld, November 1671; GP I, 72–73; L 149.

unity of substance. In his notes from this period, Leibniz continues to differentiate himself from Descartes,<sup>37</sup> stressing that the essence of body is not extension and the essence of mind is not thinking. The mind is implanted in matter, so that there are minds everywhere, even in the human egg before conception.<sup>38</sup> The mind ensures the unity and identity of substance, remaining unchanged even if the accidents change. Through the hypothesis that the nature of mind is perception of itself, Leibniz offers a view very close to that in his mature thought where the soul is a kind of mirror of the universe and of the body to which it is united. The idea that the mind is the unity of substance is also present in his notes from the Parisian period:

My opinion is that all true being or minds, which alone are unities, increase always in perfection and that every impression which is made on the body has an effect into infinity. Minds will be for a while reduced into themselves; then they will return, perhaps to the sense on external things, perhaps to some far different nature. Sometime there will be an intercourse of all the spheres of the world with each other. Once brought into this theater minds will advance to more and more perfection. It is impossible to believe that the effect of all perceptions will ever disappear, since the effect of all other actions lasts always. This would happen only if the mind were obliterated.<sup>39</sup>

*The confession of the Philosopher* (1672/1673) is the most important of the writings from this period which pertain to the question under discussion. It is a dialogue between two personages: a theologian, probably Arnauld (after Belaval and Jagodinsky), Foucher or Steno (after Saame and Sleigh Jr.), and a philosopher, probably Leibniz's spokesman.

The first relevant passage is that where Leibniz raises the question: what is the explanation that there being a separation of the souls (*divortium animarum*) between those who love God and those who hate him, that is, between those who will be saved and those who will be condemned. The philosopher suggests that one should see the world as a republic governed by a monarch where some people are content with their present state and others are hostile. Leibniz wants to emphasize, more or less explicitly, that the freedom of men is compatible with the divine concurrence, as God is not the author of the sin. Moreover, in his letter to Wedderkopf, Leibniz maintains that God chooses the best variant among infinite possibilities.<sup>40</sup> The hypothesis of the harmony of the world is based on the idea that mind (*mens*) and body are in harmony (*armonikotaton*<sup>41</sup>) in the sense that "what a *conatus* is in a body, an affect (*affectus*) is in a mind (*in mente*)".<sup>42</sup> This mechanical explanation of the states of mind is very close to that of Hobbes.<sup>43</sup>

<sup>37</sup>About *element communes*, see Dyck (2005, pp. 21–40). See also Garber (1982, pp. 160–184).

<sup>38</sup>Paris Notes, L 160. The same idea, but with "soul", not with "mind", is sustained in *Monadology*: "It is clear from this that there is a world of creatures, living beings, animals, entelechies, souls, in the smallest particle of matter" (*Monadology* 66, GP VI, 618; L 650).

<sup>39</sup>Paris Notes, L 162.

<sup>40</sup>Letter to Wedderkopf (May 1671), A II, 1, 117–118; L 146–147.

<sup>41</sup>*Confessio philosophi* (1672/1673), A VI, 3, 146; Sleigh Jr., pp. 100–101 (*armonikoteros*).

<sup>42</sup>*Confessio philosophi* (1672/1673), A VI, 3, 141; Sleigh Jr., pp. 88–89.

<sup>43</sup>For more details on the relationship Leibniz-Hobbes, see Wilson (1999, pp. 223–243).

The second relevant part is the fragment in which the Theologian asks why the order of the world was not established without damnation of anyone and why the circumstances of things brought it about that one soul rather than another rendered itself unhappy.<sup>44</sup> Like in the previous passage, the Theologian raises a question of the soul (*anima*), and the Philosopher answers using the word “mind” (*mens*). We learn that the easy part of the answer is that the first and unique efficient cause of things is the mind (*mens*) and the cause of its action is harmony:

I assert that it was best that way and conforms to the universal harmony, which is shown by its creation, and a posteriori, as they say in the schools, by the very fact that it exists. For what exists is the best, or harmonious. This is established by an invincible demonstration, because the first and unique *efficient* cause of things is mind; the cause of mind, that is, the cause of its action, or the *end* of things, is harmony; and in the case of the most perfect mind (*mens perfectissima*), the cause is the greatest harmony.<sup>45</sup>

It is interesting to note that while the Philosopher states that he prefers the term “mind” (*mens*) to the term “soul” (*anima*),<sup>46</sup> the French editor, Yvon Belaval, translated the two terms into French indiscriminately by “l’ame” (in very few places he renders “mens” by “l’esprit”). In this way, the French translation conceals the possible tension between *anima* and *mens*.<sup>47</sup>

Leibniz’s considerations may be compared with Gassendi’s distinction between *anima* and *animus*.<sup>48</sup> The author of *Syntagma philosophicum* introduced a distinction between *anima* as a sensory soul, completely material and present in all parts of the body, and *animus* as an incorporeal rational soul. The class of animate things contains animals and humans, the former ones being endowed with sensory souls (*anima*) and the latter ones with sensory and rational souls (*animus*).<sup>49</sup> In Gassendi’s thought, based on Epicurus’s philosophy except for the rational soul, only beings endowed with *animus* can have complete being, real unity, and immortality. While Leibniz distinguished between higher and lower minds (or souls), they are all incorporeal and sufficient to form substances. Leibniz allows that when he was young, he admitted the atoms and the void<sup>50</sup> because this theory satisfied the imagination better than Aristotle’s theory. Later, he understood that the simple matter cannot have unity and only recourse to a formal atom can ground an adequate metaphysical theory. Leibniz’s rehabilitation of substantial forms took place at the same

<sup>44</sup> *Confessio philosophi* (1672/1673), A VI, 3, 145; Sleigh Jr., p. 101.

<sup>45</sup> *Confessio philosophi* (1672/1673), A VI, 3, 146; Sleigh Jr., p. 101.

<sup>46</sup> A VI 3, 148; Sleigh Jr., p. 105.

<sup>47</sup> Leibniz (1961, p. 25, 29, 35, 37, 39, 71, 77, 83, 87, 89, 93, 101). Moreover, in a footnote, Belaval maintains that Leibniz draws a distinction (under Descartes’s influence, of course) between souls as principles of life (*animae*) and souls as principles of reflexive thinking (*mentes*). It is true that Leibniz makes this distinction, but it would be good to make it visible in translation, as Sleigh Jr. does.

<sup>48</sup> On Leibniz’s atomism, as a continuator of tradition from the seventeenth century, as articulated by Sennert and Gassendi, see Richard Arthur (2003, pp. 183–227), Blank (2010, 189–210), Beeley (1996, chaps. 4–14), Moll (1978).

<sup>49</sup> Gassendi (1658, vol. II, pp. 193–658), Gassendi (1684, vol. 5, pp. 409–626 and vol. 6).

<sup>50</sup> Leibniz, *New System* 3. Also, in the letter to Burnett from 18 may 1697 (GP III, 205), he declares that even in 1661 he was an atomist.

time when he understood that their nature consists in force and should be treated by analogy with the notion that we have about the mind.

## 2 Identity and Mind

We saw that Leibniz's new concept of substance came to contain, step by step, the fundamental elements of his mature metaphysics: substance is a unity (and consequently a being because Leibniz adopts the ancient principle: *unum et ens convertuntur*), and it is also characterized by certain identity and activity.

In his early metaphysics, Leibniz understood the identity of substance in a way that differed both from the views of Aristotelians and the moderns. Typically, two sides of identity are closely united in Leibniz's thought: he is interested in how a being is identical with itself or with other beings, as well as of the reason why a being is exactly the being it is. The last question is related with traditional discussions of individuation and the former ones with the theories of identity as sameness. These two sides of identity represent the major impulses of his philosophical meditation.

An important thesis about identity is the correction of the scholastic view that there could exist two things that are perfectly the same, that is, having the same properties, except numerical identity. Leibniz admits that at the logical-linguistic level of existence or in the ideal domain of intelligibility there can be entities that are the same. The Paris notes show that Leibniz associates identity with the remarkable capacity of the mind to remain the same even if its ideas, sentiments, and memories are changing. He also mentions the view that sentences are identical when their terms (the subject and the predicate) have the same extension.<sup>51</sup>

About the domain of physical objects, Leibniz came to think, probably before 1678, that there is no such thing as two individuals indiscernible from each other. This is the principle of the identity of indiscernibles. A specific variant of this in his metaphysics maintains that the difference between things is due to the internal, intrinsic, non-relational properties. In my opinion,<sup>52</sup> in speaking about possible Sextuses, Leibniz employs a sort of identity labeled as "relative identity":  $x$  may be the same  $F$  as  $y$  though  $x$  is different  $G$  than  $y$ .<sup>53</sup> For example, Sextus of the actual world who does not go to Thrace is the same as Sextus who goes to Thrace in some aspects. These two persons are not simply identical, but they are "similar", having a relative identity in the sense that they have similar elements in their histories.<sup>54</sup>

The relative identity can be defended also from a predicative point of view: Sextus who goes to Rome and Sextus who goes to Thrace have a relative identity in the sense that they have some common predicates. The strongest argument is that

<sup>51</sup> See the Letter to Conring, March 19, 1678, GP I, 193–199; L 186–191.

<sup>52</sup> See Nita (2013, pp. 149–160).

<sup>53</sup> For relative identity, see Geach (1962).

<sup>54</sup> See Nita (2012).

they have in common some general predicates: they are men, they have the same parents, they had the same childhood etc.<sup>55</sup> Moreover, this kind of identity is maintained in the case of the homological relationship: Sextus who goes to Thrace is a homologue of Sextus who goes to Rome. In this case, Sextus from a possible world is relatively identical with Sextus from our world given that Sextus from real world is the same son of Sextus Tarquinius as Sextus that goes in Thrace and he is a different resident from Sextus who goes to Thrace. A homolog can have the same predicates in different degrees, but he is relatively identical with the real Sextus. In this way, there will be a huge number of predicates, and so a huge number of Sextus.<sup>56</sup>

The second side of the question about identity deals with differentiation, that is with individuation.<sup>57</sup> To answer the question what is the explanation that an individual is exactly that individual, Leibniz advances the complete concept or the law of series in his maturity.<sup>58</sup> In his early works, Leibniz adopted four theoretical positions: the whole entity, substantial form, the perception of space-temporal circumstances, the mind.

In *Disputatio metaphysica de principio individui* (1663), Leibniz maintains that every individual is individuated by its total entity and rejects the theses of individuation through existence, haecceity, or negation. His position is close to that of Suarez.<sup>59</sup> The notion of "total entity" refers to something compounded of matter and form,<sup>60</sup> and even though this may look a particular case of individuation, Leibniz probably wanted to have the principle of individuation as mind-independent and internal in the individuated thing.<sup>61</sup>

In *De transsubstantione*, Leibniz refers to some scholastic philosophers in support of his view that what differentiates an individual from other individuals is the substantial form: "I demonstrate the numerical identity of substance from the numerical identity of substantial form, in conformity with the principles of the noblest Scholastic and Aristotelian philosophers, those for whom substantial form is the principle of individuation."<sup>62</sup> His idea is that the substantial form cannot be used universally for all the bodies:

For the divine mind consists of the ideas of all things. Therefore, since the idea of thing A is one thing, the idea of B another, the result is that one idea of the divine mind concurs with

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<sup>55</sup> See Nita (2012).

<sup>56</sup> Nita (2013, p. 159).

<sup>57</sup> On the individuation in Leibniz, see McCullough (1996, Chaps. 1–40), Cover and O'Leary-Hawthorne (1999), Mugnai (2001, pp. 36–54), Ariew (2009, pp. 95–115), Mare and Ariew, *supra*, Chap. 2.

<sup>58</sup> For a different point of view, see Ariew (2009, pp. 95–115).

<sup>59</sup> "a singular substance does not need as individuating principle anything but its entity, i.e. the intrinsic principles which constitute its entity" (Suarez, *Disputationes metaphysicae*, sectio VI, 1; reprint Hildesheim, 1965, vol. 1, p. 180).

<sup>60</sup> Ariew (2009, p. 101), Garber (2009, p. 58).

<sup>61</sup> Mugnai (2001, p. 37). See also Cover and O'Leary-Hawthorne (1999, pp. 28–29).

<sup>62</sup> *De transsubstantione* (1668 (?)), A VI, 1, 508–512; L 117.



A, another with B. That the composition of ideas does not constitute parts of the divine mind is elsewhere demonstrated with the example of a point. The idea of Plato is therefore the same as the substantial form of Aristotle. From this it is apparent that there is not one substantial form for all bodies but a different one for different bodies, for as the disposition of nature is varied, the form and idea are also varied; the motion and rest of a body derive from this fact.<sup>63</sup>

In *The Confession of a Philosopher* the character called the Philosopher maintains that individuation is made through the perception of time and place:

But what do we mean when we count, that is, when we say *this* (for to *count* is to repeat *this*). What is *this*? What is it to determine something? What is it except the perception of time and place (*sensus temporis et loci*), i.e., of motion either, on the one hand, of a given thing in relation to us or to a thing already determined, or, on the other hand, of our own movement (e.g., the motion of our hand or the finger by which we point), or the motion of some already determined thing, like a stick, in order to point to a given thing?<sup>64</sup>

When this character talks about space and time as specifying a *this*, it is a being, say Socrates, that is known to be in a certain place and at a certain time. From the point of view of contemporary metaphysical theories, this position is closer to that which maintains temporal continuity than that of simple individuation by space and time. The Philosopher also maintains that the souls or, as he prefers to name them, minds, “become *these*, by place and time”<sup>65</sup>; the idea is not only that the soul is in time and space, but also that the series of the space-time things and events has a certain identity. If the world had different elements (for example, that Judas did not betray Jesus Christ), it would be a different world and not the world in which we are living (this is the famous law of series from Leibniz’s mature philosophy). In the fragment about individuation, the Philosopher uses the word “*anima*”; one might wonder whether the character expresses Leibniz’s position. Another explanation can be that this is Leibniz’s view, but it is so different from the positions of the scholastics and moderns (as the Theologian says<sup>66</sup>) that Leibniz feels the need to take some measure of precaution. I incline to believe that this influenced his choice of words.

This view is close to the fourth position of individuation from the end of the 70s. Leibniz then maintains that individuation depends on mind not in the sense that our spirit understands the difference between two things, but in the sense that the mind is the principle of individuation. This mental individuation prepares the way to the individuation through the complete concept in his mature metaphysics and the law of the series from the late years. In a fragment from March 18, 1676, Leibniz argues that “matter changes perpetually, because it exists only in virtue of a relation, as I

<sup>63</sup>*De transsubstantione* (1668 (?)), A VI, 1, 508–512; L 118.

<sup>64</sup>*Confessio philosophi* (1672/1673), A VI, 3, 147; Sleigh Jr., pp. 102–103.

<sup>65</sup>*Confessio philosophi* (1672/1673), A VI, 3, 148; Sleigh Jr., pp. 104–105.

<sup>66</sup>“You speak of astounding things, which, I believe, have not come into the mind of any scholastic even in a dream, but which, nevertheless, no one can disavow, for they are taken from practical experience. For no man reasons otherwise when he must distinguish things that are entirely similar” (*Confessio philosophi* (1672/1673), A VI, 3, 148; Sleigh Jr., pp. 104–105).

have shown in other occasion – i.e. on the ground of the principle of individuation of every thing”.<sup>67</sup> Thus matter cannot be a principle, because matter changes, and so matter has no unity (and being) and has no identity. This is against the position maintained by Aristotle and Thomas Aquinas that matter is the principle of individuation.<sup>68</sup> The relation to which this text refers is what we already have seen in the Paris notes, namely that the matter is always united with a mind.<sup>69</sup> Only on this basis can matter receive its unity (and being) and identity. Leibniz connects also individuation with this which shows that he begins to associate the difference between individuals with other elements than matter and form. As for the reference to “other occasion”, it is clear that it is neither *Disputatio de principio individui* nor *Confessio philosophi*. It could be *Meditatio de principio individui*, but it is dated 1 April 1676. Whatever could settle the things from a detectivist-historical point of view, the confirmation of the relationship with mind is explicitly made in the *Meditation on the principle of the individuation*, where Leibniz maintains that

indeed, unless we admit that it is impossible that there should be two things which are perfectly similar, it will follow that the principle of individuation is outside the thing, in its cause. It will also follow that the effect does not involve the cause in accordance with specific reason, but in accordance with its individual reason, and therefore that one thing does not differ from another in itself. But we admit that two different things always differ in themselves in some respect as well, it follows that there is present in any matter something which retain the effect of what precedes it, namely a mind (*mentem*).<sup>70</sup>

### 3 Conclusions

To sum up, we saw that in discussing the unity and identity of substance, Leibniz employs the term “mind” (*mens*) before 1678–1679 and the term “soul” (*anima, l'ame*) after 1679. This is associated with a break in his thought. The transformation of substantial form from something mind-like in his early metaphysics to something soul-like in the late metaphysics shows a very special evolution of thought. From this point of view, to use indistinctly the terms “mind” (*mens*) and “soul” (*anima*)<sup>71</sup> is to hide a fundamental metaphysical distinction.

There is a possible objection with respect to this point: is not the later use of “soul” (*anima, l'ame*) in continuity with the earlier use of “mind” (*mens*)? Referring to the notion of spirit, one could maintain that the spiritual sphere is incorporeal and immaterial and therefore mind and soul are something of spiritual nature. I think

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<sup>67</sup>A VI, 3, 392.

<sup>68</sup>For a different interpretation, see Mugnai (2001), Ariew (2009).

<sup>69</sup>“it is necessary that a mind is added to matter, i.e. that incorporeal substances are supposed to exist” (A VI, 3, 67).

<sup>70</sup>*Meditatio de principio individui* (1 April 1676), A VI, 3, 490; Parkinson, p. 51.

<sup>71</sup>See Catherine Wilson (1999, p. 236), Yvon Belaval in Leibniz (1961, p. 25, 29, 35, 37, 39, 71, 77, 83, 87, 89, 93, 101).

that matters are more complex. In the *Monadology*, Leibniz maintains that all simple substances or created monads might be called *entelechies*.<sup>72</sup> If we wish to designate by soul (*l'ame*) everything that has perceptions and appetites, all simple substances or created monads could be called souls (*les ames*). But since the sentiment is something more than a simple perception, the general terms “monad” or “entelechy” are appropriate to simple substances which only have perception and only those should be called souls (*les ames*) whose perception is more distinct and accompanied by memory.<sup>73</sup> But it is the knowledge of necessary and eternal truths which distinguishes us from simple animals and gives us reason and the sciences, lifting us to the knowledge of ourselves and of God. It is this within us which Leibniz calls the rational soul (*l'ame*) or spirit.<sup>74</sup> Therefore, only a part of the class of animate things has a spiritual nature, and this fact confutes the thought of an equivalence between soul and spirit.

It is obvious that Leibniz's metaphysical tools, grounded in the new theory of substance as something with unity, identity and activity, allowed him to build a complex metaphysical system for explaining our complex world and provide reasons for morality, jurisprudence and theology.

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<sup>72</sup> *Monadologie* (1714) 18, GP VI, 609–610; L 644.

<sup>73</sup> *Monadologie* (1714) 19, GP VI, 610; L 644.

<sup>74</sup> *Monadologie* (1714) 29, GP VI, 611; L 645.

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# Chapter 4

## Hylomorphism (Even) Without Matter? Transtemporal Sameness and the Rehabilitation of Substantial Form in Leibniz's Theory of Substance

Stefano Di Bella

### 1 Introduction: Background and Antefact for a Rehabilitation

The context and motivations of Leibniz's rehabilitation of 'substantial forms' have been enlightened in the last years by some important studies focused on the relationship between his metaphysical and scientific inquiries. Thus, M. Fichant and D. Garber have illustrated the close connection between that rehabilitation and the fundamental change in Leibniz's physical view at the end of the 70s.<sup>1</sup> Garber did not fail to emphasize the fact that the theme (and the terminology) of substantial form had never been entirely dismissed by Leibniz after its explicit abandonment in physics – due to his early adhesion to mechanism – and during the decade preceding his reform of mechanism itself. The positive occurrences of substantial forms in that period, however, were chiefly confined to the theological field. From this perspective, the (admittedly, revolutionary) novelty of 1678/79 would consist in their reimportation into the field of physics, or 'natural philosophy'.

While taking this reconstruction for granted, I will focus on a certain cluster of features which were connected by Leibniz to the hylomorphic model and which, in my view, are central in both phases and fields of its application. I am thinking to the concepts and issues centered around the phenomenon of change, such as temporal sameness and action.

In a seminal draft from the end of the 70s – the *Definitiones cogitationesque metaphysicae* – we find the unity/duration pair, to express the twofold work done by form: "The substantial form, or Soul, is the principle of unity and duration, the

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<sup>1</sup> See in particular M. Fichant (1998, 163–204), D. Garber (2009).

matter is the principle of multiplicity and change”.<sup>2</sup> The notion of unity evokes the problem of the composition of body, while the theme of ‘duration’ alludes to the other role of form, on which I wish to focus here. The unity expressed by the substantial form turns out to have a double dimension, a temporal and spatial one, and I would dare to say that the reintroduction of substantial forms is originally thought of in connection with the problem of the former rather than of the latter.

The notions related to change and temporal sameness are, indeed, already central to the theological usage of substantial form during the 70s, but the same features are also decisive for Leibniz’s later reinterpretation of his dynamical discoveries through the ancient hylomorphic paradigm.

### 1.1 *Aristotelian Models*

It is worth noting that the matter/form pair had been elaborated by Aristotle himself in the context of two different (though related) issues: the problem of the constitution of material objects, of course, but also (and firstly) a much more general problem concerning the ontology of change. Moreover, these different problems must be considered within (at least) two wider different ontological frameworks.

In the *Physics*, the general notion of change is analyzed and made conceivable as the successive privation and possession of a form within matter, where matter is taken as a permanent substratum.

In the *Categories*, substance is considered as the ultimate subject of predication, and its handling is entirely neutral with respect to its status as a material or an immaterial object. Accordingly, the problems of physical change and of material constitution are conspicuously absent in this framework. This is not the case with change in general, however. Substance is characterized, in fact, among other things, as a ‘power of contraries’, that is to say as a permanent subject of change. In this sense, it seems to play a role somehow analogous to that played by matter in the *Physics*. A major difference, however, is that an essentialist intuition is already at work in the *Categories*, given that some (sortal) properties play a constitutive and identifying role for the subject itself. Accordingly, the only change taken into account is accidental change, namely the change in the accidental properties of a well-constituted permanent subject; the problem of the coming-to-be and ceasing-from-being of substance itself is not considered.

In the *Physics*, instead, also substantial change is taken into account, besides the accidental one, and is accounted for through the notion of prime matter. But most of all, in the central books of *Metaphysics* Aristotle goes beyond the view of substance as a logical subject, to consider the case of material substance and analyze its inner constitution in terms of matter and form.

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<sup>2</sup>“Forma substantialis seu Anima est principium *unitatis et durationis*, materia vero multitudinis et mutationis...” (A VI, 4, 1399).

Rightly from the start, however (see Bk. Z, Ch. 3), he rejects the temptation of considering matter as the best candidate for substancehood – a temptation plausible enough if one should strictly apply the criterion of the ultimate subject. And the essentialist assumption of the *Categories* is transformed, in the new scenario, into the idea of substantial form and its primacy.

Still, the problems of material composition constitute a good part of the intricacies of this Aristotelian work. Moreover, also these problems are partly connected to change. For instance, a typical feature of material objects – but in particular of living beings, the paradigmatic case for Aristotelian material substances – is their attitude of losing their parts, while retaining their identity. Although this is not a central aspect in Aristotle's inquiry, it raised many puzzles and deserved a great deal of attention in the whole later tradition, and turns out to be at the center of Leibniz's reflection.

After evoking this traditional framework, let me now consider Leibniz's handling of substantial forms from the perspective of the problems of change and temporal identity. First of all, I will briefly explore this connection in the period *before* his rehabilitation of forms in natural philosophy.

## 1.2 *The Theological Application: Substantial Form as a Factor of Identity*

Chapter 9 of the *Philosophia prima* in Hobbes's *De corpore* is certainly representative of the way in which the problem of identity should have presented itself to the young Leibniz after his abandonment of the traditional hylomorphic paradigm and his adhesion to the 'modern philosophy'.<sup>3</sup> A first relevant aspect of Hobbes's approach is the central role assumed by the diachronical aspect of the notion of identity. Hobbes deals tentatively with it by using the old language of hylomorphism – that is to say, by testing the respective capacity of matter and form to account for sameness through change. Both matter and form, however, are radically reinterpreted, of course in the terms of mechanical philosophy. Taken in this way, respectively homogeneous extension or mass, and as geometrical configuration, they can hardly provide a satisfying account for identity. Among the difficulties which threaten the possible accounts of identity in this framework, Hobbes illustrates the puzzle of Theseus's ship; and he ends up with a sort of conventionalist understanding of the notion.

Leibniz also proves to be well aware of this kind of mereological puzzle, which he prefers to express, however, by the Heraclitean image of the perpetual flux of a river. Moreover, he is prepared to apply this consideration to the whole scope of material objects. But he cannot resign to this final loss of identity, nor be satisfied with a merely conventionalist solution. Thus, while briefly discussing these

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<sup>3</sup> See *De Corpore*, II, 11, *De eodem et diverso*, in Hobbes, *Opera latina* I, 117–123.

problems within a Scholastic framework in the *Specimen quaestionum ex Jure*, he inclines towards recognizing form as the principle of identity in change; and he attributes this opinion to Aristotle.<sup>4</sup>

At the same time, Leibniz was eager to integrate Hobbes's philosophy of body through an anti-materialist philosophy of mind. From early on, some crucial requirements that could not be met by bodies – such as being capable of action, or maintaining continuity in change, by connecting its own past and future states, – are referred by him to the mind. And precisely in virtue of this, mind deserves a privileged ontological status with respect to matter.<sup>5</sup>

The explicit linkage between this view of mind (which Leibniz will improve in the following years through a good deal of psychological observation, concerning especially the phenomena of memory) and the old notion of substantial form, however, is established only in theological contexts, where the connection between the sameness of the mind and a certain body becomes absolutely relevant. As a matter of fact, this happens in relation with the problem of Eucharist. This is the case in the often quoted writing on transubstantiation of 1668,<sup>6</sup> where Leibniz defines substantiality in terms of being a principle of action (and *hence*, of sameness), and makes explicit its attribution to the mind (as we have seen, this is the leading idea of his whole early philosophy of mind). As far as body is concerned, it can receive substantiality only derivatively, through its union with a mind. I cannot dwell here on the details of this solution. I only observe that a similar peculiar revival of hylomorphism had been proposed by a famous adversary of substantial forms, to deal with the same issue of Eucharist. I am referring, of course, to Descartes' tentative explanation of Eucharist in his letters to Mesland.<sup>7</sup>

## 2 The Rehabilitation: Between the Dynamical and the Logical Approach

### 2.1 *Beyond Extension: Involving a Future Effect*

In any event, the rehabilitation of forms assumes a central and massive role only after Leibniz's change of mind about physics. We know that Leibniz, rightly from the start, deduced from his physical discovery of the true conservation laws some heavy metaphysical consequences. The most spectacular was exactly the rehabilitation of substantial forms in the field of natural philosophy. How should this inference be accounted for? As it has been shown by the scholars already mentioned, the

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<sup>4</sup>See A VI, 1, 90–91.

<sup>5</sup>The passage in the *Theoria motus abstracti* is well known, where Leibniz labels body as 'mens momentanea', in contrast to the true mind, which is able to keep the traces of its past. See A VI, 2, 266.

<sup>6</sup>See A VI, 1, 511.

<sup>7</sup>See Descartes to Mesland, February, 9, 1645, AT IV 165–170.



key point is that the true conservation law concerns an entity which cannot be reduced to those (mass, velocity) that were admitted within the strict mechanist framework.

But this entity is a *force*, or *power* – an ontological category which was central in the Aristotelian framework, while being largely dismissed in the Cartesian one. Hence, it is something which, in the present state of a thing, involves an essential reference to a future effect. The ‘force’ expressed by  $mv^2$  is, in fact, a present ‘property’ of a body which is measured by the work it is able to do.

Thus, in the *Praefatio ad libellum elementorum physicae* – a highly interesting draft studied by Fichant as an exemplary document for the reintroduction of substantial forms – the ‘metaphysical’ distinct attributes of bodies that can be recognized thanks to the new physical discoveries are listed in this way: ‘existence. Duration, action and passion, force of acting, end of action or perception of the agent’.<sup>8</sup> And from the recognition of these attributes the existence of substantial forms, analogous to souls, is immediately inferred.

It hardly needs to be stressed, how the new ontology of physics allows Leibniz to transfer to the body (but always in connection with its related form) those features that in the earlier period were grounded in the mind’s life. I am referring especially to the mind’s ability of conserving the traces of its past states and connecting them with its future ones. The related theme of transtemporal sameness, then, is made explicit especially in the more metaphysically oriented texts from the 80s, which I am going to consider now.

## 2.2 *Complete Concept and Substantial Form in the Discourse: A Non-physical Rehabilitation?*

Consider the way in which substantial forms are introduced in the *Discourse*. It has not often been noted that this move is made in two steps, and only the second, properly, is accompanied and justified by the illustration of dynamical discoveries.

It is well known that the *Discourse* introduces the theme of substance (Section 8) through a logically-minded approach centered on predication and the complete concept. In Section 9, then, Leibniz draws some surprising (‘paradoxical’) corollaries from this idea of complete concept: besides the Identity of Indiscernibles, the thesis of the natural ungenerability and imperishability of substances, and of the universal expression (or ‘mirroring’) of its whole world by each substance.

Section 10 abruptly refers to the Scholastic philosophers, in order to attribute to them ‘some knowledge’ of all of this; this knowledge led them to endorse the idea of substantial form, which Leibniz is now prepared to reintroduce.

After a general pladoyer for the plausibility and the limits of his audacious move (Sections 10–11), Leibniz returns in Section 12 to his ground for rehabilitating the

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<sup>8</sup>A VI, 4, 2009.

'forms'. It consists in the idea we are already familiar with – I mean, the thesis according to which the nature of bodies is not entirely captured by the conceptual apparatus of (Cartesian, or Hobbesian) mechanical science. But here, this view is *not* connected to his new physical discoveries, but directly to the (metaphysical) theory of substance outlined in Sections 8 and 9.

Making the inference a bit more explicit: in order to count as substances, bodies have to meet the requirements that have been established a priori by the general theory of substance outlined in the preceding paragraphs. Those requirements, however, are not made further explicit. Then, Section 12 observes that the notions of mechanical science are not as clear and distinct as they were commonly held to be. This was another idea, well attested in the drafts of those years. Immediately after, Leibniz refers to a different, though related deficiency of Cartesian extension:

And if there is no other principle of identity in body than those we have just mentioned, no body can ever subsist longer than a moment.<sup>9</sup>

Extension fails to be a good candidate for substantiality because it fails to provide a principle of identity, or of sameness through change. This time, the reference to the general requirements for substantiality stated in Sections 8–9 is clearer. We know well, indeed, that the complete concept is what assures its identity to the corresponding individual substance. But before coming to this in more detail, I wish to conclude with some remarks on the general strategy for the reintroduction of forms adopted in the *Discourse*.

Section 12 concludes with the general attribution of substantial form to all physical beings endowed with a more than phenomenal reality, and with the distinction between human and animal souls. Then the handling of this topic is interrupted, to pass to the dense digression of Section 13, which will give occasion to Arnauld's sharp criticism. Sections 14–15 deal with the problems of expression and causation, and Section 16 introduces the topic of miracle and of the laws of nature. Only at this point, Section 17 presents the discovery of the conservation of force, in a somewhat incidental way, as an example of these 'laws of nature', or 'subalternate laws'. Finally, Section 18 deals with the metaphysical consequences of the new conservation law and ends up to observe that "we are obliged, again [*encor*], to restore some beings or forms..." ('nous sommes encor obligés de rétablir quelques estres ou formes...'). The *encor*' is worth remarking, as if Leibniz were to consider this as a further and distinct motivation for the reintroduction of substantial forms. At the same time, the physical recognition of 'force' works as a kind of a posteriori confirmation of the satisfaction of the metaphysical requirements to which a physical body must be submitted in order to figure as a true substance.

I am far from claiming, of course, that Leibniz actually came to the reintroduction of substantial forms simply as a corollary of his complete concept view. We are clearly faced with an expositive strategy, corresponding to the move – typical of the 1686 metaphysics, and especially of the *Discourse* – of reimplanting on the complete

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<sup>9</sup>"Et s'il n'y a point d'autre principe d'identité dans les corps que ce que nous venons de dire, jamais un corps ne subsistera plus d'un moment" (L 39–310).

concept view some themes and results that had been actually worked out by Leibniz himself quite independently. Thus, the physical turn of 1678/79 maintains its priority, from both the historical and heuristical point of view, in the rehabilitation of substantial form. Still, Leibniz's expositive choice is significant, insofar as it suggests that the rehabilitation is considered by him, in principle, as logically independent of the physical discoveries. Or better, it expresses the fallout in the field of corporeal substance, and the empirical verification (by way of those discoveries), of the general framework for substances that had been articulated, in the preceding sections of the *Discourse*, starting from the logical approach.

### 2.3 *Sameness, Change and Completeness*

The suggestion of the hylomorphic model, however, is valid also for the individual substance as such; or better, for the substance considered as an immaterial being, according to the other Leibnizian way to approach substance from the psychological inquiry.

A parallel case – with respect to the relationship between the logico-ontological foundation and some more specific research fields – can be made, indeed, also concerning the philosophy of mind. Some crucial metaphysical features of a substance – its sameness through time, its capacity to act and to retain its own past – which in the earlier years had been already granted chiefly on the basis of the psychological experience of mind (in particular of the phenomena of memory), are now 'deduced' from the general theory of substance.

This move is evident in the well-known passage in the *Remarques* on Arnauld's letter of May, 1686 – a *locus classicus* for the central role of temporal identity in Leibniz's substance view – where he contrasts the *a posteriori* recognition of transtemporal sameness through the psychological attestation of self-consciousness, on one hand, to its more basic *a priori* foundation through the containment principle, on the other, which rules the logical-ontological inner structure of the individual substance.<sup>10</sup>

From this, Leibniz deduces the attribution of some tendencies to the individual substance, and he goes as far as to assimilating its future predicates to some 'laws' of development. Admittedly, he does not refer explicitly to the idea of substantial form in this passage – perhaps, just because that terminology more typically appears only when the case of *corporeal* substance is taken into account.

In the letter he sent to Arnauld, however, the connection is made, although in a rather cryptic manner and without the literal mention of substantial form, again. But the train of thought suggested is the same as in the classic passages where forms are introduced:

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<sup>10</sup>GP II, 43; see also letter to Arnauld, July 1686, GP II, 53.

Otherwise, one might say that it is not the same individual, although it appears to be. And indeed certain philosophers who were not well enough acquainted with the nature of substance and of individual entities or entities *per se* have thought that nothing remained truly the same. And it is because of that, among other things, that I am of the opinion that bodies would not be substances if they were composed only of extension.<sup>11</sup>

This train of thought is further developed in the discussion with Arnauld. But before considering this, it is worth taking some general consideration on the location of this issue within the *Discourse* ontology. A schematic comparison with the twofold Aristotelian ontological framework sketched above will be useful.

As a matter of fact, the logico-ontological approach to substance of Leibniz's *Discourse* can be assimilated to the ontological framework of Aristotle's *Categories*. In both texts, we are faced with an extremely general abstract characterization of substance as the ultimate logical subject, wholly indifferent to the further problems of its possible material constitution. From the later works of Aristotle, Leibniz in the *Discourse* takes the identification of form with the *psyche* – but in a manner fundamentally independent of its physical correlate, body. Only when introducing the theme of substantial form in Section 12, he hints at the corporeal substance and, notice, with a robust caution. Interestingly enough, whereas Aristotle in the *Metaphysics* takes the reality of material (compound) substance for granted, and considers its analysis as preliminary to the inquiry concerning the more problematic possibility of immaterial substance, the ontology of Leibniz's *Discourse* takes the other way around: he takes the exemplification of individual substance by the soul (or by a soul-like substance) for granted, and he seems to consider the existence of corporeal substance only in a hypothetical way.

In any event, even within the limits of the *Categories*-style ontology of Section 8 of the *Discourse*, the property of being the subject of *change* is absolutely central also for Leibniz's individual substance, as it was for Aristotle's. And even within these limits, as I hinted above, the hylomorphic model can work. Admittedly, Leibniz tends to employ the *terminology* of 'substantial form' only when considering the further possibility of a *corporeal* substance. Still, the individual essence, expressed by the 'complete concept', as we have seen, already works as an Aristotelian form, ruling the development of the individual and preserving its identity.

Here, the Leibnizian identification of *psyche* and *ousia* is relevant: in Alexander's individual essence his whole story is contained, so that we could read it off from its soul. This substantial core works as a form-like element, which unifies a multiplicity not of material parts, but of (successive, immaterial) states.

What is typical of the *Discourse* solution is the exclusion of the possibility of interpreting the element which is permanent in change as if it were a 'bare substratum',

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<sup>11</sup>“Autrement [sc. if there is no a priori reason for identity] on pourroit dire que ce n'est pas le même individu, quoiqu'il paraisse de l'estre. Et en effet quelques philosophes qui n'ont pas assez connu la nature de la substance et des estres individuelles ou Estres per se, ont crû que rien ne demeureroit veritablement le même. Et c'est pour cela entre autres que je juge que les corps ne seroient pas des substances, s'il n'y en avoit en eux que de l'etendue” (GP II, 53–54; Mason 60).

analogous to matter. Rather, Leibniz's individual substance seems to realize the model of a self-subsisting form.

## 2.4 *Completeness and the Heraclitean Challenge, Again: The Temporal Side of the Bodily Composition Problem*

The problem of properly *material* constitution, however, does present itself immediately, in the form of the question about the possibility of a true corporeal substance. And also in this context, the temporal dimension is well present – although this temporal side of the composition issue remains a bit concealed.

At the beginning of his discussion with Arnauld on the reintroduction of forms, in the preparatory draft for his letter of November, 1686, Leibniz presents the example of two detached triangles which are put close to compose a square, and points out that this cannot produce a substantial unity – a standard remark about the insufficiency of *spatial* aggregation to produce true unity. On this basis, he argues for the need of admitting a 'form'. But then he continues in this way:

But *also* the general concept of individual substance, which you seem rather inclined to accept, Sir, proves the same thing. Extension is an attribute which cannot make up a complete entity, no action or change can be deduced from it, it expresses only a present state, not at all the future and past as the concept of a substance must do. When two triangles are found linked together, one cannot deduce therefrom how the link was made. For that can have occurred in many ways, but anything capable of having many causes is never a complete entity.<sup>12</sup>

Some remarks are in order here. Firstly, the consideration of the 'general' notion (i.e., logico-ontological, or independent of dynamical or psychological features) of the individual substance is invoked, once again, as an autonomous and decisive ground for admitting the existence of forms. And the inference is here more explicit than in the passage of the *Remarques*. Secondly, the connection is reinforced and illustrated by a metaphysical argument, drawn from the notion of unity. And in this context the temporal dimension appears beside the spatial one and is even more emphasized than the latter. Extended matter is not only unable by itself to assure true unity through the mere composition of parts, but also to account for the story of a body.

We have here an unmistakable reference to a peculiar train of thought, which had been illustrated in a significant text of the Paris notes by the similar example of a

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<sup>12</sup>“Mais *aussi* la notion generale de la substance individuelle ... prouve la même chose. L'étendue est un attribut qui ne sçauroit constituer un estre accompli, on n'en sçauroit tirer aucune action, ny changement, elle exprime seulement un estat present, mais nullement le futur et le passé, comme le doit faire la notion d'une substance. Quand deux triangles se trouvent joints, on n'en sçauroit conclure comment cette jonction s'est faite. Car cela peut estre arrivé de plusieurs façons, mais tout ce qui peut avoir plusieurs causes, n'est jamais un estre accompli” (GP II, 72; Mason 88–89).

square which can be obtained by uniting two triangles as well as two parallelograms, so that the construction which has been actually followed is not discernible:

...if we are certain... that the effect does involve its cause, then it is necessary that the method of production must always be discernible in the squares that have been produced. And so it is impossible that two squares of this kind should be perfectly similar; for they will consist of matter, but that matter will have a mind, and the mind will retain the effect of its former state.<sup>13</sup>

Interestingly enough, this suggestion is skipped in the letter Leibniz finally sent, where the triangles are replaced by the two diamonds: certainly a more colourful example, but one where the diachronical dimension gets largely lost. Still, a trace of it remains in the final text:

Substantial unity requires a complete, indivisible and naturally indestructible entity, *since its concept embraces everything that is to happen to it*, which cannot be found in shape or in motion ... but in a soul or substantial form after the example of what one calls self. These are the only truly complete entities, as the Ancients had recognized, especially Plato, who demonstrated very clearly that matter is not enough by itself to form a substance. (Mason 94; italics mine)<sup>14</sup>

The reference to the Heraclitean ontology of bodies surfaces, and this view of bodies is now attributed to Plato. From this perspective, the well-known (and much discussed) alternative which Leibniz is sketching (bodies as phenomena or bodies endowed with substantial forms) assumes precisely the significance of a choice between a 'Platonic' ontology for material beings and an Aristotelian one.

It is worth observing how these references to the diachronical dimension of form have been systematically downplayed by Leibniz in the prosecution of his discussion with Arnauld. I suspect that this attitude is due not only to the fact that the problem of spatial composition tends to become central, but also and at least in part, to the fact that the temporal aspect of form was related to that theme of the involvement of the future history of substance that raised Arnauld's strongest perplexities.

But the diachronical aspect of the composition problem is documented by some coeval and later texts, showing that this intuition remains well alive in Leibniz's thought. Here I quote some samples:

But what is most important, an army, when considered accurately, is not the same even for one moment. There is nothing real in it, indeed, that does not result from the reality of the parts which are aggregated to make it up. And because their whole nature amounts to number, figure, relationship and the like, if these are changed, then the army is no longer the same. The human soul, however, has its own reality, and thus it cannot cease to be, although the parts of the body are changed.<sup>15</sup>

<sup>13</sup> *Meditatio de Principio Individui*, April 1676, A VI, 3, 490–491 (Parkinson, 51).

<sup>14</sup> "L'unité substantielle demande un estre *accompli et indivisible*, et naturellement indestructible, *puisque sa notion enveloppe tout ce qui luy doit arriver*, ce qu'on ne sçauroit trouver ny dans la figure ny dans le mouvement... Ce sont là les seules estres accomplis veritables comme les anciens avoient reconnu, et sur tout Platon, qui a fort clairement monstré que la seule matiere ne suffit pas pour former une substance" (GP II, 76).

<sup>15</sup> "Sed quod potissimum est, *Exercitus accurate spectatus ne uno quidem momento idem est*, nulum enim reale in ipso est, quod non resultet ex partium unde aggregatur realitate; cumque omnis

And again:

There is a puzzle concerning change. An aggregate, in fact, is not the same as before, if even one part is taken away; and nevertheless, a man is the same, although the parts of the human body are continually changing. Hence, if the person or the individual substance remains exactly the same as before, it follows that physical matter is not a part of man; and even if some matter in general is required by man, a certain one is not required. Exactly as the water is part of the river, although no drop of water is required, in the same way matter is a part of the human body. The human body, indeed, is like a river, and nevertheless is required by man.<sup>16</sup>

The first passage focuses on the challenge to sameness represented by the change in the configuration of parts. The second – which is drawn, notice, from a technical draft devoted to the formal analysis of mereological notions – emphasizes the continual change of parts themselves: here the classic mereological problems raised by the Heraclitean challenge come to the fore. They are especially acute, given the endorsement, clearly expressed, of a form of mereological essentialism: “An aggregate ... is not the same as before, if even one part is taken away”.

In the first text, the unity of the soul is opposed to the perpetual change of the parts of matter – a theme, remember, that had been familiar to Leibniz since the beginning of his intellectual development. Only, now the soul’s privilege is rooted in the logico-ontological structure which involves change within the unity of a nature – as it is said in a valuable passage of the same *Notationes Generales*:

A thing can remain the same, though changed, if from its very nature it follows that the same thing must pass successively through different states.<sup>17</sup>

Leibniz does not fail to appreciate the Aristotelian echo of this thesis, which allows him to give a new sense to the ancient idea of *physis* as ‘the principle of change’.<sup>18</sup> This vindication of nature will be central in works like the *De ipsa natura*, where dynamical and metaphysical considerations concur, and the theme of sameness is also emphasized.

In the second draft, Leibniz – while maintaining the basic role of substantial unity – seems more willing to explore the possibility of making some derivative sense of sameness as referred to the composite itself, or to the human body, over and above the continual change of its parts. Interestingly enough, the passage continues

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ejus natura in numero, figura, habitudine et similibus constat, ea mutata non est idem, sed Anima Humana suam propriam habet realitatem, adeo ut desinere mutatis utcumque partibus corporis non possit” (*Notationes Generales*, A VI, 4, 555–556).

<sup>16</sup>“Difficultas est circa mutationes, nam aggregatum non est idem quam ante, vel unica parte adempta; et tamen idem est homo, licet partes humani corporis continue mutantur. Quod si igitur eadem exacte manet persona seu substantia individualis quae ante, sequitur materiam corpoream non esse partem hominis, et licet in genere aliqua materia requiratur ad hominem nulla tamen certa. Eodem modo ut aqua est pars fluminis, licet nulla certa gutta aquae ad flumen requiratur, ita materia est pars corporis humani. Corpus igitur humanum est quasi flumen, et tamen requiritur ad hominem.” (*Fragmenta Quinque de Contento et Continuo*, A VI, 4, 1,001–1,002).

<sup>17</sup>“Res eadem manere potest, licet mutetur si ex ipsa ejus natura sequitur idem debere successive diversos status habere.” (A VI, 4, 556, transl. mine).

<sup>18</sup>See *De natura sive analogo animae* (A VI, 4, 1,504–1,505).

in this way: “Or maybe cannot a substance be a part of another one? Thus, nothing of the substance of a human being does perish, but it changes, insofar as it is taken as a composite of matter and form, that is to say of the passive and active power. But this change is conjoined with the change of some other bodies, or substances.”<sup>19</sup> These last lines combine the general view concerning the relationship between substance and change with the concrete interpretation of hylomorphism within the conceptual framework of Leibniz’s dynamics. The reading of matter as a passive power is applied here to the explanation of body (required by, but somehow external to the soul-like substance). But the same dynamical interpretation of the matter/form pair in terms of passive/active power will be also internalized in the substance itself, as we will see below.

Of course, a thoroughgoing analysis of these aspects would commit us to the discussion of some complex issues bound to Leibniz’s controversial account of the topic of corporeal substance. But I cannot further explore these issues, and I can only hint at these further applications of the explanatory model for sameness through the continuity of form to the proper field of material constitution. In any event, in the discussions about the metaphysical status of bodies, both in the so-called middle years and in the later monadological stage, the main focus is mainly shifted to the problems of spatial composition, while the diachronical dimension is somehow overshadowed.

### 3 Matter, Form and the General Ontology of Change

#### 3.1 *On the Ungenerability and Imperishability of Form*

I have briefly considered the issue of change with respect to matter in the physical sense of material constitution, with the related mereological problems, and tried to show how it was central – although not so overtly emphasized – to Leibniz’s concern about corporeal substance in the middle years.

But matter is important also within the most general view of change. In order to see this, let me recall, again, an aspect of Aristotelian ontology. As I have said above, the issue of matter for Aristotle – and in particular the notion of prime matter – was bound to the problem of *substantial* change. Now, this conception did not fail to provoke some tension with the essentialist assumption, according to which substantial nature is something which nothing can assume or lose while remaining the same; whereas the continuity of the same subject seems to be a condition for change. Moreover, in the Scholastic tradition a big puzzlement was connected with

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<sup>19</sup>“An revera una substantia alterius substantiae pars esse non potest? Itaque nihil substantiae hominis decedit, sed mutatur quatenus intelligitur compositus ex materia et forma hoc est agendi patiendique potentia, haec autem mutatio cum corporum quorundam seu aliarum substantiarum recessu conjuncta est” (*Fragmenta Quinque*, A VI.4, 1,002).



the problem of the origin of forms and their ‘eduction’ from matter. This topic had been intensively discussed in Leibniz’s age.

Coming now to Leibniz’s *Discourse* armed with these remarks, one can better appreciate the value of the first corollary of Section 9, often a bit overlooked by present-day readers. From the unity of the logical subject (maybe reinforced by its tacit identification with the ‘I’ of self-knowledge), Leibniz deduces the indivisibility of substance, and hence its ungenerability and imperishability: that is to say, the impossibility of being produced unless by creation, and of being destroyed unless by annihilation.

Remember, these sections are devoted to the general notion of the individual substance, without considering its possible composition; thus, ungenerability and imperishability are properly referred to the individual substance as such. And this individual substance is considered in its metaphysical form-like nature; although the metaphysical dimension of matter – in the sense of the ‘substratum’ – is not lost, as we shall see.

In any event, Leibniz feels entitled, by this way, to overcome the thorny metaphysical problems posed by the traditional view of substantial change and its relationship to physical matter. In order to better see this, I wish to consider here a very interesting Leibnizian text, coming from the later years of his confrontation with Locke.

### ***3.2 Substantial Change and the Essentialist Claim. A Leibnizian Afterthought***

In the draft *De Mutationibus*<sup>20</sup> Leibniz introduces the topic of change starting from a semantic-ontological discussion, which I cannot consider here. According to the traditional essentialist view, some terms express properties which are constitutive of the identity of a thing, so that the thing itself cannot survive their loss. Now, Leibniz challenges this essentialist claim. More interestingly, he does this by putting to light the underlying tension I alluded to between two basic tenets of the Aristotelian framework: on one hand, the essentialist claim itself, a central one for Aristotle’s substance ontology both in the *Categories* and in the *Metaphysics*; on the other, his metaphysical theory of change, more precisely the admission of substantial change. Behind this tension,<sup>21</sup> there is the acute sense of the problems that the old hylomorphic paradigm was faced, concerning the coming- to-be and passing away of substances, and of the challenge coming in particular from the new (mechanist) view of nature. Let me quote at length from Leibniz’s draft:

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<sup>20</sup>The *De Mutationibus* has been published in the *Vorausedition* to volume VI 4 of the Academy edition: VE n. 55, 172–175. See on this text S. Di Bella (2000).

<sup>21</sup>In a sense, it is the aporia Aristotle himself raised in *Metaphysics*, Z 3.

It should be observed that one can doubt, whether there is truly no being which while subsisting in itself, ceases to be Appius, or to be a man, or to be an animal. Maybe some people will contend that such a Being, or subject, turns out to be just matter; while Appiety, humanity, animality are forms, which can be taken away while the same subject persists. And in their view Appiety, humanity and so on will be accidents of that subject; I mean, if they believe that the subject which is Appius, or man, does remain, while Appiety or humanity being lost. And this will be, I imagine, the opinion of Democriteans.<sup>22</sup>

The label of ‘Democriteans’ here should not be confined to the ancient atomists, but it should be extended to the supporters of the ontology of the mechanist science, who had completely dismissed the hylomorphic model on behalf of a view where matter plays the role of substance and ‘forms’ are reduced to transient configurations of material parts, from which all types of changes can be in principle explained.

Now, the supporters of the traditional view react to this ontological collapse by restating the traditional distinction between substantial and accidental change. But in Leibniz’s view the justification of the Aristotelian distinction is insidiated by their very admission of substantial change:

At the same time, however, Aristotelians are prepared to admit that there is a subject in which both humanity and animality are produced, that is to say prime matter, in which the substantial form is produced and destroyed. But then the Democriteans will insist: why do Aristotelians not admit that the same being persists, being now a man, now a not-man, or in other words: why what constitutes man within matter is less accidental than what constitutes honesty, knowledge and so on? Surely, according to the Democriteans, the two situations will not differ, if not for the fact that one [form] is a bit more permanent than the other; but ultimately, indeed, they all simply arise from the figures and motions of matter.<sup>23</sup>

Leibniz is persuaded that the objection of the ‘Democriteans’, with its radical anti-essentialist implications, cannot be countered from within the Aristotelian framework. The only way out is represented by his thesis of the ungenerability and imperishability of substantial form, which simply amounts to the denial of substantial change:

Now, they will never be able to solve this knot by appealing to the commonly accepted philosophical principles, nor they will provide any account for the distinction between a substantial and an accidental form. Therefore, one should rely on my thesis, according to which substantial form is something everlasting, which is never separated from its subject. That is to say, who is Appius, or a man, never ceases to be Appius or to be a man...<sup>24</sup>

The corollary of *Discourse 9* is evoked, this time in order to deal with a properly hylomorphic issue. Leibniz’s solution presents itself as the vindication of a hylomorphism without substantial change. But what about ‘matter’ in this context? My impression is that ‘matter’ is meant here basically in its more metaphysical, or

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<sup>22</sup>VE 173 (transl. mine).

<sup>23</sup>*Ibidem*.

<sup>24</sup>VE 174.

abstract sense: a sense close to that of *hypokeimenon*, or *substratum*.<sup>25</sup> Taken in this sense, it designates a dimension that should belong to the individual substance even leaving aside any further consideration concerning matter in its properly physical sense and the related issue of corporeal substance. Consider the last paragraph of our draft:

although we were to concede that ‘Appius’ and ‘man’ are terms *per accidens*, nevertheless I, You will be no Beings *per accidens*, nor can we be produced except by creation, or be destroyed except by annihilation.<sup>26</sup>

And Leibniz continues:

And what constitutes myself and distinguishes me from anyone else, taken abstractly, is a substantial form, which cannot be separated from its subject. Hence, one can wonder, whether there are actually two incomplete Beings: the Subject, and the Substantial Form inhering in it.<sup>27</sup>

We see that the polarity here is not expressed in terms of form/matter, but of form/subject. Still, the tentative characterization as passive principle, which immediately follows, is the same that Leibniz usually adopts for its matter – and in particular for its prime matter:

While I see no way of proving this, nevertheless we could conceive two distinct things: a principle of passivity in the role of subject, and a principle of action in the role of form<sup>28</sup>

Consider that at this time Leibniz should have already worked out, within the emerging monadological framework, the dynamical-metaphysical scheme – exemplarily stated in his letter to de Volder of June, 1703 – where matter is internalized into the monad itself. Prime matter, in fact, figures as an ‘incomplete’ constituent of the monad, on a par with entelechy – in the role, respectively, of passive and active principle. In the final part of the *De Mutationibus*, therefore, we are faced with a purely metaphysical analysis, which can be well connected, however, to the dynamical-metaphysical sense of matter as internal to substance. What is relevant here is the fact that form and matter – in whatever sense be matter interpreted – while being distinct, are really inseparable.

Even in this case, notice, this scheme is open to a double reading: beside an ‘internal’ interpretation of matter, it allows also a more ‘externalist’ one, closer to the physical sense. We know, indeed, that in Leibniz’s view the soul as a whole (or

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<sup>25</sup>The sense in which we find, in another Leibnizian draft of linguistic-ontological analysis, the expression ‘metaphysical matter’ to designate the ultimate subject of inherence. See the *Characteristica verbalis*: “... a materia metaphysica, id est a subjecto abstractis” (A VI, 4, 334).

<sup>26</sup>VE 174. The possibility that those essential terms are taken as if they were accidental terms is bound to the hypothesis of metempsychosis or transmigration, which Leibniz is considering here.

<sup>27</sup>VE 175.

<sup>28</sup>*Ibidem*.

the dominant monad) cannot be completely detached from a residual body. And this is a persuasion he is restating also in the context of the *De Mutationibus*, shaped by the confrontation with Locke's view and the discussion on the 'transmigration' cases.

The improved hylomorphic model (I mean, improved through the thesis of the inseparability of the matter/form pair) turns out to be a very general metaphysical structure, always qualified by its capacity of accounting for the reality of change, while being open to different interpretations and levels of applications, from a purely ontological analysis of the general structure of the individual substance to the more specific problems of corporeal substance.

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## Chapter 5

# Essential Differences. Or, an Exercise in Symptomatic History of Philosophy

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The unaccounted occurrence of an isolated and uncommon expression in a philosophical text or corpus, albeit seemingly unimportant, may be the symptom of some more general and, perhaps, more interesting issue. Our starting point is the following rhetorical question posed on one occasion by Leibniz: “Who would ever reject substantial forms, that is to say, the essential differences of the bodies?” (A II, 1, 604).<sup>1</sup> It is found in a letter that Leibniz wrote in March 1678, addressed to Conring, the famous polymath. In January they had been discussing, among others, the mechanical view of nature that had been endorsed by Robert Boyle in his *Experiments and Notes about the Mechanical Origin or Production of Particular Qualities*.<sup>2</sup> Leibniz supported Boyle’s view and even maintained that it had been demonstrated true:

I take to be demonstrated what [Boyle] stressed continuously, and took such great care to prove, namely that everything in nature happens mechanically, and I believe that no prudent man will doubt that the apparatus of forms and faculties is useless in giving the reasons of things.<sup>3</sup>

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<sup>1</sup>“Formas substantiales quis neget, id est differentias essentiales corporum?” (A II, 1, 604).

<sup>2</sup>Boyle (1675). Conring himself had publicly discussed in his twenties the origin of forms and qualities: *De origine formarum secundum Aristotelem disputatio publice habita VI Julii Lugduni Batavorum 1630* (Conring 1638, pp. 135–150). He introduced the object of his disquisitions at §§ 1–2 as follows: “Formae, vel (quod idem est) rerum essentiae, aut omnes semper actu sunt, aut omnes semper sunt potentia, aut omnes interdum sunt actu interdum potentia. Sed si omnes semper actu forent aut potentia, nulla esse generatio. (...) At quum actu et potentia esse multis modis dicatur, videamus qualis sit potentia illa, in qua formae aut essentiae rerum naturalium sunt antequam actu existunt” (Conring (1638, p. 136); *obiter dictum*, no mention of ‘essential differences’ is found in this text). Leibniz had criticised this dissertation in his letter to Thomasius of 1669 (A II, 1, 27), and in March 1678 Conring complains to him about it (A II, 1, 596), to which Leibniz plays ignorant (A II, 1, 604).

<sup>3</sup>“quod [Boylus] passim inculcat, et tanto apparatu probare nititur, scilicet omnia in natura fieri mechanicè, id a me habetur pro demonstrato, nec quenquam prudentum dubitare arbitror, quin formarum ac facultatum inutilis sit ad rerum rationes reddendas apparatus” (A II, 1, 581).

Since he was discussing with an enraged Aristotelian,<sup>4</sup> he added that, in his opinion, both the prince of philosophers and his followers must have been aware of that. Of course, the soul ought to be excepted from any mechanicalness.<sup>5</sup>

Two months later, when he was returning to Conring, who had protested fiercely his opposition to mechanist doctrines, Leibniz introduces some conciliatory but unwonted expressions that we have already quoted in translation; precisely he writes in Latin: “Formas substantiales quis neget, id est differentias essentielles corporum?” (A II, 1, 604).<sup>6</sup> Our musings will revolve around this peculiar locution, *differentiae essentielles corporum*, in the light of Leibniz’s reflections of the years 1677–78 on incorporeal substances and on essences and reality. We shall in fact be mostly focusing, in accord with the theme of our collection, on a short time range: the years 1677–78, when Leibniz cultivated various thoughts and doctrines that, we can say with hindsight, are comprised between the confused notions of emancipation from Spinozism that he had entertained at the end of the Parisian period, and the theory of simple substances that will be developed in the following years.

It may be remarked *en passant* that the very expression ‘differentia essentialis’, in the same years of Leibniz’s exchange about mechanism and forms with Conring, is becoming quite common in writings on botanics. But Leibniz does not know about this development at the time we are considering, although he will eventually find the phrase in Jungius,<sup>7</sup> whose works, in fact, influence such writers as White (also annotated by Leibniz later) and Gray.

We have indeed, at least, two ways open before us in dealing with our quote. The first one would be to consider it a trifle, a casual sentence, an occasional homage to the lingo of Aristotelism, just like so many others in the letters to Thomasius of Leibniz’s concordist period, marked by his interest in the so-called *philosophia reformata*. But it might be not unprofitable that we try here to clarify, instead, if not the true meaning, the true import of Leibniz’s use of this locution. Although it is an isolated statement, it is not devoid of interest at least because of its very unwontedness that makes of it the signifier of some strangeness, and also of the reasons of this strangeness. In this sense, as we suggested at the beginning, it is a symptom. But of what?

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<sup>4</sup>Indeed when Leibniz writes to Conring in 1677–78 he has a respectful yet strongly autonomous attitude. His letters are quite different, in their tone, from his more youthful exchanges with that great man, jurispudent, polymath—and, *Leibnitio inscio*, French spy—who imposed on him so much at the time.

<sup>5</sup>“Idque Aristoteli quoque et veteribus Peripateticis persuasum fuisse apparet, quoties ad particularia explicanda descendunt. Animam semper excipio, sive substantiam operationes exercentem immanentes, quas per motum et figuram explicare ineptum est” (ib.).

<sup>6</sup>Their discussion, according to Leibniz himself, should not concern the existence or inexistence of the souls of beasts, a factual matter that, he said, must be inquired by means of experiments: “An sit in brutis substantia quaedam incorporea, quam vocant animam sentientem, indagari debet experimentis, est enim res facti” (A II, 1, 607). Also finalism, in his opinion, was not the real issue: mechanism is not a danger and guarantees instead the knowability in principle of natural phenomena, that happen “certis legibus Mathematicis a Deo praescriptis” (A II, 1, 604).

<sup>7</sup>A VI, 4, 1286.

For a start, we can—quite unsurprisingly—separate two distinct puzzles that are posed by this clause: one concerning its first two words, namely ‘essential differences’; the other concerning the specification “corporum”, ‘of the bodies’.

As we already remarked, ‘differentia essentialis’ is an uncommon expression, not only among modern philosophers, but in the scholastic writings as well. When it is found there, it is most often left undefined, as if it were an expression that must be taken at face value and understood as such: it denotes a difference according to the essence, or as far as the essence is concerned, that kind of difference that is predicated essentially and, consequently, has to do with real definitions and science.<sup>8</sup> As the distinguished Thomist writer Egidio Colonna (Giles of Rome) put it, the essential difference constitutes the essence of that of which it is the difference, while it also hails from that essence.<sup>9</sup> A nominalist would just moderately disagree on the last clause: William of Ockham stated that “it is called essential difference not because it hails from the essence of the thing, but since it expresses a part of the essence of the thing and nothing extrinsic to the thing”.<sup>10</sup>

Thomas Aquinas himself had written: “the essential difference hails from the essence of that of which it is the constitutive difference, like rationality hails from the essence of man”.<sup>11</sup> And on the fact that reason is the ‘essential difference’ of humankind there would be, one could say, universal consent; it was often repeated to exemplify the connection between essence and specific difference. As the same Aquinas had phrased it: “every difference that lets things differ in species is an essential difference”.<sup>12</sup>

This conceptual habit propagated even to anti-scholasticist writers; for example, the well known empiricist physician Francisco Sánchez, in his *Quod nihil scitur*, employed the same words inside an anti-essentialist reasoning on the epistemology of medicine: “In [definitions], if an essential difference becomes known to us, adding it to the genus will be sufficient; but when we ignore it, we must resort to using in its place such properties that derive from it as closely as it is possible”.<sup>13</sup>

In order to understand better the nature of essential differences we may turn to a more basic technicality, namely the concept of *distinctio essentialis*. The theory of distinctions is known to be quite complex. The Scotist school, with such theorists as Francis of Mayronnes, Petrus Thomae, Nicholas d’Orbellis, distinguished different

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<sup>8</sup>By reference to Aristotle’s *An. Post.*, II, 8.

<sup>9</sup>Colonna 1581, Pars prima, 608: “essentialis differentia alicuius est constitutiva essentiae illius, cuius est differentia, et est de essentia illius”. See also Aegidius de Lessinia 1901, 64–65.

<sup>10</sup>Ockham, *Summa totius logicae*, I, 23; 1974, 75: “vocatur differentia essentialis, non quia est de essentia rei, sed quia exprimit partem essentiae rei et nihil extrinsecum rei”.

<sup>11</sup>Aquinas, *In II Sent.*, Dist. XL, q. I (“Utrum bonum et malum sint differentiae essentialis actionis”), art. I, 3: “essentialis differentia est de essentia eius cuius est differentia constitutiva: sicut rationale de essentia hominis”.

<sup>12</sup>Aquinas, *In II Sent.*, Dist. XL, q. I, ad I: “omnis differentia faciens secundum speciem differre, est differentia essentialis”.

<sup>13</sup>“In [definitionibus,] si essentialis differentia nobis innotesceret, eam tantum ad genus apponere sufficeret; sed cum illam ignoremus, cogimur proprietatibus quam proxime ad ea fluentibus pro ea uti” (Sánchez 1636, p. 337).

degrees of distinction, of which the strongest is exactly the essential one, since it is drawn between things that not only can be separated, as in a real distinction, but have distinct natures or essences as well; another Scotist, Bartolomeo Mastri de Meldola, gives this concise definition of it: “the essential distinction [is] that which coincides with a real distinction between natures”.<sup>14</sup>

To be sure, the hard problem of distinction arises for Scholastic thinkers with the *distinctio in divinis*. Distinction is weaker than difference and only implies a relative opposition; thus according to Aquinas—as always the first settler of the matter—it is more suitable when the divinity is concerned: “we must eschew the terms ‘diversity’ and ‘difference’ in divine matters, lest we take away the unity of the essence; but we may use the term ‘distinction’, since the opposition it entails is relative”.<sup>15</sup> In fact, any distinction in God not only can but must be a relative distinction: “there ought to be real distinction in God, not, indeed, according to that which is absolute—that is, essence, in which there are the highest unity and simplicity—but according to that which is relative”.<sup>16</sup> An essential distinction, as it seems from here, is ‘absolute’ in some way. Correspondingly Aquinas, as we have seen, deemed it better not to speak of ‘differences’ in relation to the divine nature: this for the reason that any difference implies a distinction according to the form, while distinctions of nature and form are to be avoided in the case of God. To resort to ‘diversity’ would make things worse, since diversity, according to him, implies an essential difference:

although some Doctors of the Church happen to use the term ‘difference’ in divine matters, it should not be used ordinarily nor amplified: because difference entails some distinction according to form, and this is impossible in God since, as Augustine says, God’s form is his nature. Instead we must explain the term ‘difference’ as standing for a distinction that entails the slightest distinction (...) in divine matters we must avoid the term ‘diversity’ more than the term ‘difference’, since diversity concerns rather an essential division: for any multiplicity of forms brings on a difference, but diversity arises only from substantial forms.<sup>17</sup>

The last passage clearly conveys the idea that the ‘essential division’ occurs due to a difference in substantial forms. This corroborates the orthodoxy, so to say, of

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<sup>14</sup>Meldola 1708, Pars prior, 296: “distinctio essentialis [est] illa quae coincidit cum distinctione reali naturarum”.

<sup>15</sup>Aquinas, ST, I, q. 31, 2 c: “vitare debemus in divinis nomen diversitatis et differentiae, ne tollatur unitas essentiae, possumus autem uti nomine distinctionis propter oppositionem relativam”.

<sup>16</sup>Aquinas, ST, I, q. 28, a. 3 co.: “oportet quod in Deo sit realis distinctio, non quidem secundum rem absolutam, quae est essentia, in qua est summa unitas et simplicitas; sed secundum rem relativam”.

<sup>17</sup>Aquinas, *Q. disp. de Pot.*, q. 9, a. 8, ad 2: “Ad secundum dicendum quod, licet a quibusdam doctoribus Ecclesiae inveniatur nomen differentiae circa divina, non tamen est communiter utendum, nec ampliandum, quia differentia importat distinctionem aliquam secundum formam, quae non potest esse in divinis, since cum forma Dei sit divina natura, ut Augustinus dicit. Sed exponenda est differentia, ut ponatur pro distinctione, quae minimum distinctionis importat (...) Magis tamen cavendum est nomen diversitatis in divinis quam differentiae; quia diversitas magis pertinet ad essentialem divisionem, nam qualiscumque formarum multitudo facit differentiam; diversitas autem fit solum per formas substantiales”.



the association of substantial forms and essential differences with which Leibniz shields himself from his imposing correspondent.

Furthermore, the question of essential distinctions and essential differences that has already shown to be connected to specific differences and essentialist classification, on the one hand, and to substantial forms, on the other, turns out to be also strictly associated with the debate concerning individuality, under the disguise of the so-called *species infima*, *species ultima* or *species specialissima*<sup>18</sup>: that is, again, with a problem that has much to do with Leibniz's view of substantial forms at the time.

On this matter, Suárez presents us, and might well have presented by Leibniz, an exposition that is clearer than usual. He explains, quite conventionally, that those things that are not only distinct by a real distinction, but essentially dissimilar as well, are essentially distinct; such essential distinction, he then adds, has various degrees, according to the kind of essences involved, and the utmost difference is entailed by the *species ultima*:

in the real distinction itself (...) we can apprehend the things thus distinct to be not only distinct in reality, but also dissimilar in their intrinsic and essential entity; then they are said to be not only really but also essentially distinct, and in proportion to the greater or less dissimilarity they are said to be distinct in their ultimate species (*specie ultima*), or in a subordinate species, or even in genus or in predicament".<sup>19</sup>

The expression 'species ultima' is not used by Leibniz, but it is well known that 'species infima' appears often in his writings between 1678 and 1686. Leibniz is au courant with this language, and also with the appropriate definitions: "Species infima est cujus non datur species. Individua ejusdem speciei infimae, quae non possunt per essentialia distingui" (C, 498).<sup>20</sup> In 1677, or not much later, he identifies the autonomously existent substances with the 'species infima sive individualis':

There can be posited or can certainly be understood pure air, that is Being, about which nothing can be predicated other than what the nature of air requires; but pure transparency cannot be posited, that is Being in which there may be transparency and nothing else. Hence it seems to follow that substances alone should be called the lowest, or individual species—namely, those whose concept is perfect, or such that in that concept there is contained an answer to everything that can be asked about the thing. However the concept of an animal is not such a thing, for it can still be asked: is it rational or irrational, quadruped or biped, because some animals are rational and others are irrational. (...) Therefore only

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<sup>18</sup>In Aquinas' words, "non ulterius divisa in species, sicut sunt species specialissimae" (*Super Met.*, X, l. 10, n. 12).

<sup>19</sup>F. Suárez, *DM 7*, sectio I, § 22: "In ipsa tamen distinctione reali (...) intelligere possumus res sic distinctas non solum esse reipsa distinctas, sed etiam dissimiles in sua intrinseca et essentiali entitate; et tunc dicuntur non solum realiter sed etiam essentialiter distingui, et quo maior est illa dissimilitudo vel minor, dicuntur distingui vel specie ultima, vel subalterna, vel etiam genere aut praedicamento".

<sup>20</sup>Cf. for example Godard's *Lexicon philosophicum*: "Infima, atoma, seu specialissima est ea quae ita species est, ut nequeat evadere genus; etenim est indivisibilis in alias species. (...) Definitur unum aptum inesse multis solo numero differentibus, ut tota communis eorum essentia (...) Solo numero differunt, ea quae conveniunt inter se essentia" (Godard 1675, p. 173). On Leibniz, individuality and *species infimae* see Piro (2005).

those general terms which are homogeneous are of substances, and such is the concept of pure or absolute Being, i.e. the concept of God.<sup>21</sup>

Clearly he has in mind natural substances, albeit ‘individual’. But the object corresponding to the ultimate species soon comes to be a true individual,<sup>22</sup> and in 1686 Leibniz explains that individuals in the strictest sense, namely complete beings as Alexander or Caesar, constitute each one a different *species infima*; each one has different essence, and there are no two particulars that are similar in all respects and differ only numerically:

it follows that singular things are in fact lowest species and there can never exist two singular things similar in all respects; and consequently the principle of individuation is always some specific difference, which St. Thomas said of intelligences, but which is also true of any individual at all. When I say that men differ in the lowest species, I do not mean by the word ‘species’ (as is commonly understood) some group of things procreating with things similar to themselves (...) nor even a universal, or a term produced from a finite number of terms, but a term whose particular concept is different from that of all others. And surely it cannot be denied that the concepts of Alexander the Great or of Julius Caesar differ and that we can infer many things from the concept of the one or the other of them (...) It is enough that it cannot be said that there exist two singular things similar in all respects, e.g., two eggs, for it is necessary that something can be said of one which cannot be said of the other, otherwise they could be substituted for each other and there would be no reason why they should not instead be said to be one and the same.<sup>23</sup>

Let us leave this mention of Thomas Aquinas unattended for a moment, since this connection between the essential difference and the character of the individual substance is born in truth in the ‘minor’ thirteenth century Scholastic. At the very begin-

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<sup>21</sup> *De perfecta notione substantiarum*, transl. by Strickland (2006, p. 40). “Daturque aut certe intelligi potest aër purus, id est Ens, de quo nihil aliud praedicari queat, quam quod aëris natura postulat; sed non potest dari transparentis purum, id est Ens in quo sit transparentia et nihil ultra. Hinc videtur sequi substantias tantum appellari debere species infimas sive individuales, quarum notio scilicet perfecta sive talis est, ut in ea responsio ad omnia ea quae de re quaeri possunt contineatur. Animalis vero notio non est talis, quaeri enim adhuc potest, sitne rationale an brutum, quadrupes an bipes, quia alia animalia rationalia, alia bruta sunt. (...) Itaque illi tantum termini generales, sunt substantiarum, qui homogenei sunt, et talis est conceptus Entis puri seu absoluti, sive Dei” (A VI, 4, 1350–51).

<sup>22</sup> Cf. the *Notae plerumque metaphysicae*, 1677 or later: “si la plante est une espece ou universel, chaque homme l’est aussi, mais une espece specialissime. Ainsi l’histoire d’un homme faut [vaut?] celle de toutes plantes” (A VI, 4, 1349).

<sup>23</sup> *Notationes generales*, transl. by Rutherford (1998, p. 142), with modifications. “Hinc porro sequitur singularia esse revera species infimas, neque unquam dari posse duo singularia per omnia similia et proinde principium individuationis semper esse differentiam aliquam specificam, quod S. Thomas ajebat de intelligentiis, sed idem verum est de individuis quibuscunque. Notamus autem cum dico homines infima specie differere, speciei nomine a me non intelligi (ut vulgo fit), aliquam tribum rerum sibi similes procreantium, (...) neque etiam universale, seu terminum ex finito terminorum numero conflatum, sed terminum cujus peculiaris est conceptus a conceptu aliorum diversus. Et certe differre conceptum Alexandri M. et Julii Caesaris et nos multa ex conceptu illius aut hujus colligere posse negari non potest. (...) Sufficit quod dixi non posse dari duo singularia per omnia similia, exempli causa duo ova, necesse est enim aliqua de uno dici posse quae de altero dici non possint, alioqui substitui sibi mutuo possent, nec ratio erit cur ita non potius dicantur esse unum et idem” (A VI, 4, 553–54).

ning of Christian Aristotelianism, it is the century of widespread and diverse receptions of Avicenna's idea that what is common to the individuals, i.e. the essence, is divided from the existing being, supplied with everything that is *proprium* to it.<sup>24</sup> According to Avicenna, only the *essentia*—that essence that defines a certain class of beings, and will also be called *quidditas*, or, in Matthew of Aquasparta's punctilious manner, *quidditas simpliciter*—is different from other essences and from the *proprietas*; it can also be considered independently and by itself.<sup>25</sup> This conceptual framework allows, invites, and even compels to reflect on essence and being, on individuation, on analogy or equivocity of being, on God as a being *de essentia*, on the ability of the soul to acquire knowledge of the *communia* and *proprietates* of things in the present state of corruption, and so on.<sup>26</sup>

In 1674, in Paris, where Leibniz is lodging *rue Garancière*, the works of one of those thirteenth century Scholastic thinkers, William of Auvergne, are first published in modern edition.<sup>27</sup> William does not think that the soul is always accompanied by a body—even in death, as Leibniz, in rather Lutheran fashion, will.<sup>28</sup> He believes instead that the body, be it the soul's vehicle, organ, house, etc., is not needed by the soul and might indeed corrupt it with its proximity:

Whatever be the comparisons of the human body to the human soul—namely the comparison of a horse, of a house, of clothes, of a tool—that are accepted by them [i.e. those who maintain that the soul that leaves the body is deprived of all dispositions that had been acquired in life], none of those modes necessitates that the soul, being separated from it, abandons or gives up anything that has been acquired through it. As it happens with wine, that sometimes picks up corruption from the vessel, if the vessel is corrupt, and sometimes picks up flavour, suavity of odor, even medicinal virtue, if the vessel has in itself such disposition.<sup>29</sup>

<sup>24</sup>“Cum autem fuerit appropriata hac, eius essentia non est ipsa proprietas: homo enim cum est unus vel albus, tunc essentia humanitatis non erit ipsa essentia unitatis vel albedinis, nec essentia hominis erit essentia unius vel albi (...) ipsa enim humanitas, ex hoc quod est ipsa humanitas, est quiddam praeter aliquid illorum in cuius diffinitione non accipitur nisi humanitas tantum” (Avicenna, *Phil. prima*, V, 1, A; 1508, 86v; cf. 1977–1983, II, 230).

<sup>25</sup>“Dicemus ergo quod hoc est quiddam sensibile quod est animal vel homo cum materia et accidentibus, et hoc est homo naturalis. Et hoc est quiddam quod est animal vel homo, consideratum in seipso secundum hoc quod est ipsum, non accepto cum eo hoc quod est sibi admixtum, sine condicione communis aut proprii aut unius aut multi nec in effectu nec in respectu etiam potentiae secundum quod est aliquid in potentia (...) Poterit autem animal per se considerari, quamvis sit cum alio a se; essentia enim eius est cum alio a se; ergo essentia eius est ipsi per se; ipsum vero esse cum alio a se est quiddam quod accidit ei vel aliquid quod comitatur naturam suam, sicut haec animalitas et humanitas” (Avicenna, *Phil. prima*, V, 1, C; 1508, 87r; 1977–1983, II, 233).

<sup>26</sup>See the first volume of Marrone (2001).

<sup>27</sup>Guilelmus de Alvernia (1674). Admittedly, it is not exactly the late Scholastic that recent Leibnizologues are so fond of.

<sup>28</sup>I briefly touched this point in Pasini (2015b).

<sup>29</sup>Guilelmus de Alvernia, *De universo*, II, 2, 14; 1674, I, 858a H: “Quicquid enim ponas corpus humanum ad animam, hoc est, sive equum, sive domum, sive vestem, sive organum, quae ipsimet recipiunt, non est necesse ullo modorum, ut separatione ab illo amittat, vel deponat quaecunque per illud idem acquisita sunt. Quemadmodum se habet de vino, quod ex vase interdum corruptionem contrahit, si corruptum ipsum invenerit, interdum vero saporis, aut odoris suavitate, aut etiam medicinalem virtutem, si hanc dispositionem in se vas habuit”. See Moody 1975, 21–58.

Accordingly, death and the departing of the soul from the body will not cause any loss of personal identity; moreover, William considers the Averroist theory of the unity of the intellect to be erroneous, precisely because of the corruption that the soul picks up from the body, among the effects of which is that, during this life, our soul can discern very similar, or apparently identical objects only by perceiving them together in their bodily difference.

Here the Leibnizian scholar is confronted with an accustomed subject. In the second section of the second part, dedicated to spirits, of William's *De universo*, we find in fact a familiar kind of reasoning about individuals and discernibility:

indeed the example of two things that appear to the senses similar in all respects seems to have lead such men in that error [that the soul, by leaving the body, is corrupted and loses its individuality], because of the fact that in such things there can be no distinction from the senses, but for their place and position, or something analogous; for instance, nobody could distinguish by the senses between two sheep<sup>30</sup> utterly similar in colour, dimension and other properties that appear to the senses, or between two utterly similar bees, without considering their place and position (...) they say that the same happens in the intellect, since if our souls became, after separation from the bodies, utterly similar in every spiritual, or intellectual, things, they would necessarily become undistinguishable according to the intellect, and therefore it would not be possible to designate them individually.<sup>31</sup>

Here comes finally a connection to our present theme with transpiring ideas that later will be in some way Leibnizian. Averroists, according to William, do not realize that in the glorious condition of the separate soul it can perceive intellectually the internal difference<sup>32</sup> between not only horses and men, but also between individuals: that is, it will have a grasp of the *essential differences* (*differentiae essentialis illorum*) that tell apart Socrates and Plato—to whom, as it seems, individual essences should be consequently attributed since they are numerically distinct not because of inessential properties, but precisely by essential differences.<sup>33</sup> Individuals, in sum, do not differ only numerically: there is an essential difference.

<sup>30</sup>*Inter duas oves*. They could have been eggs (*ova*), Leibniz's preferred example, at that time too: see for example Oresme, "Et si sint omnino similia in accidentibus, tunc non potest intellectus distinguere inter illa, nisi quando obiciuntur simul sicut duo ova. Et tunc species eorum in visu et in sensu interiore distinguuntur loco" (1995, p. 414).

<sup>31</sup>Guilelmus de Alvernia, *De universo*, II, 2, 14; 1674, I, 857b, C–D: "vero exemplum de duobus per omnia similibus ad sensum hujusmodi homines induxisse videtur in hunc errorem, eo quod in talibus non sit a sensibus distinctio, nisi per locum, aut situm, aut aliud hujusmodi, verbi gratia, inter duas oves simillimas tam colore, quam quantitate, quam aliis, quae sensibus apparent, vel inter duas apes simillimas nemo per sensum distingueret, nisi attenderet vel locum, vel situm; propter hoc enim, quod vides hanc in uno loco, et illam in alio, vel hanc a dextris, et illam a sinistris, vel hanc alicui propinquiorem, illam remotiorem, aut hanc oppositam alicui directe secundum situm, illam vero non, visus inquam non distingueret inter illas, nec apud visum numerum faceret: sic inquirunt, se habet et apud intellectum, quia si animae nostrae omnes post spoliationem a corporibus simillimae remanerent in omnibus spiritualibus, sive intellectualibus, remanerent ex necessitate indistinguishibiles secundum intellectum apud ipsum, et propter hoc singulariter indesignabiles".

<sup>32</sup>"Intellectus igitur videt interiora omnia, hoc est, ipsa substantialia rerum, ipsaque substantias earum" (Guilelmus de Alvernia, *De universo*, II, 2, 15; 1674, I, 858b, G–H).

<sup>33</sup>"Haec autem sunt substantiae, et substantialia illorum, et differentiae essentialis ipsorum, quae faciunt diversitatem secundum numerum" (Guilelmus de Alvernia, *De universo*, II, 2, 15; 1674, I, 859a A).

The language of *proprium* and *commune* appears indeed under Leibniz's pen in 1677 when he writes *De iis quae per se concipiuntur*. He sees being, or existence, and essence or possibility, as unresolvable notions, that are conceived *per se*. All things have in common the same reality, but each one has a different essence.<sup>34</sup>

Aquinas's stance might seem rather dissimilar. Aristotle maintains<sup>35</sup> that it is impossible to have science until we reach what is undivided, that is to say, in Latin, *individuum*. Does it mean that Aristotle negated *ante litteram* the principle that science concerns universals? The answer Aquinas gives to this difficulty is to distinguish the individual as a singularity from the individual as a most special species: "Yet here the individual is not considered as a single being since science does not deal with single beings. But in a way an individual can be said to be the most special species since", mind this, "it is not divided by essential differences".<sup>36</sup>

We know very well, at least because he has given us enough hints that it is so, that Leibniz conflates these two dimensions. He thinks of the individual substance, that corresponds in the created world to a complete concept which is its individual essence *in mente Dei*, precisely as Aquinas conceived of those individuals that really coincide with their own *species infimae*,<sup>37</sup> and not simply *dici uno modo*. As he declares in the *Discourse on metaphysics*, in the original French and Latin wording:

it is not true that two substances can resemble each other completely and differ only in number, and that what Saint Thomas asserts on this point about angels or intelligences (that here every individual is a lowest species) is true of all substances, provided that one takes the specific differences as the geometers do with respect to their figures. (Ariew-Garber, 41–42)<sup>38</sup>

For this famous passage, a reference to a vaguely similar quotation from the *Summa theologica* is usually blindly repeated. But the bracketed Latin clause in DM §9 is quite different, conceptually and linguistically, from that text.<sup>39</sup> Leibniz's

<sup>34</sup>"Sint duae res A, B utique distinctae, assignetur ergo tum quod est in ipsis commune, tum quod est in singulis; seu differentia pura, nihil amplius commune continens. Aio differentiam puram non continere realitatem, quia realitas est aliquid commune quod in differentia pura contineri non debet" (A VI, 4, 26). "Quoniam realitas in omnibus una, essentia diversa, ideo id in quo distinguuntur non debet continere realitatem" (A VI, 4, 26). Remember that in his Spinozian season he had at a moment entertained the idea that all things have the same essence, namely the very same divine essence (A VI, 3, 573).

<sup>35</sup>*Met.*, II, 2, 994 b 21.

<sup>36</sup>"Non autem accipitur hic individuum [pro?] singulare, quia scientia non est de singularibus. Sed individuum potest dici uno modo ipsa ratio speciei specialissimae, quae non dividitur per essentialis differentias" (Aquinas, *Super Met.*, II, I, 4, n. 8).

<sup>37</sup>Leibniz was thinking of angels and separate intelligences, but other Scholastic examples of such *species infimae* are, in a sense, geometric figures, and certain celestial bodies (there is only one Sun in its class).

<sup>38</sup>"il n'est pas vray, que deux substances se ressemblent entierement et soyent differentes *solo numero*, et que ce que S. Thomas assure sur ce point des anges ou intelligences (*quod ibi omne individuum sit species infima*) est vray de toutes les substances, pourveu qu'on prenne la difference specifique, comme la prennent les Geometres à l'égard de leur figures" (DM § 9; A VI, 4, 1541).

<sup>39</sup>"Ea enim quae conveniunt specie et differunt numero, conveniunt in forma, et distinguuntur materialiter. Si ergo Angeli non sunt compositi ex materia et forma, ut dictum est supra, sequitur quod impossibile sit esse duos Angelos unius speciei" (Aquinas, *ST*, I, q. 50, a. 4 co.).

wording seems more similar to the language used, for example, by Molina in his *Commentary* on Thomas; but Molina discusses that question, as it is ordinarily done in later Scholastic, from the opposite point of view, i.e. whether “under each lowest species of the angels, many angels can be contained differing from one another only in number”.<sup>40</sup> Anyway, instead of the greater *Summa*, I would rather suggest as a reference the equivalent passage in the *Summa contra Gentiles*:

Whatever things are the same in species but differ in number, have matter, since a difference arising from the form entails a diversity in species, whereas that which arises from matter entails a diversity in number. But the separate substances have no matter at all, neither as a part of themselves nor by being united to it as forms. Therefore it is impossible that they be several of one species.<sup>41</sup>

This doctrine of Aquinas, that Leibniz seems to like so much, is challenged by the whole Scotist school, but accepted by Suárez, who even tracks its origin to John Damascenus,<sup>42</sup> and formulates it interestingly in this way: “it is simply more likely (...) that between angels there is a specific and essential difference”.<sup>43</sup>

We may conclude that individual substances, as presented by Leibniz in the *Generales inquisitiones* and the *Discourse on Metaphysics* at the denouement of this elaboration period, differ one from the other intrinsically in the sense that they are not only numerically different, but, like Aquinas’s separate intelligences, they are *essentially different* – just like species in this case ‘species infimae’ are: any difference in a species changes it into another species, to which a different essence corresponds. This brings us, by the way, to the well-known theme of ‘essentiae rerum sunt sicut numeri’, that is, ‘the essences of things are like numbers’: a dictum that regularly appears in Leibniz’s writings at various times.<sup>44</sup> And the idea that species or forms or essences are ‘like numbers’ requires conversely that numbers differ as species, i.e. that each number is a ‘species specialissima’, a doctrine that is in fact

<sup>40</sup>“sub eadem specie infima Angelorum contineri possint multi Angeli solo numero inter se distincti” (Molina 1622, p. 540).

<sup>41</sup>“Quaecumque sunt idem specie differentia autem numero, habent materiam: differentia enim quae ex forma procedit, inducit diversitatem speciei; quae autem ex materia, inducit diversitatem secundum numerum. Substantiae autem separatae non habent omnino materiam, neque quae sit pars earum, neque cui uniantur ut formae. Impossibile est igitur quod sint plures unius speciei” (Aquinas, *Cont. Gent.*, II, 93). Just before that passage, Aquinas had also written: “Ostensum est enim supra quod substantiae separatae sunt quaedam quidditates subsistentes. Species autem rei est quam significat definitio, quae est signum quidditatis rei. Unde quidditates subsistentes sunt species subsistentes. Plures ergo substantiae separatae esse non possunt nisi sint plures species” (Aquinas, *ibidem*).

<sup>42</sup>“Damascen. cum lib. 2. *de Fide*, cap. 3. dixisset, solum Deum scire, nobisque compertum non esse, utrum Angeli sint essentia dispare, vel aequales, nihilominus lib. *de Decret. & placit.* (...) cap. 7. Incorporream essentiam appello animum, Angelum, demonem, unumquodque enim istorum species est infima” (Suárez 1620, p. 37).

<sup>43</sup>F. Suárez, *DM* 35, 3, § 43: “est simpliciter probabilior (...) esse inter angelos differentiam specificam et essentialem”.

<sup>44</sup>See Pasini (2015a).

defended by Suárez under the title: “Whether all different numbers differ essentially”.<sup>45</sup>

The principle of the individual constitution is surely at play here; and we might mention that such a principle, in Suárez’s words, is “the very entity of such form, apt by its nature to inform thusly, an aptitude that is not something distinct in reality from the entity of that form, but is its intrinsic and essential difference”.<sup>46</sup> This might even suggest us some connection with the typical Leibnizian opposition between intrinsic and extrinsic denominations. But at the time of the 1678 letters to Conring Leibniz is not working or reflecting any more on the principle of individuation<sup>47</sup>; rather he has in view the metaphysical constitution of individuals: this makes for a priority not of the ‘why’, but of the ‘what’ and the ‘how’ of individuals, as it will become apparent in the writings of the years 1680s.

Moreover, as we have seen in our starting quotation, forms ought to be not only essentially different, but essential differences of the bodies as well. Now forms, in the *Discourse*, are such ‘essential differences’ that make bodies to be individuals. This reminds of Aquinas indeed, but in a way upside down—at least because Aquinas’s doctrine was based on the idea that angels have no matter.<sup>48</sup> Of course Leibniz wants matter for his substances, and we know that the opposition of form and matter will be repositioned on the opposition of active and passive. The soul, as a form, will nonetheless contain its own matter, at the same time being ineluctably endowed with a body; and the various stages of Leibniz’s re-reading of Aristotelian substances are marked by the various ways in which it is and is not the form of its own body, and interweaves its activity and passivity with those of the multiplicity that makes up that body.

Thus, returning to our small temporal window, we may say that Leibniz must have been working hard. He had been elaborating, as we said,<sup>49</sup> a theoretical edifice concerned mostly with the essences—primarily divine, and also creaturely<sup>50</sup>: it

<sup>45</sup>“An omnes numeri differentes essentialiter differant”, F. Suárez, *DM* 41, 4, § 9.

<sup>46</sup>F. Suárez, *DM* 16, 1, § 5: “ipsa entitas talis formae, natura sua apta ad sic informandum, quae aptitudo non est aliquid in re distinctum ab entitate talis formae, sed est intrinseca et essentialis differentia ejus”.

<sup>47</sup>A problem of which he might be said to have been well rid already by his endorsing the Suarezian *tota entitate* in the youthful *Disputatio de principio individui* and anyway is later superseded by Leibniz’s constantly giving ontological priority to individual things in his famous nominalism *per provisionem* (G, 547).

<sup>48</sup>“For those who take matter to be the principle of individuation, it follows that separate forms, for example, angels or separate intelligences, constitute a species each for itself; each is one of its kind by definition” (Funkenstein 1986, p. 136).

<sup>49</sup>And also see Pasini (2010).

<sup>50</sup>He even briefly considered the argumentative device of a space of possibilities that would be more extensive than that of the divine intellect: in 1678, in a *Probatio existentiae Dei ex ejus essentia*, he writes and then strikes this passage: “Nec in hoc [in the proof] supponitur Deum actu esse, sed supponitur tantum in regione idearum sive veritatum reperiri quamdam essentiam, cum qua existentia necessario connectitur, ut tribuimus nomen Dei” (A II, 1, 588). But it might be just some reasoning *pros hemas*.

comprises several versions of the ontological proof, the ‘wonderful theorem’,<sup>51</sup> the *regio idearum* with infinite collections of possible essences, and so on. In this context, a ‘substance’ is somewhat out of place. Substances appear with existence, namely at and by creation. In fact, while essences are uncreated, since they are coeternal with the divine intellect, substances are created, and only those substances are created that correspond to the set of essences, i.e. of possible entities, that God finds to be the best possible. Leibniz states it quite clearly in a letter written to Honoré Fabri at the beginning of 1677:

Since the essences of things do not depend from God’s arbitrary choice but from his essence (as my opinion is), it is apparent that the very idea of good and right also does not depend from his arbitrary choice, although the creation of things good and perfect is arbitrarily chosen by God: indeed things are created, and not essences (*neque enim essentiae sed res creantur*). But God made those things that he saw good to make, and the goodness of those things, or rather of those ideas, does not tell against his freedom any more than his wisdom does by causing that he cannot but act well. (A II, 1, 463)

Thus in our ‘symptomatic’ clause we have, I think, a first hint—maybe the earliest one—of a return from the focus on the essences to the thinking of existences: as we said, of such existences that correspond to the very essences chosen by God for creation and thus constitute the natural world and its spiritual counterparts in the universe. On the one hand, he is conveying the fact that, be it orthodox or not, in reinstating substantial forms he is not looking for a theory of the *synolon*, a theory of substances composed of matter and form in the traditional Aristotelian way; in fact he is considering a general theory of individual forms, represented each by its own essence as a possible being in God’s mind. On the other hand, he is moving from a very general metaphysical reflection on God and the possibles to a theory of the natural world, and this necessitates a movement from essences to substances, in the sense of the realisation of essences.

In the same letter to Fabri, Leibniz already announced his continued support to the existence of incorporeal substances: “Ego vero pro certo habeo, esse substantias incorporeas” (A II, 1, 447). But concerning that matter he seemingly had no theory of his own that could replace those first expounded in the *Hypothesis physica nova* and now rather abandoned. In 1679 Leibniz famously declared to the Duke Johann Friedrich his intention to restore substantial forms: “There is something else of great importance in my philosophy, that will find it acceptance among the Jesuits and other theologians: namely, that I reinstate the substantial forms that the atomists and Cartesians claim to have eradicated”.<sup>52</sup>

<sup>51</sup> “Ens necessarium, si modo possibile est, utique existit”, the famous “fastigium doctrinae modalis”, as he will later qualify it (A VI, 4, 1617).

<sup>52</sup> “Il y a encor une chose fort considerable dans ma philosophie, qui luy donnera quelque acces chez les Jesuites et autres Theologiens. C’est que je retablis les formes substantielles, que les Atomistes et Cartesiens pretendent d’avoir exterminées” (A II, 1, 754). He adds: “Or il est constant que sans ces formes et sans la difference qu’il y a entre elles et entre les accidens reels, il est impossible de maintenir nos mysteres” etc. These are in fact the ‘differences’ he is interested in, a fact which stresses even more the unlikely character of our micro-textual object.



The *Definitiones cogitationesque metaphysicae*, which also is, by the way, one of the first of Leibniz's anti-cartesian writings, will mark an important turning point of this elaboration. There Leibniz first writes that the principle of unity (of existing things) is the substantial form: "The substantial form, or soul, is the principle of unity, whereas matter is the principle of multiplicity and change"; moreover, "every form is in a certain way a soul, that is, it is capable of sensation and appetite".<sup>53</sup> The reflexion on *simpliciora* as *natura priora* in the *Quid sit natura prius* (end 1679), and the *Enumeratio terminorum simpliciorum* (1680–85), where we already find a mixture of logical and metaphysical terms, provide a conceptual bridge between the obvious logical meaning of 'simple' and the metaphysical level. The "simple substances", *substantiae simplices*, make their entrance in the *Tabula notionum praeparanda* of 1685–86, together with their bodies or "organic aggregates".<sup>54</sup>

The third step to completing his future 'system', that is, the active nature of those forms and the mirroring of this activity in the phenomenal world, will be again announced in a letter that is supposed to have been addressed to the Jesuit de La Chaise mid-1680: "Having considered everything, I find that we should retain the philosophy of Aristotle, St. Thomas, and that taught in your society". This philosophy that ought not to be dismissed teaches principally "that there are substantial forms, and" – at this point Leibniz is in fact already *moving away* from that very philosophy he professes to preserve – "that the nature of the body consists, not in extension, but in an action which has a relation to the extension, for I hold that there can be no body devoid of effort".<sup>55</sup>

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<sup>53</sup>"Forma substantialis seu Anima est principium unitatis et durationis, materia vero multitudinis et mutationis. (...) Omnis forma quodammodo Anima est sive sensus atque appetitus capax" (A VI 4, 1399–1400).

<sup>54</sup>"Species organicae: plantae, animalia, homines, angeli (species constant ex substantia simplice et corpore seu aggregato organico)" (A VI, 4, 635).

<sup>55</sup>Loemker 274, modif. "Après avoir bien pensé a tout, j'ay trouvé que la philosophie d'Aristote, de S. Thomas, et celle qui s'enseigne dans vostre société, doit estre retenue. Qu'il y a des formes substantielles, et que la nature du corps consiste non pas dans l'etendue, mais dans une action qui se rapporte a l'etendue, car je tiens qu'un corps ne scauroit estre sans effort" (A II, 1, 798).

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## Chapter 6

# Affects and Activity in Leibniz's *De affectibus*

Markku Roinila

The topic of this paper is the doctrine of substance which emerges from Leibniz's unpublished early memoir *De affectibus* of 1679 (A VI, 4, 1410–1441). It is unclear why Leibniz wrote the memoir in the first place, but lately it has gained increasing attention as an early formulation of his metaphysical dynamism.<sup>1</sup> While the first half of the text deals mostly with the contents of Descartes's *Les passions de l'âme* (1649), the second half discusses philosophy of mind and metaphysics of emotions and I will concentrate on that latter half of the text.

*De affectibus* marks a new stage in Leibniz's views of the mind. The motivation for this change can probably be found in Leibniz's rejection of the Cartesian theory of passion and action in the 1670s. His early Aristotelianism and some features of Cartesianism persisted with influences from Hobbes and Spinoza. His nascent dynamical concept of substance is seemingly a combination of old and fresh influences, representing a characteristically eclectic approach. I will examine Leibniz's development in the 1670s up to the *De affectibus* and consider the nature of affects in the memoir, especially the first affect which starts the thought sequence. This first affect is the key to Leibniz's theory of active substances and in this way it is key to the whole of Leibniz's moral psychology and ethical metaphysics.

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<sup>1</sup>Schepers (2003, 133–135) speculates that by analysing Descartes's and Spinoza's views on passions or affections Leibniz sought to find material for his planned *scientia generalis*. Di Bella argues along the same lines (2006, 194). As I will argue later, I think Leibniz saw affections as important in his moral philosophy, as *Elementa juris naturalis* of 1671 already shows. Therefore I think that his interest in passions was fired up by the need to explain human behavior in general. In the previous year he also read and copied passages from Spinoza's *Ethica*, parts III–V, noting in his letter to Vincent Placcius of 14. February 1678 that Spinoza had said many good things about the affects (A II, 1, 593).

## 1 Background

Leibniz was taught traditional Aristotelianism in his university years, but at an early age he decided to follow the mechanistic philosophy of the moderns such as Descartes, Gassendi and Hobbes. Characteristically he was not quite happy with all the aspects of their philosophy and tried to reconcile between the best parts of their systems (Garber 2009a, 5–9). In addition, not wanting to part ways with Aristotelianism, he wanted to have a teleological conception of substance, that is, he wished to preserve the Aristotelian doctrine of forms despite the ardent opposition of the mechanists.<sup>2</sup>

According to Aristotle, active powers enable whatever has them to transmit new forms to substances possessing the passive power to receive those forms (Schneewind 2006, 559).<sup>3</sup> The conception of metaphysical powers changed in the Early Modern period: they are analysed as secondary qualities like colours, tastes or smells, which result from our interaction with the world, and reduce to only two, action and passion (James 1997, 85).

This is central in Descartes's view. In the Cartesian picture the soul has only one part and possesses one power, the power of thinking.<sup>4</sup> Although willing and understanding occur in the soul alone, sensory perceptions, passions, some memories, and some fantasies depend on the interaction of soul and body. In *Les passions de l'âme* (1649), §17 he says:

There is nothing in us which we must attribute to our soul except our thoughts. These are of two principal kinds, some being actions of the soul and others its passions. Those I call its actions are all our volitions...the various perceptions or modes of knowledge present in us may be called its passions in the general sense, for it is often not our soul which makes them such as they are, and the soul always receives them from the things that are represented by them. (CSM I, 335)

Passions in one sense are all the functions of the soul that are not actions of the soul or volitions (*Passions*, §28; CSM I, 339). Action and passion are essential in Descartes' theory of mind-body interaction which takes place through the pineal gland and the movements of the animal spirits (*Passions*, §30–37; CSM I, 339–342). Emotions typically have bodily manifestations (shame causes blushing etc.) and this is why they cannot be restricted to the soul alone.

Descartes makes a considerable effort at explaining the passions with the movements of the animal spirits (*Passions*, §160; CSM I, 386–387), but there is a serious problem in the mind-body interaction which was famously pointed out by Princess Elisabeth, namely, how can a mental soul affect the material body? (Elisabeth's letter to Descartes 6. May 1643, Shapiro (2007, 62)). This problem affects the theory of action and passion in the sense that passions seem to be complex interpretations

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<sup>2</sup>See, for example, *Discours de metaphysique*, §10.

<sup>3</sup>Active powers are potentialities, which are external principles of change or being at rest (*Metaphysics* 9. 8, 1049b5–10). Thus they are essential in explaining causes.

<sup>4</sup>On the nature of the soul, see *Second Meditation*, CSM II, 19–20.

(of immanent danger, for example) and thus fruits of judgments and inferences in the soul rather than a flow of animal spirits (James 1997, 104–105). Thus ascribing action to the soul and passion to the body seems to be problematic as the active soul apparently has no direct way to affect the passive body.

Like Malebranche, Leibniz could not accept the soul/body-divide of Descartes because of these problems and his criticism towards Cartesianism increased in his formative period of 1672–76 when he was on a diplomatic mission to Paris.<sup>5</sup> However, he retained some features of Cartesianism in his later philosophy, as we will soon see. During the Paris years Leibniz was also reflecting on metaphysics, writing, among others, a collection of short notes and memoirs now known as *De summa rerum* (1675–76, A VI, 3, 461–588). One topic essential to developing his metaphysics was the nature of substance and the question of activity versus passivity. After rejecting most of the Cartesian doctrine he played for a short time with Spinozian monism, but in the end he devised a pluralist metaphysics with an infinite number of substances. As a consequence, Leibniz had to develop a new understanding of activity and passivity. *De affectibus* is one of his earliest attempts to do that.

## 2 The Memoir

*De affectibus*, which remained unpublished, was written in April 1679, a few years after Leibniz had settled at the Hannover court after his stay in Paris. Before that he had carefully read Spinoza's *Opera posthuma* in 1678 and found that he could not accept many of its central doctrines. The memoir, which can be characterized as working notes (Jones 2006, 250), begins with a collection of definitions and reflections on Descartes' theory of the passions. Before writing this piece, he had read *Les passions de l'âme* the previous year and briefly copied some parts of it with marginal notes and some underlinings (A VI, 4, 1703–05). Of interest is the fact that many points Leibniz wrote down from Descartes' work concern the details of the mind-body union, such as the movement of the pineal gland, the movement of the animal spirits, and how certain passions such as love and joy arise from the movement of the spirits.<sup>6</sup>

The series of definitions in several groups seem at first to be random, having no relation to each other and composing no apparent unity, although the first half of the text loosely follows the structure of the *Passions*. Most definitions concern single affects or characteristics of man such as honour, wonder, curiosity, diligence, cupidity etc. (A VI, 4, 1414–1416). They seem to be short summaries or reformulations of the ones in Descartes' *Passions* as some definitions refer to articles of that work.

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<sup>5</sup>On Malebranche's criticism of Descartes's views, see James (1997, 108–123). On Leibniz's intellectual development in the Paris years, see Antognazza (2008, 139–192) and Mercer (2001, 385–461).

<sup>6</sup>Leibniz wrote a marginal note on the relationship between love and joy (A VI, 4, 1704). In 1671 he had discussed the essence of pure love in *Elementa juris naturalis* (A VI, 1, 431–485).

In addition, the text includes a long section of definitions of passions copied from Descartes's work. Thus the first three sections seem to be a collection of Cartesian and original alternative definitions of passions.<sup>7</sup>

In section D<sup>8</sup> the tone of the text changes and we are provided with reflections on affects and how they influence our actions. While passions and affects are usually thought to be two names for the same thing, it is noteworthy that after ceasing to refer to Descartes, Leibniz systematically uses the term 'affect', familiar especially from Spinoza's writings. One gets the impression that Leibniz turns from the Cartesian theory of passions to Spinoza's theory of affects although it is noteworthy that *De affectibus* discusses only affects of the mind, not of the body. Alluding to Aristotelianism, Leibniz explicitly says that what affect is in the mind, *impetus* is in the body (A VI, 4, 1426). Some emotions are also discussed within this new kind of framework. Finally, from section H Leibniz turns to metaphysics proper, discussing potentiality, perfection and determination. The text seems to have more backbone and systematicity.<sup>9</sup> Eventually all the previous themes are incorporated in the doctrine of thought sequences which are initiated with affects. The essential question seems to be: how are the following states of the soul determined, or what brings about change in the substance?

### 3 Cartesian and Leibnizian Passions

One can interpret *De affectibus* as a remake of Descartes's *Les passions de l'âme* (Di Bella 2005, 99), but this would apply mostly to the first half of the text. It seems that he was just collecting what he saw as worthwhile in the *Passions* in order to utilize them in his new understanding of activity and passivity. If this is true, the foremost motivation of the text appears to be metaphysical. While Descartes argues that he is treating the passions only as a natural philosopher (CSM I, 327), that is, to analyse passions and their causes and see how they can be remedied, Leibniz's goal seems to be to place activity and passivity within a framework of plurality of substances. One gets the impression that when he picks up steam, he is not really interested in affects per se, but rather in how they motivate the mind. In fact, it would seem that for Leibniz, whatever brings about a change in the mind, can be called an affect.

It is revealing that also in Leibniz's mature theory of emotions in *Nouveaux essais sur l'entendement humain* II, xx (1704), the most important passions are the same as in *De affectibus*, the ones which have to do with activity and perfection, that is, joy, hope and love (A VI, 6, 162–168). However, it is also true that Leibniz's later conception of passions are essentially tied to metaphysics in the sense that they

<sup>7</sup> See especially his own definitions in A VI, 4, 1426.

<sup>8</sup> The division A–J is made by the Academy editors. See A VI, 4, 1410.

<sup>9</sup> Schepers finds in the last sections of *De affectibus* a logical structure. See Schepers (2003), especially 152–160. See also Di Bella (2006, 194).

either produce pleasure or displeasure of the mind and are in that sense related to universal perfection and imperfection.

In *De affectibus* a central motivation is to explain how the states of the mind follow from one another. According to Vargas (2011, 178), by April 1679 Leibniz had already formed the doctrine of expression, but was still uncertain as to how the mind passes from one thought to another. That is why in *De affectibus* he seeks to explain how affections, understood as actions and passions, are produced in the mind.

Leibniz starts the memoir by distancing passions from corporeality. Both action and passion belong to the mind: passion is some state which is the proximate effect of change while action is some state which is the proximate cause of change.<sup>10</sup> Later in the memoir he says: "An action is the state of a thing according to which something does follow, arising from its nature ... A passion is the state of a thing, according to which something is prevented from following from its nature."<sup>11</sup> The definitions here refer only to change itself in the mind, not their corporeal nature. Sensations of the body such as hunger thus does not qualify as an affect.<sup>12</sup>

In *De affectibus* Leibniz defines affect as an occupation or thought of the soul which arises out of its opinion on good and evil.<sup>13</sup> The source of the affect is a feeling of pleasure or pain which correspond to our opinion on goodness or evil in the situation. In itself, this is an Aristotelian notion – we automatically follow the apparent good – but Goldenbaum (2009, 199) argues persuasively that Leibniz actually took the doctrine from Hobbes's *De corpore* (1655) or *De homine* (1658).<sup>14</sup> In *De affectibus* Leibniz relates the thinking of good to several other emotions such as love, hope and joy and also to greed and probability of favourable outcome (A VI, 4, 1426).

Related to the opinion on good and evil is the will because Leibniz defines opinion as a volition which follows from an understanding or intellection.<sup>15</sup> The occupation of the soul is an inclination towards something and because volition is involved, the inclination is toward something which is preferred by the understanding.<sup>16</sup> One might say that volition cannot arise without thought and thought cannot arise without reason (Giolito 1996, 197). As Leibniz regards the will as an intellectual appetite in the soul, his conception of it is clearly much closer to Thomas

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<sup>10</sup>"Passio est status aliquis qui causa proxima mutationis est" (A VI, 4, 1411). In much later *Monadologie* of 1714 Leibniz argues in §49–52 that mutual action and passion among substances is regulated by the pre-established harmony. In *De affectibus* Leibniz discusses in terms of individual minds which are either spontaneous in the sense that they are active or the opposite case.

<sup>11</sup>A VI, 4, 1428–1429; translated in Di Bella (2006, 113).

<sup>12</sup>Compare *Passions*, §24 (CSM I, 337). Referring to §27–28, Leibniz argues that affects are perceptions which are related to the soul and not to the body (A VI, 4, 1418). See also Giolito (1996, 198).

<sup>13</sup>"Affectus est occupatio animi orta ex sententia animi circa bonum et malum" (A VI, 4, 1412).

<sup>14</sup>For another account on Hobbes's influence to Leibniz's early thought, see McDonald Ross (2007, 20 and 24–27). I will return to the details of Hobbes' influence to Leibniz in the next section.

<sup>15</sup>"Sententia est intellectio ex qua sequitur voluntas" (A VI, 1412).

<sup>16</sup>"Occupatio animi est inclinatio ad aliquid prae alio cogitandum" (A VI, 1412).

Aquinas or even Descartes than to Hobbes for whom the will is the last desire in deliberation.<sup>17</sup>

It is clear that Leibniz does not relate affects to external objects as Descartes does (*Passions*, §53–56; CSM I, 350). They seem to be inherent, occasioned by the sentiment of the soul – that is, the external objects as representational content give occasion to an affect, but are not directly the cause of them in the same way as in Descartes. Leibniz does say that the affection of the mind involves the existence of its objects, but does not really give an argument for establishing the external objects (Vargas 2011, 179). The affect disposes us to incline into a certain direction which is preferred. It carries, as it were, the soul from one reason to another (Girolito 1996, 197–198). In this way it is much more lasting than a mechanical cause.

In order to see how Leibniz ended up in this position, it is useful to look at his earlier writings in the 1670s. Influenced heavily by Hobbes, in *Theoria motus abstracti* of 1671 he stated that every body in collision transfers to the other a *conatus* equal to its own without thereby losing any of its original *conatus*. The multiple *conatuses* last only for a moment before they are resolved into one (A VI, 2, 265–266).<sup>18</sup> If they are unequal, the resultant *conatus* will retain the direction of the greatest one, and have for its magnitude the difference between the original *conatuses* (A VI, 2, 269–70).<sup>19</sup> If the *conatuses* are equal, they rule each other out and another one takes their place. Interesting to our purposes is the fact that Leibniz argued that “every body is a momentary mind, or one lacking recollection, because it does not retain its own *conatus* and the other contrary one together for longer than a moment” (A VI, 2, 266; Leibniz (1976, 141).<sup>20</sup>

The difference between the mind and the body is that the latter lacks thought and memory which makes it unable to perceive its own actions and passions (A VI, 2, 266). To quote Di Bella, Leibniz was trying to complete the Hobbesian philosophy of body through a new philosophy of mind (Di Bella 2005, 62). This is implicit already in his letter to Hobbes of July 1670, where he laments that Hobbes had failed to see the proper significance of the *conatus* for a true theory of the soul (A II, 1, 58).<sup>21</sup>

In *De Summa rerum* of 1675–1676 Leibniz argues that the solidity or unity of the body comes from the mind and there are as many minds as vortices and as many vortices as solid bodies (Garber 1998, 781).<sup>22</sup> At this stage Leibniz still holds on to

<sup>17</sup>Hobbes, *Leviathan*, ch. 6 (1651). At this point Leibniz did not yet have the doctrine of innate instinct of the *New Essays* (I, ii) where we automatically strive for good or pleasure and avoid evil or imperfection.

<sup>18</sup>On Hobbes’ influence to TMA, see Wilson (1997, 341–343) and Garber (2009a, 15–17).

<sup>19</sup>See also Garber (2009a, 17–18).

<sup>20</sup>The doctrine of perceiving bodies is also a debt Leibniz owes to Hobbes. See MacDonald Ross (2007, 27–30).

<sup>21</sup>See also Boros (2007, 82–83) and Wilson (1997, 344). In his letter to Arnauld in 1671 Leibniz said that the philosophy of motion is a step towards the science of the mind (A II, 1, 278). On Leibniz’s early attempts to formulate such a science, see Busche (2004, 142–151).

<sup>22</sup>See also Wilson (1997, 343–344).



the Cartesian doctrine of extension, but it is implicit that minds are incorporeal substances (Di Bella 2005, 67).<sup>23</sup> He thought that the mind is necessarily added to the matter and this seems to be his view also in *De affectibus*.

Another interesting predecessor to *De affectibus* is 1673 dialogue *Confessio philosophi* where Leibniz argues, much the same way as in his later *Nouveaux essais* that happiness consists of pleasure of the mind and that being delighted is nothing other than experiencing harmony and the greatest harmony consists of thinking of the universe or God. Thus pleasure is the first step towards happiness as all happiness is harmonious (Leibniz 2005, 30–31). Put otherwise, pleasure or judging something to be good is an affect which motivates us to strive for harmony. Interestingly, in this text Leibniz does not discuss the will in the human soul as in *De affectibus*. It is said that what a conatus is in a body, an affect is in the mind – thus Leibniz held on to the Hobbesian idea of bodies as momentary minds.<sup>24</sup> However, it must be noted that Leibniz explained to Arnauld two years earlier, in 1671, that the *conatus* of the mind is the will (A II, 1, 173).<sup>25</sup>

The will as a part of the soul returns to the picture in *Elementa verae pietatis* of 1677–78<sup>26</sup> where Leibniz characterized it as a sentiment concerning good and evil. Sentiment, again, is characterized as a practical thought, that is, a thought with a tendency (*conatus*) toward action (Leibniz 2005, 161). Here the idea of an occupation of the soul as a tendency which is related to our opinions of good and evil is already in place. What *De affectibus* introduces is the dynamism and teleology of thought sequences.

## 4 Affects and Thought Sequences

The second half of the *De affectibus* departs clearly from the Cartesian framework. Leibniz discusses a series of thoughts (*series cogitationum*) which is a continuous series of ideas in the mind. The view is related to the infinite analysis where only God is able to see everything in the series as Leibniz noted in the end of *De affectibus* and in another memoir titled *De libertate* around the same time, where he says:

It is easily seen from a consideration of the nature of demonstration and analysis that there can and must be truths which cannot be reduced by any analysis to identities or to the principle of contradiction but which involve an infinite series of reasons which only God can see through. (Leibniz 1971, 185; 1976, 266)

While in his earlier works Leibniz had argued that pleasure and pain are related to experiencing harmony, here he presents the series of thoughts as a law-like process or ordered progress of thoughts in the mind which has its origin in the affect of

<sup>23</sup> See also Leibniz (1992, xlv).

<sup>24</sup> This view is also present in *Theoria motus abstracti*, written in the same year. See Busche (2004, 151–153). Compare also *De affectibus* (A VI, 4, 1426).

<sup>25</sup> See also Leibniz (2005, 161, n. 101).

<sup>26</sup> *Elementa verae pietatis, sive de amore Dei super omnia* (A VI, 4, 1357–1366).

pleasure or pain.<sup>27</sup> Although the series of thoughts might seem like a mechanical one, the difference is in the continuity – while in mechanics the cause determines the next state, in the mind the sequence lasts a long time and leads to series of changes. Because the first affect is intentional (concerning some good or evil which is sought for), the whole series of thoughts is teleological. The sequence continues until the desired good or evil is reached or found to be unreachable (Di Bella 2005, 100–101). The process can be quite intense and Leibniz compares its ending to waking up from a dream (A VI, 4, 1425–1426).<sup>28</sup> Different series can also rival each other and we can abandon one series in order to follow another (A VI, 4, 1424).

The determination of the series does not happen mechanically, but by some kind of power or force. At the time Leibniz was beginning to develop his theory of dynamics; an indication of this is his definition of determination in *De affectibus*: “Determination is a state from which something does follow [*sequitur*], provided that nothing else prevents it” (A VI, 4, 1426; translated in Di Bella (2005, 104)). Thus determination is an inclination, a tendency, *conatus*. It is also an action in the sense that something follows from its nature. Leibniz illustrates this idea in *De affectibus* with an example of a body which falls towards the center of the earth. When the body stops for a moment because of an obstacle and then continues falling on the same path (according to a certain physical law) once the obstacle is taken away, then it is very close to spontaneity (A VI, 4, 1428–1429). In other words, its falling follows from its nature spontaneously. One can see here a very early and limited version of a doctrine of substantial forms which Leibniz gave in his *Système Nouveau* of 1695, where he described their source of action as follows: “Aristotle calls them first entelechies; I call them, perhaps more intelligibly, primitive forces, which contain not only act or the completion of possibility, but also an original activity” (Leibniz 1989, 139).

Di Bella has argued that the developing of a serial, abstract and impersonal dimension reflects a distinct Spinozian influence. The series of thoughts is comparable to series of things or series of determinations in the world and the substance unfolds in a kind of logical way. The first affect determines the whole series and its effect lasts until a contrary, stronger affect is encountered (Di Bella 2005, 100–103).<sup>29</sup> Following Fichant, Di Bella argues that by 1679 Leibniz had already found his basic concept of force and for that reason, he had stopped thinking of bodies as

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<sup>27</sup>“Series est multitudo cum ordinis regula” (A VI, 4, 1426). See also A VI, 1424.

<sup>28</sup>An interesting comparison can be made to *Nouveaux essais* II, xxi, §47 where Leibniz argues that we cannot affect our moral action directly, but we should reject our bad habits and adopt new ones in order to reach virtue. The habit is in a sense a series of thoughts which can be maintained by strong willing and developing the understanding (A VI, 6, 195–197). See also Roinila (2006) and Jones (2006, 252–261).

<sup>29</sup>I think Di Bella is right in the sense that in *Tractatus de Intellectus Emendatione* (1662?), sec. 85 Spinoza argues that an objective effect proceeds in the soul according to the formal nature of its object. Thus the soul acts according to certain laws, like a spiritual automaton. See Spinoza (1985, 37). It is also true that Leibniz continued to use this description of the soul in many of his later writings, for example in *Monadologie*, §18. However, he does not use the concept in *De affectibus* and, as I argue, I think the primary influence can also be Hobbes. See also *Monadologie*, §37 and *Principes de la nature et de la grace, fondés en raison*, §8.

momentary minds and shifted to a dynamical view which makes it possible to form continuous series of thoughts (Di Bella 2005, 103).<sup>30</sup>

While this seems to be a possible reading of *De affectibus*, it seems to me that there might be an alternative interpretation. The foremost other influence I can think of is Hobbes.<sup>31</sup> In *De corpore* (1655) and *De homine* (1658) Hobbes had developed a theory of affects where good is strived after, and evil is avoided. These are identified with pleasure and pain and *conatus* is identified with the beginning of motion (EW I, 406–410).<sup>32</sup> These definitions provide Leibniz with the basic tools for creating his theory of series of thoughts. In addition, one can find a predecessor to the idea of series of thoughts in Hobbes's "trayne of thoughts" in *Leviathan*, I, 3 (1651) where he says: "By consequence, or trayne of thoughts, I understand that succession of one thought to another, which is called (to distinguish it from discourse in words) Mentall Discourse" (EW III, 11).

Hobbes regards the train of thoughts a mental discourse of which there are of two kinds. The first is unguided and inconstant wherein there is no passionate thought (for example, dreams). The second kind is more constant and it is regulated by some desire and design (EW III, 12–13). The latter kind of process is remarkably similar to Leibniz's series of thoughts in *De affectibus*, although Leibniz added will to the picture. The thought is suggested by the understanding and preferred by the will. This opinion is an inclination, a desire, a disposition.

According to *De Gaudemar*, in 1676 Leibniz strived to replace the Hobbesian *conatus* with a doctrine of entelechy or primitive power. Thought is seen as action and essences of things consist in a law of acting, analogous to a mathematical series. The primitive power of the mind manifests in its ability to pass through different thoughts without getting stuck in one thought. This ability was enabled by feelings of pleasure or pain to which the will attaches as Leibniz already argued in his 1673 dialogue *Confessio philosophi* (*De Gaudemar* 2009, 179).<sup>33</sup>

While it would seem that Leibniz has transferred the Hobbesian *conatus* from the body to the mind, in *De affectibus* Leibniz also says that the first affect serves the same role in the soul as *impetus* in the body.<sup>34</sup> This leads us to Aristotelianism – in the doctrine of *impetus* or an impulsion of a body to motion the body is only maintained in motion by the action of a continuous external force (Pasnau 2011, 381–382).

Although I think the influence of Hobbes is prominent in *De affectibus*, Leibniz introduces an element in the memoir which is distinctly Cartesian or Spinozian. He argues that the series we are thinking can arise either from distinct ideas (of causes, for example) or from confused ideas when there are many inclinations present at the

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<sup>30</sup>For Fichant's argument, see Leibniz 1994. For a critical view on Fichant's argument, see Garber (2009b).

<sup>31</sup>In this, I am inspired by Goldenbaum's article on Leibniz's early fascination with Hobbes's views (2009, 193–196).

<sup>32</sup>Hobbes discusses series of appetites and aversions which form passions such as hope or fear. On Hobbes' views on affects, see also *De homine* XI, 5 and XIII, 1.

<sup>33</sup>See also Goldenbaum (2009, 199).

<sup>34</sup>"Affectus est in animo, quod impetus in corpore" (A VI, 4, 1426). See also Schepers (2003, 135).

same time.<sup>35</sup> This emphasis on confusedness or distinctness of the starting point of a series distances Leibniz from Hobbes and makes one think of Spinoza who, in E3p1d, related affects to the adequacy and inadequacy of ideas (Spinoza 1985, 493–494). Especially this passage in *De affectibus* would be related to the distinctness or confusedness of the first affects:

We are caused [*determinati sumus*] to pursue some series of thoughts, either because we are already in it, nor is there a reason for changing; or because we come to a crossroads where many series of thoughts meet, one of them being the strongest of all. (A VI, 4, 1434; translated in Di Bella 2005, 102)<sup>36</sup>

The citation exemplifies the mechanical character of the memoir: the mind proceeds like an automaton, one thought following from another, sometimes branching to several related paths or coming to a crossroads where the same thought can lead in several directions (Di Bella 2005, 102–103).<sup>37</sup>

However, one can – and I think, should – read *De affectibus* on a more personal level. In this reading we have to compare the series of thoughts to each other. The idea seems to be that the more distinct the series, the more it involves reality or perfection and the more certainly we continue in the series without being transferred into another series (A VI, 4, 1425, 1428 & 1433). For example, if we follow a series of confused thoughts and come across an intersection where a common thought branches into a more distinct series of thoughts, we ought to abandon our present series and follow the more distinct series. The series of thoughts which is initiated by a distinct perception is a clear and recognizable path which is superior to all the concurrent, hardly visible tracks in its vicinity. Leibniz does in fact say that in our initial choice we prefer the series of thoughts which appears to us to be more perfect than other series. In cases where there are intersections, some path is preferred by the will, but the choice is founded on the understanding.

The role of the will is more vague in *De affectibus* than in Leibniz's later writings, although it is clearly a necessary and independent part of the soul.<sup>38</sup> We saw that he defined opinion as a volition which follows the understanding, but he does not really present volitions as actions which create new thoughts. Rather, the cause of a thought is another previous thought in the series (Vargas 2011, 178–179). Willing is to be understood here as preferring, inclining to one rather than another initial endeavour. This relates Leibniz to the intellectualism of Aquinas where the will usually follows the recommendations of the intellect (James 1997, 60–62) and distinguishes him from both Descartes, who emphasized the independence of the will (Losonsky 2001, 12–41), and Hobbes, who thought volition is the last endeavour.

<sup>35</sup>“Series cogitandi oritur vel ex ideis distinctis...vel oritur ex ideis confusis” (A VI, 4, 1424–1425). This passage clearly anticipates NE II, xxi, §39.

<sup>36</sup>Although Leibniz does not discuss the topic more extensively, one can easily relate this idea to the classic problem of *akrasia* or weakness of the will. We are taken by a more vivid thought which leads us to another train of thoughts. The goal, of course, is to turn human attention to the most perfect series. See Leibniz's later discussion of *akrasia* in NE, II, xxi, §35 (A VI, 6, 185–188).

<sup>37</sup>Of branching, see Blank Chap. 7 in this volume.

<sup>38</sup>See, for example, *Nouveaux essais*, II, xxi, §21–30 (A VI, 6, 181–183).

our in deliberation, be it desire or aversion. According to this view, there is no independent criteria of preferring the one to another (EW III, 48–49).

There is no reason to doubt that Leibniz continued to think in the same way as in *Confessio philosophi* and *Elementa verae pietatis* that the first affect is a sentiment of good or evil, that is, pleasure or pain. Leibniz understands pleasure or pain as an inclination or a tendency of the mind to pass to another state or thought, or to a train or series of thoughts.<sup>39</sup> As we saw, Leibniz held to the Aristotelian view that we always strive toward the apparent good. He also agreed with Descartes in his later writings that strong willing helps us to act virtuously.<sup>40</sup>

Considering the will as an essential part of the soul distances Leibniz not only from Hobbes, but also from Spinoza. Unlike Descartes, Spinoza thinks that there is no faculty of the will in the mind. He argued that the will is closely related to desire which is conscious striving of the mind and the body and represents *conatus* (E3p9s).<sup>41</sup> In itself, will is a thought, identical to an idea and related to the causal chain of substances and subject to its laws. In *De affectibus*, the will follows the understanding (A VI, 4, 1412), but is still separated from it. This preferring is nothing like the Spinozian general desire although sometimes Leibniz also discusses the will as a general endeavour which is related to activity and perfection. Compare *Nouveaux essais*:

Volition is the effort or endeavour [*conatus*] to move towards what one finds good and away from what one finds bad, the endeavour arising immediately out of one's awareness of those things. This definition has as a corollary in the famous axiom that from will and power together, action follows; since any endeavour results in action unless it is prevented. (NE II, xxi, §5; A VI, 6, 72; Leibniz 1996, 72)<sup>42</sup>

In addition, Leibniz himself commented on Spinoza's views to Oldenbourg in 1675–76, arguing that the will is something essential in the soul, not only a verbal or nominalist way of thinking (De Gaudemar 2009, 185). While in *De affectibus* the thoughts seem to follow from each other in a sense automatically, the first affect or disposition seems to be essential as it inclines one to perfection or imperfection. For this reason, I think the will is an essential component in the thought series and this distinguishes Leibniz clearly from Spinoza.

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<sup>39</sup>Giolito compares the Leibnizian affect to Cartesian internal emotions of the soul which he discusses in *Passions*, §147 (CSM I, 381). These are produced in the soul itself and are therefore not dependent on the movement of the animal spirits, although they may be aroused by external events such as a tragic play. However, the Cartesian intellectual passions are defined as particular passions, while Leibniz's affect is general by nature. See Giolito (1996, 201–202).

<sup>40</sup>See, for example, NE II, xxi, §47. See also Aristotle, *Nicomachean Ethics* VII.

<sup>41</sup>See also Nadler (2006, 200).

<sup>42</sup>Leibniz argues in much the same way in an appendix to *Essais de theodicée*, titled *Remarques sur le livre de l'origine du mal, publié depuis peu en Angleterre*: “No agent is capable of acting without being predisposed to what the action demands; and the reasons or inclinations derived from good or evil are the dispositions that enable the soul to decide between various courses...the truth is that the soul, or the thinking substance, understands the reasons and feels the inclinations, and decides according to the predominance of the representations modifying its active force, in order to shape the action.” (Leibniz (1978, 416); Leibniz (2005, 421)).

Another clear difference is Spinoza's mind-body-parallelism which Leibniz was keen to criticize. In Spinoza's philosophy the mind and the body are attributes of the same substance, God or nature. Both are driven by continuous causal chains which do not directly affect each other and both are produced by God. While Leibniz thought that minds are the forms of bodies, Spinoza argued that the mind is an idea of a body (E3p12; Spinoza 1985, 502). This Leibniz criticized already in *De summa rerum* of 1676 and in his marginal notes to Spinoza's *Opera Posthuma* of 1678 (A VI, 4, 1713, n. 21; 1714, n. 22; 1715, n. 28 and 1723, n. 45). As we remember, *De affectibus* discusses exclusively the mind while Spinoza's theory of affects in *Ethica* concerns both the mind and the body simultaneously. For these reasons I am inclined to think that Hobbes's theory of affects and the doctrine of trains of thoughts as a mental discourse was a more important influence for Leibniz than Spinoza, although Leibniz's views on deliberation and will are certainly closer to Descartes than to Hobbes.

## 5 Perfection, Action and Passion

We have seen that the first affect starts thought sequences or trains of thought which can rival each other in the sense that the mind may abandon one series and adopt another. While this picture seems to me to be Hobbesian, Leibniz introduces still a further element which is Spinozian, namely perfection. In itself, the idea of perfection is not novel in Leibniz's writings. It can be found already in *Elementa juris naturalis* of 1671, where perceiving pleasure in another person is said to be a sensation of perfection. In *Confessio philosophi* of 1673 Leibniz was discussing harmony which produces pleasure in the mind. In *De affectibus* Leibniz says that the soul is determined towards the series of thoughts which in itself is most perfect.<sup>43</sup> He also argues that perfection is a degree of reality (A VI, 4, 1429).

In *De affectibus* Leibniz does not emphasize the metaphysical pluralist framework which is so typical of his writings. But he certainly had it in place long before 1679.<sup>44</sup> For example, in a dialogue with Steno concerning freedom of 7 December 1677, he wrote: "If all possible series were equally perfect, then it would follow that even one in which all the impious are saved and all the pious are damned would be equally perfect." Therefore it seems to be clear that some series of thoughts are better than others and he counters the argument by saying that it is contrary to perfection in the sense that it is possible in itself, but carrying it out becomes impossible because it is contrary to God's perfection (Leibniz 2005, 115).<sup>45</sup>

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<sup>43</sup>"Determinatur animus ad eam seriem cogitationum quae in se spectata perfectior est" (A VI, 4, 1430).

<sup>44</sup>On the development of Leibniz's views of harmony, see Mercer (2001, 208–220).

<sup>45</sup>Leibniz also argues that the series of things is not necessary by an absolute necessity as there are many other series that are possible, i.e. intelligible, even if they are not actually performed. See Leibniz (2005, 119).

The concept of perfection in *De affectibus* is also used as a standard of comparison, but from the first-person perspective of the self – one is supposed to enter into a series which appears to be more perfect than other available series. Leibniz does not discuss God's will in the memoir until the very end where an idea of series of a series pops up in connection with spontaneity, which, as we saw, is seen as a natural unfolding of the series (A VI, 4, 1430). An early version of a concept containment theory can also be found in the very end of *De affectibus* (A VI, 4, 1441).<sup>46</sup>

The natural unfolding of the series is closely related to action and passion. As we have seen, Leibniz is more interested in actions than passions in the Cartesian sense.<sup>47</sup> In A VI, 4, 1428 he defined action as a state of thing to which something follows, arising from its nature. Thus action is related to the new concept of spontaneity, which in Leibniz's philosophy becomes an essential component of freedom (Di Bella 2005, 114–115).<sup>48</sup> It is also evident that spontaneity is related to distinct perceptions as Leibniz says that the less in following this regress we come across a passive state, the more spontaneous and natural we consider a process (A VI, 4, 1430). We can see that Leibniz is closer here to Spinoza than to either Descartes or Hobbes, as action refers to the substance itself, and not to any kind of communication between two different kinds of entities.<sup>49</sup> For Spinoza, going back along the causal chains of the substance leads us to see that the substance is its own dynamical source of action. However, whereas Spinoza sees action as part of the universal law, Leibniz allows the principle of action to each substance of which there is an infinite number. This view, however, is not very prominent in *De affectibus*.

In addition, Leibniz maintains that determination can be both pure action or mixed with a passion (A VI, 4, 1429). To my mind, this view anticipates a feature essential in Leibniz's later conception of emotions as a ratio of pleasure versus displeasure. In *Nouveaux essais* II, xx, §7 he argues that one can be joyful when tortured (A VI, 6, 166). This marks a substantial difference to Spinoza's view where joy is a transition from lesser perfection to greater perfection (see E3p11s).<sup>50</sup>

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<sup>46</sup> See also Di Bella (2005, 127).

<sup>47</sup> For Descartes, passions are related to the fundamental difference between the soul and the body. See *Passions*, §2 (CSM I, 328).

<sup>48</sup> On this topic, see Rutherford and Cover (2005).

<sup>49</sup> Martha Kneale presents five different definitions on action and passion which she suggest were influenced by reading Spinoza. See Kneale (1976, 220–222).

<sup>50</sup> In Leibniz's mature view, the process of action and passion are atemporal although he sometimes sounds a lot like Spinoza. For example, in NE II, xxi, 72 he says: "If we take 'action' to be an endeavor towards perfection, and 'passion' to be the opposite, then genuine substances are active only when their perceptions... are becoming better developed and more distinct, just as they are passive only when their perceptions are becoming more confused. Consequently, in substances which are capable of pleasure and pain every action is a move towards pleasure, every passion a move towards pain" (A VI, 6, 210; Leibniz (1996, 210)). See also *Monadologie* §49 and *Principes de la nature et de la grâce*, §3.

## 6 Conclusion

*De affectibus* is an interesting although fragmentary memoir on the philosophy and history of the mind. While the first half of the text is related to Descartes's *Les passions de l'âme*, in the second half Leibniz drafts a presentation of how the mind works. From the first affect of pleasure or pain, suggested by the understanding and preferred by the will, follows a mental series which continues until an opposite affect is encountered. Each series is independent of the others and therefore they can rival each other. The series can, however, be compared with the standard of perfection. While this view and some other elements in *De affectibus* seem to be close to Spinoza, I have argued that the basic structure of the doctrine is in place in Leibniz's earlier writings and heavily influenced by Hobbes and Aristotle. I am inclined to think with Martha Kneale that the certain similarities between Spinoza's and Leibniz's views are due to common origin rather than direct influence (Kneale 1976, 236). This common origin is the philosophy of Hobbes.

The view of action and passion presented in *De affectibus* is related to all of the essential components of a Leibnizian metaphysics – what is left for further development after the memoir is the advanced mind-body theory, a mature theory of dynamics and the theory of pre-established harmony. The pre-established harmony is especially important, for in his mature theory of emotions Leibniz argues that the soul is often affected through the passions of the body.

In *De affectibus* it is left open how the series of thoughts are affected by external objects. The series are rather separate continuums which are occasioned by some pleasure or pain and the change comes only when an opposite series of thoughts is encountered. The theory of expression was already presented in *De summa rerum* of 1676, so it is difficult to say why Leibniz does not use it in the memoir instead of discussing it in an apparently Spinozian manner. This fact together with his efforts at defining emotions within the framework of series of thoughts suggests that *De affectibus* was, after all, a draft on emotions rather than on metaphysics.<sup>51</sup>

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# Chapter 7

## Presumption and Leibniz's Metaphysics of Action

Andreas Blank

### 1 Introduction

The notion of presumption plays an important role in early modern theories of legal argumentation. Leibniz's professional legal writings are no exception to this, and it is unsurprising to find a number of occurrences of the notion of presumption there. But Leibniz also applies the notion to other fields. In particular, there is a considerable number of interesting, even if scattered occurrences of the notion of presumption in Leibniz's analysis of political decision making, as well as in his analysis of the structure of human agency. These occurrences indicate that, for Leibniz, the significance of the notion of presumption goes beyond a technical juridical context. Nevertheless, Leibniz's usage of the notion of presumption has never attracted much attention from his commentators (I will presently mention some exceptions<sup>1</sup>). This may be due to the fact that the occurrences of the notion of presumption outside Leibniz's juridical writings are quite scattered and seemingly unsystematic; also there is a quite long temporal interval between some occurrences in the period between 1669 and 1671 and then again in the period between 1678 and 1680. In this article, I will argue that the occurrences in the context of the analysis of political decision making and those in the context of the analysis of the structure of human agency are closely connected. What is more, the role that the notion of presumption plays in writings on the metaphysics of action during the period between 1678 and 1680 can be regarded as taking up and developing further some seminal ideas that were in his writings from the period between 1669 and 1671.

To get a grasp of the continuity of Leibniz's thought in this respect, it will be useful to look into the metaphysical background assumptions that were operative in

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<sup>1</sup> See below, note 52.

Leibniz's early conception of rational political decisions. During the period between 1678 and 1680, Leibniz returns to the connection between presumption and the metaphysics of action in a more elaborate conceptual framework, and I will show how this conceptual framework contributes to solving some questions that his earlier account had left open (Sect. 2). During the period between 1678 and 1680 Leibniz also returns to some of this earlier insights into the connection between presumption and the moral quality of actions, such as an action's being just or an action's being allowed. I will argue that Leibniz's remarks about presumptions concerning the moral quality of actions draw directly on his metaphysical analysis of the grounds of person-related presumptions (Sect. 3).

## 2 Presumptions Concerning Future Actions

Early modern thinkers took the concept of presumption from Roman law. According to the Roman-law tradition, there are presumptions of different kinds. Some kinds of presumptions were encoded in written law: the so-called *praesumptiones iuris* and *praesumptiones iuris et de iure*. An example of the first kind is the presumption that someone missing for several years is dead. Obviously, this presumption can be revised when reliable news about the missing person's being alive becomes available. An example of the second kind is the presumption that an accused person is innocent until proven guilty. Here, the law obliges us to use this presumption in legal procedures even when we strongly believe in the guilt of the accused person already at an early stage in the trial. Presumptions of this kind were usually taken to be non-revisable in the light of new evidence.<sup>2</sup> A third kind of presumption is a presumption that is not laid down in law but rather formed by persons, the so-called *praesumptiones hominis*. Such presumptions were understood as conjectures based on available signs (*signa*) or indications (*indicia*) and were taken to be true unless and until contrary evidence became available.<sup>3</sup>

In early modern legal thought, the logical role of such signs and indications was characterized in different ways. One way of explicating it had to do with probability in the sense of relative frequency. As Giuseppe Mascardi (d. 1586) puts it in his handbook on juridical proof: "Presumption is a conjecture, or a guess, in doubtful matters, derived from argument or *indicia* concerning what frequently takes place in the relevant circumstances."<sup>4</sup> Another way of explicating the logical role of signs and indications had to do with probability in the sense of what has the appearance

<sup>2</sup> See, e.g., Alciato (1617, vol. 4, cols. 579–584).

<sup>3</sup> On the notion of *indiciu*m in medieval and Renaissance law, see Franklin (2001, 27–43); on the theory of interpreting *signa* in Renaissance law, see Maclean (1992). Evidence-based presumptions played a significant role in the early modern controversies over excepted crimes (see Blank 2012) and territorial rights (see Blank 2011, 2013).

<sup>4</sup> Mascardi (1607, vol. 1, 32): "Praesumptio est coniectura, seu divinatio in rebus dubiis, collecta ex argumentis, vel indiciis per rerum circumstantias frequenter eventibus."

of truth for a person embodying epistemic virtues, such as an experienced judge. As Giacomo Menochio (1532–1607) explains in his handbook on presumptions: “An *indicium* is a conjecture that arises on the basis of something probable and non-necessary, from which truth can be absent but not the appearance of truth, and which sometimes captures the mind of the judge in such a way that it forces the conscience of the judge to decide according to it.”<sup>5</sup> Thinking in such a way about the evidential basis of presumption severs the necessary link between evidence and what takes place most frequently.

The advantage of distinguishing the notion of presumption from the notion of probability in the sense of relative frequency is evident in cases where the relevant relative frequencies are unknown. This is particularly pertinent with respect to presumptions concerning future human actions, that is, a kind of presumption that plays a great role in everyday life as well as in political decision making. We often form such presumptions without being able to identify a class of relevantly similar cases and, thereby, without being able to base our presumption on what happens most frequently in similar cases. Still, we want to be able to form a presumption in a rational way. Yet, appealing to what has an appearance of truth to an experienced judge as Menochio may not be the only way in which we could explicate the kind of rationality relevant here. In fact, in Leibniz's writings from the late 1660s and the period between 1678 and 1680, one finds some remarks that give voice to an alternative and, as far as I can see, entirely original view of what makes presumptions that are not based on the knowledge of relative frequencies rational. As it will turn out, these remarks stem from contexts in which the notion of easiness plays a crucial role, and since Leibniz analyses the notion of easiness by invoking the metaphysical notion of requisite, the metaphysics of action belongs to the relevant context of Leibniz' remarks concerning presumption.

Let us first examine some passages from the period between 1678 and 1680. The notion of presumption there is used in connection with an analysis of the notion of determination: “A *determination* is a state from which something follows unless something else impedes it. Therefore a determination gives rise to a presumption concerning what lies in the future, until it is proved that an impediment is present.”<sup>6</sup> This definition is directly relevant for the notion of action: “Action seems to be a kind of determination, viz., when that from which something follows is in the nature of the thing in which it follows.”<sup>7</sup> By implication, given the definition of determination, an action gives rise to a presumption concerning some future event: the presumption that the event will take place, which the action would bring about if

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<sup>5</sup>Menochio (1608, 7): “Est indicium coniectura ex probabilibus & non necessariis orta, a quibus potest abesse veritas, sed non verisimilitudo veri, quae quandoque mentem iudicantis ita perstringunt, ut cogant conscientiam iudicis iudicare secundum ipsa.”

<sup>6</sup>A VI, 4, 1426. Leibniz takes this thought up in a slightly later manuscript: “Something is determined towards some state or action when something else follows from it considered in itself or when no obstacle occurs, and relates to what is absolutely determined towards causing something (which includes all requisites) as demonstration relates to presumption: determination in this sense is a presumption based on what is naturally prior” (A VI, 4, 404).

<sup>7</sup>A VI 4, 1428–1429.

nothing comes in between. A similar structure is characteristic of the notion of power: “Power [*vis*] or potency [*potentia*] is a state from which action follows unless there is something else from which [something different] follows in the same respect.”<sup>8</sup> While these definitions of action and power are meant to capture all activities and potencies of natural objects, they can be applied to human agency. This becomes clear in the way that Leibniz draws an analogy between mental states such as affects and the kind of determination characteristic for physical impetuses:

An *affect* is a determination of the mind to follow a certain series of thoughts.

(In the same way as an *impetus* is a determination of the body to follow in a certain way a line of motion.)

A *determination* is a state out of which something follows considered in itself.

(*Considered in itself*, I say, that is unless it is understood that some additional factor is present. Thus, from the state of a heavy body considered in itself, descent follows; but perhaps this descent does not follow if an obstacle comes in between.)<sup>9</sup>

By implication, both affects and impetuses give rise to presumptions concerning future events—be it a particular series of future thoughts or be it a particular line of motion. These presumptions can be revised because both affects and impetuses can be overruled by further influences. But, again, the way in which affects and impetuses can be overruled by further influences bears a close analogy:

Both determinations exist, even if through an additional obstacle the effect ceases. Both determinations take place in the beginning, middle, and end of the development. Together with an additional impression both compose a new determination.<sup>10</sup>

Thus, even if a given affect or a given impetus does not lead to the series of thoughts or the series of motions that it would bring about considered in itself, it remains causally relevant for the eventual outcome.

What is more, the way in which affects determine future courses of action is closely connected with the notion of easiness:

An *affect* is an occupation of the mind originating from the mind’s opinion concerning good and bad.

An *occupation* of the mind is an inclination to think something rather than something else.

An *inclination* is the easiness of acting.<sup>11</sup>

Thus, an affect consists in a state of mind that renders the occurrence of some thought easier than the occurrence of other, alternative thoughts. Leibniz uses the notion of “contributing” for analyzing this structure: “*What contributes something* [*conferens*] is something that is not absolutely required for a thing, but is required for a particular way of producing the thing.”<sup>12</sup> Thus, a given affect is required to

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<sup>8</sup> A VI, 4, 1411.

<sup>9</sup> A VI, 4, 1430.

<sup>10</sup> A VI, 4, 1426.

<sup>11</sup> A VI, 4, 1412–1413.

<sup>12</sup> A VI, 4, 308. Here Leibniz takes up John Wilkins’s explication of the notion of “what contributes something” [*conferens*] as “a requisite according to a certain mode of production.” See A VI, 4, 39; see Wilkins 1668: 35.

produce a particular thought in a particular way; but by itself it does not guarantee that this thought will actually occur. Each factor that contributes to the occurrence of an event such as a thought thus can be trumped by some other, additional factors. Hence, other thoughts can occur, but their occurrence is less easy than the thought to which an affect inclines because more is required for alternative thoughts. This structure also characterizes how an affect contributes to a future series of thoughts: Every present thought enters into the determination of future thoughts; and although this determination can be overruled by additional factors such that alternative series of future thoughts arise, the series of thoughts that does not require these additional factors comes about more easily. This means that a present affect not only consists in the easiness of bringing about a present thought; it also consists in the easiness of bringing about a series of future thoughts. This is why present affects give rise to presumptions concerning future thoughts.

In fact, in Leibniz's earlier writings from the period between 1669 and 1671 one finds the suggestion that we should presume what comes about more easily. In these early writings, the notion of easiness is closely connected with the notion of requisite.<sup>13</sup> On the ontological level, Leibniz thinks of requisites as conditions of existence. In this sense, "[a] requisite is something that, if it is not given, a thing does not exist either."<sup>14</sup> He distinguishes between mediate requisites—roughly: causal antecedents—of a thing or an event<sup>15</sup> and immediate requisites—roughly: parts or constituents—of a thing or an event.<sup>16</sup> Mediate and immediate requisites are ontological conditions: conditions for the existence of a thing or an event. Both logical and ontological conditions play a role in Leibniz's conception of easiness. On the ontological level, a thing or an event is easier than another thing or event if its existence depends on fewer conditions. On the logical level, a concept or a proposition is easier than another concept or proposition if it has fewer logical requisites. Both the ontological and the logical aspects of the concept of easiness are connected with the notion of presumption. Leibniz emphasizes that "in a presumption we demonstrate from the nature of the thing that it is easier", or, equivalently, "When we presume something, we demonstrate from its nature that it is easier."<sup>17</sup>

In fact, the notion of easiness plays an important role in Leibniz's work on the election of the King of Poland, *Specimen demonstrationum politicarum pro eligendo rege Polonorum* (1669).<sup>18</sup> For example, the notion of easiness there is built into considerations concerning what makes actions and political circumstances indifferent or dangerous:

*Indifferent* is what has equally easily a good or a bad outcome.

*Dangerous* is what is more probable to have a bad outcome than a good outcome.

<sup>13</sup> For detailed accounts of Leibniz's notion of requisite, see Adams (1994, 115–119); Piro (2002, 38–54); Di Bella (1991, 2005a, 72–98, b).

<sup>14</sup> A VI, 2, 483.

<sup>15</sup> See A VI, 2, 489.

<sup>16</sup> See A VI, 2, 499.

<sup>17</sup> A VI, 2, 567.

<sup>18</sup> On Leibniz's evaluation of the talents of the different candidates in this work, see Griard (2008).

Hence, *dangerous times* are those in which everything has more easily a bad outcome than a good outcome.

Hence, indifferent things in a dangerous time, if put on the scales of a balance, incline towards the worse.

Dangerous things in addition to the probability of a bad effect that they carry in themselves, acquire a new probability from the times.<sup>19</sup>

Here it becomes clear that the notion of easiness is connected with a notion of probability that does not reduce to relative frequencies. Rather, a possible future event is characterized as more probable than another possible future event if it is comes about more easily. Read from Leibniz's contemporary characterization of the notion of easiness, there is thus a sense in which we are advised to regard a possible future event as more probable when it has fewer requisites than another possible future event. That Leibniz applies the notion of easiness in the sense of a small number of requisites is confirmed when he remarks that "[t]he fewer conspirators, the easier conspiracy is."<sup>20</sup> Here the conspirators in a very straightforward way belong to the requisites of the conspiracy. Hence, a smaller number of conspirators means a smaller number of requisites of the conspiracy. What is more, the notion of requisites also stands implicitly behind the connection that Leibniz sees between beliefs concerning easiness and beliefs concerning the effort required for a given action:

Everything dishonest *diminishes honor*.

What diminishes honor diminishes the *reputation of being powerful*.

Whatever diminishes the reputation of being powerful brings about the belief that violation is easier.

Whatever brings about the belief that violation is easier brings about the belief that violation can be done with less effort.

Whatever brings about the belief that violation can be done with less effort brings about a greater preference for violation.

Whatever brings about a greater preference for violation is dangerous.<sup>21</sup>

The smaller effort that an action requires can naturally be understood as a smaller number of requisites that has to be given for the action to take place. Leibniz's argument also makes clear that what matters for future courses of action is not only the easiness of these courses of action but also beliefs concerning their easiness. Leibniz draws out this line of argument further when he considers how certain states of mind—such as audacity—themselves reduce the number of requisites for certain actions. This becomes clear when he discusses whether an interregnum might be profitable for Poland:

When the *necessity of obeying* is only temporary, fear is smaller than the greatest fear. Hence, [it is] smaller than the fear owed to the highest power.

When fear is smaller than it should be, there quickly arises contempt.

Where there is contempt, there quickly arises the audacity to resist.

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<sup>19</sup>A IV, 1, 11.

<sup>20</sup>A IV, 1, 15–16.

<sup>21</sup>A IV, 1, 5.



Where there is the audacity to resist those in charge of government, a civil war easily begins little by little.<sup>22</sup>

Thus, in such a situation a civil war begins more easily than in a situation of permanent political authority because a requisite that is present in situations of permanent political authority is absent in an interregnum situation.

Likewise, certain external circumstances—such as being a candidate for being elected king—contribute to the easiness of the occurrence of certain mental states such as recollection. This is relevant for Leibniz's discussion of how certainly we can assume that someone acts knowingly in a dishonest way. The particular kind of dishonest action that Leibniz has in mind consists in knowingly refraining from restituting the honor that was violated through a previous unlawful act. Leibniz is aware that when we want to assess how certainly someone acts knowingly in such a way we should assess how easily it comes about that that someone recalls the previous unlawful act in the present situation:

*Dishonest* is a person who knowingly omitted the restitution of honor ...

Hence, the dishonesty is bigger the more certainly someone was acting knowingly ...

Recollection is easier and hence the dishonesty graver the more similar the benefit is to the previous violation.<sup>23</sup>

Thus, the similarity between the present election situation and a previous election fraud through bribes and threats makes recollection of the previous violation easier and, hence, we are justified in assuming that someone who does not retribute honor in such a situation acts knowingly in a dishonest manner.

Leibniz also makes clear that considerations concerning what will come about most easily leads to conjectures that function as a person-related presumptions. That Leibniz has in mind this kind of presumption becomes clear, when he discusses the question whether a conversion to Catholicism shortly before the time of the election would fully satisfy the political demand that the future King of Poland should be a Catholic:

Who becomes Catholic at the necessary time, is presumed to become Catholic due to necessity, unless another cause becomes evident.

Necessity does not relate to the state of mind.

Hence, who is Catholic only due to necessity, is not Catholic in the mind. ...

Hence, unless there is evidence of another cause of change (which is not presumed), he will not be Catholic.

Who is presumed that he will not be Catholic should also not be King.<sup>24</sup>

Here, one presumption—the presumption against change—figures among the grounds of another presumption—the presumption concerning a person's state of mind. As Leibniz indicates in the fifth manuscript of the *Elements of Natural Law*, the presumption against change is an instance of the presumption against difficulty

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<sup>22</sup>A IV, 1, 14.

<sup>23</sup>A IV, 1, 43.

<sup>24</sup>A IV, 1, 21.

and in favor of a small number of requisites [*pro minore*].<sup>25</sup> Thus, change is not to be presumed because change requires some additional factor that need not be present if things continue unchanged.

The presumption against change is not only relevant for presumptions concerning states of mind but also for presumptions concerning actions arising from states of mind:

A turbulent family certainly had causes for turmoil.

A change of these causes is not presumed.

Hence, while the cause remains, the effect will remain: turmoil.<sup>26</sup>

An analogous argument runs as follows:

What the family is like, such an education is presumed.

What the education is like, such a frame of mind [is presumed].

What the frame of mind is like, such an action [is presumed].

Hence, from a prince belonging to a turbulent family, turmoil is to be presumed.<sup>27</sup>

These arguments document that the connection between the notions of easiness and presumption plays a substantial role in Leibniz's early account of political decision making. Moreover, this conceptual connection indicates a sense in which political decisions can be rational, even if we do not know probabilities in the sense of relative frequencies. In fact, Leibniz clearly distinguishes presumptions from probabilities. As he explains, the degree of probability (in the sense of a relative frequency) is a matter of the easiness of a thing's or an event's coexisting with all other things or events in the universe.<sup>28</sup> By contrast, what matters for presumption is only the easiness of a thing's or an event's existing.<sup>29</sup> In the deleted variants to this passage, Leibniz also tries to establish how presumption and probability are connected. In a first try, he suggests that presumption based on the easiness of a thing or an event also creates a presumption concerning its relative frequency.<sup>30</sup> Obviously, if the distinction between the easiness of existing and the easiness of coexisting is taken seriously, this cannot be exactly right. But, again in the deleted variants, Leibniz offers a second try which seems to be compatible with his distinction between the easiness of existing and the easiness of coexisting: a presumption based on the greater easiness of existing leads to a presumption concerning higher relative frequencies, *ceteris paribus*.<sup>31</sup> The last clause apparently pays attention to the factors responsible for coexistence: If A and B coexist equally easily with all things and events in the universe, the greater easiness of A will lead to a greater frequency of A. Conversely, in the deleted variants Leibniz points out that knowledge of relative

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<sup>25</sup> A IV, 1, 471.

<sup>26</sup> A IV, 1, 31.

<sup>27</sup> A IV, 1, 32.

<sup>28</sup> A VI, 1, 472.

<sup>29</sup> *Ibid.*

<sup>30</sup> A VI, 2, 565.

<sup>31</sup> *Ibid.*

frequencies may provide grounds for presumptions.<sup>32</sup> Nevertheless, the crucial point is that, even if presumptions can be based on probabilities, we can form presumptions without knowing probabilities. In this sense, presumptions genuinely expand our ability to act rationally in situations of uncertainty.

Still, characterizing the metaphysical grounds of presumptions in terms of easiness leaves us with further methodological problems: Would not each possible future action involve an enormous amount of requisites, namely, the entire causal history of all the events that have some remote influence on the action? Would not such an enormous amount of requisites be too big for limited human minds to survey and compare with each other? And would not different possible future actions have requisites of entirely different kinds, such that we would not know how to compare them with each other?<sup>33</sup> These are serious problems that, on first sight, seem to undermine the suggestion that we should base presumptions on easiness.

Leibniz develops some ideas that could provide him with a partial solution to these problems. Already in the fifth MS of the *Elements of Natural Law*, he gives the following explication of the sense in which something could be said to involve “smaller” or “fewer” requisites than something else: “Easier . . . is that in which there are smaller or fewer things than in the opposite, [i.e.] that whose requisites are a part of the requisites of the opposite.”<sup>34</sup> Also in the time between 1678 and 1680, Leibniz emphasizes that a comparison of degrees of easiness involves a part-whole relation: “What contributes [*conferens*] is what brings about a greater easiness. Easy is what has few or small requisites. Greater is whose part is equal to the whole of something else.”<sup>35</sup> While this way of characterizing easiness as a comparative notion coincides with Leibniz's earlier characterization, in the time between 1678 and 1680 there is a further characterization that contains a substantial addition: “*Easiness* is having fewer requisites compared with the greater number of similar [*similia*] and equal [*aequalia*] requisites of something else.”<sup>36</sup> According to the latter characterization, a comparison between degrees of easiness can take place in two kinds of settings.

The first kind of setting—the one already envisaged in Leibniz's earliest writings—consists of situations in which a set of requisites is part of another set of requisites. In this case, it would not even be necessary to have a complete analysis of the requisites that are contained in these sets. It would be enough to know that the requisites of action A are also the requisites of action B and to know that the set of requisites of action B contains at least one requisite in addition (while the same is not the case for action A). Situations of this kind thus involve sets of strictly identical requisites. This way of characterizing a comparative notion of easiness can be instructively applied to the cases of political decision making in Leibniz's work on the election of the King of Poland. Take the case of a prince who comes from a

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<sup>32</sup> *Ibid.*

<sup>33</sup> I owe this way of formulating the problems to a conversation with Mark Kulstad.

<sup>34</sup> A VI, 1, 472.

<sup>35</sup> A VI, 4, 303.

<sup>36</sup> VI, 4, 1412.

turbulent family. The future actions of this prince have a number of requisites, including the impressions from education and family life. Since these impressions form part of the biography of the individual in question, they will be among the requisites of any future action, no matter whether the prince will act turbulently or otherwise. This is why we do not have to be able to specify them one by one. It suffices to see that, no matter how large their number is, they are common to the different sets of requisites for different actions. But if no further impressions are at work, the prince would be determined to act turbulently by this set of requisites, while in order to be determined to act differently some additional requisites must be present. Hence, the peaceful future course of action has more requisites than the turbulent behavior. In this sense, growing up and being educated in a turbulent family constitutes a determination towards acting turbulently—a determination that can be turned into a different determination by some additional requisites. And this is why one should presume that the prince will act in a turbulent way.

By contrast, the second kind of setting—the kind of setting that goes beyond what is envisaged in Leibniz’s earliest writings—consists of situations in which we are able to identify relevant similarity relations between requisites. Situations of this kind thus do not require sets of strictly identical requisites, thus expanding the applicability of the idea of a comparison between degrees of easiness. Obviously, the similarity-oriented concept of degrees of easiness presupposes an account of how we identify relevant similarity relations. In fact, in other writings from the same period, Leibniz offers an account of similarity that has a strong epistemic component. In his view, what matters for similarity is not just the presence of some identical qualities; rather, what also matters are the conditions under which we are capable of telling two things apart: “Similar are those things that have the same form, or that can be distinguished only when they are both accessible to experience.”<sup>37</sup> Leibniz explicates what he has in mind by using the following example:

Let us imagine that there are two ships, one of which is a little bigger than the other but built in such a way that, unless someone sees them both at the same time, he would be unable to distinguish them; unless perhaps he would measure something like the height of some door and, keeping the measure, goes to the other ship, and, when asked, again applies the measure and makes a pronouncement. These two ships are called similar; and hence two similar things must not be distinguished through sensation of the one and the recollection of the other, as in the case of other, dissimilar things, but through sensation of both of them ...<sup>38</sup>

If we use such an essentially epistemological understanding of similarity between requisites, one action could be understood as being easier than another action when it requires fewer requisites of a kind that can be distinguished from the requisites of the other action only when they are accessible to experience. This, of course, does not preclude considering the easiness of possible actions in the future. But if some of the requisites of these actions can only be imagined and, on the basis of imagination, cannot be distinguished from the requisites of other future actions, then they should be regarded as similar. In such a case, a comparison of the degrees of easiness

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<sup>37</sup>A VI, 4, 74.

<sup>38</sup>A VI, 4, 380–381.

could be carried out even if the actions compared do not share any requisites with each other. Still, such comparisons allow us to form presumptions on the basis of what comes about more easily.

### 3 Presumptions Concerning the Moral Quality of Actions

There is thus a high degree of continuity between Leibniz's earliest remarks concerning the metaphysical foundation of presumptions concerning future actions and his treatment of presumption in his metaphysics of action in the period between 1678 and 1680. Yet, there are some more, related aspects of continuity. Another element of his metaphysics of action from the 1660s that Leibniz takes up in notes from the time between 1678 and 1680 concerns the connection between presumption and normative notions such as an action's being allowed, being non-obligatory, and being free. As Leibniz claims, "[e]verything is presumed to be allowed [*licitum*], everything is presumed to be non-obligatory [*indebitum*]."<sup>39</sup> Likewise, he holds that "[e]verything is presumed to be free [*liberum*],"<sup>40</sup> where "free" is to be understood as "what is neither obligatory nor illicit."<sup>41</sup> Although Leibniz does not make this explicit here, I would like to suggest that the view that there is a presumption in favor of an action's being allowed, being non-obligatory and being free are closely connected with his conception of easiness. To see that this is the case, note that Leibniz's claims concerning the presumption in favor of an action's being allowed and an action's being free stem from a group of manuscripts in which Leibniz takes up his early theory of justice. In a piece written between 1678 and 1681, he expresses the central idea of his theory of justice as follows: "Justice is well-ordered love or the virtue that upholds the proportion in the affect towards other rational beings."<sup>42</sup> This closely corresponds to the conception of justice in his early manuscripts on natural law. To be sure, in his early manuscripts he formulates objections against the specific formulation that Aristotle has given to the notion of justice. In the third MS of the *Elements of Natural Law*, Leibniz objects to Aristotle's suggestion that we should look for the mean only in relations between things:

[I]f one has obtained a more precise insight into this problem, one realizes that justice governs love and dislike of a human being towards another human being ... Now there are two rules to moderate this emotion: 1. to hurt nobody, 2. to help everyone, as far as no-one else is hurt by this.<sup>43</sup>

Leibniz's alternative idea of the mean consequently is described as a process of deliberation between various affects: "What is just is not precisely enough defined

<sup>39</sup>A VI, 4, 2764, marginal note.

<sup>40</sup>*Ibid.*

<sup>41</sup>A VI, 4, 2762.

<sup>42</sup>A VI, 4, 2758.

<sup>43</sup>A VI, 1, 455.

as what is useful for the community, since it is permissible to prefer the death of many to my own death ... The just is the well-proportioned relation between self-love and the love for another person.”<sup>44</sup> Thus, in this context the search for rational proportions underlying the Platonic component of Leibniz’s theory of justice is introduced as an alternative to the specific Aristotelian conception of what the mean in the case of justice consists in; but at the same time it is an alternative that does not deny the validity of Aristotle’s general conception of virtue as a mean in affects but rather tries to integrate the virtue of justice into this general Aristotelian conception. This is why Leibniz in the period between 1678 and 1680 takes up the idea that justice can be characterized as involving a specifically affective side.

What is more, in his early writings on natural law Leibniz formulates a presumption closely analogous to the presumptions concerning an action’s being free, allowed, and non-obligatory. In the fifth MS of the *Elements of Natural Law*, Leibniz claims that we should presume a given action to be just.<sup>45</sup> This claim is puzzling if read in conjunction with his view that we should presume what comes about more easily. Many of his early remarks about justice suggest that it is difficult rather than easy to be just since, according to his view, different kinds of justice involve different levels of natural law (*jus naturae*). The first degree is “strict law” (*jus strictum*), centered around the maxim “Not to hurt anyone” (*neminem laedere*); the second degree is equity (*aequitas*), centered around the maxim “To give each person his or her due” (*sum cuique tribuere*); and the third degree is a precursor of what Leibniz later calls “universal justice”: “piety” (*pietas*), centered around the maxim “To live honorably” (*honeste vivere*).<sup>46</sup> In the *Elements of Natural Law*, he defines what is equitable as “what is in accordance with reason with respect to the distribution of goods between persons”.<sup>47</sup> Moreover, he maintains that the highest degree of natural law—as the “virtue of love or friendship”—involves a loving attitude towards all human beings.<sup>48</sup> This degree of natural law consists in the capacity “to moderate love and hate of one human being towards another human being”, a capacity that presupposes a rational assessment of the relative merit of different human beings.<sup>49</sup>

There may be nothing counterintuitive about the claim that a given action should be presumed to be just when this claim is made with respect to the first degree of natural law. One might think that it comes about more easily that a given action has no harming consequences for others than that it does cause harm to them. Accordingly, the burden of proof would lie with the one who undertakes to demonstrate that a given action is contrary to the first degree of natural law. Things stand differently with the two other degrees of natural law, however. In order to perform an action that fulfils the demands of the second degree of natural law, one has to be

<sup>44</sup> *Ibid.* On Leibniz’s attitude towards Aristotelian ethics, see Piro (1994).

<sup>45</sup> A VI, 1, 471.

<sup>46</sup> A VI, 1, 343–345.

<sup>47</sup> *Ibid.*

<sup>48</sup> *Ibid.* On Leibniz’s reasons to include love into his conception of justice, see Busche (1997, 307–310); Goldenbaum (2002, 209–231).

<sup>49</sup> A VI, 1, 455.

thoughtful and to care about acting rationally. But certainly, to be thoughtful is more difficult than to be thoughtless, and to care about acting rationally is more difficult than to act irrationally. Something similar holds with respect to the third degree of natural law. Considering relative personal merit rationally requires more effort than not giving a thought to the matter. Moreover, loving all human beings to some degree certainly is more difficult than loving only a few human beings. Hence, if one should presume what comes about more easily, it might appear as if what one should presume is that, when it comes to the two higher degrees of natural law, a given action is unjust, rather than just.

To dissolve this puzzle, it will be helpful to start with Leibniz's claim that we should presume the possibility of a given entity (thing or event). He argues:

For it is easier for something to turn out to be possible than impossible. For nothing is required for the possible but that it be supposed; for the impossible, however, it is required that while it is supposed, its opposite be supposed at the same time. Therefore, more things are required for the impossible than for the possible. [...] Indeed, the requisites [*requisita*] or suppositions [*supposita*] of the possible are contained in the suppositions of the opposite, and not conversely. That is *presumed*, however, whose suppositions are also the suppositions of the opposite, and not conversely.<sup>50</sup>

It might be helpful to distinguish in this passage between the two levels of dependency relations. In the first half of the quotation, the dependency relation at stake is one between suppositions that we make: Leibniz tells us that we have to make one supposition in order to be able to make another supposition. Possibly, when Leibniz speaks of "supposing" a particular possible or impossible entity, what he means is something like "forming a concept" of this possible or impossible entity. In this case, his claim would be that in order to form the concept of a particular impossible entity we first have to form the concept of a particular possible entity. In this sense, the concept of this possible entity would be a condition of the concept of the impossible entity, not the other way round.

So far, Leibniz formulates a claim about conceptual dependency. In the second half of the quotation, he shifts to the level of ontological dependency: we are told that a given possible entity has fewer ontological requisites than an impossible entity. This claim becomes intelligible against the background of Leibniz's conception of possibility as conceivability: everything that is logically consistent is possible, or conversely: if something is impossible, it involves a logical contradiction.<sup>51</sup> Hence, to every impossible entity there corresponds at least one possible entity that has the same ontological requisites as the impossible entity except those that are responsible for the contradiction. In other words: For every impossible entity there is at least one possible entity whose ontological requisites are a proper part of the ontological requisites of the impossible entity. In this sense, to be possible is easier than to be impossible. Hence, an entity should be presumed possible rather than impossible. Moreover, as Hans Burkhardt and Robert M. Adams have noted, in the case of the presumption of possibility the work is done on the level of ontological

<sup>50</sup> A VI, 1, 471; Translation from Adams (1994, 204), with one sentence added.

<sup>51</sup> See A VI, 1, 398; A VI, 1, 405; A VI, 2, 487, note 3; A VI, 2, 495 and 495, note 46; A VI, 3, 127.

requisites.<sup>52</sup> The level of logical dependency follows suit: If the requisites of a possible entity are a proper part of the requisites of an impossible entity, then the requisites of the concept of a possible entity are a proper part of the requisites of the concept of an impossible entity. The supposition of the possible entity is easier than the supposition of the impossible entity *because* the possible entity is easier than the impossible entity.

Leibniz regards the presumption of justice as a special case of the presumption of possibility. Indeed, what Leibniz says about the presumption of possibility is presented as an explanation of the presumption of justice. In his remarks on the presumption of possibility, he gives the following argument that starts from one of the sentences already quoted above: “[M]ore things are required for the impossible than for the possible. Therefore it is easier for an action to be just than to be unjust.”<sup>53</sup> On first sight, of course, the two presumptions are different: the one is concerned with the justice of an action, the other with the possibility of a thing.

What connects the two presumptions, however, is Leibniz’s modal approach to virtue ethics. According to him, a just action is “an action that is possible for a good person (*vir bonus*)”.<sup>54</sup> To be sure, as far as the characterization of the moral quality embodied by a good person goes, Leibniz’s views depart from Aristotle’s. At the early stage of his thought represented in the *Elements of Natural Law*, Leibniz has not yet fully arrived at his later, famous definition of universal justice as the “charity of the wise” (*caritas sapientis*).<sup>55</sup> Nevertheless, *caritas* is implicit in his definition of justice as “the habit of loving everyone”<sup>56</sup> and of the good person as “the person who loves everyone.”<sup>57</sup> As the variants to the manuscript document, Leibniz also considered including prudence (*prudentia*) in the definition of the good person.<sup>58</sup> In any case, in one respect his opinion is clear: A just action is a special kind of possibility: something that is possible for a good person.<sup>59</sup> In the manuscript variants to the passage about the presumption of justice, he explains:

The just is easier than the unjust. For easier is what is more possible, or what requires fewer things for its existence. Yet in order for something to be just, it is required that it is possible, in order to be unjust it is required that it is impossible for a good person. But fewer things are required for the possible than for the impossible.<sup>60</sup>

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<sup>52</sup> Burkhardt (1980, 425–426); Adams (1994, 205).

<sup>53</sup> A VI, 1, 471.

<sup>54</sup> A VI, 1, 476; see also A VI, 1, 480.

<sup>55</sup> See A VI, 4, 2777; A VI, 4, 2758, 2761 and 2767. On Leibniz’s theory of justice as *caritas sapientis*, see Grua (1953); Riley (1996).

<sup>56</sup> A VI, 1, 465.

<sup>57</sup> A VI, 1, 466.

<sup>58</sup> See A VI, 2, 565 (variants to A VI, 1, 465).

<sup>59</sup> A VI, 1, 470.

<sup>60</sup> A VI, 2, 567.



It should be clear now that the logic of the presumption of justice is closely analogous to the logic of the presumption of possibility. The presumption of justice amounts to the claim that it is easier for an action to be possible for a good person than to be impossible for a good person. Again, the background of this claim is Leibniz's conception of possibility as non-contradiction. An action that is impossible for a good person is an action that, if conceived of as performed by a good person, involves a logical contradiction. Among its ontological requisites, there is at least one that accounts for the occurrence of this contradiction. Hence, for every action that is impossible for a good person there is at least one action that is possible for a good person that has the same ontological requisites except the ones that are responsible for the contradiction.

This structure carries over to the presumption of an action's being free, the presumption of an action's being allowed, and the presumption of an action's being non-obligatory. This is so although, in the period between 1678 and 1680, one finds some modifications of his earlier theory of justice. As in his writings from the period of the *Elements of Natural Law*, in the period between 1678 and 1680 Leibniz defines the Roman law concept of the good person (*vir bonus*) with respect to the notion of justice: "A *good person* is the one endowed with justice."<sup>61</sup> But unlike in the period of the *Elements of Natural Law*, he adds a reference to the public good: "A *good person* is someone endowed with justice and therefore seeks the public good as far as it is allowed."<sup>62</sup> What is the conception of the public good that Leibniz has in mind here? In a first variant, he suggests analyzing the notion of the good of society in terms of a sum of individual goods: "The *good (evil)* of society is the difference between the sums of the good and evils of the members of the society ..."<sup>63</sup> However, he deleted this variant and replaced it by the following set of definitions:

A *good of society* is something that is a greater good for the one than it is an evil for the other.

An *evil of society* is something that is a greater evil for the one than it is a good for the other.

A *good* for someone is what contributes more to his happiness than sadness.

An *evil* for someone is what contributes more to his sadness than happiness.<sup>64</sup>

This indeed goes beyond what is found in Leibniz's writings from around 1670 (and it also shows that the portrayal of Leibniz's conception of the common good as an early version of utility maximization misses the qualms that Leibniz himself had about understanding the common good as the maximization of the goods of the individuals<sup>65</sup>). What matters for present purposes, however, is that even in this

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<sup>61</sup> *Ibid.*

<sup>62</sup> A VI, 4, 2761.

<sup>63</sup> *Ibid.* For a similar statement, see A VI, 4, 613.

<sup>64</sup> A VI, 4, 2761.

<sup>65</sup> For an utilitarian interpretation of Leibniz's notion of common good, see Elster (1975, 129). Such an interpretation is criticized, for different reasons, in Riley (1996, 160–164) and in Basso (2005, 54–57).

modified version his theory of justice, Leibniz takes up a series of modal claims involving the notion of the good person:

*Obligatory* [*debitum*] is what is necessary for a good person as such.

*Non-obligatory* [*indebitum*] is what is contingent for a good person as such.

*Allowed* [*licitum*] is what is possible for a good person as such.

*Forbidden* [*illicitum*] is what is impossible for a good person as such.<sup>66</sup>

Why would Leibniz advise us to presume that a given action is non-obligatory? Already in the fifth MS of the *Elements of Natural Law*, he regards this presumption as a consequence of the presumption in favor of the justice of an action: “An action is presumed to be non-obligatory. For everything non-obligatory is just [...] and everything just is easier than something unjust, hence it is presumed.”<sup>67</sup> Or, to put it differently, an action should be presumed to be non-obligatory because “an action is easier to be non-obligatory than to be obligatory.”<sup>68</sup> Also, in the *Elements of Natural Law* Leibniz regards the presumption in favor of an action’s being free and in favor of an action’s being allowed as a further instance of the precept to presume what has fewer requisites.<sup>69</sup> This carries over to the version of the modal aspects of Leibniz’s theory of justice in the manuscripts from the period between 1678 and 1680. An allowed action is an instance of a possible event, namely, something that is possible for a good person. Hence, it involves fewer requisites than an action that is impossible for a good person. This is so because, compared with an action that is possible for a good person, it involves at least one additional requisite that is responsible for the contradiction. Likewise, if one understands what is “free” as what is “neither obligatory nor illicit,”<sup>70</sup> then a free action is neither impossible for a good person nor impossible not to be performed by a good person. Thus, again a free action is a kind of possibility, and the presumption in favor of an action’s being free can be understood as a special case of the presumption in favor of possibility.

## 4 Conclusion

In the treatment of presumption there is thus a remarkable continuity between Leibniz’s writings from the period between 1669 and 1671 and his writings from the period between 1678 and 1680. Leibniz’s few and scattered remarks about presumption are more unified than may be evident at first glance because they can be understood as forming a part of a quite systematic account of the role of requisites in the metaphysics of action. What makes presumptions concerning future actions and presumptions concerning the moral quality of actions rational, even when we do

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<sup>66</sup>A VI, 4, 2758.

<sup>67</sup>A VI, 1, 471.

<sup>68</sup>*Ibid.*

<sup>69</sup>*Ibid.*

<sup>70</sup>A VI, 4, 2762 (see above, note 41).

not know the relevant relative frequencies, is that they can be based on a consideration concerning what has a smaller number of requisites than the closest alternatives. As we have seen, closest alternatives could be considered as cases that have a set of requisites in common with the action under consideration. This argumentative strategy can be applied to future actions as well as to the moral quality of actions—in the latter case, too, what matters is a set of requisites that is identical for an action that is possible for a good person and for an action that is impossible for a good person. Apart from such a situation in which the requisites of one action are a part of the requisites of another action, Leibniz also considers cases in which the requisites of two actions are not identical but similar in the sense that we could not distinguish them except by direct comparison. This seems to be a genuine extension of his earlier views concerning how degrees of easiness could be compared with each other. The intuition, however, that presumptions concerning future actions and the moral qualities of actions are rational when they are grounded on the metaphysical structure of the actions themselves remains recognizably the same.

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# Chapter 8

## Corporeal Substances as Monadic Composites in Leibniz's Later Philosophy

Paul Lodge

In a passage from the late 1680s that appears as a marginal comment to a letter to Arnauld, Leibniz presents an account of corporeal substances according to which they are composites of form and matter, where the form is a “soul” and the matter is “a secondary matter, which is the multitude of substances whose mass is that of the whole body” (GP II, 119). This account is an instance of what Brandon Look and Donald Rutherford have called the “Composite View” of corporeal substance, since corporeal substances are “composed of a substantial form and a multitude of other substances, which exist independently of the substance whose body they constitute” (LR xliii). As Look and Rutherford point out, this passage was written at a time when Leibniz identified the substances that comprise secondary matter as corporeal substances themselves (LR xliii). However, they also note that later in Leibniz's career there are passages that are readily interpreted as embodying the Composite View, but with secondary matter that is said to be comprised of simple substances, or monads. In order to mark this distinction, Look and Rutherford introducing the expression “M-Composite View” for the latter (LR li).

A passage that seems to exemplify the M-Composite View appears in one of the most famous of all of Leibniz's statements regarding his ontological commitments, and, in particular, the conception of substance operative in his philosophy.<sup>1</sup> This is the fivefold scheme that we find in his letter to De Volder from 20 June 1703. It runs as follows:

I distinguish: (1) the primitive entelechy or soul; (2) matter, namely, primary matter or primitive passive power; (3) the monad completed by these two things; (4) the mass or secondary matter, or the organic machine for which innumerable subordinate monads come

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<sup>1</sup>Another well-known instance, to which I shall return later in this paper, is to be found in Section 3 of the *Principles of Nature and Grace* (GP VI, 598–99; AG 207).

together; and (5) the animal, or corporeal substance, which the monad dominating in the machine makes one. (LR li)<sup>2</sup>

On what one might regard as a natural interpretation of this passage, it provides evidence of Leibniz's commitment a version of the M-Composite View. I shall refer to this interpretation from now on as "the M-Composite reading". According to this reading, there are monads (also referred to as "simple substances" two sentences earlier in the same letter), which are comprised of an entelechy, or soul, and primary matter. In addition, there are corporeal substances, such as animals, comprised of innumerable monads that constitute an organic machine and another monad.

Strictly speaking, the fivefold scheme goes beyond the basic requirements for the M-Composite View as characterized above, since it also offers an explanation of why it is that the composite is to be regarded as a substance, namely the fact that the monads that comprise the organic machine are dominated by/subordinate to the other monad. However, this additional element is a component of the way in which Look and Rutherford understand the M-Composite View throughout their discussion, and I shall treat it as an essential feature of the M-Composite reading in what follows.

Despite the *prima facie* plausibility of the M-Composite reading of the fivefold scheme, there are challenges. Look and Rutherford's discussion presents three. Whilst Look and Rutherford do not regard the first of their challenges as a serious one, they think that the remaining two cannot be evaded. Their response has ramifications both for their understanding of the fivefold scheme and for their understanding of the conception of corporeal substance with which Leibniz operated for the remainder of his career. More precisely, they suggest that Leibniz's use of the expression "corporeal substance" in the fivefold scheme may indicate a willingness on his part to "use the term "substance" ... in an extended sense that abandons the assumption that per se unity is an essential property of substance" (LR liv). Furthermore, they hold that by the beginning of his correspondence with Des Bosses, i.e., 1706, Leibniz's requirement of per se unity had led him to reach "the conclusion that ... the reality of corporeal substance can be upheld only if one acknowledges the existence of a "real union" or substantial bond" (LR lxxxvii). And, with this in mind, they suggest that by the end of the correspondence, and, hence, by the end of his life, Leibniz saw the choices as limited to two: (1) the rejection of corporeal substances in favor of an ontology in which the only substances are monads; or (2) the rejection of a monadic ontology in favour of one in which the basic entities are corporeal substances in the traditional Aristotelian sense, i.e., comprised of matter and form neither of which can exist independently of the substance. On balance, Look and Rutherford appear to think that the only motivation for Leibniz adopting to adopt the latter would have been a desire to cleave to reli-

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<sup>2</sup>The translation in this passage is Look and Rutherford's. It deviates slightly from my own translation in the Yale edition of the Leibniz-De Volder correspondence (see Lodge 265). I follow the translations in LR here and in other places where the differences are of no consequence for the purposes of this paper. These are generally cited using other standard sources, with an asterisk to indicate any deviation from those sources.

gious dogma. And whilst they do not underestimate the importance of theological issues in Leibniz's thinking, they tend to think that Leibniz the philosopher, whose primary desideratum was to provide parsimonious explanations of the phenomena, favored the former. Thus, Look and Rutherford hold that Leibniz's continued use of the term "corporeal substance" when articulating his own views after 1706 can only be in the loosened sense that they suggest is operative in the fivefold scheme.<sup>3</sup>

In this paper I am primarily interested in the issue of whether we should offer the M-Composite reading of the fivefold scheme. I shall argue that there is room for the possibility that the M-Composite reading accurately captures Leibniz's intention in this passage, and that at this time in his career he was sincere in his assertion that there are corporeal substances of this kind. The case that I will make involves the suggestion that Look and Rutherford may be wrong when they assert that, by the beginning of the correspondence with Des Bosses, Leibniz had clearly seen the error of his ways in continuing to use the expression "corporeal substances" to refer to M-Composites. I shall finish by presenting, as a working hypothesis, the suggestion that Leibniz may have been happy with the M-Composite View throughout the remainder of his life. However, I will not try to defend this hypothesis in the current paper.

## 1 Problems for the M-Composite Reading of the Five-Fold Scheme

As I mentioned above, Look and Rutherford provide three reasons for doubting that the M-Composite reading is an adequate interpretation of (5) from the fivefold scheme. The first challenge comes from the fact that there is a competing reading of the passage; the second is described as "textual" (LR lii), and arises when the fivefold scheme is read in conjunction with the paragraph that follows it in the letter to De Volder of June 20, 1703; and the third, which Look and Rutherford describe as "philosophical" (*ibid.*), turns on the claim that the M-Composite reading of (5) from the fivefold scheme leaves Leibniz with corporeal substances that fail to possess the *per se* unity which he regards as essential for substantiality, in virtue of the fact that they are comprised of many things.

### 1.1 *The Competing Reading of (5)*

The competing reading that Look and Rutherford mention involves interpreting (5) from the fivefold scheme as expressing a commitment to what Robert Adams has called the "Qualified Monad Conception" of corporeal substance.<sup>4</sup> According to this

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<sup>3</sup> See LR lxxii-lxxix.

<sup>4</sup> See Adams (1994, 269).

reading, “corporeal substance” is an expression that refers to a monad “insofar as it has an organic body” (LR liii). On the Qualified Monad Conception, (5) is true because the monad makes itself one, and thus, given that the corporeal substance is numerically identical to the monad, it makes the corporeal substance one. To Look and Rutherford this interpretation has the virtue of allowing one to avoid the third of their challenges, namely how it could be that monads comprising a composite could come to have per se unity. But this comes at a cost. For one thing, as Look and Rutherford point out, the interpretation is hard to square with other texts. Thus, in a contemporary letter to Masham of September 1704, Leibniz speaks of a substance which is “a composite of a soul and a body, for example, a man” (GP III, 363; WF 220). And, perhaps more significantly, earlier in the letter to De Volder of 20 June 1703, we find Leibniz saying that “a corporeal [substance], contains an infinity of machines” (Lodge 261).<sup>5</sup> In each of these passages, the corporeal substance is presented as a composite being, which is inconsistent with its identification with a single monad in the Qualified Monad Conception. But it is also the case that the Qualified Monad Conception requires a rather strained reading of the fivefold scheme itself, since the passage begins with Leibniz announcing to De Volder that he is about to *distinguish* the numbered elements that appear in the scheme. Thus, it seems reasonable to me to conclude that the possibility of interpreting the fivefold scheme in this way does not pose a significant challenge to the M-Composite reading.<sup>6</sup>

## 1.2 *The Textual and Philosophical Challenges*

Look and Rutherford explain their textual challenge as follows:

The textual problem is Leibniz’s suggestion, in the very next paragraph, that only monads possess the essential property of being an unum per se: “since only simple things are true things, the rest are only beings by aggregation; to that extent they are phenomena, and, as Democritus put it, exist by convention and not by nature” (GP II, 252; AG 177\*). On no coherent reading of Leibniz’s metaphysics can something that possesses a per se unity be confused with something that is a being by aggregation. Consequently, if only monads are true substances, then a composite consisting of a dominant monad and a mass of subordinate monads cannot be a substance (LR lii).

It is a little hard to work out just what the textual challenge is supposed to be here. At first glance, it looks as if the notion of per se unity is central to the worry. If this is the case, however, then there seems to be a problem, since there is no mention of per se unity in the passage that is quoted. But, although the notion of per se unity will be ineliminably relevant when we consider the philosophical challenge

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<sup>5</sup>Look and Rutherford present another, somewhat later, passage from a letter to Bierling of 1711 in which Leibniz tells him “I call a *corporeal substance* that which consists in a simple substance or monad (that is, a soul or soul analogous) and a united organic body” (GP VII, 501).

<sup>6</sup>It should, however, be noted that the Qualified Monad Conception has been defended at some length by Donald Baxter (1995).



that Look and Rutherford raise, I think the force of the worry here does not really depend on it. Instead it is the final sentence that seems to me to capture the real sense of where Look and Rutherford's challenge lies.

If I'm right, the challenge is as follows: If monads are the only true substances, then the entities from (5), as construed on the M-Composite reading of the fivefold scheme, cannot be "true substances". But if this is the correct way to think of the challenge, it faces two problems: The first is that the text cited doesn't talk explicitly about monads or true substances; the second is that it was not built into the M-Composite reading that corporeal substances are "true substances", but simply that they are "corporeal substances". Whilst I think it is reasonable to infer that the M-Composite reading requires that corporeal substances are *substances*, without further elaboration of the meaning of "true" in "true substance", it is not clear just what the force of the objection that they are not true substances is supposed to be.

Despite both of these worries, it seems to me that Look and Rutherford's textual challenge does point toward an important set of issues that surround the M-Composite reading of (5). Let us assume, as Look and Rutherford do, that we should understand the first part of the passage they cite as equivalent to the following: "since only monads are true substances, the rest are only beings by aggregation". The problem for the M-Composite reading is now made somewhat clearer. As conceived on the M-Composite reading, corporeal substances are not themselves monads, they are composites comprised of monads. Therefore, corporeal substances belong with "the rest" and must be aggregates. But, as Look and Rutherford imply, Leibniz seems to regard the categories of substance and aggregate as mutually exclusive. Indeed, in his letter to De Volder of 19 November 1703, Leibniz observes: "when it is asked what we understand by the word *substance*, I point out that aggregates must be excluded before everything else" (Lodge 275). The problem for the M-Composite reading can therefore be put as follows: If the corporeal substances mentioned in fivefold scheme are interpreted in this way, then they are not in fact substances. And a natural response is to take this as a *reductio ad absurdum* of the M-Composite reading.

Before moving on to consider how a defender of the M-Composite reading might respond, I want to present Look and Rutherford's philosophical challenge. Here the issue of per se unity is crucial, since the claim is that the proponents of the M-Composite reading of (5) are unable to explain how it is that corporeal substances have per se unity. In particular, Look and Rutherford observe that this reading "lacks the resources to explain how a dominant monad could confer per se unity on the mass of monads that make up its body" (LR lii). As we have already seen, Look and Rutherford suggest that, for Leibniz, per se unity is an essential feature of substances. Thus, it follows that Leibniz ought not to regard M-Composite corporeal substances as substances at all.

Whilst Look and Rutherford do not say explicitly what they mean by "per se unity", the way that they appeal to the expression in articulating their textual challenge makes it clear that having per se unity is incompatible with being an aggregate. We can see why they would think this by looking at something else that Leibniz says in his letter to De Volder of 19 November 1703, namely, "an aggregate is nothing other than all the things from which it results taken together, which clearly have their unity only from a mind, on account of those things that they have in

common, like a flock of sheep” (Lodge 275). Here Leibniz makes it plain that the unity of aggregates is mind-dependent. It is a unity that comes from a mind representing the things aggregated as one based on relations that hold between them.<sup>7</sup>

On the M-Composite reading, the monads that comprise corporeal substances are related via the domination relation. But although this relation may provide a basis for regarding a corporeal substance as a unity, this is only because the relation provides the grounds for an aggregate. And aggregates have a unity that comes from something external to them – i.e. an aggregating mind – rather than from themselves (*per se*). In this respect, they can be contrasted with monads. For whilst the fivefold scheme reveals that monads have an inner complexity, since they are “completed” by “primitive entelechy or soul” and “primary matter or primitive passive power”, these are not distinct entities from which the monad is aggregated, but rather distinct aspects of a single indivisible being. The monads are the “true substances”.

## 2 A Response to the Textual and Philosophical Challenges

One way to respond to Look and Rutherford’s textual concern is to focus on the letter of the text that they cite. Thus, one might question whether they are in error when they equate simple things with monads on Leibniz’s behalf. If this were an error, one could contend that Leibniz thinks that M-Composite corporeal substances are simple things. This would also allow them to count as true things, which one might (or might not), following Look and Rutherford, treat as equivalent to the claim that they are “true substances.” Look and Rutherford don’t explain why they interpret “simple thing” as “monad”. But it is notable that Leibniz seems to equate “things that are simple” with “monads” toward the end of his 20 June 1703 letter to De Volder (Lodge 269), and seems to equate “simple substance” and “monad” in his letters to De Volder of 20 January 1700 (Lodge 155), June 20, 1703 (Lodge 265), and 19 January 1706 (Lodge 333). Furthermore, it is natural to think that nothing can be “simple” and “composite” at the same time. Thus, there is some reason to believe that Look and Rutherford point to a serious challenge.

But set against this is the fact the Leibniz chooses to use the expression “simple substance” in the first place. *Prima facie*, this seems to suggest that there are some substances that are not simple. And the situation is complicated yet further by the fact that Leibniz tells De Volder in his letter of 27 December 1701, “I concede that every substance is simple in a certain sense” (Lodge 223), a sense which he explicates in his next letter, of April 1702, as “lack[ing] parts” (Lodge 239). Furthermore, these claims need to be read in the context of his claim, just before the fivefold scheme, that “subordinate monads ... do not make up a part of the organic body although they are immediately required for it, and they come together with the primary monad for the organic corporeal substance” (Lodge 265). Here Leibniz explicitly sanctions the existence of a thing whose existence is dependent on the

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<sup>7</sup> See Lodge 2001 for a more detailed discussion of this issue.

existence of many things, which should not be regarded as parts of that thing. This at least invites the possibility that corporeal substances are simple, in that they lack parts, but not simple in the sense that simple substances are – where one might surmise that simplicity of this kind is incompatible with being comprised of many substances.

I am not at all sure how to resolve the impasse here. But I think there are things one can say in defence of the M-Composite reading whichever way one chooses to go, and I want to explore those now. Let us suppose first that Look and Rutherford are right that Leibniz is claiming that monads are the only true things/substances. Given this, unless corporeal substances are to be identified with monads, they are aggregates, and Leibniz is left in an apparently incoherent position. Following Look and Rutherford, I've already suggested that identifying corporeal substances with monads is problematic.<sup>8</sup> So how are we to save him from incoherence?

Look and Rutherford's response is to suggest that Leibniz might have been "willing to weaken the conditions that he imposes on the existence of a substance" and allow that there was "a close enough relation among [the monads in the M-Composite of (5)] to warrant describing them collectively as a "corporeal substance" as opposed to a mere aggregate" (LR liii), and they look to the passage that precedes the five-fold scheme for textual evidence that Leibniz took this route. Here Leibniz observes:

If you take a mass to be an aggregate containing many substances, you can nonetheless conceive of one substance that is preeminent in it, if in fact the mass constitutes an organic body animated by its primary entelechy. For the rest, in the monad, or complete simple substance, I do not unite anything with the entelechy except the primitive passive force related to the whole mass of the organic body. Certainly, the remaining subordinate monads situated in the organs do not make up a part of the [organic body], though they are immediately required for it, and they come together with the primary monad for the organic corporeal substance, or the animal or plant (GP II, 252; AG 177\*).

Look and Rutherford take it that in the first sentence of this paragraph "Leibniz implicitly concedes that what he will call a "corporeal substance" is an aggregate in which one substance, the soul, is "preeminent"" (LR liv). Given this, they see no option other than to suggest that Leibniz "may have been willing" in the De Volder correspondence to "hold that when he speaks of 'corporeal substance' he is not using the term 'substance' in its strict sense, but rather in an extended sense that abandons the assumption that per se unity is an essential property of substance" (LR liv). The justification for this depends on observations made earlier in their discussion regarding Leibniz's views on the essential features of substance. As Rutherford has outlined in greater detail in earlier work, Leibniz's conception of substance ascribes a number of necessary features to them.<sup>9</sup> As well as per se unity, these include, "being a principle of force or action", "indivisibility", and "identity through

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<sup>8</sup>I will ignore the possibility here that Leibniz might be willing to extend to term "monad" to include corporeal substances – as he appears to do in some other contexts, such as his letter to Johann Bernoulli of 30 September 1698 (GM III, 542; AG 168) – given that this seems to be explicitly ruled out in the fivefold scheme.

<sup>9</sup>See Rutherford (1995, Chap. 6).

change” (LR xxxix). With this in mind, Look and Rutherford note that in the 20 June 1703 letter Leibniz also tells De Volder that “both the soul and the machine it animates, as well as the animal itself, are as indestructible as the universe itself” (GP II, 251; AG 176), and they suggest that the possession of this property may have been what led Leibniz to hold that “we are entitled to think of the composite ... as a substance in its own right” (LR liii).

But this reading faces textual challenges of its own. For in a number of passages written around the same time as the letter that contains the fivefold scheme, we find Leibniz asserting the existence of corporeal substances in a way that involves an apparent commitment to their per se unity, or true unity. Thus in a piece from 1702, titled *On Body and Force Against the Cartesians* by Ariew and Garber, he observes that “a corporeal substance ... of course, is one per se, and not a mere aggregate of many substances, for there is a great difference between an animal, for example, and a flock”, and in a letter to Jacquelot from 22 March 1703 we find: “matter (I mean here secondary matter, or a mass) is not a substance, but a number of substances, like a flock of sheep, or a lake full of fish. I count as corporeal substances only nature’s machines, which have souls or something analogous; otherwise there would be no true unity” (GP III, 457; WF 200–01). These passages suggest that, whatever Leibniz was doing, he did not wish to abandon the claim that corporeal substances have per se unity at this stage.

If this is the case, then it seems that Look and Rutherford’s account cannot quite be right. Two moves seem to be available at this point. Either we might try to defend an interpretation on which corporeal substances are both aggregates and have per se unity, or we might question whether Leibniz regarded them as aggregates. Importantly, both of these interpretations provide us with a way of answering Look and Rutherford’s philosophical challenge, since they each depend on regarding the domination relation as sufficient for per se unity.

I have argued for the first of these elsewhere.<sup>10</sup> The key to this reading is to notice that although, *qua* aggregates, the corporeal substances of the M-Composite reading depend for their unity on something essentially extrinsic, they are different from other aggregates. Crucially, the aggregation of M-Composite corporeal substances is based on the fact that one monad stands in the domination relation to innumerable others. Thus, the aggregation is dependent on a relation that holds between one of the things which are aggregated and all the remaining ones. In this sense there is a principle of unity that is internal to the aggregate itself. And, whilst this may be true of some other aggregates as well, the examples that Leibniz usually chooses to illustrate the notion, such as an army or flock of sheep, are typically aggregated on the basis of relations that do not appear to have this feature.

But this reading, and the related one offered by Look and Rutherford, still faces a serious problem. For we cannot ignore Leibniz’s explicit denial that anything can be both a substance and an aggregate in his 19 November 1703 letter to De Volder. In my previous discussion, I suggested that we might finesse this problem by noting that “the substance-aggregate bifurcation occurs in a context in which Leibniz is

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<sup>10</sup> See Lodge c-ci.

discussing “what are truly called substances (i.e., the monads, i.e., the perfect substantial unities from which everything else necessarily results)”” (Lodge c). Absent any other account of how to save the M-Composite reading, this may be the way to go. However, I now think it may be more promising to explore an interpretation that involves a denial of the claim that Leibniz regards M-Composite corporeal substances as aggregates.

The previous attempts to explain how Leibniz is conceiving of corporeal substances in the fivefold scheme take for granted that, *qua* composite, they must be aggregates. But it is worth looking again closely at the passage that Look and Rutherford quote which precedes the fivefold scheme that provides support for their making of this assumption. In particular I want to focus on the first sentence, which is as follows:

If you take a mass to be an aggregate containing many substances, you can nonetheless conceive of one substance that is preeminent in it, if in fact the mass constitutes an organic body animated by its primary entelechy (GP II, 252; AG 177\*).

As we saw, Look and Rutherford interpret this passage as containing an implicit commitment to the thesis that “what [Leibniz] will call a “corporeal substance” is an aggregate in which one substance, the soul, is “preeminent”” (LR liv). What they seem to have in mind here is a reading on which the substance that “is preeminent” in the mass is one of the substances that comprise an aggregate which Leibniz is willing to call a “corporeal substance”. But it is not entirely clear how this would fit with the characterization of corporeal substance that appears a few lines later in the fivefold scheme. The difficulty comes to light when one notices that the mass that is mentioned has a preeminent substance in it *if* the mass itself is “an organic body animated by its primary entelechy”.

Later we learn, in (4), that the “organic machine” is comprised of subordinate monads and then in (5) that a corporeal substance arises due to a unity that is conferred by an additional monad that is dominating them. Given this, we can see that there is no explicit commitment in Look and Rutherford’s quoted passage to the thesis that corporeal substances are aggregates, only that their organic bodies are. Thus there appears to be room, in logical space at least, for an interpretation of Leibniz according to which the monads that comprise a corporeal substance are unified as a result of two distinct kinds of composition: the aggregation that gives rise to an organic body; and a relation of domination/subordination, that confers *per se* unity on the monads that comprise the aggregate and a distinct monad, giving rise to the corporeal substance itself.

It is important to notice that, on this interpretation, the relationship that sustains the corporeal substance is not straightforwardly a relationship between a single monad and an aggregate. The organic body, like any other body, is an aggregate. It is an apparent unity that exists only in the representations of finite minds. But it is a body that behaves in such a way that it is legitimately classified as organic rather than inorganic. In other words, it is a body that appears to be alive and is subject to biological as well as physical investigation. But the monads from which it is aggregated also stand in a complex system of relations to an additional monad, which

Leibniz tries to capture by speaking of them as dominated by, or subordinated to that monad, and which he regards as sufficient for substantial unity.<sup>11</sup>

Look and Rutherford reject this kind of reading. However, it is not clear to me that they provide compelling reasons. Their main concerns seem to be the ones that I have already considered. As we have already seen, they claim that “if only monads are true substances, then a composite consisting of dominant monad and a mass of subordinate monads cannot be a substance” (LR lii). But, at least on the basis of the text that they cite, the relevant notion of a “true substance” seems to be of Look and Rutherford’s making. And I have argued above that there might be a sense in which domination should be regarded as sufficient to ground the per se unity required for substantiality.

However, another aspect of Look and Rutherford’s discussion of the notion of corporeal substance is relevant and deserves further attention. Here I have in mind their reading of the issues raised in a public interchange between Leibniz and Tournemine, which are also discussed by him in contemporary letters to both De Volder and Des Bosses.<sup>12</sup> Here is what Leibniz says in the letter to De Volder of 19 January 1706:

You rightly despair of obtaining from me something for which I neither raise nor have the hope, nor even the desire. In the schools they commonly seek things that are not so much ultramundane as utopian. The clever French Jesuit Tournemine recently provided me with an elegant example. After he had offered some praise of my pre-established harmony—which seemed to provide an explanation of the agreement that we perceive between soul and body—he said that he still desired one thing, namely, an explanation of the *union*, which assuredly differs from the agreement. I responded that whatever that metaphysical union is that the schools add over and above agreement, it is not a phenomenon and there is no notion of, or acquaintance with, it. Thus I could not have intended to explain it (Lodge 331).

The importance of this passage in the current context is that Look and Rutherford see reverberations of its central claims in a passage deleted from a letter to Des Bosses which is itself circa 1706:

The union that I find some difficulty in explaining is that which joins the different simple substances or monads existing in our bodies with us, such that it makes one thing from them; nor is it sufficiently clear how, in addition to the existence of individual monads, there may arise a new existing thing, unless they are joined by the bond of a continuous [thing] that the phenomena display to us (LR liv).

For Look and Rutherford, this passage “testifies to Leibniz’s scepticism concerning the M-Composite View as a satisfactory explanation of corporeal substance”

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<sup>11</sup> Leibniz’s account of the domination relation, which appears to have been introduced into his thinking at this time, is never clearly articulated in his writings. Interesting attempts to explicate this notion further can be found in Look (2002) and Duarte (2012). But each of these involves a good deal of philosophical speculation.

<sup>12</sup> Tournemine discussed Leibniz’s views in his *Conjectures on the Union of Soul and Body*, which appeared in the *Mémoires de Trévoux* of May 1703. Leibniz responded in the same journal in 1708 in a piece entitled *Comment of M. Leibniz on an article in the Mémoires de Trévoux of March 1704* (the reference here is to the date of the Amsterdam edition of the journal). See WF 246–51 for translations of the relevant parts of these articles.

(LR iv). For they attribute to Leibniz the view that, “If there are to be corporeal substances, something must be added in addition to the harmonized perceptions of monads”, and suggest that he “characterizes this something extra as a ‘union’ by which the subordinate monads of the body are joined with the soul such that ‘it makes one thing from them’” (*ibid.*).

It seems clear that in these passages Leibniz is accepting that the M-Composite View does not provide the resources to explain something, namely the “union” between soul and body that Tournemine demands, or, as Leibniz later puts it, how from a plurality of monads “there may arise a new existing thing”. But the connection between this and the claim that the M-Composite reading of Leibniz’s account of corporeal substance is inadequate is not immediately apparent. The connection is perhaps easier to make if one accepts Look and Rutherford’s contention that Leibniz had already foregone the condition of per se unity when he was prepared to confer the title “substance” on the M-Composites corporeal substances of the fivefold scheme. With this in the background, the passages from 1706 are naturally read as an expression of something that had been, or at least should have been, acknowledged by Leibniz already. However, I have provided reasons to think that we need not make that concession as far as the fivefold scheme goes, and it is not obvious to me that Leibniz is denying per se unity to M-Composites in the passages from 1706 either. For there are reasons to think that Leibniz would not have thought that the notions of union and substantial unity are equivalent.

Leibniz’s response to Tournemine was precipitated by an article in which Tournemine was himself trying respond to someone. The task Tournemine had been set was to “explain ... clearly what the union of the soul and the body consists in” (WF 247). Before offering his own view, Tournemine surveys a number of options that he finds available among his contemporaries, including the account of the relationship between the mind and body that Leibniz had articulated in his *New System* and a number of subsequent articles that dealt with this issue.<sup>13</sup>

Tournemine begins by presenting two views that he attributes to “university professors”. The first is that “the soul and the body are united because a certain thing unites them”, something which he suggests they would characterize as “an *entity*, whose distinctive quality is to unite”, which “is neither body nor mind and ... although it is indivisible ... is partly corporeal and partly spiritual” (WF 247). The second is simply the thesis that “the soul and the body are united because they unite themselves” (*ibid.*). Tournemine does not express his own view concerning the adequacy of these explanations, but moves on to others on the grounds that his interlocutor wants “to know what the union of the soul and body consists in, what it is that makes them unite” (*ibid.*).

At this point Tournemine considers a number of explanations that he characterizes as Cartesian. Each of them shares a core assumption, namely that soul and body

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<sup>13</sup> See the *New System of the Nature of Substances* (GP IV, 483–87; WF 17–20), the *Explanation of the New System* (GP IV, 493–98; WF 47–52), *Extract from a Letter by M. Leibniz about his Philosophical Hypothesis* (GP IV, 500–03; WF 65–67) and the *Explanation of the Difficulties which M. Bayle Found with the New System* (GP IV, 517–24; WF 79–86).

“are united because to each change in the body there corresponds a change in the soul, and in the same way to each change in the soul there corresponds a change in the body” (*ibid.*). Tournemine suggests that his interlocutor will not be satisfied with the Cartesian who adverts to this core thesis alone on the grounds that “the mutual interchange of passions, of feelings, and of movements is a consequence, an effect, of the union of the soul and the body” rather than the “proximate cause, for what creates that union” (*ibid.*). He then suggests that a Cartesian might appeal to the claim that “the soul and the body are united because God willed it, and set up a law about it”, and that if this is not enough of an explanation, they will explain how this is implemented, namely by God laying down a law for his own actions. Here Tournemine is explicit that he is thinking of those who appeal to “occasional causes” (WF 248), and he finishes by suggesting that the explanatory resources of the Cartesians are exhausted once one understands that the union consists of law-like regularities by which God has bound the changes that he brings about in souls and bodies.

It is at this point that Tournemine introduces Leibniz. He first rehearses, with approval, Leibniz’s suggestion that the occasionalist account of mind-body union is analogous to a clock-maker who must intervene at every moment in order to ensure that two clocks stay synchronized, and that such an account of God’s involvement in the world is unworthy of him. Next he sketches Leibniz’s alternative as follows:

What M. Leibniz has come up with on the union of the soul and the body shows much more imagination, and is much more worthy of God. He suggests that God, perceiving through the clarity of his infinite knowledge everything that will happen to the animated body in all the situations it will ever be in, was careful to create for every body a soul which, from within itself and its own nature, passes through all the same changes as the body, and which at every moment has the disposition and the feelings which correspond exactly to the current state of the body (WF 248).

Despite describing the explanation as “excellent and splendid” (*ibid.*), Tournemine is critical of Leibniz as well. The problem is that whilst Leibniz “makes against the Cartesians an objection which entirely destroys their theory of the union of the soul and the body ... [it] destroys M. Leibniz’s theory as well” (WF 248–49). The objection that Tournemine attributes to Leibniz is as follows:

Neither the law which God lays down for himself to act in parallel on the soul and on the body, nor the correspondence between the changes in the one and the changes in the other, can produce any genuine union between the soul and the body. There is, if you like, a perfect correspondence; but there is no real connection, any more than there would be between the two clocks we have just discussed (WF 249).

And he turns it on Leibniz as follows:

*[C]orrespondence, or harmony, does not make a union, or essential connection. Whatever parallels we imagine between two clocks, even if the relation between them were perfectly exact, we could never say that these clocks were united just because the movements of the one correspond to the movements of the other with perfect symmetry (WF 249).*

Tournemine then introduces a number of criteria that he thinks that an adequate account of the union of mind and body must satisfy before presenting his own “conjectures” (WF 249). The latter will not concern us here, but it is important to



understand how Tournemine is thinking about the notion of mind-body union in order to understand Leibniz's reaction. Tournemine observes:

We need to find a principle which will show that there is not only harmony and correspondence between these two substances, but also a connection, or essential dependence; not merely a virtual or apparent union which depends on some arbitrary law, but one which is actual and real: a union which is not superficial but intrinsic; a union of possession and of right, not merely of occupancy and custom. We need a principle which will show that the soul and the body are united in a different way from the citizens of the same town, from the workman and the tool he uses, or from a space and the body that fills it. In a word, we need a principle which shows that there is between a certain body and a certain soul a connection so natural, so essential and so necessary, that no soul other than mine could animate my body, and no body except mine could be animated by my soul (WF 249).

Many claims are made here, some of which appear rather metaphorical. However, one key thing comes through in this passage, namely that Tournemine does not think that any kind of relation between wholly distinct entities could produce the kind of connection that is required. Rather, there must be what he calls an "essential dependence", such that it would be impossible for one soul to unite in the relevant sense with different bodies at different times, or vice versa. As I have said, we don't need to worry about Tournemine's positive views any further than this. But the passage is important in that it suggests that Leibniz's response to Tournemine may not be quite as concessive as Look and Rutherford maintain.

In his published response – as opposed to his initial reaction in the letter to De Volder, or subsequent comments in the correspondence with Des Bosses – Leibniz begins by trying to distance himself from the objection to Cartesianism that Tournemine attributes to him. After accepting that he might have argued this way, Leibniz adds:

I have to admit that I would be greatly mistaken if I objected against the Cartesians that the agreement which, according to them, God maintains immediately between the soul and the body, does not create a genuine unity, because most certainly my *pre-established harmony* could not do it any better. My aim was to explain naturally what they explain by perpetual miracles, and in doing so I attempted only to give an explanation of the phenomena, that is to say, of the relation we perceive between the soul and the body (GP VI, 595; WF 250).

Here Leibniz accepts that Tournemine is right to think that the pre-established harmony is no more able to "create a genuine unity" than the agreement between soul and body that the occasionalists ascribe to the direct action of God. As he observes, the relevant difference is that he provides a natural explanation of something that the occasionalist can only explain by postulating constant miracles. But this is not all that significant a concession in the context of his disagreement with Tournemine. For Leibniz does not admit, as Tournemine would have it, that both he and the Cartesians fail to account for the fact that the soul and body form a unity. Indeed, he continues by making the point that was the focus of his discussion of Tournemine in the 1706 letter to De Volder:

But since this metaphysical union, which is added on to that, is not a phenomenon, and as we have not even been given any intelligible notion of it, I have not taken it upon myself to look for an explanation of it. However, I do not deny that there may be something of this kind (*ibid.*).

It seems to me that the most natural reading of the response to Tournemine and, by extension the letter to De Volder, is that Leibniz is claiming that whilst he thinks that pre-established harmony suffices to explain the unity of soul and body, in virtue of which they comprise the human animal, he denies that it provides an explanation of the kind of union that Tournemine appears to require. But Leibniz is also maintaining that he does not think that this notion has really been made intelligible. And furthermore he is claiming, since he does not think the union manifests itself in experience as anything beyond the correspondence of soul and body, that it is not incumbent on him to explain it. So, although Leibniz is willing to admit that there may be something of the kind that Tournemine and his interlocutor seek, there is no direct evidence here that this admission involves an acceptance that this kind of union is a necessary condition for the soul and body to constitute a unified animate being, or corporeal substance.

It is worth noting at this point that the Leibniz-Tournemine debate makes no direct reference to monads or corporeal substances. However, as we have seen, Look and Rutherford present a parallel passage from the Des Bosses correspondence in which Leibniz says that “the union . . . joins the different simple substances or monads existing in our bodies with us, such that it makes one thing from them” (LR liv). The text of this passage does sound somewhat more favourable to the thesis that they advance, since Leibniz continues:

[N]or is it sufficiently clear how, in addition to the existence of individual monads, there may arise a new existing thing, unless they are joined by the bond of a continuous [thing] that the phenomena display to us (LR liv).

But in order that this provide support for Look and Rutherford’s reading, we must take Leibniz to be claiming that for there to be a corporeal substance at all there must “arise a new existing thing.” It is clearly possible that this is Leibniz’s intention. But it does not seem to me that such a reading is forced on us. It is implicit in the kind of position that Tournemine and his interlocutor seek to explain, and, as such, it is natural for Leibniz to speak of such an entity here. But this is by no means equivalent to the interpretation that Look and Rutherford favour, namely, that in this letter and the related texts, Leibniz is conceding that the relations between the monads that comprise an animate being, i.e., relations of domination and subordination, do not suffice for the *per se* unity necessary for substantiality. I want, then, to suggest that the texts of 1706 do not provide us with reasons to think that Leibniz had rejected the M-Composite reading of corporeal substance at this time. Thus, it seems to me that there is all the more reason to think that the corporeal substance of the fivefold scheme may be self-consciously embraced as a composite being with a unity that suffices for substantiality rather than an aggregate.

However, I suspect that Look and Rutherford would offer a further rejoinder to this interpretation. The problem that I have in mind is my claim that the domination relation might ground a composite being that is not an aggregate. For this claim is dependent on a feature of my understanding of Leibniz’s conception of aggregates

that is at odds with the account that Rutherford has advocated in a number of his writings.<sup>14</sup> On the interpretation of Leibniz's notion of an aggregate that I have defended at length elsewhere,<sup>15</sup> aggregates exist only where finite minds represent the things aggregated individually and treat them as one thing on the basis of a system of relations that holds between them. For Rutherford, aggregation is something that takes place in the divine mind whenever a plurality of things is perceived by God to stand in a given relation to one another. Furthermore, for Rutherford this exhausts the ways in which he thinks that Leibniz allows there to be composition.<sup>16</sup>

For Rutherford, the monads that comprise a corporeal substance on the reading offered in this section would be aggregates, given that they are united by a system of relations. And I suspect Look and Rutherford would hold that this reading collapses into a version of the view that treats corporeal substances as aggregates of a special kind, and that is subject to the worry that the categories of substance and aggregate are mutually exclusive. Thus, it would turn out to be the kind of unstable view which Look and Rutherford think is finally unseated by Leibniz's encounter with Tournemine. However, on the reading of aggregation that I maintain, whilst every system of relations that obtains between a plurality of individuals will be perceived by God, this perception alone does not yield an aggregate.

On my interpretation, aggregates are the kinds of things that exist solely in the minds of finite beings. This is consistent with God perceiving individuals standing in relation to one another, and, assuming that there are such things, is consistent with there being individuals that stand in relations that unite them. Furthermore, or so I have argued, it is plausible to think that in some cases, these relations might unite them on the basis of a relation that is constituted by features that are intrinsic to the plurality. Given other commitments that Leibniz makes regarding the being of relations, it is the case the reality of these relations is essentially dependent on their perception by God. But this does entail that the composite beings that the relations ground are aggregates. Whilst I do not have the space to explore the position further here, my contention is that the domination/subordination relation is a relation which performs just this function. Thus, I want to suggest that it is possible for Leibniz to maintain that there are non-aggregate composites which are per se unities that may be identified with the animals or plants, i.e., the corporeal substances, that he mentions in (5) from the fivefold scheme. And I think we should seriously entertain the thought that there is a consistent version of the M-Composite View available to Leibniz which he had in mind when he composed the 20 June 1703 letter to De Volder.

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<sup>14</sup>For example, see Rutherford (1994, 1995, 221–226).

<sup>15</sup>See Lodge (2001).

<sup>16</sup>See Rutherford (1995, 221–226).

### 3 How Stable Is the Non-aggregate M-Composite View?

I want finish by saying something about the extent to which my reading of the five-fold scheme might be thought as providing a model for how Leibniz considered these issues for the remainder of his career. From hereon I will assume that corporeal substances should be understood as non-aggregate M-Composites in light of the argument of the last section. However, even if corporeal substances are better conceived as aggregates of a special kind, it is important to remember that they might still be thought to have a kind of *per se* unity.

A first thing to notice is that there is *prima facie* textual evidence that Leibniz is willing to regard M-Composites as corporeal substances up until the end of his life. In a piece dating from around 1707, comprising comments on Wachter's *Elucidarius cabalisticus*, which is concerned with Spinoza's philosophy, Leibniz asserts that "A corporeal substance has a soul and an organic body, that is, a mass composed of other substances" (AG 274), and, more explicitly, in section 3 of *The Principles of Nature and Grace*, dating from around 1714, we find:

There are simple substances everywhere, actually separated from one another by their own actions, which continually change their relations; and each distinct simple substance or monad, which makes up the center of a composite substance (an animal, for example) and is the principle of its unity, is surrounded by a mass composed of an infinity of other monads, which constitute the body belonging to this central monad (GP VI, 598–99; AG 207).<sup>17</sup>

In the second of these passages, Leibniz explicitly speaks of a monad (presumably a dominant monad) as the principle of unity of a composite substance. Might it not be the case then, that Leibniz remained happy to maintain the substantial unity of some composite entities in the way that I sketched above?

I don't aim to answer this question now. To do so would require a detailed examination of the later parts of the correspondence with Des Bosses, in which Leibniz discusses the thesis that corporeal substance might require something like the union that Tournemine mentions in the form of a "substantial bond [*vinculum substantiale*]" . The nature of the bond itself is one that seems to have changed during the course of Leibniz's discussion with Des Bosses (see LR lx-lxxii). But, in its final incarnation it seems to be regarded by Leibniz as an entity whose being is entirely separate from the monads that comprise the corporeal substance of the M-Composite View, and which should replace this composite as the referent for the terms "corporeal substance" and "composite substance".

For Look and Rutherford, Leibniz's discussion of the substantial bond is evidence that he continued to regard the criticisms of Tournemine as decisive, with the bond developed partly as a way of addressing the failures of M-Composite View. But whilst there are clearly passages in the Des Bosses correspondence which suggest that Leibniz does not think that monads alone suffice for the existence of cor-

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<sup>17</sup>Also see the *Conversation between Ariste and Philarete* from 1712/15 in which Leibniz speaks of "corporeal substance, composed of soul and mass" (GP VI, 588; AG 264).

poreal substances, they are difficult to interpret. One important complication is that, in the correspondence with Des Bosses, the notion of corporeal substance is often invoked in the context of a discussion of transubstantiation, where the substantiality of inanimate beings – the bread and wine – is the primary focus. Set against this, however, is the fact that, by the later stages of the correspondence, Leibniz appears to restrict the extension of the term “corporeal substance” to cases where “there is an organic body with a dominant monad, or a living thing, that is, an animal, or something analogous to an animal” (LR 319). Indeed, Look and Rutherford provide a good case for the conclusion that, in the Des Bosses correspondence, Leibniz argues that there would be no corporeal substances if all that existed were pluralities of monads standing in the kinds of mind-dependent relations to another that sustain the M-Composite View. But it is also worth noting that Leibniz begins to develop his account of the substantial bond in his letter of 15 February 1712, introducing it in the following way:

If a corporeal substance is something real, over and above monads, just as a line is held to be something over and above points, then we will have to say that corporeal substance consists in a certain union, or better, in a real unifying thing that God superadds to the monads (LR 225).

In this passage, we can see that Leibniz connects the existence of a corporeal substance with the existence of a “union” as Tournemine had suggested he was obliged to do. But we should also notice that Leibniz is talking of a corporeal substance as “something that is real, over and above monads”. What is unclear here is whether Leibniz accepts that a corporeal substance is a thing of this kind. Arguably, on the M-Composite View, the corporeal substance is *not* “something real over and above monads”; it is simply monads which stand in a special kind of relation to one another. Whilst it remains nothing other than a working hypothesis at this point, were this an adequate reflection of Leibniz's position, and were we entitled to assume that the term “corporeal substance” as used in the Des Bosses correspondence is intended to pick out something that Leibniz regarded as nothing other than an artefact of the positions of some of his interlocutors, it would allow us to see him as maintaining the positions of the *Principles of Nature and Grace* and the Des Bosses correspondence consistently. Much more work would be needed to mount a full defence of this position.<sup>18</sup> However, the suggestion here is that Leibniz himself may never have abandoned the non-aggregate version of the M-Composite View, and that appearances to the contrary should be understood as prefaced by the conditional claim from the letter of February 1712.<sup>19</sup>

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<sup>18</sup>Notably, it would be necessary to find a way of accommodating the following claim that Leibniz makes in his final letter to Des Bosses, of 29 May, 1716, “Composite substance does not formally consist in monads and their subordination, for then it would be a mere aggregate, that is, an accidental being” (LDB 371).

<sup>19</sup>Many thanks to Martin Pickup for helpful comments on an earlier draft of this paper.

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# Chapter 9

## The Souls of Seeds

Pauline Phemister

Leibniz's pre-established harmonious unfolding of individuals' essences is rightly granted a pivotal role in his metaphysics. Most commonly understood in terms of the unfolding of monadic sequences of perceptions and appetitions, the closely related theories of organic-body preformation and the unfolding into visibility of plants and animals from their seeds have until recently largely been ignored.<sup>1</sup> In this paper, we question why, despite the thoroughgoing mechanical preformation of organic bodies, Leibniz insisted that the preformed seeds of animals and other living things must contain souls, entelechies or substantial forms. The issue is raised through contrast with Malebranche's doctrine of preformation that makes no such claim.

### 1 Introduction

Leibniz made no secret of his support for Descartes' modernising mission to expose the scholastic misconception that souls, substantial forms or entelechies and their perceptions and appetitions have any explanatory value within the physical sciences. In true Cartesian spirit, he insisted that physical mechanisms are "sufficient to produce the organic bodies of animals" (Preface to the *Theodicy*, H 64; GP VI, 40). At the same time, however, he also believed that the generation of organic bodies must be supplemented by "the *pre-formation* already completely organic in the seeds of the bodies that come into existence, contained in those of the bodies whence

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<sup>1</sup>For an extended discussion of Leibniz's theory and its historical context, see Smith (2011, 165–196). The topic has also been addressed by Duchesneau (2010) and by Wilson (1997).

they spring, right back to the primary seeds” (*ibid.*). Furthermore, Leibniz insisted that *all* preformed seeds, whether original or primary seeds or subsequent seeds,<sup>2</sup> contain souls. Yet, it is clear that Leibniz regarded preformation as applying only to the organic body and not to the whole corporeal substance comprising the organic body together with its dominant soul or substantial form. Hence, in the Preface to the *Theodicy*, he described preformation as “completely organic in the seeds” and later, in the text itself, he would refer to “this great number of souls and of animals, or at least of living organic bodies which are in the seeds”, and explain that only the organic bodies of souls that are “destined to attain one day to human nature” are already “preformed and predisposed to assume one day the human shape” (*Theodicy*, §397; H 361; GP VI, 352). The organic bodies of “other small animals or seminal living beings” are also preformed, although, destined never to become the bodies of human beings, their bodies will accordingly only ever assume non-human shapes (*ibid.*). However, if preformation and mechanism suffice to explain the various successive states of the organic bodies of creatures, why did Leibniz consider it important in that context to highlight the fact that their seeds contain souls? Unless the fact of souls in seeds is a mere coincidence, their presence requires justification.

Leibniz’s claim relies on two assumptions, neither of which is self-evidently necessary. First, Leibniz had supposed that all organic bodies are living bodies and second, that all living bodies are ensouled. Among his contemporaries, neither assumption enjoyed universal acceptance. Anne Conway felt no compulsion to endorse the first. She used the term ‘organic’ to refer to any object with parts arranged in an organised and functional manner. Thus, for Conway, a lifeless clock, even though it has no “vital principle of motion in it” is “simply an organic body”.<sup>3</sup> Meanwhile, Malebranche denied the second assumption. He believed that all preformed bodies, though they are living bodies, should be regarded as *inanimate* or *soul-less* mechanisms. Lacking feeling, perception or desire, Malebranche’s preformed seeds and other living bodies are therefore far closer in kind to inorganic physical objects, such as mountains, rocks and Conway’s clock, than they are to living, sensing human beings whose minds or souls God fills with the sensations of colour, taste, touch, sound and smell that enable them to perceive physical objects in the external world. Malebranche appealed solely to the seed’s preformation to ensure that everything is in place to allow that its future states are unfolded sequentially simply by the natural motions and collisions of bodies in accordance with the regular laws of motion. Given Leibniz’s agreement on this point,<sup>4</sup> the question is raised: if Malebranche’s preformation doctrine does not require that seeds possess souls, why should Leibniz’s?

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<sup>2</sup> Leibniz believed that God created all souls and organic bodies at once. Hence seeds are not primary in the sense of being created first, before others. Rather, at the moment of Creation, all seeds were ‘primary seeds’. The phrase ‘primary seeds’ presumably refers to the initial states of seeds, that is, to seeds as they were when first created. Correspondingly, non-primary or subsequent seeds can be understood as seeds in their post-creation developed states.

<sup>3</sup> Conway (1996, 64).

<sup>4</sup> Leibniz’s Fifth letter to Clarke, ALC 93, GP VII, 417–18.



## 2 Malebranche's Preformationism

Malebranche had proposed that the preformation of bodies together with the mechanical laws of nature could account for the future unfolding of living animals and plants from seeds contained in the very first members of each species created by God at the beginning of the world. A single seed contains the seeds that will become its immediate offspring as well as the seeds of all the offspring that will be produced from that line down the years forevermore. All whose lineage will later be traceable back to the first parent are already present in seed-form in that first parent's seeds: "each seed contains the entire species it can conserve" (*Dialogues on Metaphysics and on Religion*, Dialogue X; DMR 175; R-L II, 852). For instance, "in a single apple seed there are apple trees, apples, and apple seeds, standing in the proportion of a fully grown tree to the tree in its seed, for an infinite, or nearly infinite number of centuries" (*Search After Truth*, LO 27; R-L I, 57).

The role of nature (or mechanism) is merely,

to unfold these tiny trees by providing perceptible growth [*un accroissement sensible*] for that outside its seed, and imperceptible yet very real growth in proportion to their size, for those thought to be in their seed – for it cannot be doubted that there are bodies sufficiently small to get in between the fibers of these trees thought to be in their seed and thus to serve as food for them (*ibid.*).

The process may involve some re-configuration or re-shaping of the parts or organs of the seeds,<sup>5</sup> by which Malebranche meant that the relations and proportions among the pre-existing parts in the seeds might not be exactly the same as those in the resulting plant or animal. The parts of the bee, for instance, will not have "the same proportion of size, solidity, and configuration between its parts" when it exists in the larva as it will do after it has emerged as a fully-grown bee. Similarly, a chicken's head "when it is in the egg and appears in the form of larvae, is much larger than all the rest of the body, and ... the bones assume their consistency only after the other parts" (*Dialogues on Metaphysics and on Religion*, Dialogue XI, DMR 195; R-L II, 873).

From this stance, there is no need for non-human animals, plants and their parts, including their seeds, to be endowed with sensing souls. They are simply mechanical machines. On Malebranche's thoroughly Cartesian account, "all the parts of animals are merely mechanical, and ... they can be moved without a soul merely by the impression of objects and by their particular constitution" (*Search After Truth*, LO 324; R-L I, 469).<sup>6</sup> The process of unfolding what is already present in miniature in the seed involves only mechanical growth or augmentation. The accumulation of additional matter simply enlarges, while motion re-configures, parts or organs that are already present in miniature. All living things that will appear in due course,

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<sup>5</sup>"Configuration", Malebranche defines as, "the shape of the unobservable parts of which large bodies are composed" (*Dialogues on Metaphysics and on Religion*, Dialogue X; DMR 181; R-L II, 859).

<sup>6</sup>See also, *Dialogues on Metaphysics and on Religion*, Dialogue XI DMR 195–96; R-L II, 874.

from tulips and frogs to the bodies of human beings, already exist in the seeds of their progenitors as tiny versions of their future selves.

An entire tulip is seen in the seed of a tulip bulb. Likewise, a chicken that is perhaps entirely formed is seen in the seed of a fresh egg that has not been hatched.<sup>7</sup> Frogs are to be seen in frogs' eggs, and still other animals will be seen in their seed when we have sufficient skill and experience to discover them.<sup>8</sup> ... We ought to accept, in addition, that the body of every man and beast born till the end of time was perhaps produced at the creation of the world (*Search After Truth*, LO 27; R-L I, 57).<sup>9</sup>

All that mechanism was required to do was to enlarge the organs and perhaps re-arrange the organs of the miniature animalcular figure in the seed. Extended matter in motion was considered quite sufficient to enable nature to fulfil its role of unfolding through augmentation and re-configuration what was already contained in the seed.<sup>10</sup> Nothing more is needed. Animal and plant souls, on the Malebranchian model, are redundant.<sup>11</sup>

### 3 Leibniz's Malebranchianism

There are indications of a Malebranchian-style animalculism in Leibniz's accounts of preformation also. For instance, Leibniz likened the never-ending, nested structure of organic living bodies to the layers of clothes on Harlequin:

the machines of nature are as imperishable as souls themselves, and the animal together with its soul persists for ever. I can explain my meaning better with the help of a pleasant though very silly example: it is as if someone tried to strip Harlequin on the stage but could never finish the task because he had on so many costumes, one on top of the other (*New Essays*, A VI, 6, 328; RB 328).

Leibniz also employed Malebranche's language of "growth" or "augmentation" to describe the unfolding of the animal or plant that already exists "in miniature" in the preformed seed. The early microscopists had uncovered a previously hidden world of miniscule creatures in all manner of everyday substances from dung to

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<sup>7</sup> Author note: "The germ of the egg is under a tiny white spot that is on the yolk. See the *Liv. de formatione pulli in ovo*, by Malpighi".

<sup>8</sup> Author note: "See *Miraculum naturae*, by Swammerdam".

<sup>9</sup> Similarly, of trees, that they exist "in the seeds of their seeds in miniature" (*Search After Truth*, LO 26; R-L I, 56).

<sup>10</sup> See *Dialogues on Metaphysics and on Religion*, Dialogue X (DMR 188–89; R-L II 866–67) for Malebranche's account of how the motion of matter fashions the parts in the seeds into the organised bodies of humans, animals and plants.

<sup>11</sup> Malebranche offered various negative reasons to support his denial of animal souls, among them being the avoidance of divine injustice. Regarding all pain or suffering as God's way of punishing sinful behaviour, recognising that any feeling creature will at times experience pain, and assuming that animals are innocent creatures, we can be assured that an "infinitely just and omnipotent God" will not provide animals with souls that enable them to be sensible of their circumstances (*Search After Truth*, LO 323; R-L I, 467).

chalk and Leibniz, following Malebranche,<sup>12</sup> appealed to their investigations to support his claims that “the apparent generation of a new plant or new animal is only a growth (*un accroissement*) and transformation of a plant or animal which already subsists in the seeds” (Leibniz to Sophie, 6 February 1706, Strickland (2011, 348), GP VII, 568); that “living animals as well as plants already exist in miniature (*en petit*) in the seeds before conception” (*Considerations on the Principles of Life and on Plastic Natures*, GP VI, 543; L 589); and that “death, like generation, is only the transformation of the same animal, which is sometimes augmented and sometimes diminished” (*ibid.*).

Given Malebranche’s use of the microscopists’ observations, Leibniz’s appeals to those whom he considered the “best observers of our time” (Jan Swammerdam, Marcello Malpighi and Antonie van Leeuwenhoek)<sup>13</sup> afforded him the opportunity to align his preformationism explicitly and in public to that of the Oratorian. In the *New System of the Nature and Communication of Substances*, published in 1695, and again in the *Essays on Theodicy*, published in 1710, he numbered Malebranche amongst from whom he garnered support. Claiming that “the *transformations* of Swammerdam, Malpighi, and Leeuwenhoek ... have made it easier for me to admit that animals and all other organized substances have no beginning ... and that their apparent generation is only a development, a kind of augmentation”, he immediately added that he had also “noticed that the author of the *Search After Truth*, Régis, Hartsoeker and other able persons have held opinions not far removed from this” (*New System*, GP IV, 480; AG 140). Fifteen years later, Leibniz once again alluded publicly to the support for his views from Malebranche in conjunction with others, including the microscopists:

It is thus my belief that those souls which one day shall be human souls, like those of other species, have been in the seed, and in the progenitors as far back as Adam, and have consequently existed since the beginning of things, always in a kind of organic body. On this point it seems that M. Swammerdam, Father Malebranche, M. Bayle, Mr. Pitcairne, M. Hartsoeker and numerous other very able persons share my opinion. This doctrine is also sufficiently confirmed by the microscope observations of M. Leeuwenhoek and other good observers (*Theodicy*, §91; GP VI, 152; H 172).

While technically accurate, Leibniz’s attempt in the *Theodicy* to situate himself amongst Malebranche and other well-respected figures can easily breed misunderstanding if not read entirely literally. For though it is true that Malebranche admitted human souls, the alignment with Leibniz breaks down as soon as we go beyond these to consider the possibility of non-human souls in plants and animals. These, Malebranche firmly denied and, unlike Leibniz, Malebranche never appealed to the microscopic evidence to support such an opinion.<sup>14</sup> We find that the association with

<sup>12</sup>For instance, *Search After Truth*, LO 26; R-L I, 56. Malebranche’s writings display an impressive awareness and understanding of contemporary scientific studies of the natural world. Wilson (1997, 158) suggests that it was his reading Malebranche’s *Search After Truth* that led Leibniz to appreciate the metaphysical import of microscopy.

<sup>13</sup>*New System*, GP IV 480; AG 140. Leibniz favoured Leeuwenhoek’s animalist position; Malebranche, the ovism of Malpighi and Swammerdam. See DMR 175, n6.

<sup>14</sup>For all Leibniz’s protestations, on this point, the scientific evidence must be silent. No empirical confirmation of the presence of immaterial perceiving souls in animals or in their seeds can be provided solely by the observation of their physical bodies.

Malebranche is further undermined when we attend more closely to Leibniz's choice of terminology, first with respect to the changes that occur in organic bodies and, second, with regard to the changes undergone by the animals and other living beings to which these bodies belong. Leibniz described the former as mere 'preformations', while for the latter, he reserved the more dramatic term: 'transformations'.

#### 4 Preformation *versus* Transformation

Leibniz took great care to distinguish preformation and transformation. Preformation was attributed to the organic body or seed, but transformation or metamorphosis was attributed solely to the animal. Animals or corporeal substances are *transformed*; organic bodies or seeds are only *preformed*. The difference was stated most clearly at *Monadology* §74:

... today, when exact inquiries on plants, insects, and animals have shown us that organic bodies in nature are never produced from chaos or putrefaction, but always through seeds in which there is, no doubt, some *preformation*, it has been judged that, not only the organic body was already there before conception, but there was also a soul in this body; in brief, the animal itself was there, and through conception this animal was merely prepared for a great transformation, in order to become an animal of another kind. Something similar is seen outside generation, as when worms become flies, and caterpillars become butterflies (sec. 86, 89; Preface \*\*\*5.b. ff; sec. 90, 187, 188, 403, 86, 397) (*Monadology*, §74, GP VI, 619–20; AG 222).<sup>15</sup>

The transformations described here involve changes of the animal's bodily shape that are so radical that the animal, post-transformation, may be regarded as belonging to a different species. The transformed animal becomes "an animal of another kind". Among the appended references to the *Theodicy*, Leibniz directs us to one we have already had occasion to mention, *Theodicy* §397. There, Leibniz had written of souls whose organic bodies are "preformed and predisposed to assume one day the human shape", distinguishing these bodies from "the other small animals or seminal living beings, in which no such thing is pre-established" (*Theodicy* §397; GP VI, 352; H 361; my emphasis). Even Leibniz's homuncular-sounding example of the multi-layered Harlequin was qualified in keeping with the notion that preformed bodies can change dramatically change their shape, for Leibniz went on in the *New Essays* passage quoted earlier to explain that we should not conceive the tiny bodies within larger bodies as exact replicas of the latter. "Nature's artifice" is not so crude. What is replicated in the smaller regions of the organic body does not exactly resemble the original:

the infinity of replications of its organic body which an animal contains are not as alike as suits of clothes, and nor are they arranged one on top of another, since nature's artifice is of an entirely different order of subtlety (*New Essays*, A VI, 6, 328; RB 328).

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<sup>15</sup> See also, *Principles of Nature and Grace*, §6; GP VI, 601; AG 209.

From the observation that some souls will one day possess bodies that assume the figures of creatures belonging to different species, we may infer that Leibniz intended that the transformation of an animal be understood, not as a simple “augmentation” in the Malebranchian sense of merely becoming bigger, but rather as a process through which the creature acquires a new outward appearance. When a body takes on the shape of a human being, there is a real transformation of the *animal* (the body together with a soul) as its body assumes a shape typical of members of an altogether different species. The body acquires a new shape; it does not simply re-configure and increase in size (augment) the organs that the body already possessed in miniature.<sup>16</sup>

Augmentation as growth or nourishment is of course still required in addition to transformation. Ordinarily, Leibniz referred to ‘transformations’ as ‘developments’, as when he stated that ‘generation is thus merely the growth of a changed (*transformé*) and developed (*developpé*) animal’ (*Reflections on the doctrine of a single universal spirit*, GP VI, 534; L 557). The development of the animal (its transformation) goes hand in hand with its growth (or augmentation). Nevertheless, the two procedures are not one and the same. Elsewhere, Leibniz described the generation of the animal as a transformation *and* a “kind of augmentation” (*New System*, GP IV, 480; AG 140). The unfolding of the animal as a creature of another species is a sophisticated growth, nourishment or augmentation combined with transformation or development. The distinction and combination of transformation with augmentation or growth is also evident in the passage cited earlier from his 6 February letter to Sophie, in which Leibniz had declared that “the apparent generation of a new plant or new animal is only a growth and transformation of a plant or animal which already subsists in the seeds” (Strickland (2011, 348), GP VII, 568). It is evident too in Leibniz’s remark in the *Reflections on the doctrine of a single universal spirit* that “seeds already contain the formed plant or animal, although it still needs transformation and nourishment, or growth (*accroissement*), to become an animal of the kind which our ordinary senses can observe” (GP VI, 534; L 557).<sup>17</sup>

In sharp contrast, Malebranche never embellished his theory of preformation as augmentation with a theory of the transformation of the animal. Instead, Malebranche insisted upon understanding the so-called transformations from larvae into fully-fledged flies and butterflies as simple augmentations. When, in the *Dialogues on Metaphysics and on Religion*, Theotimus claims, incorrectly as it turns out, that the Ant-Lion or “*Formica-leo*” transforms itself into a dragonfly, Malebranche’s mouthpiece, Theodore, ridicules the idea, likening it to the idea of a mole being

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<sup>16</sup>Although the issue is of course highly relevant, I will not divert our attention here to the methods of species classification preferred by Leibniz and contrasted in the *New Essays* with Locke’s thoroughgoing nominalism. For discussion of Leibniz on the classification of biological species, see Smith (2011, 235–274).

<sup>17</sup>In the *Considerations on the Principles of Life and on Plastic Natures*, Leibniz described death and generation as “only the transformation of the same animal, which is sometimes augmented and sometimes diminished” (GP VI, 543; L 589). This can be read as claiming either that the transformation itself is subjected to augmentation or that it is the transformed animal that is augmented. In either case, however, transformation is presented as something more than mere augmentation.

turned into a blackbird. An animal of one type cannot be transformed into an animal of a different kind.<sup>18</sup> Indeed, Malebranche thought that generation via different species would require that God intervene in particular instances, acting by particular volitions rather than relying on the general or universal operation of the laws of motion to generate new life. To believe otherwise, he claimed, would denigrate God's intelligence: "[f]or to suppose that God ordained some intellect ... to maintain the species and from it always to form new ones, is to render divine providence human, and make it bear the character of a limited intelligence" (*Dialogues on Metaphysics and on Religion*, Dialogue XI; R-L II, 879; DMR 201).<sup>19</sup>

However, Malebranche contended, the mechanical generation of new creatures within the same species *is* possible so long as the arrangement of the infinity of organs is pre-formed in advance by God in such a way that every creature contains the seeds of all its progeny for evermore. As we have seen, all that is then required to pave the path to adulthood is growth or nourishment through the accretion of matter and re-configuration, through motion, of the organs. Bees provide the paradigm case:

all the organic [*organiques*] parts of bees are formed in their larvae, and are so well proportioned to the laws of motion that they can grow [*peuvent croître*] through their own construction and through the efficacy of these laws, and can assume the shape suitable to their condition, without God intervening anew through extraordinary providence (*ibid.* R-L II, 874; DMR 195–96).<sup>20</sup>

Nevertheless, the universal operation of the general laws of motion is useful only in blindly and deterministically re-configuring and augmenting organs that are already *in situ*. They cannot effect the initial creation and organisation of the infinity of parts of each and every creature that will ever exist: "the general laws of the communication of motion are too simple to construct organic bodies [*des corps organisés*]" (*ibid.*, R-L II, 873; DMR 195). Consequently, whatever is not literally in the seeds at the beginning cannot arise later through the mere mechanical laws of nature:

if these tiny embryos, or rather these embryos of embryos of embryos, and so on, did not have a crystalline lens, for example, or optic nerve, or the leading block I discussed,<sup>21</sup> or the first rudiments of all those parts destined to the same end, it is clear that the general laws of motion would never have been able to construct them. (*Search After Truth*, Last Elucidation – Elucidation on Optics, R-L I, 1099; LO 741–42)<sup>22</sup>

<sup>18</sup> *Dialogues on Metaphysics and on Religion*, Dialogue XI; R-L I, 878; DMR 200.

<sup>19</sup> See also R-L II, 881; DMR 203.

<sup>20</sup> Malebranche also appealed to God's strict application of the universal laws of motion and His refusal to intervene in particular instances in order to account for the frequent occurrences of "monstrous animals" (DMR 196, R-L II, 874). See also *Search After Truth* (R-L I, 183; LO 118) where God's adherence to the criteria of simplicity, continuity, and order are highlighted: "having had a plan to produce an admirable work by the simplest means, and to link all His creatures with one another, He foresaw certain effects that would necessarily follow from the order and nature of things". That this would sometimes give rise to monstrous births in humans and other living things "did not deter Him from his plan".

<sup>21</sup> See *Search After Truth*, R-L I, 1070–71; LO 723.

<sup>22</sup> See also, *Dialogues on Metaphysics and on Religion*, Dialogue XI; R-L II, 884; DMR 205.

On the inability of matter to construct organised bodies with infinitely many parts and the need to introduce initial divine preformation, Leibniz was in complete agreement with Malebranche. He agreed wholeheartedly that preformation is a necessity because “there is no mechanism which is able to draw from an unformed mass a body endowed with an infinite number of organs, such as is that of an animal” (Leibniz to Sophie, 6 February 1706, Strickland (2011, 348), GP VII, 568). And even though Leibniz allowed species-changing transformations, he also agreed that matter operating solely by the laws of motion was sufficient to bring about the unfolding of the animals’ preformed organic bodies. For Leibniz, the preformed changes to the organic body needed to accomplish the transformation of the animal are produced by purely mechanical means. As he told Samuel Clarke:

The organism of animals is a mechanism which supposes a divine preformation: what follows from it, is purely natural, and wholly mechanical (Leibniz’s Fifth letter to Clarke, GP VII, 417–18; Alexander 93).

Divine preformation sets the original conditions. For Malebranche, these constitute in miniature the body that will eventually emerge. Having rejected transformations, Malebranche proposed that seeds and eggs contain all that they need and do not take in nourishment from outside until they are ready to hatch and to grow full maturity.<sup>23</sup> Anything less than the complete formation of the creature in miniature in the seed would require God’s particular volitional intervention over and above the general operation of the laws of motion. However, there seems in principle no reason why God’s particular volitions should be required in order that animals and plants might be, not merely augmented, but actually transformed into creatures of a different species. There is no need, as Malebranche would have it, to limit God’s intelligence or to require His miraculous intervention from time to time. Could not God simply preform seeds in such a way that shapes different from the one originally bestowed might come about over time through interactions with external things? Divine omniscience, foreseeing all the motions and interactions of bodies, would surely know exactly which initial states (that is, which primary seeds) were needed in order that they should assume their different species shapes in due course. The crystalline lens need not present fully formed from the beginning. It can emerge through (internal and external) mechanical processes over time. The primary seeds are not required to have everything they need from the very beginning; they can acquire what they need over time, through mechanical interactions with others. Once preformed, mechanism alone could bring about all the changes required in individuals’ organic bodies, even those radical changes of bodily shape that result in their changing species membership.

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<sup>23</sup>“The silkworm is nourished by the leaves of the mulberry tree, but the tiny worm contained in the egg is nourished by nothing; it has everything it needs next to it. True, it does not always eat. But it conserves itself without eating, and for six thousand years has been conserving itself. We find it strange that certain animals spend the winter without nourishment. What a marvel it is, then, that silkworms organize their nourishment so exactly, that they lack it precisely only when they are strong enough to break out of their prison and when the mulberry trees have spouted tender leaves to nourish them anew” (*Dialogues on Metaphysics and on Religion*, Dialogue XI, R-L I, 881; LO 202).

However, if the laws of mechanics do suffice to maintain the functions of reproduction, nutrition and self-repair and even to bring about the requisite changes of shape and structure of the organic body, if everything in nature does simply unfold through mechanical collisions and motion, then we still lack justification of Leibniz's claim that preformation requires that seeds and other organic bodies possess souls. Malebranche and Leibniz agreed that preformation together with mechanism is sufficient to produce the organic bodies of animals. Malebranche did not attribute souls to seeds. The question remains, why should Leibniz?

## 5 Transformations, Continuity and Identity

In itself, the doctrine preformation itself seems unable to justify Leibniz's attribution of souls to preformed seeds. Might the animal transformations brought about by changes to their preformed bodies fare better? Certainly, all transformations of living beings are dependent upon the preformations of their organic-bodies. No living thing can be transformed into a creature of a different species unless its organic body assumes the shape typical of members of that species.<sup>24</sup> If animal transformations can be demonstrated to require the presence of souls, then at least in those cases where transformations occur, the preformed bodies, as the organic bodies of ensouled creatures, would also be shown to possess souls. And if *all* preformed bodies are organic bodies of transformed living creatures, we would have the foundation on which to build a case for the presence of souls in *all* seeds. Whether rightly or wrongly, Leibniz himself believed that transformations are not unusual occurrences. Those few that are observable are only visible instances of a process that is prevalent throughout the created world:

nature has this tact and goodness in revealing its secrets to us in small samples and thus making us infer the rest, everything being in correspondence and harmony. It is this which nature shows us in the transformation of caterpillars and other insects, for flies too come from worms, to help us grasp that there are transformations everywhere (*Reflections on the doctrine of a single universal spirit*, GP VI, 533; L 557).

But do living things really need to possess souls if they are to undergo transformations? One might suppose that the soul is required to maintain the continuity of the species-changing animal over time. Certainly, Leibniz believed that the animal persists throughout the momentous changes precipitated by the altered shape of its body: "the animal itself will always remain throughout these transformations, just as the silkworm and the butterfly are one and the same animal" (*Reflections on the*

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<sup>24</sup>In the *Principles of Nature and Grace*, Leibniz even inferred the transformation of the animal or plant from the preformation of the seed: "Modern investigations have taught us, and reason confirms it, that living things whose organs are known to us, that is, plants and animals, do not come from putrefaction or chaos, as the ancients believed, but from *preformed* seeds, and consequently, from the transformation of preexistent living beings" (§6, GP VI, 601; AG 209).



*doctrine of a single universal spirit*: GP VI, 533; L 557). However, I have found no evidence of Leibniz arguing for the existence of the soul as a means of securing the continuous diachronic identity of the animal through species transformation. Indeed, his preference seems to have been to argue from the prior existence of the organic body to the existence of the soul and the animal itself, not from the pre-existence of the soul or ensouled animal to the existence of its organic body.<sup>25</sup>

In any case, arguing in favour of the soul as guarantor of the continuing identity of the animal through change may simply beg the question. After all, the outward appearance has utterly changed, so strictly speaking, the evidence suggests that the first animal has disappeared and has been replaced by another. Nevertheless, eager to *believe* that the same animal has persisted throughout, the temptation is great to propose a theory of transformation over replacement. When Descartes had suggested that the soft, transparent, melted wax by his fireside was the same as the hard, opaque object that had been at his fireside before the fire was lit, his assessment could not be based on empirical evidence, but had to depend upon his forming an intellectual judgement that begged the question whether the same object really did persist despite the changes in its outward appearance. Maintaining that the same animal persists through similarly radical changes to the shape, size and general appearance of its body is equally questionable. Just as Descartes lacked a watertight assurance that it really is the same wax, so too there is no full-proof evidence that the caterpillar is the same animal as the butterfly and the latter has not simply taken the place of the former.<sup>26</sup>

Such quibbles may be set aside, however, for Leibniz's approach was quite different. When commenting on Ralph Cudworth's theory of plastic natures in a paper published in the May 1705 issue of the *Histoire des Ouvrages des Savants*, Leibniz proposed that the organic body itself is indestructible, thus effectively avoiding the Cartesian problem of how to justify the continuing identity of the animal through the radical changes to its organic body. In that paper, Leibniz did not appeal to the presence of a unifying soul in order to secure the sameness of the animal whose body is in constant flux. Instead, he proposed that the organic body itself remains the same throughout. Its composition or structure alone guarantees its physical indestructibility and ensures its identity even through radical and species-altering changes of shape. Living bodies – here described as “mechanisms of nature” – have

<sup>25</sup> *Monadology* §74, GP VI, 619.

<sup>26</sup> Besides this, many common alterations to bodies are not judged to be transformations of an *animal* from one species to another. Wine turns into vinegar, milk into cheese. Why should we consider the change from caterpillar to butterfly as anything more than the ordinary changes that happen to inanimate masses? One response is to highlight the generative capacities of living things. Wine turns into vinegar, but vinegar never becomes wine. Caterpillars, on the other hand, become butterflies and butterflies then produce the larvae of future caterpillars, completing the natural cycle of the birth and death of living things. On the self-sustaining and self-reproducing abilities of living things, see Smith (2011, 70–72). Generally, biological reproduction is effected through the production of seeds or eggs. This too, however, begs the question as to whether seeds and other means of generative replication are rightly regarded as signs of life and the presence of souls.

an infinite number of parts, each of which is itself a mechanism with infinite parts.<sup>27</sup> Nature's mechanisms are indestructible *because* their mechanical structure proceeds to the infinitely small:

since the mechanisms of nature are mechanisms down to their smallest parts, they are indestructible, since smaller machines are enfolded in greater machines into infinity (*Considerations on Vital Principles and Plastic Natures*, GP VI, 543; L 589).<sup>28</sup>

Leibniz's Harlequin example discussed earlier traced a similar line of thought:

the machines of nature are as imperishable as souls themselves, and the animal together with its soul persists for ever. I can explain my meaning better with the help of a pleasant though very silly example: it is as if someone tried to strip Harlequin on the stage but could never finish the task because he had on so many costumes, one on top of the other (*New Essays*, A VI, 6, 328; RB 328).

Putting to one side the multiplicity of questions and difficulties associated with this justification of corporeal indestructibility on account of their infinitely enfolded structures,<sup>29</sup> it is clear that Leibniz himself believed that bodies' infinitely nested structures are sufficient to guarantee that one can never completely destroy an organic body for one could never completely destroy all of its (infinitely many) versions. However, if the organic body is in itself indestructible and remains the *same* through the change from seed to plant or animal and beyond, there would seem to be no need for each and every organic body also to be endowed with its own dominant soul nor any reason why the organic body should belong to a transformed animal. The diachronic identity of the body has been secured by appeal to its internal composition and, other than support for the belief that each organic body is the body of a perceiving, appetitive living being – a fact that we can be certain of only in our own case<sup>30</sup> – the attribution of souls to non-human organic bodies has nothing to contribute. Non-human animals, plants and other living creatures might indeed, as Malebranche believed, be nothing more than infinitely complex soul-less machines.

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<sup>27</sup>For Leibniz, the infinitely divided nature of the body of the corporeal substance identifies it as a living body and marks the distinctive difference between machines of divine construction and those made by mere humans that have only a finite number of parts. For discussion, see Nachtomy (2011).

<sup>28</sup>Having earlier in the paper asserted his belief in the existence and immortality of the soul, Leibniz continued: "Thus, one finds himself forced to maintain at the same time both the pre-existence of the soul with that of the animal and also the subsistence of the animal with that of the soul" (GP VI, 543; L 589).

<sup>29</sup>The notion sits uneasily beside Leibniz's more usual stance whereby composite bodies, because they are composite, are naturally destructible (e.g. *Monadology* §6, GP VI, 607; AG 213). Moreover, the animate machine or living organic body is in constant flux, with parts leaving and others arriving at every moment. There is no inherent unity among them. If it is said that the animate body does possess a unity that persists despite the flux of its parts, this implicitly re-introduces the soul as the source of that unity, contrary to Leibniz's reasoning here. If, as is implied here, indestructibility is due to the similarity of the infinitely enfolded parts, a non-Leibnizian animalculism is indicated, while if the parts are not exactly the same and change of species can occur, the continuing identity of the animal (and hence also its indestructibility) is assumed, not proven.

<sup>30</sup>Leibniz does argue elsewhere that we can extrapolate from our own experience to the probability that other creatures have experiences also. See Phemister (2004).

## 6 Souls, Preformation, and Causation

Up to now, we have found no reason within Leibniz's accounts of animal transformations or the bodily preformations on which they depend to support Leibniz against the Malebranchean threat of soul-less seeds and living bodies. In this last section, however, we examine a powerful argument based on the nature of matter and its mechanical operation that sheds light on why Leibniz believed that the unfolding of preformed bodies – and hence also by extension the pre-established successive transformations of animals and plants – presupposes and depends upon their possessing perceiving, indivisible souls. Preformed matter can operate mechanically (by collisions), it will be argued, only if that matter is imbued throughout with souls. Consequently, as we shall see, the preformation-transformation relation is symbiotic: the transformation of the animal depends upon the preformation of its organic body, but equally, the unfolding of the preformed matter is dependent upon there being unified, en-souled and transformable creatures.

Preformed bodies, for both Malebranche and Leibniz, are composed of infinitely many, intricately organised parts or organs. Such plurality of parts, Leibniz contended despite the argument discussed in the previous section, requires principles of unity, namely souls. Anticipating the iconic argument at the opening of the *Monadology*, he declared in the *New System* that,

a simple mass of matter, however organized it may be ... can only be considered as an army or a herd, or a pond full of fish, or like a watch composed of springs and wheels. Yet if there were no true *substantial unities*, there would be nothing substantial or real in the collection (*New System*, GP IV, 482; AG 142).

The argument is familiar. To avoid falling into the labyrinth of the composition of the material continuum and its regression of never-ending divisibility, it is necessary to postulate the existence of metaphysical atoms, substantial indivisible unities upon which divisible aggregate bodies can be founded. Souls or substantial forms are the means by which the requisite unity is introduced into aggregate bodies (*ibid.*). Bodily indestructibility notwithstanding, an aggregate is a unified organic body only when it is in possession of a dominant soul or substantial form.

With respect to preformed seeds, this establishes only that the parts from which the seed is composed must possess unifying souls if the seed is to be an aggregate body. As an aggregate, it must be constituted by or founded upon substantial unities. It does not determine whether the seed itself must also possess its own dominant soul that unifies the otherwise indestructible aggregate body nor does it establish any specific role for such a dominant soul in the preformation of the seed itself.

A crucial role for the soul is forthcoming, however. If successful, Leibniz's claims will demonstrate that matter, in order that it be preformed, must be imbued throughout with souls or their equivalents, entelechies or substantial forms and will put to rest the notion that Malebranchean soulless merely extended animal and plant bodies and seeds can be subjected to preformation. In a letter written in the spring of 1687, Leibniz suggested to Arnauld that it is only through the perceiving substance's "representation of the whole universe according to its point of view" and its

gathering together of the “impressions (or rather relationships) which its body receives mediately or immediately from all others”, that

the lineaments [*les traits*] of the future are formed in advance and that the indications [*les traces*] of the past are preserved for ever in each thing, and that cause and effect adapt to one another precisely down to the detail of the smallest circumstance, although every effect depends upon an infinite number of causes and every cause has an infinite number of effects... (to Arnauld, 30 April 1687, GP II, 98; Mason 123).<sup>31</sup>

Nothing can be “formed in advance” and nothing can be preserved unless each organic body has a dominant soul, entelechy or substantial form, together with which it becomes a complete indivisible corporeal substance, for only the perceiving soul has the requisite unity that makes possible the complete representation in a single instant of past, present and future states of the universe in the animal itself. The soul is the immaterial point at which all preceding causes of the present effect converge. It acts both as the place-holder for an infinity of future effects and as the present locus of memories of an infinite number of past effects. And without the soul’s complete representation by which the animal holds all the “lineaments of the future” in itself and preserves the “indications of the past”, the animal’s body would be unable to enter into causal relations with other bodies and thus would not be able to unfold in accordance with its preformation. In short, neither causation nor preformation would be possible if, as Malebranche and other Cartesians believed, “the essence of matter consisted of a certain shape, movement, or modified version of extension which was determined” (*ibid.*, GP II, 98–99; Mason 123).

Leibniz offered a similar argument to the Electress Sophie. In his letter of 6 February 1706, he explained that the soul must not only receive the diverse impressions made on its body through interaction with others across the entire universe, but it must also “disentangle” (*demêler*) them.

[N]ature alone in fact receives all impressions and brings them together into one, but without the soul the order of the impressions matter has received could not be disentangled, and the impressions would only be confused. Each assignable point of matter has a different motion from every other point assignable to it, and its motion is composed of all preceding impressions; but this impression is as simple as those which compose it, and no composition can be recognized in it (to Sophie, 6 February 1706; GP VII, 570; Strickland 2011, 350).

Each body, each portion of aggregate matter, is affected by all others. The infinitely many preceding impressions can be impressed only on an infinitely divided body, but in order for them to be effective both as causes of a creature’s present and future states, these infinitely many impressions must be “disentangled” by the body’s soul that holds them all together in a single moment. Without such disentanglement, “the impressions would only be confused”. Presumably, then, the soul’s disentanglement consists in differentiation of the various impressions, some of which will be perceived more distinctly than others. As he went on to explain, even though all past impressions are causally efficacious in bringing about the creature’s current state of being and all must be represented in its soul’s perceptions (for “the

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<sup>31</sup>I am indebted to Dr Jeremy Dunham for reminding me of this passage.

entire effect must always express its cause”), it is only “where the preceding impressions are distinguished and preserved” that the soul is present (*ibid.*).

To fully appreciate the importance of the soul’s disentangling distinctions, we must return to Leibniz’s 30 April 1687 letter to Arnauld. Leibniz began this letter by re-iterating the claim made in an earlier letter<sup>32</sup> that “the soul expresses more distinctly (all other things being equal) what pertains to its body” (GP II, 90; Mason 113). It is in this way that the soul perceives the rest of the universe by means of its body’s sense organs, distinctly perceiving the effects made on its own body by external bodies.<sup>33</sup> By disentangling the infinite multitude of impressions, perceiving some more distinctly than others, the soul is firmly situated ‘in’ its body. By perceiving more distinctly the impressions made on its own body and thereby perceiving the world through its sense organs, the organic body becomes the spatial location for the soul’s unique point of view or perspectival representation of the universe.<sup>34</sup>

Keeping these points in mind, we are now in a better position to comprehend Leibniz’s cryptic remarks to Sophie. Following on from his remarks cited above, he remarked, “It is true and very noteworthy that, by taking this point together with the matter which surrounds it, there is a way of disentangling the past” (to Sophie, 6 February 1706; GP VII 570; Strickland 2011, 350). The “point” in question is the soul as the unique “point of view” on the universe; the “matter which surrounds it” is the soul’s organic body. In this “surrounding matter”, he continued, are the “infinite varieties of shapes and motions ... which preserve something of all preceding effects”, all of which impressions are held united in the soul’s perspectival perception. “[F]or this reason”, he concluded, “every soul is accompanied by an organic body which corresponds to it” (*ibid.*). In short, the soul must have an infinitely divided body capable of receiving the infinity of impressions made on it from outside. Correspondingly, since the effect must represent its entire cause, the organic body, if it is to be an effect of all these impressions, must be in possession of a soul that holds these myriad impressions as a single perceptual experience.

## 7 Conclusion

The remarkable theory outlined in the previous section has startling consequences for the very possibility of a mechanical philosophy styled on the Cartesian model. If indeed, a piece of matter or its motion cannot be the effect of any preceding cause unless it is able to contain in a single indivisible point, and to disentangle, the

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<sup>32</sup>To Arnauld, 28 November/8 December 1686; GP II, 74; Mason 92.

<sup>33</sup>“[W]e perceive other bodies only through their relationship to ours” (to Arnauld, 9 October 1687; GP II, 113; Mason 145).

<sup>34</sup>Thus, Leibniz continued, although the soul expresses the whole universe, unless it perceives some things more distinctly than others, “there would be no distinction between souls” (to Arnauld 30 April 1687; GP II, 90; Mason 113).

entirety of preceding impressions made by all past bodies, then no soul-less inanimate, divisible body, such as Malebranche and Descartes theorised, can be the effect of (can be affected by) any other body. If we accept Leibniz's conditions, then effects can manifest only in bodies that have dominant souls or substantial forms. When the soul collates the myriad impressions on its body and perceives some more distinctly than others, its body not only becomes the spatialised point from which the universe is perceived, it also becomes a particularised effect of the myriad causes that led to its current state of movement or resistance. Thus, when an aggregate of substances lacks a dominant soul – when it is a mere inanimate object – the effects on the body will be felt only in the constituent ensouled substances. Only when the body as a whole is an organic body dominated by its own soul is the whole body itself an effect of the preceding causes.

The implications for the possibility of Malebranchean preformed seeds are serious. Malebranche's soul-less seeds are composed entirely of equally soul-less organised parts. But if Leibniz's argument holds, then seeds can be preformed only if they contain the "lineaments of the future" and they can unfold their futures only if they are able to be "effects", that is to be affected by preceding causes. Thus, they must, as Leibniz has claimed, also preserve the "indications of the past". Neither is possible, Leibniz has argued, unless the seed possesses a dominant soul or substantial form. Moreover, both Leibniz and Malebranche held that each preformed seed has infinitely many parts. If the body as a whole is to be affected, each of these constituent parts must also be acted upon. But each part can be an effect only if has a soul dominant over it and uniting the impressions it receives through each of its smaller parts. Hence, each preformed seed, contrary to what Malebranche believed, must contain an infinite number of souls or substantial forms, each dominant over its own particular part of the infinitely divided seed. Thus, souls really are in preformed seeds, one as dominant over the whole and each of the others dominant over one of the seed's myriad parts respectively.

Finally, we may note that, despite Malebranche's protestations against animal transformations, if each preformed seed must be the organic body of a living, ensouled, corporeal substance or animal-like living entity, then all preformed changes in the organic body are also transformations of the animal itself.<sup>35</sup> Neither the preformation of the organic body or seed with its infinitely many parts nor the various transformations of the animal to which this body belongs could take place in the absence of the unifying and collecting soul. Transformations of the animal depend upon the preformed changes to its organic body, but equally, the preformed changes in the organic body are dependent upon the presence of the dominant soul of the animal that is transformed by these preformed effects on its body.

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<sup>35</sup>Thus seeds are ensouled organic bodies, that is, they are the organic bodies of tiny corporeal substances waiting in the wings ready to unfold.

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# Chapter 10

## The Relativity of Motion as a Motivation for Leibnizian Substantial Forms

Richard T.W. Arthur

### 1 Introduction

In an unpublished manuscript of the late 1680s, Leibniz wrote

In fact, each substance is a kind of force of acting, i.e. an endeavour to change itself with respect to all the others according to certain laws of its own nature. Whence any substance whatever expresses the whole universe, according to its own point of view. And in the phenomena of motions this fact is especially apparent, for there every single body must be supposed to have a motion in common with any other, as if they were in the same ship, as well as its own motion, reciprocal to its bulk; how this could be so could not be imagined if motions were absolute and each body did not express all others (“Motion is not Something Absolute”; A VI, 4, 1638; Arthur 333).

There is much to say about this passage, but what is particularly noteworthy for my purposes here is this. One of the signature themes of Leibniz’s mature metaphysics, that each substance expresses the universe according to its point of view, is justified by reference to the *motions of bodies*: the phenomena of motions, he argues, are evidence that each body expresses all others. It is implied that the body expresses these relations by its containing a substance with a given point of view; the point of view expresses its spatial relations to all other bodies in the universe from a unique situational perspective; and the substance is conceived as a force or endeavour to change these situational relations of the body to all others as it moves, in accordance with laws internal to it.

According to many contemporary scholars, however, Leibniz’s words cannot be interpreted so literally. Substances (monads) do not exist in space, so they cannot be contained in moving bodies. “Point of view”, accordingly, cannot be taken as a point in space from which a substance has a perspective on the rest of the

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universe, and should therefore be regarded as mere metaphor. Actually, there are two objections here, both of them made already by Russell in his (1900). First, points of view cannot be given such a realistic reading because in Leibniz's mature theory monads are not located in points; Leibniz's "point of view" imagery seems to be a holdover from the earlier theory of his youth, where he did conceive substances as contained in points in a real space (Russell 1900, 122–124; Adams 1994, 252). Second, in his mature work Leibniz rejects the reality of space (Russell 1900, 124–126). As Hartz and Cover argue in their well-cited paper, since space is an *ideal entity*, Leibniz would not be entitled to presuppose it in any account of monads and their perceptions, which "are at the ground floor metaphysical level" (Hartz and Cover 1988, 503).

Now, Hartz and Cover argue that the thesis of the ideality of space is a late development in Leibniz's metaphysics, so one might be tempted to argue along those lines that when the above passage was written Leibniz was still thinking in a more realist vein about the situation of substances. For by the 1680s Leibniz had long ago abandoned his earlier theory that substances are located in points in favour of the claim that a substance has a situation derivatively through its organic body. As we shall see, though, by 1677 Leibniz had already depicted absolute space as a mere "affection of the soul", and by 1679 the essentials of his mature views on space are in place: space is relational, indeed an order of situations, and these situations are characterized in terms of simultaneous existence or what is "simultaneously perceived".<sup>1</sup> This therefore seems like more grist for the mill of the idealist interpretation of passages like the one above. Moreover, as Robert Adams observes (1994, 252), by the 1680s Leibniz is clearly characterizing body as a phenomenon. Given the latter fact, Adams argues, body cannot be presupposed in a construction of space from relations among monadic perceptions. He therefore sets about giving a sketch of a view in which the spatial positions of bodies are apparent positions of bodies as phenomena, constructed from the perceptions of the monads: phenomena are contents of the intentional states of monads, interpreted as mind-like entities. On this kind of idealist interpretation Leibniz must be understood as rejecting the reality of motion, reducing it instead to the coordinated perceptions of substances.

But as we shall see, such an interpretation is at odds with the way in which Leibniz argues for the necessity of introducing substantial form (or force) in this context, which is to save the reality of motion and avoid reducing it to a mere appearance. Taken merely geometrically, motion would have no subject; it would consist in a change of external denominations without any corresponding change in internal denominations, and would reduce to mere changes in appearances. The cause of the change in situation would not be assignable, with the consequence that "there would not be any real motion", as he writes in his *Critical Thoughts* on Descartes' *Principles*. "Consequently in order for something to be said to move, we shall require not only that it change its situation with respect to the others, but also that the cause of the change, the force or action, be in itself." (GP IV, 396). Taken with respect to cause, moreover, true motions are identified in accordance with the

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<sup>1</sup> See Arthur (2013a) for an account of the genesis and development of Leibniz's views on space.

most intelligible hypothesis for understanding the phenomena. So on the one hand, true motions are distinguished from merely apparent ones, and on the other, the reality of the phenomena of motion is founded in force.

The problem with Adams' argument, I contend, is his understanding of what Leibniz means by saying that motion or body is a *phenomenon*, which he interprets in terms of its being reducible to appearances in the perceptions of perceiving substances. Let me begin by discussing this, before moving on to a discussion of the relativity of motion and its implications.<sup>2</sup>

## 2 Motion as a Phenomenon

In a recent article, Stephen Puryear has argued that in Leibniz's middle period he was a phenomenalist about motion (Puryear 2012, esp. 169–170). Whether “properly speaking” this also makes him an idealist about motion in this period depends on whether he “considered perceiving substances purely immaterial”, as Adams supposes. Nevertheless, “If we take idealism about motion to be the view that motion is ultimately reducible to perceiving substances and their modifications, then during his middle years Leibniz was clearly an idealist about motion, since he held that motion is a phenomenon, and phenomena have their being in perceivers” (Puryear 2012, 169).<sup>3</sup>

This, I believe, is not the right way to understand Leibniz's claim that motion is a phenomenon. Granted, there are occasions – particularly a notorious passage in his correspondence with De Volder in 1704 to which we will return later – where Leibniz seems to say something like this. But I believe that his considered position for almost all the last four decades of his life is analogous to the one I have elsewhere attributed to him about the phenomenality of body. This is that body, as an aggregate of substances, is semi-mental: its *unity* is constituted by its being perceived as one thing.<sup>4</sup> Its *reality*, on the other hand, is constituted by the constituent substances themselves. So it is a real or well-founded phenomenon, as

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<sup>2</sup>There have been many analyses of Leibniz's depictions of bodies as ‘phenomena’. See Hartz (1992) for an analysis of many of the different senses that Leibniz seems to have given this on different occasions, as well as Garber (2009). My own views are closer to those of Rutherford (1990).

<sup>3</sup>I am not sure I fully understand Puryear here. He says Leibniz is “clearly an idealist about *motion*”, and then seems to retract it on the grounds that it has not yet been decided whether perceiving *substances* are purely immaterial. I will treat him as claiming that motion is phenomenal in the sense of mere appearance, but as not being committed to substance idealism for Leibniz in his middle years.

<sup>4</sup>See Loptson and Arthur (2006), and Arthur (2011) for a defence. I would add that this interpretation of the unity only as mind-dependent is consistent with Leibniz's philosophy of perception, according to which a perception consists in the representation of an infinity of lesser perceptions as one; here each lesser perception would correspond to the action of a smaller constituent body on the sense organs, and the confused perception to a fusing together or composition of the corresponding endeavours.

opposed to an illusory one. If it were just an appearance of unity, it would be a *mere phenomenon*; but the fact that it is an appearance (as one) of the infinity of substances constituting the body, means that it is not illusory, it is the appearance of something there, it is a *real phenomenon*. Analogously, motion too is semi-mental. On the one hand, it is a change of situation of a body relative to the perceiver; but equally an observer in that body could regard the same motion as a change of situation relative to her. If that were all there were to motion, it would be a *mere phenomenon*, and the reality of motion would consist in the agreement of such mutual perceptions and nothing more. But, Leibniz believes, that is not all there is to motion: what is real in motion is force, and this has a foundation in monadic appetite, that is, in the states of change of the underlying substances from which the moving body is aggregated – such a motion is a real or *well-founded phenomenon*; moreover, as we shall see, true motions can be distinguished from merely apparent ones by the identification of causes.

Before proceeding to my main argument, though, let us consider Puryear's claim in the passage above that simply describing motion as a phenomenon is enough to establish its ideality. That is surely too fast. When Leibniz writes of "the phenomena of motion", for example, he is appealing to a perfectly well established usage extending from ancient times to the present day (witness "Phenomenological Thermodynamics" or "Phenomenological Particle Physics"): a phenomenon in this sense has nothing to do with idealism. The phenomena are things as they appear, they are occurrences which we seek to explain as the results of the actions of various agents; they are not simply images in the minds of perceivers. This is the sense Newton intends, for example, when he talks of inferring the laws of nature from the phenomena.

Now, in astronomy there was an established Platonic tradition that the task of that science is to "save the phenomena": this meant to treat a given mathematical hypothesis as a construction that would correctly predict the apparent positions (i.e. angles) at any time of the heavenly bodies as seen by an observer on Earth. This Platonic injunction could be regarded as neutral or agnostic with respect to the real locations and orbits of bodies; Ptolemy, for example, developed a mathematical theory that saved the phenomena (and was thus a mere instrument for making predictions), but also gave arguments for the correct ordering of planetary orbits, which presupposes that the planets are travelling in roughly circular orbits at various distances from the Earth. Nearer Leibniz's time, though, Osiander, Bellarmine and Baer (Ursus) had insisted that Copernicanism be interpreted as a merely mathematical hypothesis for saving the phenomena, and not as a realistic depiction of orbits. Johannes Kepler vehemently opposed this instrumentalist interpretation, arguing that the Copernican hypothesis is concerned with the real orbits of planets; although various mathematical hypotheses might be devised to fit the phenomena, a true hypothesis (such as the Copernican) must be justified not just by its mathematical fit to those phenomena, but by the assigning of probable physical causes.<sup>5</sup> As Nico Bertoloni Meli has lucidly explained (following the lead of Ernst Cassirer), Leibniz

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<sup>5</sup> See Jardine (1984), for an analysis of the dispute between Ursus and Kepler.

appealed to this Keplerian philosophy in opposing Newton's cosmology, which he saw as a mere mathematical hypothesis that failed to provide the cause of gravitational attraction.<sup>6</sup> As we shall see, as early as 1676 Leibniz ceded that various hypotheses could be devised to save the appearances, but insisted that the Copernican view is established as correctly identifying the Earth's motion as the physical cause of the phenomena, a cause established by reference to various pieces of evidence, such as changes in the apparent diameters of the fixed stars, parallax, the tides, oscillating lamps, and so forth.

From these considerations we may already draw some preliminary conclusions. First, with regard to the physical phenomena of the motions of heavenly bodies, Leibniz took a realist view: they are not simply appearances to an observer, but the effects of physical causes. If motions were simply the coordinated perceptions of perceivers, as on Adams' and Puryear's idealist interpretation, we would expect Leibniz to have adopted an instrumentalist interpretation of Copernicanism.<sup>7</sup> He did not, and had he done so, this would have completely undermined his criticisms of Newton's gravitational theory for not providing physical causes compatible with mechanism.

And this brings me to a second point: not only was Leibniz a convinced Copernican, he was adamantly committed to *mechanism*. In correspondence with the distinguished medical and legal philosopher Hermann Conring in 1678 he wrote that "*everything in nature happens mechanically*". When Conring scoffed "if you want this to be understood in a Cartesian sense, I for my part do not hesitate to pronounce it a most absurd statement" (Conring to Leibniz, 26th February, 1678; GP I, 191), Leibniz responded with one of the most eloquent statements of the mechanist creed ever made:

I recognize nothing in the world but bodies and minds, and nothing in mind but intellect and will, nor anything else in bodies insofar as they are separated from mind but magnitude, figure, situation, and changes in these, whether partial or total. Everything else is merely said, not understood (Leibniz to Conring, 19th March, 1678; GP I, 197 f.).

Leibniz made this assertion in the same breath as defending himself against Conring's criticism that he would thereby be rejecting substantial forms. On the contrary, he assures Conring, it is the substantial form itself that is the principle that individuates bodies: "Who would deny substantial forms," he writes, "that is, essential differences between bodies?" (Leibniz to Conring, 19th March, 1678; GP I, 196). Thus Leibniz does not see substantial forms as undermining mechanism, but as a necessary supplement to it. The key phrase for seeing their compatibility is that there is nothing else in bodies "*insofar as they are separated from mind*".

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<sup>6</sup>"Following Cassirer's interpretation, the legitimacy of hypotheses in natural philosophy and mathematics was defended by Leibniz exactly as Kepler had done in astronomy. In their philosophical systems phenomena assume a new dignity and the true hypothesis becomes the instrument for binding them to the laws of knowledge" (Bertoloni Meli 1993, 19).

<sup>7</sup>Here I agree with Puryear (2012, 147) that Leibniz's commitment to Copernicanism as the most intelligible hypothesis cannot be understood as an instrumentalist position: "the evidence actually weighs rather heavily against such an instrumentalist reading."

For Leibniz had already for some time considered Mind, or at least a mind-like principle involving memory of its body's past states, to be the key to individuating bodies. And by 1678–1679 he had come to consider it to be a kind of form assigned in body that “has some perception and appetite, which are passions and actions of the soul” (A VI, 4, 1988; Arthur 233–35). In fact, forms or entelechies will continue to play this same role of individuating bodies right through the mature Leibnizian corpus. In 1686 Leibniz tells Arnauld that “The soul, however, is nonetheless the form of its body, because it expresses the phenomena of all other bodies according to their relation to its own” (To Arnauld, 14th July 1686, GP II, 58); and in the “Monadology” of 1714 he describes a monad as the entelechy of “the body particularly assigned to it” (*Monadology* §62; GP VI, 617). This is in keeping with his understanding of mechanism, since it is only bodies insofar as they are separated from such proto-mental powers as perception and appetite that are reducible to “magnitude, figure, situation, and changes in these”; the substantial forms themselves, on the other hand, although they found the reality of bodies, should play no role in physical explanations.

This endorsement of mechanism was not some passing whim; Leibniz said something similar in his *Hypothesis physica nova* (HPN) of 1671, and the same commitment is not only integral to his criticisms of Newton's theory, as mentioned, but also to his rejection of the vitalism of Stahl in the last years of his life.<sup>8</sup> According to the Mechanical Philosophy, qualities that had been taken as accidents unproblematically existing in bodies, such as colours and sounds, are instead to be understood as produced in perceivers by the actions of the bodies and intervening medium on our sense organs. Although this was common currency among natural philosophers of his time, Leibniz's most immediate source was Hobbes, who wrote of the colours of objects that our senses make us think that there are such accidents or qualities in the world, but these are only “seemings and apparitions; the things that really *are* in the world without us are the *motions* by which these seemings are caused” (*De homine*, II, §X; Hobbes 1905, 162). Colours and other “secondary qualities”, as they came to be called, are therefore semi-mental: the redness of the apple is an appearance in my mind, but insofar as this is not illusory, the phenomenon has a real basis in motions external to the mind, those of the surface of the apple, of the mediating medium or light particles, and of the optic nerve.

In his endorsement of mechanism, Leibniz is committed to all this. But, crucially, he goes one step further, and claims that a similar analysis should apply also to the qualities that mechanists take as primary: extension, shape and motion. In a typical passage scribbled on the back of a bill in 1683, he wrote:

And just as colour and sound are phenomena, rather than true attributes of things that contain a certain absolute nature without respect to us, so too are extension and motion. For it cannot really be said just which subject the motion is in. Consequently nothing in motion is

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<sup>8</sup>In the *Hypothesis physica nova* Leibniz writes “I agree completely with the followers of those excellent gentlemen Descartes and Gassendi, and with whomever else teaches that in the end all variety in bodies must be explained in terms of size, shape and motion” (A VI, 2, 248). On his espousal of mechanism in his controversy with Stahl, see Justin E. H. Smith (2011, esp. 83–89).

real besides the force and power things are endowed with, that is to say, beyond their having such a constitution that from it there follows a change of phenomena constrained by certain rules (*Wonders concerning the nature of corporeal substance*; A VI, 4, 1465; Arthur 263).

Thus, as Puryear correctly observes, “Like phenomena in general, motion [for Leibniz] continues to be a perception-dependent feature of the world even when it has a foundation in something that exists independent of perception (i.e. force)” (Puryear 2012, 169). When Leibniz says that bodies and motions are phenomena like colour and sound, he is assimilating them to the mechanists’ account of secondary qualities: extension and motion are not, despite what the mechanists hold, primary qualities. Like sound and colour, they are appearances of something external to the perceiver. In the case of bodies, what is external to the perceiver is an (infinite) aggregate of substances. In the case of motion, he claims here, it is “the force and power things are endowed with”. But now we need to examine why Leibniz believes that this follows. Why, on a purely mechanistic view, can we not say which subject the motion is in? And how does this show the insufficiency of the mechanical philosophy to give a complete account of physical reality?

### 3 Motion Considered Geometrically

Leibniz has three discernible lines of argument premised on the relativity of motion, as to why the principles of the mechanical philosophy are insufficient, and need supplementing:

1. If motion be taken *entirely* geometrically, then one is not entitled to assume any forces in it, not even passive forces such as the greater resistance to being put in motion of a more massive body assumed by the Cartesians. Attempts such as his own earlier one to derive such inertia assuming only extension and endeavour violate the relativity of motion. But the relativity of motion is a necessary consequence of motion as understood geometrically. Therefore in order to account for the correct laws of collision (specifically, what we now call the law of conservation of linear momentum), a passive force of inertia must be assumed that is not reducible to purely mechanical principles.
2. If motion is understood as mere change of situation, then it is entirely relative, and the subject of motion cannot be identified. But then the assigning of causes of motion becomes arbitrary. Therefore there must be more than to motion than mere change of situation, or things will not be capable of action and passion.
3. Situation, and change of situation, are extrinsic denominations. But there are no purely extrinsic denominations; so the foundation of situation, and of change of situation, must be in the modifications of substances. Change of situation, Leibniz will argue, must be grounded in a primitive active force whose modifications will be the derivative forces that constitute what is real in motion at any instant.

The first thing we need to understand, then, is why Leibniz regarded the relativity of motion as intrinsic to motion considered geometrically, i.e. as mere change of situation. He gives a typical statement of this claim in the *Discourse on Metaphysics* of 1686:

For motion, if one considers only what it precisely and formally comprises, that is to say, change of place, is not an entirely real thing, and when several bodies change situation among themselves, it is not possible to determine, solely by a consideration of these changes, to which among them the motion should be attributed—as I could show geometrically if I wanted to stop to do so (*Discourse on Metaphysics*, GP IV, 444).

Actually, the latter statement is not an idle boast. Leibniz had provided precisely such a demonstration in a manuscript probably written during his last summer in Paris, or very soon thereafter, “Mechanical Principles” (A VI, 3, 101–111).<sup>9</sup> First he takes two bodies in mutual relative motion, and considers four cases. He shows that the same appearances will follow if B is at rest and A moves towards it with a uniform velocity  $v$ , if A is at rest and B moves towards it with a uniform velocity  $-v$ , if A and B are moving along a line towards one another with velocities  $\frac{1}{2}v$  and  $-\frac{1}{2}v$ , and if A and B are moving uniformly in the same direction with a difference in velocities of  $v$ . He then considers (case 5) whether it will make any difference if they are regarded from an eye in a third body C (itself at rest) observing the motions of A and B, and shows that the phenomena – all the mutual changes of situation at each instant – will appear the same, even when C is instead allowed to move along in the same direction as B but with half its velocity, as (case 6). Therefore, Leibniz, concludes, not even an omniscient being will be able to determine which body is in absolute motion: “whatever speed or direction we attribute by assuming an absolute motion for one of the bodies, we will always find that anyone must then understand motion in the others in such a way that everything will appear as before” (A VI, 3, 109).

But how, one might ask, does that make merely geometric motion “not entirely real”? The idea is that things would *appear* exactly the same whichever of several bodies is considered to be at rest provided all their relative motions are the same. Leibniz expresses this by saying that (if motion is conceived geometrically) it makes no difference to the phenomena which body is taken to be really at rest. As he writes in the unpublished second part of the *Specimen dynamicum* of 1695,

Now, it must be admitted that it is impossible for pure [*nuda*] extension, involving only geometric notions, to be capable of action and passion. ... From this it follows that ... motion considered apart from force—that is, insofar as only the geometric notions of size, shape and their variation are considered in it—is really nothing other than change of situation. Therefore *motion, as far as the phenomena are concerned, consists in a mere relation [respectu]* ... It must therefore be maintained that, if several bodies are in motion, it cannot be inferred from the phenomena which of them is in absolute, determinate motion or at rest; rather, rest can be attributed to any of them you choose and the same phenomena will still be produced (*Specimen dynamicum II*, GM VI, 246–247).

<sup>9</sup>The title *Principia Mechanica* is supplied by the Akademie editors, who date it very tentatively as 1673–1676 (?). As Dan Garber observes (2009, 108), there are many themes that resonate with ideas first articulated in the Spring–Summer of 1676, including the claim that “the full cause must produce a unique effect” and that shape is an incomplete concept. For a translation of this piece and commentary, see Arthur (2013b).

Now let us turn to the first of the three objections listed above. Leibniz's starting point in the Mechanical Philosophy was his encounter with the Laws of Collision that Wallis, Wren, Mariotte and Huygens had established in 1669. Correcting Descartes' impact laws, they had reached the correct conclusion that it is the quantity of motion in a given direction that is conserved in collisions. For this quantity, mass times speed in a given direction (i.e. vector velocity), Leibniz would later coin the term "quantity of progress", the quantity which we, after Newton, call (linear) momentum. If a smaller body collides with one with a larger mass it will be able to impart proportionately less of its speed to it, which is why Leibniz sometimes refers to this as the "law of compensation". But taking mass as a primitive is not strictly in accord with the mechanist program, since it is not derivable from extension and motion. Accordingly, in his *Theoria motus abstracti* and *Hypothesis physica nova* of 1671 Leibniz offered a theory of collisions based solely on endeavour and eschewing the concept of bulk or mass altogether. "The outcomes of all collisions would be determined by a simple composition of endeavours" (A II, 3-VE 7877), with endeavours conceived as instantaneous velocities; a body, of itself, could offer no resistance to motion. I will not go into the details of this theory here, which have been well described elsewhere (see Garber 1995, 273–277). Suffice to say that the theory fails: Leibniz cannot get it to reproduce the phenomena.

Thus the first consequence that Leibniz draws from the failure of his early theory (and some later attempts in 1676) is this: from body as pure extension and forces reduced to endeavours, one cannot account for the inertial mass assumed in the law of conservation of the conservation of the (vector) quantity of motion. So without some supplementary account of the passive force of resisting changes of motion, the foundations of mechanism as understood by his contemporaries are inadequate to explain one of the bedrock successes of mechanism, the laws of bodily collisions. Prior to his official introduction of substantial forms, this constituted an open problem for Leibniz, since it was not clear to him how a body (even one equipped with a mind) would contain in itself the information needed for it to rebound in accordance with "the law of compensation". In the spring of 1676 he was working with a kind of occasionalist philosophy which appealed to God as the "universal mind" to "assist" bodies so that they collided in such a way as to conserve the quantity of motion:

When two bodies collide, it is clear that it is not the mind of each one that makes it follow the law of compensation, but rather the universal mind assisting both, or rather all, equally. On the other hand, it is not necessary for the same quantity of motion always to be conserved in the world, since if one body is carried by another in a certain direction, but is moving of its own accord equally in the contrary direction, it will certainly come to rest, i.e. it will not leave its place. From this it follows that the conservation of the quantity of motion must be asserted of the action, i.e. relative motion, by which one body is related to another or acts on another ("On Motion and Matter", A VI, 3, 493).

Here we see a clear recognition that the quantity of motion that is conserved in collisions is the product of relative velocity and the body's magnitude, not motion regarded as an absolute quantity. That is, according to the laws of collision established by Huygens et al., the conservation of quantity of motion applies to relative motion.



This leads Leibniz to draw a second consequence from the failure of his earlier theory. For, like Descartes' own rules of collision given in the Third Law of his *Principles*, his are in violation of the relativity of motion – as Huygens himself might perhaps have pointed out to Leibniz when they were together in Paris. Like Descartes, Leibniz had tacitly assumed a background space, a kind of general extension of the plenum within which the bodies were moving. Now, if one is able to assume such a space as a really existing container, then real motion would be a change of location in this absolute space, as Leibniz explains in an unpublished manuscript from early 1677:

If *space* is a certain thing supposed in pure extension, whilst the nature of *matter* is to fill space, and *motion* is change of space, then motion will be something absolute; and so when two bodies are approaching one another, it will be possible to tell which of them is in motion and which at rest; or, if both are moving, with what speed they are moving. And from this will follow those conclusions which I once showed in the *Theory of motion abstractly considered*. But in reality space is not such a thing, and motion is not something absolute, but consists in relation (“Space and motion are really relations”, A VI, 4, 1968; Arthur 225).

Thus if a privileged space is identifiable as that presupposed by the rules of collision, as in Leibniz's theory in the HPN, then the equivalence of hypotheses (as to which body is to be taken as at rest) cannot hold. By contraposition, therefore, if one accepts the relativity of (even only inertial) motions, one cannot identify any such space as absolute space.<sup>10</sup>

## 4 Substantial Forms Reinstated

How, then, does one identify the subject of motion? If no body can be said to “have” the motion rather than any other (since any of them may equally be regarded as at rest, so long as the relative motions are all preserved) then it appears that the system of relative motions is more nearly a property of the world as a whole, as Leibniz reasons in February 1677:

A remarkable fact: motion is something relative, and one cannot distinguish exactly which of the bodies is moving. Thus if motion is an affection, its subject will not be any one individual body, but the whole world. Hence all its effects must also necessarily be relative. The absolute motion we imagine to ourselves, however, is nothing but an affection of our soul while we consider ourselves or other things as immobile, since we are able to understand everything more easily when these things are considered as immobile (“Motion is something relative” [Febr. 1677], A VI, 4, 1970; Arthur 229).

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<sup>10</sup>This undermines Puryear's claim that in Leibniz's considered view, “Motion, like force, is absolute in the sense that it is not relative to a frame of reference” (Puryear 2012, 167). He rightly points out that using the term “frame of reference” is anachronistic, and that Leibniz has in mind a space relative to a body or system of bodies (rather than that together with a system of three space and one time coordinates); but the point stands that Leibniz took the equivalence of hypotheses to rule out absolute motions as motions relative to an absolute space in the Newtonian sense.

The wording of this passage is quite revealing about how the relativity of motion factors into Leibniz's motivations for substantial forms. He has argued that insofar as motion is understood geometrically – that is, as mere change of situation – individual subjects of motion cannot be distinguished, and motion has to be regarded as an affection of the whole world. Now he argues that since there is no absolute space within which individual subjects could be distinguished, the appearance of absolute motion is an effect of the fact that we see things from our own point of view, regarding ourselves as immobile.

But suppose God now creates the world in such a way that motions as they appear to each individual in the world from his or her own point of view are all completely compatible with one another. Here we need to interpret “point of view” literally, so as to include the situation of each individual's body in relation to all the others it co-exists with, yielding representations that will change as the body moves. Each such representation could be regarded as a perception, provided the individual is equipped with organs of sense in which these representations are presented with varying degrees of clarity and confusedness. Supposing the individuals are also equipped with appetites that take them through the changes of representation in an autonomous fashion, according to some internal law, then one has all the ingredients of Leibniz's substantial forms. He argues just this in a piece written in about 1681:

Insofar as God relates the universe to some particular body, and regards the whole of it as if from this body, or what is the same thing, thinks of all the appearances or relations of things to this body considered as immobile, there results from this the substantial form or soul of this body, which is completed by a certain sensation and appetite (*The Origin of Souls and Minds*; A VI, 4, 1460; Arthur 261).

Similarly, 5 years later he argues in the *Discourse* that God produces substances as results of considering the world from all its infinite points of view:

For God ... considers all the faces of the world (*toutes les faces du monde*) in all possible ways, since there is no aspect that escapes his omniscience. The result of each view of the universe, as seen from a certain place, is a substance which expresses the universe conformably to that view, if God should see fit to actualize his thought and produce that substance (*Discourse on Metaphysics* §14, GP IV, 439).

Now such passages might be taken to confirm the picture that Adams has proposed. If ultimately all that exist are these perceiving forms, and God creates in each one a representation of the whole rest of the universe from its point of view, then all that exist are these appearances or relations of other things to it, in such a way that the systems of relations of all such substantial forms harmoniously cohere. There would be no real bodies, just their appearances; likewise, there would be no real motions, just changes of appearances and of relations of bodies with one another in one coherent whole.

One could make several objections to this interpretation. Leibniz does not appear to be arguing here that there are no real bodies or motions; in fact, the argument seems to be premised on the reality of bodies and their motions, and God arranging everything so that there is a perfect harmony between the appearances produced within the substantial form of each substance and the physical phenomena

occurring outside it. On the face of it, the reduction of bodies to appearances is not compatible with Leibniz's own way of presenting his philosophy as a hypothesis of a pre-established harmony between two realms, that in which "body expresses the whole universe through the interconnection of all matter in the plenum", and that in which "the soul also represents the entire universe by representing the body which belongs to it in a particular way" (*Monadology* §62, GP VI, 617). But I will not pursue such objections here. The inadequacy of this picture can be demonstrated by staying within the topic of relativity of motion.

For the above picture is insufficient to solve the problem of the subject of motion. On the phenomenalist picture, bodies would still not be beings capable of action and passion. A comparison with Spinoza seems particularly apt here, especially given Leibniz's later criticisms of Spinoza for reducing the world to phenomena. Spinozan individuals express from their own vantage point all their relations to other individuals. As modes of extension, they are bodies in efficient causal relations with all other bodies. But they are not substances, and their actions consist solely in these causal relations, of which sentient individuals can be aware to a greater or lesser degree. Now Leibniz followed Spinoza in attributing action to that individual in which the cause is expressed more clearly. But given the relativity of motion, this is problematic. A subject in a stagecoach, for instance, regarding herself as immobile, could change situation with respect to a group of pedestrians on the street. Meanwhile, the pedestrians, regarding themselves as immobile, would see the passenger moving with respect to them, and given the mutuality of change of situation, both passenger and pedestrians would describe the appearances truly, neither would be more correct than the other. God could create the universe so that all the relations of one subject to the others are as it appears from that point of view. But then motion would be a mere phenomenon of God as the only substance, since bodies are completely ephemeral and transitory.<sup>11</sup> There would be no more reason for saying that I threw a ball than for saying that all the other bodies in the universe conspired to make it appear that way, although the ball remained entirely stationary. So no individual could be held responsible for his own actions.

Whether such a relativity of the subject of action would have been acceptable to Spinoza, it clearly would not have been to Leibniz. He could not accept that individual human subjects were mere modes, nor that they were not responsible for their own actions. As we know, Leibniz developed a metaphysics in which substances are beings capable of action, and their actions are attributable to them individually, not in relation to other existents. This involves their containing within them the reason for their own actions, reasons bound up with the notion of *appetition*. In a word, what is lacking in the phenomenalist picture is a proper recognition of the significance of the dynamism at the heart of Leibniz's metaphysics. The entelechies presumed in bodies not only give a foundation for the reality of these bodies and their

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<sup>11</sup> Leibniz says that if Spinoza were right that there is only one substance, "then everything except God would be transitory, and would sink into mere accidents and modifications, since there would not be in things the basis of substances, which consists in the existence of monads" (Letter to Bourguet, December 1714; GP III, 575).

motions – something I will come back to in a moment – but also for a theory of action that makes the substances the true authors of their own actions, and not just actors relative to other actors. In every interaction, therefore, there had to be a way of distinguishing which were the true motions, and which were only apparent motions caused by the motions of other bodies relative to them. And the true motions had to involve the identification of causes. As we shall see now, Leibniz was alive to this.

## 5 Motion with Respect to Cause

So far I have restricted the discussion to what Leibniz says about motion insofar as it is conceived geometrically, in terms of relations of situations. But in all the passages I have quoted from this occurs as the first item in a contrast between *motion conceived merely geometrically* and *motion with respect to cause*. Motion cannot be attributed to a subject if one is considering it only as change of situation; but it can be attributed to a subject if one knows something about the causes involved. As he writes in the “Mechanical Principles” of 1676, “No one doubts that the coach moves over the ground rather than the ground under the coach” (A VI, 3, 104–05). In this vein, the passage I quoted above from “Motion is something relative” of February 1677 continues:

It should be noted, however, that when we consider motion not formally as it is in itself, but with respect to cause, it can be attributed to the body of that thing by whose contact change is brought about (“Motion is something relative”, A VI, 4, 1970; Arthur 229).

This echoes Leibniz’s account in the “Mechanical Principles”, where he writes:

From these things it is clear that in the case of two bodies, motion should be attributed to that one which contains the cause of their mutual situation having changed, because we have seen it receive a blow, or because it is dislocated and deformed, or shows signs of having received some other blows and of having had a change wrought in it as a result of this (“Mechanical Principles”, A VI, 3, 104–105).

In this same essay Leibniz applies similar considerations to the Copernican controversy, arguing that the hypothesis of the annual motion of the Earth – that is, that it “changes its situation to the fixed stars” – “would certainly be sufficiently corroborated” by such phenomena as changes in the apparent diameter of the fixed stars and parallax. Likewise its diurnal motion would be established by the fact that “hanging lamps constantly vibrate from East to West, or that waves impinge only on eastern and western shores” (A VI, 3, 105–106). One might have thought that Leibniz should deny the truth of the Copernican hypothesis. But his distinction between “motion as it is in itself” and “motion with respect to cause” allows him to identify, in a given scenario, which motions are merely apparent. The coach is moving and the ground is still, because we know the horses are pulling the coach. Of course, the ground itself could be moving, but that is not relevant to explaining which of the two relative motions is true and which apparent. Likewise, with respect

to the fixed stars – that is, taking them to be at rest – it is clear that the simplest hypothesis to explain the phenomena (and to distinguish true from apparent motions) is that according to which the Sun is taken to be at rest and the Earth in motion, both around its own axis and around the Sun.

This distinction between “motion formally as it is in itself” and “motion with respect to cause” is a traditional distinction, and can be found even in thinkers such as Swineshead and Heytesbury of fourteenth century Oxford. It certainly figured prominently in reactions to Galileo’s account of motion by Fabry, Mersenne and their contemporaries in the seventeenth century. In Leibniz’s case, once he has articulated it in 1676 in connection with the simplest hypothesis for explaining the phenomena, it remains a staple of his philosophy. He will later slightly refine the wording, using “most intelligible” in preference to “simplest”, and arguing that the hypothesis that correctly distinguishes the true from the apparent motions should be taken as itself true, but otherwise it is the same position that he defends in the *Dynamica* begun around 1689:

Universally, when motion occurs, we find nothing in bodies by which it could be determined except change of situation, which always consists in relation (*in respectu*). Thus motion by its nature is respective. But this is to understand these things in mathematical rigour. Meanwhile, we attribute motion to bodies according to those hypotheses by which they are most aptly explained, and the truth of the hypothesis is nothing other than its aptness (*Dynamica*, Prop. 19, GM VI, 507–08).

That is, we can say that a body is truly in motion (with respect to cause) when we have identified the most intelligible hypothesis that accounts for the production of the relative motions. This account tallies with Leibniz’s mature philosophy of cause, as can be seen by comparing it with the following remarks in a piece – incomplete, but probably intended for publication – roughly contemporary with (and consistent with) the *Discourse on Metaphysics*:

And that thing from whose state a reason for the changes is most readily provided is adjudged to be the cause. Thus if one person supposes that a solid moving in a fluid stirs up various waves, another can understand the same things to occur if, with the solid at rest in the middle of the fluid, one supposes certain equivalent motions of the fluid<in various waves>; indeed, the same phenomena can be explained in infinitely many ways. And granted that motion is really a relative thing, nonetheless that hypothesis which attributes motion to the solid, and from this deduces the waves in the liquid, is infinitely simpler than the others, and for this reason the solid is adjudged to be the cause of the motion. Causes are not derived from a real influence, but from the providing of a reason (*Specimen inventorum*, A VI, 4, 1620 Arthur; 311; my emphasis).

Of course, between 1676 and 1686 a profound change has occurred in Leibniz’s natural philosophy, the introduction of force and the discovery of its correct measure in 1678. It is not an accident that he should have discovered the correct measure through a consideration of causes, namely, through his principle that “the full cause must be contained in the entire effect”. Leibniz first articulates this Full Cause Principle in the summer of 1676: “Any full effect, if the opportunity presents itself, can perfectly reproduce its cause, that is, it has forces enough to bring itself back into the same state it was in previously, or into an equivalent state” (Hess 1978, 204).

This did not immediately yield the correct measure; that arrived only after a sustained effort at the beginning of 1678. But the breakthrough depended on the idea that physical force is the capacity to act, to do work. Using the Full Cause Principle, Leibniz was able to show that this remains in a body whether it is expressed in motion (living force) or not (dead force): a body that has been raised through a given height against gravity has the same capacity to do work as it does when it has acquired motion falling through that height. In an elastic collision each body has its living force ( $mv^2$ ) converted into elastic force (with the capacity to do the same work), and then back again into an equivalent living force ( $m(-v)^2$ ) as it rebounds. Thus, provided their relative speed is the same, “*the action or impact of bodies on each other will be the same*”: “if the appearances of the phenomena in question are the same, then, whatever may turn out to be the true hypothesis, that is, whichever bodies might in the end turn out to be truly in motion or at rest, the outcome in terms of the phenomena ... which result will be the same” (*Specimen dynamicum II*, GM VI, 248). So in an isolated body or system of bodies, the same total force remains, whatever hypothesis is made about which bodies are at rest. Force is therefore what is absolute in motion, unlike the Cartesian quantity of motion, whose absoluteness is contrary to the relativity of motion and would require an absolute space. Thus although motion consists “only in relation (*respectu*),” “and there is no way of determining precisely how much absolute motion should be assigned to each subject,” still “motive force, i.e. the power of acting, is something real, and can be discerned in bodies” (A VI, 4, 1622–23; Arthur 315).

Forces in this sense, however, the forces that are determined as the causes of bodies acting and being acted upon by one another, are derivative forces. And derivative forces, according to Leibniz, are instantaneous modifications of something permanent. But all material things are constantly changing. So if what is real in motion is derivative active force (whether living or dead), it must be a modification of something that is not extension and its modifications, namely *form*. This argument is buttressed by the further consideration about extrinsic denominations. For substances are situated through their bodies: they are where they physically act, so to speak. Now, situation, and change of situation too, are *extrinsic denominations*. But according to Leibniz, there can be “no purely extrinsic denominations”, and therefore no change in an extrinsic denomination without a corresponding change in some intrinsic modification of the individual substance. He identifies the relevant modification for situation as involving “a degree of expressing a remote thing in the thing itself, either of affecting it or receiving an affection from it. So, in fact, situation really involves a degree of expressions” in the substance (“On the Principle of Indiscernibles”, C 8–10). Similarly, change of situation must have a substantial basis. Leibniz identifies this as the primitive active force or appetite that takes each substance from one state to those following.

Returning now to the objections mentioned in the introduction about the reality of space, we see that Leibniz maintains a much more nuanced position than has been supposed. Bodies have relations of situation to other simultaneously existing bodies, and these are mutual; so, likewise, are the changes of situation of bodies. But all these relations are instantaneous: there is no one enduring space in which

bodies are situated, on account of the relativity of motion. But with respect to cause, we can identify the most intelligible hypothesis, yielding the true versus the merely apparent motions among some set of phenomena. This will serve to give us an absolute space, not as an enduring entity, but as a convenient fiction based on the hypothesis that certain bodies are immobile. (This is a fiction because there is nothing with respect to which they can be absolutely immobile.) In the fragment quoted at the beginning of this paper, Leibniz writes:

Absolute space is no more a thing than time is, even though it is pleasing to the imagination; indeed it can be demonstrated that such entities are not things, but merely relations of the mind trying to refer everything to intelligible hypotheses—that is, to uniform motions and immobile places—and to values deduced on this basis (“Motion is not Something Absolute”, A VI, 4, 1638; Arthur 333).

Moreover, the fact that bodies do not actually exchange any impetus, Leibniz thinks, reflects the fact that causes are not derived from a real influence. Therefore, rather than have the universal mind “assist” bodies in having them behave according to the law of compensation, as he had suggested in 1676, God must have given them the means to have successive representations that properly reflect the motions occurring in their collisions with other bodies. Above all, this must consist in a force of acting. But it must also consist in a passive force that is the ground for their representation of their reaction to other bodies. Without this, Leibniz argues, there is no way that they could contain within themselves the means to resist the forces experienced in their collisions with other bodies. There would be no ground for what he called “the law of compensation” or for the conservation of living force except in a divine mandate imposed from above. Thus, he argues in the passage with which we began, each body must contain within it both the representation of its spatial relations to other bodies and the means to change its representations in accordance with their respective masses and speeds, and this is found in its substance or force:

In fact, each substance is a kind of force of acting, i.e. an endeavour to change itself with respect to all the others according to certain laws of its own nature. Whence any substance whatever expresses the whole universe, according to its own point of view. And in the phenomena of motions this fact is especially apparent, for there every single body must be supposed to have a motion in common with any other, as if they were in the same ship, as well as its own motion, reciprocal to its bulk; how this could be so could not be imagined if motions were absolute and each body did not express all others (“Motion is not Something Absolute” [c. 1686–9], A VI, 4, 1638; Arthur 333–35).

## 6 Conclusion

I have not tried here to give a full treatment of Leibniz’s views on the relativity of motion, nor is it part of my brief to defend his position from all criticism. What I have tried to do is to show how the relativity of motion, considered geometrically, functioned as one of his motivations for rehabilitating substantial forms; and that when this is taken seriously, a different picture emerges from the idealistic position about motion usually attributed to him.

In closing, let me address one of the passages most often cited both as supporting an idealistic interpretation of Leibniz's position on matter and motion, as well as perhaps indicating where he finally moves over to a frankly idealistic position. It occurs near the end of a long and exhaustive reply (30th June, 1704) to De Volder's criticisms of his views expressed earlier in their correspondence:

Indeed, considering the matter carefully, it should be said that there is nothing in things except simple substances, and in them, perception and appetite. Moreover, matter and motion are not so much substances or things as the phenomena of perceivers, the reality of which is located in the harmony of perceivers with themselves (at different times) and with other perceivers (Lodge 307; GP II, 268).

This wording seems in keeping with what Puryear wrote about motion being "ultimately reducible to perceiving substances and their modifications" and phenomena "having their being in perceivers", which he took to be tantamount to a commitment to idealism. But if what Leibniz meant by this was that he had now abandoned his former position respecting the reality of motion, which required not only that a body "change its situation with respect to the others, but also that the cause of the change, the force or action, be in itself" (GP IV, 396), we would certainly have expected him to say more. What we find on inspecting the rest of the letter, though, is a summary of the position he had been urging throughout the correspondence: Body and motion are not simply extension and change of situation, which are mere mathematical abstractions. Extension is an abstraction from the extended, whereas a really extended body presupposes "a nature that is supposed to be diffused, repeated and continued", a nature "which constitutes physical body", consisting in "the principle of acting and being acted upon", i.e. active and passive force (Lodge 305; GP II, 269). Force, on the other hand, "is that which is momentary in action, but with a relation to the following state" (Lodge 307; GP II, 270). Force, that is, is really in the things that are acting and are extended. If there were no such "internal force or foundation of actions ... there would be no natural principle of change at all, and so no natural change would occur" (Lodge 309; GP II, 271).

Earlier in the letter Leibniz writes that "extended mass is nothing but a phenomenon founded in things, like the rainbow or perihelion" (Lodge 303; GP II, 268); what he means by this, I contend, is not that bodies are mere appearances, but appearances to us of those natures which constitute bodies as extended. It is those natures, the forces in bodies, that constitute them as real phenomena. Bodies are "real things", he writes in the same letter, whose "parts are not indefinite, but are actually assigned in a certain way, in accordance with the divisions and subdivisions that nature actually institutes by different motions". This, of course, requires that the motions effecting the subdivisions also be real. But these are mutable and transitory, like the derivative forces, and therefore must be modifications or limitations of something permanent, namely a primitive active force in bodies.

All of this, I submit, indicates that Leibniz intends that the phenomena of bodies and motions are real, that they contain substances or forces in the robust sense that a thing must be where it acts, and that these substances or forces are the foundations of the phenomena, and are what constitute them as real. Body in reality is just an



aggregation of unities, of the derivative passive forces whose diffusion constitutes its extension, and its appearance as extended, homogeneous and one, is dependent on our perceiving it as such; whereas the motion of a body is an appearance resulting from its change of situation relative to an observer, a motion which could be made to disappear by changing the observer's frame of reference; nevertheless, its reality consists in the force it is endowed with, an internal principle of change in the body whose phenomenal measure at any instant is invariant. Although the appearances of these phenomena depend on our perception, their reality does not. As Leibniz responded to Locke's observation that to creatures with much finer senses than ours, "the yellow colour of gold would then disappear, and instead of it we should see an admirable texture of parts": "[Agreed;] but the colour yellow is a reality, all the same, like the rainbow" (NE 219).

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# Chapter 11

## Monads on My Mind

Daniel Garber

Monads were very much on Leibniz's mind in the late 1690s. In these crucial years between about 1695 and 1700, Leibniz was beginning to work out the details of the monadology, what monads are, and how they are to function as the ultimate building-blocks of his metaphysics. In this essay, I would like to look carefully at the development of the argument in those years, as Leibniz's view was undergoing what has to be regarded as a major shift. I will begin by reviewing what I take to be Leibniz's position in what I have called his middle years, the years between the late 1670s and the mid-1690s, before monads, when Leibniz's view of the world was grounded in corporeal substances. Then I will try to trace out at least one of the paths by which monads came into Leibniz's world during those important years of transition.

Inevitably I will have to go over some of the ground that I covered elsewhere, where I have discussed the transition from the corporeal substance view of the middle years (still somewhat controversial) to the monadological metaphysics of the later years.<sup>1</sup> I was moved to reconsider the question in part because of later thoughts I had, not altogether consistent with what I thought earlier, but mostly because of the new availability of some texts. I am becoming increasingly convinced that the second half of the 1690s was a period of Leibniz's philosophical life as fertile as the late 1670s and early 1680s, when the doctrines characteristic of his middle years emerged. As new texts from this period are edited and published, I expect that new insights about the emergence of the monadological metaphysics of his mature period will be revealed. In that respect, I take this to be only a preliminary report on a crucial issue in Leibniz's philosophical development.

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<sup>1</sup> See Garber (2009), Chap. 8.

## 1 The Back Story: Leibniz Before 1695

Leibniz's earliest conception of the world was strictly mechanist, with a distinctly Hobbesian influence.<sup>2</sup> In the physics of the *Theoria motus abstracti* and *Hypothesis physica nova* of 1671, bodies were just geometrical, and so offered no resistance. For a variety of reasons, Leibniz found this unsatisfactory. For one, the physics that resulted from this conception of body violated the principle of the equality of cause and effect, a conservation principle, discovered by Leibniz in the summer of 1676, in accordance with which the ability to do work is conserved. If bodies offer no resistance, then the smallest body in motion could set into motion a larger body at rest, without losing any of its own motion, causing a violation of the conservation principle. But in addition, if a body were just extension, then it would be infinitely divisible: one could find no level at which there genuine individuals with genuine unity. In the late 1670s, these two problems led Leibniz to revive the dreaded substantial forms of the scholastics. And so, Leibniz wrote in 1679, in a famous letter to the Duke Johann Friedrich, his employer in Hannover, "I reestablish substantial forms with demonstrative certainty..." (A I, 2, 225).<sup>3</sup> And in a contemporary passage from an outline of a book Leibniz never got to write, he remarked:

There follows now a discussion of incorporeal things. Certain things take place in body which cannot be explained from the necessity of matter alone. Such are the laws of motion, which depend upon the metaphysical principle of the equality of cause and effect. Therefore we must deal here with the soul and show that all things are animated. Without soul or form of some kind, a body would have no being, because no part of it can be designated which does not in turn consist of more parts. Thus nothing could be designated in a body which could be called 'this thing,' or a unity. (A VI, 4, 1988 (L 278–9))

The reestablishment of substantial forms meant, for Leibniz, the reestablishment of an Aristotelian conception of substance, corporeal substance understood as a union of form and matter. This addressed both of the problems with his earlier view. From the matter arises passivity, resistance, which will enable bodies to resist the acquisition of new motion and thus satisfy the principle of the equality of cause and effect. And from the substantial form, came the individuation of bodies, genuine individuals, genuine unities, something "in a body which could be called 'this thing,' or a unity."

An important exposition of Leibniz's metaphysics of corporeal substances can be found in his correspondence with Arnauld in the late 1680s. Central to the correspondence is what might be called the aggregate argument:

I believe that where there are only entities through aggregation, there will not even be real entities; for every entity through aggregation presupposes entities endowed with a true unity. . . I do not grant that there are only aggregates of substances. If there are aggregates of substances, there must also be genuine substances from which all the aggregates result.

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<sup>2</sup>For a fuller development of the early years and the transition to his middle period discussed in this section of the paper, with full references and documentation, see Garber (2009), Chap. 1.

<sup>3</sup>References to Leibniz's writings are generally given in the main text. When available, the English translation is given in parentheses following the original language citation.

One must necessarily arrive either at mathematical points from which certain authors make up extension, or at Epicurus's and M. Cordemoy's atoms (which you, like me, dismiss), or else one must acknowledge that no reality can be found in bodies, or finally one must recognize certain substances in them that possess a true unity.<sup>4</sup>

These "certain substances" are, like us, organic bodies united by souls, corporeal substances:

I accord substantial forms to all corporeal substances that are more than mechanically united . . . . If I am asked for my views in particular on the sun, . . . the earth, the moon, trees and similar bodies, and even on animals, I cannot declare with absolute certainty if they are animate or at least if they are substances or even if they are simply machines or aggregates of many substances. . . . [E]very part of matter is actually divided into other parts as different as the diamonds [of the Grand Duke and the Grand Mogul]; and since it continues endlessly in this way, *one will never arrive at a thing of which it may be said: 'Here really is an entity,' except when one finds animate machines whose soul or substantial form creates substantial unity independent of the external union of contiguity.* And if there are none, it follows that apart from man there is apparently nothing substantial in the visible world.<sup>5</sup>

In this period, it seems, the ultimate entities that make up the world are corporeal substances, animate creatures understood on the model of human beings, organic bodies and souls, in Aristotelian terms, matter and form. The objects of everyday experience are either corporeal substances, such as us, fellow human beings, and likely animals, or aggregates of corporeal substances, like tables and chairs.<sup>6</sup>

## 2 Monads Emerge: 1695–1696

This is Leibniz's view of the world in the middle years, I would claim. The view that Leibniz saw extended corporeal substances and not non-extended and mind-like monads as the ultimate ground of reality in this period, indeed the whole idea of a middle period in Leibniz's philosophy is increasingly accepted in the literature, though it is still rather controversial. I shall not defend that reading here.<sup>7</sup> But if we can assume that the constituents of reality were corporeal substances in his middle years, by in the mid-1690s, things are beginning to change. The changes, though, are subtle, and it is not obvious when exactly they happen.

<sup>4</sup>Leibniz to Arnauld, 30 April 1687, A II, 2, 169. See also A II, 2, 82; A II, 2, 114–15; A II, 2, 186; A II, 2, 248.

<sup>5</sup>Leibniz to Arnauld, 28 Nov/8 Dec 1686, A II, 2, 121–22. See also A II, 2, 115–16; A II, 2, 119; A II, 2, 120–21.

<sup>6</sup>For a fuller account of the aggregate argument and the account of the unity of substance with which it is connected, see Garber (2009), Chap. 2. I am leaving aside here the theme of force, which is also important to Leibniz's metaphysics in this period. See Garber (2009), Chaps. 3 and 4.

<sup>7</sup>My main defense of this thesis is Garber (2009), where I present a developmental account of Leibniz's philosophy that shows the place that the middle years occupy in the larger development of Leibniz's thought. The most substantial attack on the "middle years" thesis of a corporeal substance metaphysics is found in part III of Adams (1994).

There are a couple of texts from the mid-1690s where it appears as if Leibniz is considering grounding reality is something non-extended and analogous to minds, though he doesn't there call them monads. Consider, for example, the *Système nouveau* of 1695. At the end of the first part of the essay, Leibniz writes:

There are only atoms of substance, that is, real unities *absolutely destitute of parts*, which are the source of actions, *the first absolute principles of the composition of things, and, as it were, the final elements in the analysis of substances* [*les premiers principes absolus de la composition des choses, & comme les derniers élemens de l'analyse des substances*]. We could call them metaphysical points: they have something vital, a kind of perception, and mathematical points are the points of view from which they express the universe. But when corporeal substances are contracted, all their organs together constitute only a physical point relative to us. Thus physical points are indivisible only in appearance; mathematical points are exact, but they are merely modalities. Only metaphysical points or points of substance (constituted by forms or souls [*constituez par les formes ou ames*]) are exact and real, and without them there would be nothing real, since without true unities there would be no multitude.<sup>8</sup>

It is tempting to read this passage as asserting that that the ultimate constituents of reality are not corporeal substances, but something more like souls. And it suggests a stronger notion of unity than we found in the Correspondence with Arnauld. On this view, it would appear, corporeal substances are not sufficiently unified to count as genuine individuals: on this view the *real* unities are something more like souls or forms. But this reading is not forced on us. Souls or forms are certainly central here, one might argue, insofar as they transform mere aggregates of matter, organic bodies, into genuine corporeal substances. But, one might argue, the “true unities” in the last line are the corporeal substances as a whole, and not just their souls. A crucial term here is “*constituez*”: Leibniz writes that the “metaphysical points or points of substance” are “constituted by” forms or souls. In seventeenth century French, as in modern French, the word is ambiguous. It *can* mean that these “points of substance” *are* just “forms or souls”. But it can *also* mean that the forms or souls *create* or *establish* genuine unities, in the way in which souls transform an organic body, an aggregate of parts, into a genuine corporeal substance.<sup>9</sup>

Closely related to this is another important text, where Leibniz makes crucial use of the idea of a simple substance, a term that is just at this moment entering his technical vocabulary.<sup>10</sup> The text is Leibniz's remarks on some criticisms that Simon Foucher had made of the *Système nouveau*. In this important text, Leibniz discusses the difference between mathematical extension and real bodies. Mathematical extension is not composed of parts, but is divisible into parts; in mathematics we are dealing with the ideal world and we don't have to worry about how extension can be

<sup>8</sup>Leibniz (1695, 300; AG 142), emphasis added. Note that I am citing the original publication of the *Système nouveau* since the standard text, given in GP IV is from a version with later additions.

<sup>9</sup>On this see the *Dictionnaire de L'Académie française* (1694), s.v. “*constituer*.” For further reflections on the notion of constitution in Leibniz, see Nita (2008, 191–193).

<sup>10</sup>Before 1690, there are only a handful of occurrences of the term “simple substance” in the Leibniz texts that we have. For a discussion of the evolution of Leibniz's vocabulary, see Garber (2009, 331f).

grounded in something smaller or more basic. But the situation is different with concrete things. Leibniz writes:

[I]n actual substantial things, the whole is a result or coming together of *simple substances*, or rather of a multitude of real unities. ... Those who make up a line from points have looked for the first elements in ideal things or relations, something completely contrary to what they should have done; and those who found that relations like number or space ... cannot be formed by the coming together of points were wrong, for the most part, to deny that substantial realities have first elements, as if the substantial realities had no primitive unities, or as if there were no simple substances. ... [I]n realities in which only divisions actually made enter into consideration, the whole is only a result or coming together, like a flock of sheep. It is true that the number of *simple substances* which enter into a mass, however small, is infinite, since besides the soul, which brings about the real unity of the animal, the body of the sheep (for example) is actually subdivided—that is, it is, again, an assemblage of invisible animals or plants which are in the same way composites, outside of that which also brings about their real unity. Although this goes on to infinity, it is evident that, in the end, everything reduces [*revenir à*] to these unities, the rest or the results being nothing but well-founded phenomena. (GP IV, 491–2; AG 146–7)<sup>11</sup>

It is tempting to suppose that the “unities” to which things reduce are the “simple substances” mentioned a few lines earlier, and that these are to be understood as the mind-like monads of the later monadology. But though suggestive, that reading is not inevitable: the unities to which everything reduces might also be things like the sheep or the “invisible animals or plants” which Leibniz mentions, corporeal substances united by souls.

It is at just about this time that the term “monad” enters Leibniz’s vocabulary as well. The first occurrence of the word in Leibniz’s texts that can plausibly be linked with his later monadological doctrine occurs in a letter to L’Hospital dated 12/22 July 1695.<sup>12</sup> The context is a brief discussion of the *Système nouveau*, which had just come out in the *Journal des sçavans* in the June and July issues. Leibniz writes:

The key to my doctrine on this subject consists in the consideration of that which is genuinely a real unity, a monad [*une unité réelle, Monas*]. (A III, 6, 451; WF 57)

It is interesting, though, that as defined, the monad could be either the corporeal substance of the Correspondence with Arnauld, or the mind-like simple substance of the later monadology.

The same is true of the next occurrence of the term, about a year later, in a letter to Michelangelo Fardella, a close correspondent, from 3/13 September 1696. There he writes:

It seems to me that the nub of the matter consists in the true notion of substance, which is the same as the notion of a monad or real unity and, so to speak, a formal atom or essential

<sup>11</sup> For a fuller discussion of this passage and Leibniz’s account of continuity, see Garber (2015).

<sup>12</sup> It should be noted that the word ‘monad’ or the adjective ‘monadicus’ appear earlier in Leibniz’s 1663 theses, *De principio individui* (A VI, 1, 7), in the 1666 *De arte combinatoria* (A VI, 1, 173, 185, 220, 222), in notes on Martianus Capella in 1673 (A VI, 3, 199) and in notes on Henry More in 1676 (A VI, 3, 356). Later the term appears in discussions of John Wilkins in 1686 (A VI, 4, 31), John Dee in 1688 (A VI, 4, 919), and Ralph Cudworth in 1689 (A VI, 4, 1946). But none of these uses seem to have any substantial connection with the later metaphysical use of the term.

point. For there are no atoms of matter, whence in vain do we seek unity in matter; and a mathematical point isn't essential but modal, whence the continuum is not made up out of points, and yet something substantial comes about from unities. (A II, 3, 192–93)

In a letter to Fardella from 5/15 June 1697, Leibniz replies to a request for further clarification by noting that “what you ask about the nature of monads and substances can easily be satisfied if you indicate what in particular you would like explained about the matter.” (A II, 3, 325) But again, it is not clear whether ‘monad’ is another word for the corporeal substance, or whether it designates a mind-like simple substance.

These initial uses of the term are relatively thin; when first introduced, ‘monad’ may well be identical with what he used to call a unity in his earlier vocabulary, that is, a corporeal substance. But in the years that immediately follow, things become somewhat clearer.

### 3 Monads Aplenty: 1697–1698

At this point, I would like to turn to a number of later documents in which Leibniz deals with monads. While in some of these texts it is very difficult to say exactly how Leibniz is thinking about monads, in others we see some of the familiar and characteristic features of the monadological metaphysics revealed for the first time. In these letters, and perhaps in other texts of these years that we have not seen yet, Leibniz seems to be working out the details of his new theory.

Conrad Barthold Behrens was a physician and scholar in Lower Saxony who had a fairly extensive correspondence with Leibniz, beginning in 1692 and extending through to the end of Leibniz's life. The letter I would like to discuss, dated 24 December/3 January 1697/8, is a response to an earlier letter in which Behrens had sent him an outline of his monograph on the soul, *Pneumatologia medica*, which was to appear a few years later, in 1702 in the *Miscellanea curiosa*, a publication of the German *Academia Naturae Curiosorum*. Leibniz replied, as he often did, by taking the opportunity to inform his correspondent about his own ideas. In the course of this explanation, Leibniz wrote about monads:

By the word ‘substance’ I here understand a substance, and not substances, that is, not some aggregate but a true one, which I call a monad, because it differs from an aggregate (such as every material mass is) just as a flock of sheep differs from a sheep, or a fish pond from a fish.

Leibniz adds:

Therefore in every substance endowed with a body there is a dominant monad and an organic mass which it dominates.

And so, he concludes:

...everything is full of souls, or, if you prefer, of monads analogous to souls, though not every soul is a mind, but only those which are endowed with an intellect. (A I, 15, 153)

It is tempting here to read ‘monad’ as in the later canonical monadological texts, as something non-extended and analogous to the soul. But it is not so clear. Leibniz does say that everything is full of monads analogous to souls, and that in every substance endowed with a body there is a dominant monad, which seems to function something like a soul with respect to an organic mass. But, on the other hand, earlier in the same passage Leibniz suggests that a true substance or monad is *like a sheep or a fish*, suggesting that ‘monad’ applies not only to the soul but to the whole composite, body *and* soul. Insofar as everything is full of these living (but extended) substances, he might say that everything is full of monads analogous to souls, while, at the same time holding that everything is *also* filled with extended corporeal substances which have non-extended dominant monads as constituents. It is not absolutely clear that this is what Leibniz has in mind, but it is certainly a possible reading.

Monads also come up in a similarly inconclusive way in Leibniz’s *De ipsa natura*, the first published text in which the term appears. Though the essay appeared in print in September 1698, there is good reason to believe that Leibniz was probably working on it in the second half of 1697. Starting as early as June or July 1697, there is an epistolary exchange with Johann Christoph Sturm, the target of the essay, on themes that will come up in the published essay, suggesting that the essay was in progress at that time, even before the letter to Behrens.<sup>13</sup>

The letters to Sturm contain some brief mentions of the monad, but nothing that would allow us to say much definite about how Leibniz understood the term. In a letter that the Akademie Edition dates as having been written before 5 July 1697, Leibniz refers to monads in connection with the distinction between natural and artificial machines that he drew in the *Système nouveau*. Here Leibniz notes that every natural machine is endowed with a “substantial monad or ... a spirit.” (A II, 3, 341) In this context the term “monad” is just equivalent to soul, it would seem. But the term also comes up in a later letter to Sturm, from the end of October 1697. In one place, which Leibniz ultimately struck, he characterizes a monad as “something truly one and invisible.” (A II, 3, 387n) Later in the same letter monads come up again, this time in a passage that Leibniz actually sent. He wrote:

Also we differ in the notions of matter. With regard to extended mass, that for me it is not one substance, but an aggregate of many substances, as a flock. Moreover, substance itself is to be sought in the monad, where we cannot conceive of anything except the power [*potentia*] of acting and being acted upon [*patiendi*]. (A II, 3, 392)

Here it isn’t clear whether included among the monads are corporeal substances, or whether Leibniz’s intention is to replace corporeal substances with monads as the metaphysical ground of things. That is, it isn’t clear whether ‘monad’ is intended as a general word for unity or substance, including corporeal substance, or whether monads are the nonextended unities that ground corporeal substances.

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<sup>13</sup> See Leibniz for Sturm, prior to 5 July 1697, A II, 3, 335–344; Sturm for Leibniz, 10–15 October 1697, A II, 3, 384–385; Leibniz for Sturm, end of October 1697, A II, 3, 386–393.



There are a number of passages in the published *De ipsa natura* where the term ‘monad’ is just used in passing. (See, e.g., §§10 and 13.) But two passages are more substantive. In one passage, Leibniz argues that there must be like a soul in material bodies. He writes:

And this substantial principle itself [*ipsum substantiale principium*] is what is called the soul in living things and the substantial form in other things; insofar as, together with matter, it constitutes a substance that is truly one, or something one per se, it makes up what I call a monad [*id facit quod ego Monadem appello*], since, if these true and real unities were eliminated, only entities through aggregation, indeed (it follows from this), no true entities at all would be left in bodies. For, although there are atoms of substance, namely monads lacking parts [*monades partibus carentes*], there are no atoms of bulk [*moles*], that is, atoms of the least possible extension, nor are there any ultimate elements, since a continuum cannot be composed out of points. (*De ipsa natura* § 11, GP IV, 511; AG 162)

When Leibniz says that “it makes up what I call a monad,” it isn’t clear whether the “it” in question is the soul that creates the unity in the corporeal substance, or whether it is the substance as a whole, perhaps even a corporeal substance. But there is something suggestive in his statement that the “monads lacking parts” are the “atoms of substance”: here Leibniz might well be asserting that monads, understood on the model of the soul constitute the ultimate ground of reality. But when Leibniz writes that “nor are there any ultimate elements [in extension],” we are back to wondering how exactly he is thinking of the monad. There are certainly ways of interpreting that consistently with the later metaphysical view, on which the monads are taken to ground bodies without being “elements,” that is constituents of bodies, but it is not at all clear whether or not we are entitled to read those later views into Leibniz’s text at this moment.<sup>14</sup>

Interesting also is a later passage in the essay. Leibniz writes:

Spirit [*spiritus*] is to be understood, not as an intelligent being ... but as a soul or as a form analogous to a soul, not as a simple modification, but as something constitutive, substantial, enduring, what I usually call a monad, in which there is something like perception and appetite. (*De ipsa natura* § 12, GP IV, 512; AG 163)

Here the monad seems to be identified with “a soul or ... a form analogous to a soul.” In this passage it is very difficult to interpret the monad as anything like the corporeal substance of the middle years: here it seems that *all* monads are clearly intended to be souls or something analogous to souls. But, at the same time, it is not clear whether or not monads exhaust reality: once again it is not clear whether the monad in question is simply one constituent of a corporeal substance, together with matter, or whether it is itself the ultimate metaphysical ground of all reality.

In the passages we have been examining, it is very difficult to say what exactly Leibniz thought a monad was, whether the monad is just a new term for some elements of the earlier corporeal substance view, or whether they introduce a genuinely new metaphysics. But in a letter that Leibniz wrote to Johann Gebhard Rabener in January 1698 he is much clearer and more explicit.

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<sup>14</sup>For a discussion of some later views on the relation of monads, understood as nonextended and mind-like, to the extended world, see Garber (2009, Chap. 9).

Rabener was a court counselor and interested in medical matters. He was hardly a regular correspondent of Leibniz's; very few letters passed between them. Rabener had sent Leibniz a treatise on migranes (*Historia de hemicrania*), which Leibniz had passed on to Behrens. In his reply, he notes that Rabener seems to have encouraged him to share his thoughts about the nature of the soul. Leibniz was only too happy. In the course of that answer, Leibniz wrote the following:

Furthermore, since matter is nothing but a real phenomenon of many aggregates, and, as they commonly say, an entity through aggregation, and, moreover, since an aggregate is constituted by simples, I later discovered that we must arrive at monads. Not, indeed, corporeal or spatial [monads], since the continuum is not composed of indivisibles, nor are there any material atoms, but, however, substantial [monads]. Therefore *every true monad is a simple substance, and is in some sense analogous to a mind*, and that hence it follows that [every monad] is coeval with the world, unless it was created by God in the course of time. (A I, 15, 260)

Here it is clear that for Leibniz, monads are not extended, not corporeal substances, but simple substances, "analogous to a mind". And it is strongly implied that these mind-like monads are the ultimate constituents of bodies: one can safely presume that they are the simple substances that constitute the aggregate that is matter.

## 4 Leibniz and Wagner

Though the doctrine of monads is suggested in some of these shorter texts we have been examining, in these years it is developed at greatest length in a very curious document, the exchange between Leibniz and Gabriel Wagner, also known by his pen name, Realis de Vienna.<sup>15</sup> Wagner was an interesting person, though apparently somewhat unstable. He seems to have drifted from job to job, writing pamphlets against his teacher Christian Thomasius. Wagner was reputed to be a materialist, and held views sympathetic to those of Spinoza, particularly on the issue of necessitarianism. Despite that, Leibniz seems to have enjoyed disputing with him, and even seems to have enjoyed his personal company. Leibniz also helped Wagner to obtain a position cataloging the library at Wolfenbüttel, for at least a time.<sup>16</sup> It must have been during the time he was at Wolfenbüttel that Wagner entered into this particular exchange. Starting in December 1697 and going until March of 1698, Leibniz and Wagner met and corresponded about issues in Leibniz's philosophy. The exchange, recently published in its entirety for the first time in of the Akademie Edition, is very interesting and illuminating, and offers the first extended exchange on monads in Leibniz's corpus.<sup>17</sup>

<sup>15</sup>Note that there is a collection of Wagner's writings and documents, with an extensive introduction with biographical information and background, Wagner (1997).

<sup>16</sup>For a brief account of Wagner's life and adventures, see Israel (2006, 173–175). For a fuller account, see Wollgast's introduction to Wagner (1997).

<sup>17</sup>The full dossier is found in A II, 3, 673–739. A small portion of the exchange was published earlier in Leibniz (1948, 389–399).

The exchange grew out of Leibniz's and Wagner's contrasting reactions to Christian Thomasius's views on the notion of substance. For Wagner, the reaction against Thomasius seems to have been at least in part very personal. Though Wagner had been a student of Thomasius, the latter disowned him in 1693, following Wagner's troubles over a failure to pay his rent that led to time in jail. For Leibniz, the differences were more strictly philosophical. Indeed, much of Leibniz's interest in the notion of substance in the early 1690s, culminating in the important "*De prima philosophiae emendatione, et de notione substantiae*" of 1694, seems to derive from his reaction to Thomasius. Thomasius, in turn, replied to Leibniz in print, of which Leibniz took notice in a series of private notes, probably from mid or late 1696.<sup>18</sup> While monads don't come up in the discussion of substance in response to Thomasius, they do come up at some length in the exchange with Wagner.

The exchange resembles the now well-known exchange between Leibniz and Fardella in 1690.<sup>19</sup> Like the exchange between Leibniz and Fardella, the exchange between Leibniz and Wagner begins with Wagner stating what he takes to be Leibniz's position and offers objections, to which Leibniz then offers responses. Unlike the Fardella exchange, though, these exchanges involve Leibniz and Wagner sparring on the same sheet of paper, either in one another's presence, or with the paper passed from the one to the other for comments to be added. And unlike the Fardella exchange, the exchange with Wagner extends over a period of time. Three papers are exchanged in December 1697, a fourth which is dated as sometime between January and March 1698, followed by a fifth and sixth paper in the middle and end of March 1698. By the sixth paper, Leibniz seems to have lost interest in the project – or become annoyed with Wagner's comments. It contains only very brief and occasional responses to Wagner's questions and objections. The series of documents ends with a letter by Leibniz, written at the end of March, setting out his position on geometrical matters, with a complaint about the lack of exact definitions in the dispute, and a reply by Wagner, at the beginning of April, setting out some definitions. The documents are capped off by a note that Leibniz wrote 28 May/7 June 1698 summarizing his impressions of this curious character and his dealings with him.

The exchange begins in the first paper (December 1697) with Wagner proposing five "Leibnizian" theses for discussion, or at least five theses that he attributes to Leibniz:

1. The extended or the continuous quantity has no parts.
2. No point is next to another.
3. One or substance is an entity in motion, or is moved. And it is universal, or God, and particular, or a creature.

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<sup>18</sup>On the debate over substance between Leibniz and Thomasius, see Utermöhlen (1979) and Garber (2009, 321–322, 329–331). For an account of the exchange between Leibniz and Wagner that emphasizes the roots of the discussion in Thomasius, see Pelletier (2011). Pelletier is also at work on a monograph on Leibniz and Wagner (see Pelletier, *forthcoming*).

<sup>19</sup>See A VI, 4, 1666–1671; AG 101–105.

4. The state of the world could have been otherwise, and indeed in as many ways as don't imply a contradiction.
5. Everything always becomes more perfect (A II, 3, 675–77).  
The second paper (also December 1697) adds another thesis:
6. There is no empty space (A II, 3, 682).  
In the last of the December 1697 exchanges, a seventh thesis is added for discussion:
7. Joy [*laetitia*] is the sense of perfection (A II, 3, 691).

But this last topic drops out pretty quickly. The first two topics concern Leibniz's views on the labyrinth of the continuum and mathematical extension. The third topic (and in some of its exchanges the sixth, on empty space) relate most directly to the issue of substance, though occasionally monads and substance will come up in other contexts in the exchange. The fourth thesis deals with Leibniz's views on necessity and contingency, and the fifth on issues relating to theodicy.

Monads come up in the second paper, which is a somewhat expanded version of the first. (The first paper has Leibniz's responses in the margins of Wagner's comments; in the second paper, Wagner presents his views in the left column, and Leibniz in the right.) Wagner presented what he took to be Leibniz's thesis: "A unity or a substance is a being in motion, that is, moved. And it is universal, that is, God, or particular, that is, a creature." Leibniz responded: "This thesis is also not mine. A monad, that is a substance is an active entity, nor is it necessary that it move. God certainly doesn't move, even though he acts" (A II, 3, 680). Notice here that the term comes up in Leibniz's reply, and not in Wagner's representation of Leibniz's theses. This suggests that monads were not a part of the earlier discussions that lead up to the exchange, or, at least, that they were not very salient in the earlier discussions: this was probably the moment in which Leibniz first introduces Wagner to his theory. But once monads are made part of the discussion, they remain. In the third paper there is the following exchange about the third thesis:

<p>α I believe that all action takes place through motion;* if not, it must be said, how** therefore can an action happen; this thesis is affirmed without sufficient exegesis and explanation, but not defended. ...</p>	<p>*all action is joined to motion, but not every action happens through motion. **We can easily understand that in monads there is no internal motion, since there is no extension in them, and all motion is in extended things. However, in monads there is an internal action through which their internal state is changed. (A II, 3, 686)</p>
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Here it is absolutely clear that monads are understood to be nonextended, and change not through motion, which involves extension, but through some "internal action." The fourth paper is just about theses 1 and 2 and the problem of the mathematical continuum, but in the fifth paper he returns to theses 3 through 6. In his response to Leibniz's remarks on thesis 3, Wagner re-organizes the dispute under a number of headings, including "In monads there is no extension", "In monads there is action through which their internal states are changed." (A II, 3, 704) (There are other headings too, but none relevant to the questions at hand.)

Under the first heading, there is one of the only jokes I know of in the corpus of Leibniz's writings:

Therefore they aren't divisible to infinity, since even if the extended and the divisible are not synonyms, they are reciprocal and convertible. And yet a monad must be able to exist in isolation [ <i>solitaria</i> ], otherwise it couldn't be called a monad.	Monads are clearly not divisible. Furthermore, monads don't exist in isolation. They're monads, not nuns. [ <i>Sunt Monades non Monachae.</i> ] (A II, 3, 704)
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Monads come up later in the fifth paper, not under thesis 3, but under the heading of thesis 5, that everything becomes more perfect. To Wagner's materialistic comment that in death, our perceptions are disbursed, Leibniz responds:

This is really mistaken. Every 'I', every this, that is every monad persists perpetually. I'm not a body, but a mind or monad which is now the ruler of this body. And perfection once acquired remains to any monad whatsoever as an indelible stamp, even if it can't always be perceived distinctly, just as the conatus impressed on a body is never destroyed, but only combined with others. The only thing missing is that death destroys perceptions insofar as it lacks what is needed for increasing them. (A II, 3, 711)

At the end of the fifth paper, Leibniz returns to monads now as they relate to the problem of the continuum. Wagner tries to link the two by relating monads to the "tiny lines [*lineolae*]" (perhaps infinitesimal?) with which he attempts to answer Leibniz's thoughts on points and the continuum.<sup>20</sup> Leibniz responds impatiently:

I ... wonder about 'tiny line' and 'monad' being joined here. These things sufficiently show that the one can't be understood from the other. The monad and the tiny line are entirely different for me, indeed also a monad and a point. A monad is a substance and therefore it is endowed with action, and except for the primary one [i.e. God] with passion as well. Points and lines are really modal beings, just like place, time, motion. Namely, they are limits or negations of continuous extension, that is, of the order of coexistences. (A II, 3, 713)

And finally, the monad comes up in the connection with Wagner's further comments on the continuum. Leibniz writes:

In a continuum there isn't an element or a minimum indivisible existing independently of everything else [*solitarie*]. Monads aren't elements of the continuum but the source [*fontes*] of all power [*potentia*] and perfection in it, insofar as the source of the limits of those monads is the Most Perfect Monad [i.e. God], which they express, each in its own way. (A II, 3, 714)

At this point, with the sixth paper, the conversation peters out.

## 5 Whither Monads?

Where are we with monads in late 1697 and early 1698? As a term of art, 'monad' seems to have entered Leibniz's vocabulary. While some of the uses are difficult to pin down, in other cases he is pretty explicitly outlining a view that looks like the

<sup>20</sup> See, e.g., A II, 3, 676, where Wagner, in the context of proposing that points can be contiguous, considers an alternative, that tiny lines are next to one another, and so a circle might turn out to be a polygon, properly speaking. The discussion of this issue extends over a number of letters.

monadological metaphysics that he will later adopt in at least some of its features. In the exchange with Wagner, Leibniz has asserted quite positively and absolutely unambiguously that monads are nonextended, that they are endowed with an internal action and passion through which their internal states are changed. And in the letter to Rabener in January 1698, at exactly the same time of the exchange with Wagner, he wrote that “every true monad is a simple substance, and is in some sense analogous to a mind.” Furthermore, each monad expresses “the Most Perfect Monad” each in its own way. Unfortunately, though, these texts are relatively short on argument. Texts like the *Système nouveau* and the note to Foucher, though they don’t use the term ‘monad’, suggest that Leibniz was concerned about the metaphysical issue of unity and the need for a simple and indivisible ultimate element in things. Recall here the formulation in the *Système nouveau*:

There are only atoms of substance, that is, real unities *absolutely destitute of parts*, which are the source of actions, *the first absolute principles of the composition of things, and, as it were, the final elements in the analysis of substances.* (Leibniz 1695, 300; AG 142, emphasis added)

One can presume that at this point it was the need for ultimate metaphysical simples that was driving the push for monads. But the texts which introduce the term explicitly are hardly argumentative, and don’t give us a lot of insight into why he introduced the term and, if I am right, the concept into the discussion. Even so, it seems clear that monads understood not merely as genuine substances of any sort, but as the ultimate nonextended simples made familiar in later texts, have entered Leibniz’s metaphysics.

But there are already complications: Leibniz doesn’t seem altogether clear about the relation of these monads, understood as nonextended and mind-like, to the world of extended bodies. In the letter to Rabener, it seems clear that nonextended monads are meant to replace the corporeal substances of the earlier view in the Correspondence with Arnauld. The same kind of aggregate argument that had earlier led to the positing of corporeal substances is now taken to lead to nonextended and mind-like monads: it is because aggregates require genuine unities that, he claims, there must be monads, where monads are understood on analogy with minds. The position in the replies to Wagner suggests something a bit more complicated: “Monads aren’t elements of the continuum but the source [*fontes*] of all power [*potentia*] and perfection in it...” (A II, 3, 714). But it isn’t altogether clear what to make of this statement. We must remember here that throughout this period Leibniz had very sharply distinguished the continuum, which is ideal, from concrete bodies, which must be made up of substances.<sup>21</sup> But if the continuum is ideal, that is, something that does not itself exist in nature, what sense can be made of saying that monads are the “source of all power and perfection in it”? Are monads, then ideal? Or is Leibniz talking here about the material continuum, which, for him, isn’t properly speaking a continuum at all? Understood in this way, it looks as if Leibniz’s statement to Wagner is inconsistent with what he said to Rabener, where the monads seem to be genuine constituents of bodies. How, then, are nonextended monads related to extended bodies?

<sup>21</sup> See Leibniz’s response to Foucher, GP IV, 491–492 (AG 146–147), cited in part earlier.

This is just the question that Johann Bernoulli put to Leibniz on 16/26 August 1698, just months after Leibniz's exchange with Wagner ended and just before the term 'monad' appears in print for the first time in the *De ipsa natura*, published in September. After a series of letters in which Leibniz was trying to explain to Bernoulli his new theory of monads, Bernoulli asked the embarrassing question:

However, if you say that the body is composed out of infinite monads, then each monad must be characterized as either extended or not extended. ... If they are not extended, they are ... useless, since an extended thing cannot be composed from nonextended things. (A III, 7, 873)

On 20/30 September, a few weeks later, Leibniz answers the objection as follows, in a way very distant from the view that Leibniz was suggesting in his letter to Rabener and his exchanges with Wagner:

What I call a complete monad or individual substance is not so much the soul, as it is the animal itself, or something analogous to it, endowed with a soul or form and an organic body. (A III, 7, 909; AG 168)

Already, so soon after first articulating it at some length to Wagner, Leibniz seems to be giving up on his view of a world of nonextended monads, and returning to the world of the Correspondence with Arnauld: 'monad,' Leibniz tells Bernoulli, is just another term for corporeal substance. One might wonder whether Leibniz is just hiding his true views from Bernoulli here. But given how willing he was to share his views with others, including a number of others with whom he had more distant relations than he had with Bernoulli at that moment, it would seem strange that he would hold back from someone with whom he was on such close terms. One has got to take seriously the possibility that at that moment, in response to Bernoulli's question, Leibniz wondered about the wisdom of the new path on which he had set out.

Leibniz's answer to Bernoulli seems completely inconsistent with what he had told others, like Wagner and Rabener about the nature of the monad. But before too much longer he will return to the understanding of the monad, the ultimate unity and the new building-block of his universe, as nonextended and understood on analogy with the soul. In a letter to the Electress Sophie of Hannover on 12 June 1700, Leibniz argues, again, for a world of nonextended monads:

Everyone is agreed that *matter* has parts, and consequently it is a *multitude* of many substances, as a flock of sheep would be. But since every multitude presupposes *true unities*, it is obvious that these unities cannot be material, otherwise they would, again, be multitudes, and not true and pure unities, as are needed to make up a multitude. And thus the unities are substances apart [*substances à part*], which are not divisible, nor, as a consequence, perishable, since everything which is divisible has parts that one can distinguish there before separating them. (A I, 18, 113–114)

At this moment Leibniz is also beginning his correspondence with de Volder, where he is working out a metaphysics based on nonextended monads. But Leibniz continued to struggle with the problem of how to relate nonextended monads to the extended bodies of our experience for the rest of his life.<sup>22</sup>

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<sup>22</sup>On this theme, see Garber (2009) Chap. 9.

## 6 Monads Behind the Veil

A striking feature of the theory of monads at this moment in the late 1690s is Leibniz's openness to expressing it. He seems quite willing to volunteer his views on monads to Fardella, Behrens, Rabener, Sturm, and Wagner. Indeed, he seems to be willing to go on at quite some length with Wagner on the subject. It is also interesting to note the context of the letter in which he first talked about monads with Fardella in September 1696. In it, Leibniz was recalling that the Bernoullis and L'Hospital had developed the details of his calculus, and had helped disseminate it through Europe by way of their writings. Indeed, L'Hospital had just published his Leibnizian textbook, *Analyse des infiniment petits...*, giving a public exposition of Leibniz's mathematics. Leibniz had hoped that Fardella could be persuaded to do something similar for his theory of monads, develop its details and make it public (A II, 3, 193). Leibniz must have been disappointed when Fardella demurred. Similarly, when Wagner complained that Leibniz was hiding his views on monads, that he was presenting his hypothesis as a "veiled virgin" and that he, Wagner, felt that arguing with Leibniz was "like the groping around of a blind gladiator," Leibniz responded with a bit of pique: "I don't see why you think it is "veiled". If there were any uncertainty anywhere, one could always ask, nor would an appropriate answer be lacking." (A II, 3, 704)

But despite Leibniz's initial intentions to publicize his new view, it didn't happen. More than 15 years later, in 1714, Nicolas Remond remarked that a friend "spoke rightly when he compared the knowledge we have of your system of monads to that which one would have of the sun by the single rays that escape the clouds that cover it."<sup>23</sup> And if all you knew then of Leibniz is his published writings, then Remond's friend was certainly right. It is striking how little the monadological metaphysics that we now associate with Leibniz's name can be found in the published writing. Our knowledge of the monadology comes largely from writings that were not published during Leibniz's lifetime, from his correspondences with de Volder and Des Bosses, and, of course, from the *Principes de la nature et de la grâce* and the *Monadologie*, the latter of which remained uncirculated so far as we know during Leibniz's lifetime.<sup>24</sup>

No doubt part of the reason that he didn't go public with the monadology has to do with the fact that his thoughts about monads "are quite distant from the received imaginations," and for that reason, perhaps not suitable for general circulation, as he noted in 1714 in a passage he wrote about the monadological metaphysics for Remond, but never sent (GP III, 624). But I also suspect that this question about the relation between the world of monads and the world of extended bodies was one

<sup>23</sup> GP III, 616; cf. Leibniz to Hugony, 14 March 1714, GP III, 682.

<sup>24</sup> Although the *Principes de la nature et de la grâce* were sent to various correspondents by Leibniz and are known to have circulated, we have no direct knowledge of anyone to whom Leibniz sent a copy of the *Monadologie*. For a history of its posthumous publication in 1720 and 1721, see Lamarra et al. (2001), and esp. p. 59 for some speculations on the transmission of the manuscript to Christian Wolff and Heinrich Köhler, its first editors and translators.



that nagged at Leibniz until the end of his days, one that he was never able to solve to his complete satisfaction. And for that reason, perhaps, despite his early intention to spread the news of the new metaphysics of monads as widely as he had spread the news of his new calculus, the theory of monads was to remain behind a veil for most of his readers during his lifetime.

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