The scope of this section is less ample than those flanking it, for it constitutes a narrowing down of focus to Leibniz’s fundamental metaphysical unit, the atom of force, or monad. Its argument is that the specifications of this entity lead to an ontology of agency. In this way it also serves as a discussion of those elements of the double-aspect theory that were deferred in the previous section.

This proposition permits of succinct articulation: that for Leibniz the existence of a thing is not determined by what it is, but by what it does. In the Leibnizian metaphysics, it is from the ‘mix’ of active and passive force in an existent that both the spiritual and material constituents of the world arise, implying as Part I indicated, that spirit and matter lie in series, each representing an extremum on the scale of attainable perfection on that continuum. This is not forgetting that the furniture of ‘the world’ is organised in such a way that every body contains some quantity of spirit and matter, depending on which direction in the continuum they incline.

This leads naturally into an account of the complete concept and the law of the series, which are integrated with the concept of agency. Both relate to the comprehensive definition of a substance/subject. On the whole, the transformation of the complete concept into the law of the series is perhaps the single most important development in the evolution of Leibniz’s mature metaphysical thought. For the ‘complete concept’ with its insinuation of rigid determinism cannot ultimately reconcile the teleology of existents to itself; and this dawned on Leibniz himself after failing, despite the investment of considerable creative energy, to authenticate free will in the concept. The shift from the ‘complete concept’, or the set of relations of the monad to its accidents, to the ‘law of the series’, or the reconception of the substance as the generatrix of its accidents – was accordingly the last step towards the consummation of the idea of the monad as a thing whose existence is the enactment of its self-actualisation.¹

* C) FORCE, PHYSICS AND MATERIALISM

1. Leibnizian and Newtonian force

As a physicist Leibniz had no compunction in stepping into Descartes’ footsteps and declaring himself a mechanist in respect of this science. But as a Platonist, he also evinced great admiration for Kepler, and may have been familiar with the following passus:

My aim is to show that the heavenly machine is not a kind of divine living being, but a kind of clockwork . . . insofar as nearly all the manifold motions are caused by a most simple magnetic and material force, just as all motions of the clock are caused by a sim-

¹ “Im Anfang war die Tat.” (Goethe).
ple weight. And I also show how these physical causes are to be given numerical and geometrical expression.²

It reflects the temper of the age that men would seek on the one hand to make “nature speak in the language of mathematics” (Galileo) and on the other to lay the foundations for a thoroughly mechanical description of the itinerary of the world, including human bodies (Descartes). Leibniz confirmed his own allegiance to the latter many times over, although, as we have seen, he was dissatisfied with the metaphysical notions associated with Cartesianism. “The very heart of his objection to the prevailing philosophy of nature,” writes Westfall,

had to do with its denial, as Leibniz believed, of activity and force to created beings. … The ontologically impotent matter of the mechanical philosophy, a pretended substance unable to initiate any activity of its own, is an affront to the dignity of the creator. To be and to act are synonymous.³

Leibniz stressed these sentiments time and again. What is irreducible cannot be described by means of mechanical principles. So he wrote to Thomas Burnett in 1697:

I believe that everything happens mechanically, as Democritus and Descartes desire … [but] that nevertheless everything happens vitally and in accordance with final causes, everything being full of life and perceptions, contrary to the opinions of the Democritians.⁴

And again in almost identical terms to Des Billettes:

I believe that everything really happens mechanically in nature and can be explained by efficient causes, but that at the same time everything also takes place morally, so to speak, and can be explained by final causes. These two kingdoms, the moral one of minds and the mechanical one of bodies, penetrate each other and are in perfect accord …⁵

He remained sceptical, however, about theologically driven solutions which he considered to be tantamount to burdening the author of all things with the demeaning task of keeping the world going – presumably from his failure to design it perfectly from the outset! He was always caustic about those of his critics who seemed to find it convenient to make God a workman at his own creation, pumping energy into the system or tweaking things this way or that, non-stop. Truth and reason go begging if this is maintained: “I do not think that there is natural truth in things whose reason derives immediately from divine action or will,” he wrote.⁶ In another paper, he deals with the notion that God must be constantly imbuing bodies with their capacity for motion, insisting that God gave those laws once and for all, and replied to objections which asked him to look for the presence of those laws, that “since the command in the past no longer exists at present, it can accomplish nothing unless it has left some

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³ Westfall, op. cit., p. 312. [italics added].
⁴ Burnett, G III 217.
⁵ *Des Billettes*, G VII 451, L 472.
substantive effect which has lasted and operated until now.”7 In a word, God impregnated bodies with the said capacity together with the laws of their implementation.8

But since this capacity is associated with an ordinary dictionary word which yet seems not to possess an unambiguous referent, it is needful at this point to forestall any possible confusion on the meaning of ‘force’ in the disparate contexts of Leibnizian and Newtonian physics. For although they target the same meaning as that conveyed by the dictionary, their conceptions on what it constitutes are altogether at odds with each other.

Indeed the philosophical disparity between them could not be greater, for Leibniz sought to account for what force is, whereas Newton remained content with supplying an operational definition in which it is altogether immaterial whether such a thing or power actually exists. Thus Leibnizian force is an active principle, an entelechy, which implies an entity capable of exerting itself and communicating its inherent force, hence vis viva.

In contrast, Newtonian force is defined operationally by the laws of inertia and acceleration; it is neither ‘in’ nor ‘instilled into’ an object, but conveyed to it by physical impact.9 The law of inertia, for example, states that a body continues in its motion unless a force acts on it; the assumption enclosed in the phrase ‘state of motion’ is ‘rectilinearity’ and ‘constancy of speed’, both of which have evidently also to be defined. But if a force does act on the body, Newton’s second law declares that an acceleration ensues which is proportional to the force exerted on the moving body by other bodies; “this proportionality between force and acceleration must contain a factor that was called by Newton ‘the quantity of matter’ [‘mass’] contained in the body.”10 All this suggests that the term ‘force’ is, in the end, only a number; but the same can also be said for the other terms here employed. Yet this reflects precisely Newton’s intentions in formulating these laws:

In the Principia Newton had indeed insisted that he was using words like ‘attraction’, ‘impulse’ etc. to denote ‘forces not physically but mathematically’, and that they were not to be taken ‘to define the kind or the manner of any action’, and that he was not at-

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7 On Nature itself, G IV 507, L 500.
8 Clarke, I. 1, §4. Apropos miracles, he rebuts Clarke’s conventionalism: “I call a miracle any event which can only occur through the power of the Creator, its reason not lying in the nature of created things.” This suggests that God is unlikely ever to perform miracles, and certainly reflects Leibniz’s view on the matter; hence Clarke’s insistence that the cosmic clockwork requires “government and inspection” is roundly repudiated. – It is of some interest in this context that with both Leibniz and Clarke employing ‘clock’ models, they talked past each other with regard to these implements as much as most other things in the correspondence. For although Clarke correctly translated Leibniz’s mota as ‘watch’, he promptly substituted ‘clock’ in his arguments against Leibniz, seemingly unmindful of the important difference then prevailing between an artisan’s clock and a scientist’s watch; the former obviously mechanical and in need of constant attention by a ‘governor’, the latter an ideal conception of perfect construction. On Clarke’s model, it thus becomes highly unclear (as Freudenthal writes) “what in the clockwork model is supposed to correspond to the conception that material bodies move in God’s sensorium. The model seems rather to exclude every action at a distance … in a clockwork every transmission is produced by direct contact.” But the deeper point at issue is evidently that the comparison of the cosmos with a clockwork fails to the extent that the ‘inner works’ of the cosmic clock cannot be inspected; they can only be inferred from the motions of the visible parts, i.e. phenomena, so that the office of natural philosophy is to provide hypotheses and best explanations, not dogmatic assertions. Gideon Freudenthal: Atom and Individual in the Age of Newton. On the Genesis of the Mechanistic World View. Reidel, Dordrecht 1986, pp. 58-64.
9 This is disregarding electromagnetic and gravitational attraction for the moment.
tributing 'forces, in a true and physical sense, to certain centres' when speaking of the
latter 'as attracting or as endued with attractive powers'.

Accordingly there is a hint of vagueness – not terminologically or operationally,
but ontologically – in these definitions. “If we consider all possible forces,” writes P.
Frank, “we can only formulate the following generalisation: The acceleration of a body
B with respect to the inertial system (S) can in all cases be expressed as a simple func-
tion of the distances and velocities of B with respect to other bodies. This 'simple
function' is called the ‘force’ acting upon B and has to be substituted for f in the for-

The point of difference that emerges from these considerations is that Newton’s
laws are ‘scientific’ in the later meaning of this expression. Their correlation to the
world can be established and empirically verified if there is such a world. And since
these laws were initially extracted from observations and reflect the understanding
and/or conceptions held by Newton about them, they comprise descriptions of that
world in a specialised formal vocabulary. But unlike Leibniz’s laws, they reflect epi-
stematic rather than ontological claims to ‘existence’.

A second point is that scientific descriptions of this kind are overwhelmingly indi-
fferent to the objects and processes of which they treat. The ‘empty’ definition of force
in Newton, its general unintelligibility except in its restricted technical sense, are not
mere ‘side effects’ of the descriptive metier, but central to it. For unlike Leibniz,
whose notion of force describes existents, Newton frames laws, or in Popper’s term-
nology, ‘dispositional predicates’. Whether these are true or false is nothing that can
be asserted, proved or disproved in either ordinary or philosophical commerce; the
meaning of true or false here too can only have an operational significance. Accord-
ingly it is futile, on the whole, to seek out a metaphysical aspect to Newtonian natural
philosophy. In this simple but ultimately momentous contrast, the coming divorce
between science and philosophy is prefigured.

Returning now to the Leibnizian context, two separate issues are embraced in this
differentiation: the first being the association of force with energy, which is legiti-
mately engaged in the Leibnizian context. The other is, however, Leibniz’s effort to
use his conception of force to make every species of motion transparent to the intel-
lect; and in this he had necessarily to fail, since he could not call upon empirical data
in such of his elaborations where his sole possible recourse lay in extrapolation from
(previously derived) analogous data. In this respect, Newton was more fortunate in
that his key assumptions were not similarly encumbered. To adumbrate this claim, one
of the central issues may be aired here briefly, so as to delineate the virtues and de-
merits of Leibniz’s account so far as it pertains to science.

11 Buchdahl, op. cit., p. 288n. Quotations from Newton, Principia, pp. 5-6, Def. VIII.
12 Frank, op. cit., pp. 110-1. – It must not remain unmentioned in this context that for Newton,
on account of his belief in an absolute space, there exists the possibility of ascertaining absolute
motion and therefore rest. The bucket experiment is a famous instance of his attempted proof;
but we may also look at a homegrown specimen which is perhaps more readily intuitive. If pas-
sengers in two trains, both stationery, look out of the window as one train starts up, they may
both see the other ‘move’; but the one in actual motion will additionally convey to its passe-
ngers a force of acceleration, and this force is clearly independently observable and measurable,
and hence something more than a 'simple function'.
13 Stringently regarded, terms like force, acceleration, velocity all express dispositional characters.
158-9 & 374-6.
2. Leibniz’s Dynamics

In the years 1689-92, following the publication of Newton’s Principia (1687), Leibniz endeavoured to arrive at a critical understanding of Newton’s theories and to elaborate his own account in a number of papers, notes and marginalia on Newton’s text. Some of these, notably the Tentamen de motuum coelestium causis, were committed to print in the Acta Eruditorum. These notes and writings detail Leibniz’s working out of the mathematical framework of his own ‘harmonic vortex’ theory – an effort that culminated in the Dynamica of 1692, a 250-page work in which Leibniz developed a comprehensive axiomatic system in direct competition with Newton. However, this major essay was never published, so that as far as the public was concerned, the Tentamen remained Leibniz’s ‘definitive’ statement.14

This is not the place to review the detailed analyses offered by Bertoloni Meli of the Tentamen and associated writings, nor the several recent assessments of Leibniz’s Phoranomus and Dynamica.15 It must suffice to outline in broad strokes the immense and proliferating complexities encountered by Leibniz at every step of his way; in which respect merely to mention two of the major axioms of the Tentamen will serve to indicate what kind of problems he bequeathed to himself and his followers: “All bodies which describe a curved line in a fluid are driven by the motion of the fluid”, and “planets are moved by their aether”. These demand of the theorist to explain what motions of the aether drive the planets towards the sun, to account for the different periodicities of the planets, and in particular to identify the cause of each planet occupying its own solar vortex. It can be appreciated without close scrutiny how such complexities might stretch the resources of even Leibniz’s fabled inventiveness – the more so as in Newton’s system they don’t exist.16 Ironically, perhaps, the eventual outcome was that Leibniz in the course of his labours honed a magnificent instrument (infinitesimal calculus) which was then used by his followers in their own detailed explorations of the Newtonian system!17

For some 30-odd years the philosophical and theological presuppositions at the base of Leibniz’s and Newton’s theories influenced attitudes adversarially. But by the middle of the following half-century, it transpired that Newton’s method was amenable to the

14 Accordingly it was the Tentamen that furnished both friends and foes with the gist of Leibniz’s theory, the former including Huigghens, Bernoulli, Varignon and others, while Newton’s onslaught via John Keill (1710) directly targeted the same essay. Cf. Domenico Bertoloni Meli: Equivalence and Priority: Newton versus Leibniz, Clarendon Press, Oxford 1993, pp. 186-90 & 196-200.


16 Bertoloni Meli, op. cit., pp. 128-9 and 142. – One is reminded in this context of the similar problems posed in the 19th century by the assumption of an undululent medium (luminiferous aether) for the propagation of electromagnetic radiation: in this case the Michelson-Morley experiment of 1881 did not ‘prove’ the non-existence of the said aether (indeed renewed attempts with far superior instrumental technology at his disposal by Baker in 1924 yielded inconclusive results), but it proved that the existence or non-existence of such an aether made no difference to the calculations involved. Accordingly the veridical outcome amounted in both cases to the epistemic assurance that the assumptions of (in the Leibnizian case) liquid vortices and (in the 19th century case) a luminiferous aether constituted an unnecessary impediment to the scientific description of the quantities at issue and could safely be dispensed with.

algebraisation of mechanics in a way that Leibniz's was not. For “regardless of their beliefs concerning the cause of gravity and vortices,” writes Bertoloni Meli, “mathematicians employed accelerations and continuous curves rather than uniform motions and infinitesimal polygons. Thus the correlation between mathematical representations and physical interpretations established by Leibniz collapsed.” Leibniz’s allies Bernoulli and Varignon and indeed the premier continental mathematicians continued to use Leibniz’s formulations, but increasingly applied it to research into Newtonian physics. “The Principia (Bertoloni Meli continues) constituted an extraordinary fertile field for further researches on the inverse problem of central forces, cometography, the shape of rotating bodies, perturbation theory, lunar theory and tides.” It was precisely the inverse problem which “undermined the Tentamen”; and “if Newton’s account did not provide physical or causal explanations for gravity, it incorporated the laws of mechanics more satisfactorily than Leibniz’s.” The ultimate irony is therefore that Leibniz’s work on the development of the calculus served in the end to stabilise the method and reputation of his arch-enemy!

The Dynamica suffers from a related set of debilities. “To frame and express those theoretical hypotheses,” Duchesneau writes, “one must frame models that will satisfy the norms of extended geometrical intelligibility. This intelligibility implies the resources of infinitesimal analysis as well as a combination of abstract formal definitions beyond mere quantitative analogies.” Such a rigorous framework was unquestionably within Leibniz’s capability; but in writing this book he laboured under the two-fold negative impact of his repugnance for Newton’s “occult” concept of gravitation and the limitations imposed by his physics on the aprioritisation of causal equivalents for which nothing better than the aforesaid extrapolations were to hand. Where this made itself painfully manifest is seen in his failure to account successfully for the ramifications of dead force, which denote one of Newton’s significant triumphs. “With the advantage of hindsight,” Westfall explains,

we can see that Leibniz’s failure to generalise the dynamics of vis viva stood in intimate relation to his failure sufficiently to explore and develop his correlative concept of dead force. Within the domain of rational mechanics, the concept of kinetic energy … attains its full utility when it is yoked with concepts of work and potential energy.19

One instance where this deficiency “foreclosed” (Westfall) on Leibniz is in circular motion, which “involves the continuous action of force without a consequent increase in kinetic energy … there is no integration of force over distance.” But by Leibniz’s standards dead force integrates through time alone; accordingly he was compelled to interpret circular motion in terms of its similarity to inertial motion as a state of equilibrium.20 Westfall also notes that Leibniz never produced a quantitative analysis of elasticity such as Hooke performed on vibrating springs; “it would have confronted him with a functional relation of (dead) force to distance such as he avoided in dealing with free fall.”21 This is one of the cases where Leibniz’s untested assumptions proved to be his undoing; and taken in the whole, the clutch of problems involved in the assumption of the vis viva as a suitable ‘item of the itinerary’ of purely scientific studies

19 Westfall, op. cit., p. 297.
20 Ibid., p. 303.
21 Loc. cit.
meant that the *vis viva* controversy ensuing early in the 18th century was foredoomed to a quick and painless end.\(^22\)

Philosophically regarded, however, these deficiencies do not amount to a disqualification of Leibniz’s fundamental concept of force. His metaphysics do not stand or fall by their operational verisimilitude; and it is entirely compatible for a scientist as well as a philosopher to treat force philosophically the Leibnizian way, while accepting Newtonian precepts for its scientific description. This is because the underlying philosophical conception – whether interplanetary space is a plenum – is not an issue that can be settled in straightforward epistemic terms on the basis of measureability; and in this sense the Leibnizian insistence on using his conception of *vis viva* as the foundation for an axiomatic system cannot simply be dismissed. But the difficulties occasioned by his insistence on explicating the forces presumed to be active in that aetherial liquid, their vortex-like formations and the propagation of forces by a kind of harmonic oscillation, suffer from precisely the same epistemic predicament: they amount to a *technical problem* that falls under the denomination of levels of description; and in this sense the presuppositions under which Leibniz chose to operate militated against the success of the endeavour. If therefore a certain tone of resignation may be discerned in Leibniz’s reluctance to publish the *Dynamica*, this may well reflect a realisation on his part that Newton’s version, despite its philosophical unacceptability, accounted for phenomena as well as any theory could. As his continued truculence indicates, however, especially in the epistolatory exchange with Clarke, he had no qualms about the coherence and ultimate *rightness* of his metaphysical doctrine concerning force.\(^23\)

\(^22\) As David Papineau suggests in his paper “The *Vis Viva* Controversy”, in Woolhouse (1981), pp. 139-56, it rested ultimately on the understanding held by the parties of *vis motrix* and *vis viva*. In other words, it was not concerned with resolving the confusion in the use of the terms ‘applied force’ and ‘acceleration’, as frequently held in the literature, but “a perfectly serious debate between genuinely rival frameworks of physical thought” which affected primarily the notion of ‘effects equal causes’, i.e. the problem of impact and the conservation of force (pp. 141, 149). To the extent that this was a Cartesian legacy, “as long as there remained the metaphysical conviction that all changes of motion must be explicable in mechanistic terms, it was perfectly coherent to discuss whether those mechanisms acted uniformly over time, or over space.” (ibid, p. 155). But it was a serious anomaly for this framework that in certain experimental situations [e.g. the example of cannon balls dropped on clay], force was not conserved. Moreover Newtonian gravity threw a spanner into the works by its evident circumvention of the dictate of acceleration/retardation of motion by impact. – In the end, neither side ‘won’; but both sides learnt a lot in the process and this helped them in due course to implement “a fundamental revision of physical thought resulting in the repudiation of both.” (ibid, p. 156).

\(^23\) As a coda to the foregoing, and to re-emphasise the importance of theology for these issues, it is an intriguing fact that Leibniz went to the trouble of preparing a special edition (*zweite Bearbeitung*) of the *Tentamen* specifically for consumption by Catholic theologians. His hope was to persuade them that the Copernican system did not infringe catholic doctrines; and this was an evident necessity for a man committed to the reconciliation of the confessions. In its preface he writes: “What follows is not based on hypothesis but is deduced from phenomena by the laws of motion; whether or not there is indeed an attraction of the planets by the Sun, it is sufficient for us to be able to infer the approach and recession, that is, the increase or decrease of distance, which would occur if they were attracted by the prescribed law. And whether they do indeed circulate about the Sun, or do not, it is sufficient that they change position relative to the Sun as if they were moved by a harmonic circulation.” (quoted by Bertoloni Meli, pp. 157-8). In a word, attraction may be interpreted as a mathematical construct; there is no compulsion at work to regard it as ‘the truth’ – an injunction which indeed recalls the words of Copernicus himself.
3. Categories of force

In his *Specimen Dynamicum*, Leibniz gives us a nomenclatural criterion of fundamental importance to his own ontology:

Whether we call this principle form, entelechy or force does not matter provided we remember that it can be explained only through the concept of forces.24

To achieve our purpose in respect of Leibniz’s ontology we must attend closely to the wording of this passage. It does not express merely a neat metaphysical wrinkle, but means exactly that the primary unit of his ontology, namely ‘form’, ‘entelechy’ and ‘force’ are equivalent concepts, indeed different terms for the same concept (even though ‘force’ is an expression with a much wider range of application).25

First, however, we need to come to grips with the gist of Leibniz’s conception. Fortunately he does not leave us in doubt as to his exact meaning. There are two kinds of forces, active and passive, each with their primary and secondary modes. His utterances on them are straightforward and unambiguous:

“ACTIVE FORCE is of two kinds: the one elementary, which I also call dead force, because motion does not yet exist in it but only a solicitation to motion ... The other is ordinary force, that which is connected with actual motion, which I call living force. An example of dead force is centrifugal force, and likewise the force of gravity or centripetal force, also the force with which an elastic body begins to restore itself. But in impact, whether this arises from a heavy body which has been falling for some time, or from some similar cause, the force is living and arises from an infinite number of continuous impressions of dead force.”26

“PASSIVE FORCE brings it about that one body is not penetrated by another, but opposes an obstacle to it, and is at the same time possessed of a kind of laziness so to speak, or a repugnance to motion, and so does not allow itself to be set in motion without somewhat breaking the force of the body acting upon it.”27

In addition to active and passive, Leibniz also differentiates between primitive and derivative. Primitive force belongs to forms or entelechies; it denotes the residual capacity of a substance to act and for that reason is hereinafter called eigenforce,28 while

24 *Spec. Dyn.*, G VI 234ff, L 441. Note that Leibniz denominates force by the terms potentia or puisance.
25 What can happen if this stipulation is ignored is illustrated in a paper by Reinhold Finster, “Leibniz’s Entwurf der phänomenalen Welt im Hinblick auf Kant’s Kritik der reinen Vernunft”, in *Studia Leibnitiana, Supplementa XXVI*, Stuttgart 1986, p. 189, where we find the point-blank assertion that “force is therefore the connecting link between monads and phenomena” (italics added). The text enlisted in support of this contention, from De Volder, G II 251, L 530, contains Leibniz’s repudiation of de Volder’s suggestion, “let us assume there is nothing in bodies but derivative forces”, against which Leibniz asserts that “such an hypothesis is impossible” and “when I speak of a primitive force as enduring, I do not mean the conservation of total motive power ... but an entelechy.” But for Finster (p. 190) this results in the dilemma that “although force is now established as the connecting link [sic] between the substantial and phenomenal domains, it remains unclear in the end how Leibniz understands the generation of phenomena out of substances.” It may be said, however, that this unclarity results not from Leibniz’s text, but from the mistaken adoption of the idea of a ‘connecting link’ – for which there is bluntly no warrant in Leibniz’s text.
27 Ibid., GM VI 237, L 437.
28 I am inclined to use this coinage in analogy to contemporary scientific terminology, where syllable ‘eigen’ identifies the residual capacity of a fact, cf. ‘eigenfunction’, ‘eigenvalue’. I imagine it would have found Leibniz’s approval, for he was always on the lookout for good German
derivative force is ‘secondary’ or accidental activity, in other words exerted force which functions as a mode and delimitation of the eigenforce. Leibniz also calls it particular force, being productive of local motion, which is the subject of physics.29

Thus eigenforce is strictly a dispositional character: ‘power as such’, as if we were speaking of God’s power, political power, the power of persuasion etc. To be visible and effective, such force must be exerted; and this results in a change of terminology to secondary force as the particular instance of exertion, limiting in the exercise the eigenforce to specific local and temporal manifestation. The two properties of extended material body, ‘impenetrability’ and ‘inertia’, mean that they have what Leibniz characterises as ‘passive force of resistance’ or ‘passive power’.30

But further, and crucially, Leibniz equates substance with power – it is not the case, therefore, that a substance has power, but rather that it is that power. So (writes Garber), “primitive active force just is form, soul, entelechy, and primitive passive force just is primary matter.”31

Taken by themselves, these considerations already point strongly in the direction of Leibniz’s metaphysical thinking which is pursued here, but seems somehow to have escaped proper notice. That is to say, not in itself, but in its ontological ramifications. For when Leibniz writes,

the concept of forces or powers, which the Germans calls Kraft and the French la force, and for whose explanation I have set up a distinct science of dynamics, brings the strongest light to bear upon our understanding of the true concept of substance,32

we cannot fail to heed this emphatic identification of force with the “true concept of substance”. Nor does this passage stand on its own; it is reinforced in many other places, e.g.:

The very substance of things consists in the force of acting and being acted upon; hence it follows that no enduring thing can be produced if no force that endures for some time can be impressed upon it ...33

Since all things have commerce with each other, either directly or indirectly, the consequence is that it is the nature of every substance to express the whole universe by its power of acting and being acted on, that is by the series of its own immanent operations. ... This principle of actions, or primitive active force, from which a series of various states follows, is the form of the substance.34

Indeed Garber confirms that

derivative forces, the forces that give rise to actual motion, are simply modes or accidents of the form and matter that go to make up a corporeal substance. Though not equivalents of Latinised philosophical terminology, e.g. ‘Daseinstreben’ or ‘Substanz Kern’ in his Letter to Duke Johann Friedrich, [A II, 1, 108-9]; and ‘eigenforce’ is of a piece with this and permits of ready transposition into English. Apart from ‘eigenforce’, the term ‘eigencausality’ will also be used in this study. I trust contextual usage will made the reader comfortable with it as we go along.

31 Garber (1985), p. 84.
32 Correction of Metaphysics, G IV 469, L 433.
34 Spec. Discov., G VII 316f, P 84.
substantial themselves, they nevertheless pertain directly to the corporeal substance, the basic metaphysical unit of Leibniz’s world.35

4. Frames of references

But Garber does not draw the suggestive ontological conclusion. His summation holds our interest, however, because of an unexpected feature to which he draws attention and which once again lands us in the court of double-aspect theory. It transpires in the course of his discussion of Leibniz’s scholastic and mechanist sources that Leibniz utilised them, each in respect of their own virtues, as autonomous and yet equivalent methods of enquiry – in other words, he treated neither of them as being intrinsically true-and-adequate or false-and-obsolete, but (to use a terminology more familiar to us now) as different but equally valid levels of description. What is of particular interest here is Leibniz’s awareness that the ‘truth’ on such matters depends on the ‘frame of reference’ – that as in the case of the celebrated specimen of Galileo’s man cooped up in a ship, it is often impossible to determine just who or what is actually in motion. His own example is equally fascinating:

Whether bodies are moving freely or colliding with one another, it is a wondrous law of nature that no eye, wherever in matter it might be placed, has a sure criterion for telling from the phenomena where there is motion, how much motion there is and of what sort it is, or even whether God moves everything around that very eye itself. To summarise my point, since space without matter is something imaginary, motion in all mathematical rigour is nothing but a change in the positions of bodies with respect to one another, and so motion is not something absolute, but consists in relation.

On this question, then, he writes that “one should choose the more intelligible hypothesis, and that the truth of a hypothesis is nothing but its intelligibility.” Since these lines belong to a paper on Copernicanism, it is apt, en passant, to note on the question of methodology that we have often had occasion in history to observe that one or another methodology in the description of the world’s phenomena is neither ‘better’ nor ‘more true’ nor ‘more accurate’ than another, but simply more intelligible on account of reducing certain complicated matters to greater simplicity. A classic instance is that of Ptolemy’s and Copernicus’ planetary melée: that of Copernicus did not yield better or more accurate results, but in shifting the hypothetical location of the observer it yielded a more intelligible and indeed much simpler as well as more determinate picture of the mechanics of the heavens. Leibniz’s own account of Copernican relativism favours the dictum that “one should choose the more intelligible hypothesis, and that the truth of an hypothesis is nothing but its intelligibility.”37 An astronomer would certainly not be wrong to teach the theory of either Tycho or Copernicus, except that students would be burdened in the former case with unnecessary difficulties in spherical astronomy; nor can the latter be said to contradict Joshua’s injunction, “stand thou still, Earth”. Indeed “not even an angel could determine with mathematical rigour which of the [bodies] is at rest and which is the centre of motion for the others”; so that it is futile to claim the truth for one at the expense of the other, since both are identical. The Copernican hypothesis should therefore be cho-

36 Copern., AG 91.
37 Loc. cit.
sen, since it has greater intelligibility, in effect the greater truth behind it.\textsuperscript{38} And so with Leibniz’s concessions to scholasticism, which he was reluctant to dispense with, since it would have entailed tossing out the baby with the bathwater. “From Leibniz’s point of view,” writes Garber, “the physics of the two domains, corporeal substances and their aggregates, the non-organic bodies of everyday experience, is exactly the same; even though there may be an ontological gap between the domain of genuine entities and their aggregates, they share the same physics.”\textsuperscript{39}

This entails, among several other considerations, a need to escape the narrow qualifications associated with the term ‘phenomenal’, on which we have already dilated. In terms of physics, however, it is hard to excel Garber’s summation:

> While motion may be phenomenal, and its science in some sense a science of the apparent, forces are at the foundation of Leibniz’s conception of what is real in the world, and their science, dynamics, is as real as the forces it treats. And while dynamics may apply to the phenomenal aggregates of substances that constitute inanimate bodies, it is, properly speaking, the real science of the modes of corporeal substance, that which is real in the fullest senses Leibniz recognises. Leibniz’s dynamics, the core of his program for physics, is directly grounded in a world of corporeal substances, and the forces dynamics treats, the derivative active and passive forces, are themselves momentary states of form and matter, the constituents of corporeal substance. It is difficult to see what more a realist in physics could ask for.\textsuperscript{40}

5. Leibniz’s materialism

This invites a momentary re-consideration of the vexed issue of Leibniz’s materialism, which is here as elsewhere the driving motor of investigations. H. Holz, as we have seen, staunchly advocates it, finding support in the fact that most of Leibniz’s principles function painlessly as sufficient criteria for a materialistic ontological construction even in the absence of a divinity.\textsuperscript{41} For example, his notions of the complete concept and of contingency call upon God as the instance of ultimate verification of knowledge and control; but God does not, here or in many other Leibnizian situations,

\textsuperscript{38} Ibid, pp. 92-3. Leibniz goes on to list a number of discoveries made about the planets which strike the soul as beautiful truths and which cannot be accounted for in the older systems.

\textsuperscript{39} Garber (1985), p. 89. On the whole context cf. Ian Hacking, “Individual Substance”; in Harry Frankfurt (ed.): \textit{Leibniz: A Collection of Critical Essays.} University of Notre Dame Press, London 1972, pp. 139-40: “The two modes of description are what Leibniz called equipollent, and each can square with all the phenomena. Hence neither expresses the truth of the matter. [But] Leibniz himself hit upon the inverse square law before Newton published. Such a law is invited by a heliocentric model, but not by any story of epicycles.” Hans Reichenbach, from “The Theory of Motion according to Newton, Leibniz and Huyghens”, in Maria Reichenbach and Robert Cohen (eds.): \textit{Selected Writings 1909-1953,} Vol. 2, Reidel, Dordrecht 1978, p. 49: “Kinematically speaking, there is no difference between the views of Ptolemy and Copernicus; both describe the same fact: the relative motion of the celestial bodies. Yet for one of the views, the Copernican, Newton found a dynamic explanation in his law of attraction, whereas for the other view no such explanation seemed possible.” Finally Howard Margolis in \textit{Pattern, Thinking and Cognition: A Theory of Judgment,} University of Chicago Press 1987, pp. 207-8 points out that “there is no observation that can test the Ptolemaic [planetary] ordering … The theory would work exactly as well if we shuffle the planets in any arbitrary order. … But if the world is heliocentric, a second angle is available, so that the distance of each planet relative to the sun/earth distance is definite.” In the new model, accordingly, there is \textit{added value} to be discovered, namely an increase knowledge of \textit{attendant} circumstances (which have repercussions for us in the sense that we can \textit{visit} the Copernican, but not Ptolemy’s planets!).

\textsuperscript{40} Ibid., p. 90.

\textsuperscript{41} Holz, op. cit., p. 285ff.
take up a functional or constructive role. In a word, human ignorance is ultimately resolved in God's knowledge; but this does not entail an *intrusive presence* in respect to the operation of the laws of nature.

On the question of Leibniz's materialism — just as on the question of his idealism — there are passages which encourage such a point of view. Here is one we have seen before:

> My dynamics requires a work to itself ... you are right in judging that it is to a great extent the foundation of my system; for it is there that we learn the difference between truths whose necessity is brute and geometrical, and truths which have their source in fitness and final causes.\(^{42}\)

This conveys a fairly strong message, namely that we learn from dynamics, and *only* this way, the difference between necessity and contingency. And we have seen in the previous section that he had the temerity, unusual for his time, of admitting a certain autonomy to phenomena and the emergence of further phenomena in dependence of conditions prevailing among them — essentially a functional argument that remains resistive to reduction down to primitive principles. As E. M. Curley points out: “According to Leibniz the laws of nature are also existential propositions, so that they do not form a distinct class of contingent truths”, which he supports from the observation that “a law of nature such as ‘unsupported bodies fall to earth’ says only that an unsupported body which does not fall to earth is not an actual thing, i.e. does not exist.”\(^{43}\) For although this assertion is not readily generalisable, it serves as an example that is relevant to the cited case.

Now the description of matter offered in Part I, B, §6, adequately covers the essential principle, viz. that force and matter lie in series. Notwithstanding his opposition to atomism, Leibniz cultivated a more general form of corpuscularism to which Newton also subscribed. But Leibniz came around to the view that this corpuscularism leads to a theory of the universe as a *liquid matrix*. Richard Westfall writes:

> Vortices played a role in his philosophy quite as central as their role in Descartes. He was prepared to speak of ‘the law of nature ... that rotating bodies tend to recede from their centres along the tangent’, and with Descartes he traced the cause of gravity to the centrifugal force of an invisible aether. He went beyond Descartes in deriving solidity from the same cause. Every body is a microvortex of aethereal particles striving to fly off along the tangent. Their centrifugal pressure creates a counter-pressure in the matter surrounding them, which crowds them back. Hence the elasticity of bodies, an essential factor in Leibniz’s universe, depends on the centrifugal tendency of their parts, and physical reality consists of vortices within vortices within vortices in infinite series.\(^{44}\)

The impression gains force here that Leibniz was an unequivocal corpuscularian. Indeed it is difficult to conceive of a physics under any other terms, and Leibniz made numerous significant contributions to the theory of physics in his day. Roger Woolhouse remarks that his whole conception of substance revolved around the inevitability of having somehow to accommodate to the *facts* as they pertain in the world:

\(^{42}\) Rémond, G III 645.
\(^{44}\) Westfall, op. cit., p. 305.
There are material substances for Leibniz, and they are extended, but it is not in virtue of being extended that they are substances. Their substantiality comes from the embodiment of a substantial form by their extended material. Considered by itself and apart from its embodied form, the material body of a human being is not in itself substantial. Along with watches or marble tiles it is an 
*ens per accidens*. But though not substances or 
*entia per se*, masses of material are not like rainbows, mere phenomena or appearances. They have reality, and they derive from being aggregates of material substances.45

This is carried through to the thought that the 
*res cogitans* cannot exist without body. “What makes a human body into a body,” writes Woolhouse, “is that its material is ‘ensouled’ or ‘animated’, organised by an entelechy or form. When, as on the death of the person, the body loses this organisation, it ceases, strictly speaking, to be a body at all, and is just a mass of material. Death, therefore, … is the disorganisation of the previously organised whole.”46

Altogether this materialism implies that there is a truth to sensible things which is not gainsaid by any results which our deliberations on truth may yield in the transcendental aspects of reality. As G. Parkinson notes in this context:

When Leibniz says that the “truth of sensible things” consists solely in the connection of phenomena, he is speaking about the criteria by which we distinguish between sens-illusion and the genuine sense perception of physical reality. ... He did indeed toy with phenomenalism for a while, but came to reject it; his reason seems to have been that to deny the existence of physical things, as entities that are independent of the existence of minds, is incompatible with the principle of the best [Eclaircissement GP IV 495].47 His positive view about the relation between phenomena and physical things can be regarded as a version of the causal theory of sense perception. *His theory has in effect two levels*, the scientific and the metaphysical. He would say that on the scientific level, it is correct to say that for an observer O to have a sense perception of a physical object X is for there to be in O’s mind phenomena that are caused by X. But he adds that such language is not strictly accurate; for accuracy, we must move to the metaphysical level, where it is untrue to say that any created substance acts on any other. What was stated inaccurately in terms of causation must be restated in terms of the concept of expression, and it must be said that when one has a sense perception of a physical object X the phenomena in one’s mind 
*express* X in a certain way, that is, there is “a constant and regular relation between what can be said of the one and of the other.” [Arnauld, GP II 112, L 521].48

The italics in the above quotation have been added. They contain one of very few admissions in the literature on Leibniz that he may have entertained a double-aspect ontology. This is of self-evident merit in the context of our study and justifies its inclusion here in extenso.

6. Perception, complexity, simplicity

In summarising these many diverse strands of Leibniz’s discourse on substance, force, matter and phenomena, we are ineluctably drawn to the conclusion that Leibniz was,
uniquely for his time, possessed of a vision of the cosmos which far exceeds in complexity the still relatively modest constructions of his predecessors and older contemporaries; while on the other hand his conception of universal harmony facilitated an impression of the utmost simplicity when the whole sweep of the world is taken as one. This works on two levels simultaneously: for the complexity arises out of simple elements endowed with infinite transformational capability, and we can gaze at and seek to understand this simplicity theoretically and metaphysically. But while the complex structures arising therefrom remain in large measure impenetrable to even our most exacting analysis, yet in the gross perceptions of human agents, they again reduce to simple and well-ordered structures.

Ultimately, then, the double-aspect theory claims this paramount virtue over other explanatory devices: that the cosmos, seen in the small and in the large, can be revealed as woven from one texture. As macroscopic beings we have epistemic access to only those of its features which are caught in the expression ‘phenomenal’; but as cognitive beings it is feasible for us to descend to those levels of existence which yield their secrets to explanatory, though perhaps not exploratory devices.

The double-aspect theory serves explicitly to dispel the false impression that the doctrine of ‘monads perceiving monads’ forcibly entails an idealist or phenomenalist perspective. For clearly human agents also perceive the effects of force; but the understanding we are compelled to adopt necessarily changes in this macroscopic dimension. For us, the forces involved in structured matter yield perceptions of concentrated force, which denotes to us matter in varying degrees of density. But this is amenable to ready-made explanation: A monad perceives force as it is. Humans, however, can only perceive force as concentrated: we are too big to experience force as it is. When we use technological devices, e.g. nuclear reactors, we are aware of this discrepancy between sensed force and pure force; we understand then that matter is force and that matter and force are interconvertible, relative to our perceptions.

Moreover we might also get to understand (although materialists refuse to make that connection) how force contains within itself the principle of agency. In the context of Leibniz, material monism would lead to an explanatory absurdities. The two aspects of force, passive and active, although they translate themselves to us percipient creatures as energy and matter, are not thereby resolvable into a concept of ‘pure matter’. At the base of Leibniz’s ontology rests the claim that existence is denoted by whatever a thing does. Matter ‘pure’, understood as a lifeless item, cannot under that criterion be said to exist. Human language cajoles us too easily into a disregard of the meaning of passive and active when it is applied to matter objects, viz. suffering and resistance as opposed to effort and exertion. These are intentional terms. They denote, through language again, that it is inconceivable for us to envision a universe without activity; or (as Leibniz expressed it) that extension and its modi alone could conceivably explain that activity. Accordingly a monad, as the absolutely basic element from which the cosmos is constructed, represents and carries the principle of activity. No plausible distinction can be made between an understanding of the monad as ‘matter’, ‘energy’ or ‘spirit’. This is the relevant context of Leibniz’s ontology, as will transpire in course of the ensuing discussion.

*
D) ONTOLOGY OF AGENCY

1. Soul, substance, entelechy, form

We have reached a point in our deliberations where certain conclusions are now inevitable. After all the instances where Leibniz is found to say, without equivocation, that force, power, substance, soul, entelechy and substantial form are just so many words denoting the same referent, we can scarcely doubt that he means what he says. We need this variety of nomenclatures simply to indicate certain features of the entity; the differences resting on the fact that it has the potential of actualising itself in more than one way. The choice of a word is therefore governed by criteria other than the difference of status between force, soul et al. – the terms simply indicate varieties (various species) of power.49

It stands to reason that this must affect an ontology which is grounded in it. For taken in an adequately wide sense, a thing capable of acting must be the kind of thing we refer to as an ‘agent’. But some will baulk at this blanket application of the term. For many a thing which is not an agent in that sense of the word, may still have the power to act. We do not, after all, associate the energy which drives our engines, nor the energy which generates tornadoes, with agency. However, in the context of Leibniz, these distinctions are taken from phenomenal states of being; they do not pertain to the fundamental or metaphysical level. It is true that monads are not living things (in themselves, i.e. prior to actualisation); but by the same token they have agency – in fact, they are thought to be the sources of motion and energy in the cosmos. What this entails is, that there is no genuine distinction in this metaphysical understanding between power and agency. They are necessarily the same. Where differences do make themselves manifest is in the quality of this agency which emerges en route to the self-actualisation of monads, in other words in exertion of power as the enabling criterion of agency.

Meanwhile, however, we must fix in our minds that the existence of a monad depends on its possession of eigenforce and its capacity to exert it.50 But putting it this way is already somewhat of a misnomer, for an actualised monad cannot be said to be in possession of force – it is that force. And since that force is the power to act, everything that comes from it rests ultimately on this notion of the exertion of force as the grounding principle of Leibniz’s ontology. A thing is what it does. Which implies that, since monads are not things, it is agency that is fundamental.

Moreover, this is reinforced by the further criterion that the meaning of this dictum, to exist is to act, involves the notion that the monad exhibits Daseinstreben, a striving to exist, and thus to act. Force as eigenforce is not an existent; independently of a

49 The following comparison may contribute a little to clarification of how these differentiations may be understood: All normally endowed humans have STRENGTH. Take this in the sense of eigenforce. But some people have more strength than others. In a society where only exerted strength determines the social pecking order, a hierarchy is likely to evolve from the strongest to the weakest, though stratified in such a way as to group certain ‘average’ strength individuals into several mid-level strata and eventually down to the weakest members grouped at the bottom of the stack. This may result in the formation of a structure comprising king, ministers, crown executives, traders, artisans, labourers, house wives, children etc. But irrespective of these labels, all the individuals still share in the one common denominator that they are HUMANS.

50 Cf. Princ. Gr. §1.
monad’s striving to exert itself, it is nothing. And this striving is not an option – a monad will act unless inhibited; this is its nature.

This leaves us with an ontology for which a terminology has not so far been agreed upon; on which account the writer of these lines takes the liberty of introducing a coinage of his own, namely ‘ontology of agency’. It seems most apt now to elaborate further on these criteria.

2. Criteria of agency

What has been divulged in the preceding is this: that for a monad to have real existence, it is not sufficient to have a disposition to act: it must necessarily be capable of exerting itself. To do this, it must be an individual, that is one being, and thus an instantiation of agency. As Heidegger wrote, the monad in its constitution as an “animated point” or “substantial atom” does not represent mere capability, but involves an active “leaning towards [which] requires no prior stimulus. Drive is the impulse that in its very essence is self-propulsive.”

However, a first difficulty makes itself felt now. Each monad being a point-like, zero-dimensional existent, it seems unavoidable that monads endowed with such frugal attributes will be indistinguishable from one another, queued up like sardines in a can. But Leibniz has provided for this eventuality, for each of these monads has a second attribute, or rather an attribute which is a special variety of force, namely perception. We shall be dealing with this in due course; but it is required to bring it to notice at this point to avoid the said pitfall of indiscernibility. Since perception is affectivity (affectio), the monad is obliged from instant to instant to modify its own ‘states’ in response to the activity by which it is surrounded and affected; and it cannot help reflecting this from a unique perspective. Thus its ‘states’ vouchsafe for individuality; there cannot be two monads with identical perspectives.

It follows, then, that a differentiated self-instantiation is involved in Daseinsstreben. This is the source of individuality. Each monad is a unique specimen. But again this uniqueness and individuality is not a static quality – no essence or substrate or haecceity is involved – but the differentiation of itself from all other monads by the perceptive and appetitive ‘states’ it undergoes; and these states again represent the principle of agency. It is also always in how a monad acts, and not in what it is, that its singularity manifests itself.

Differentiation therefore accounts for the way in which a monad maintains its immunity from a conceivable ‘drag’ into homogeneity with its surrounds. The notorious claim of windowlessness has its source in this principle. It is on this premise that the totality of all monads in the universe comprise an inhomogeneous field.

The clause that monads have no windows is not as difficult to grasp as it sometimes seems. For it means simply that no attribute or property, nor perception or striving of one monad can make its way into another monad. It does not mean that a

51 To pre-empt confusion on real existence, it has to be remembered that according to Leibniz’s ‘many world theory’, more monads exist initially than will eventually be admitted to a role in the actual universe.
53 It will not be amiss to mention that the mind is a species of monad. Our intuitive understanding of personal singularity may be vulnerable to the charge of unreflexive assumption, but there is nonetheless a universal consensus of human uniqueness on account of the coherence of each
monad cannot be affected, disturbed, dislodged by the activity of another, for it evidently must be able to respond in some such way in order to change its internal states. – Comparison with ordinary experience is of help to render these specifications of a monad perfectly intelligible. A person P may change their opinion on a matter after being persuaded (or coerced) by another. But this cannot possibly be taken in the sense that the contents of that other person’s mind flowed into P’s mind. The change is evidently ‘internal’, irrespective of how much pressure was brought to bear. One cannot think another’s thoughts or feel their emotions. But one can adopt their way of thinking by adjusting one’s own – and one may not always be happy with the change. This way conflicts can arise within one’s own mind. Moreover such a situation illustrates how one can as an individual yield to another, but without receiving the other person ‘into’ one’s mind.

We need to tarry with this issue for a moment, for there are other implications. Leibniz was a relentless critic of the idea of ‘influxes’. Especially men of the scholastic tradition sinned with their “bad habit” of postulating an *influence physique* or *influence naturelle*, as if our souls received messengers through doors and windows and accidents could go walkabout from one substance to another. Cartesius was not exempt from castigation, whose metaphor of *influxus* derived, like that of the scholastics, from the model of the transport of fluid particles. On this issue Ishiguro writes aptly:

> The doctrine of causal interaction which Leibniz rejected is not a doctrine of what we today mean by cause and effect. It was a doctrine which was in traditional scholastic textbooks of his time and one which had slipped without much resistance into the vocabulary of the Cartesians and the new physicists: the doctrine of influx. … But Leibniz thought that this theory entailed an absurd idea – the idea that qualities can be detached from substances. … For example, Suarez has defined ‘cause’ as ‘what flows being into something else’. … Leibniz concludes that this is a barbarous and obscure definition. For ‘flow’ is only to be understood metaphorically, and the definition is more obscure than the concept of cause which it defines.

Leibniz was aware, nonetheless, of Descartes’ unease with his own solution and targets with his critique primarily “les nouveaux Cartesiens”. Accordingly that problem is solved by *ridding* philosophy of this nexus. The ‘medium’ can only be the monadic *appetitus*, the flow of self-unfolding by which all monads appear to and ‘represent’ each other. To bring something to appearance is, however, nothing other than the self-incorporation which is laid into the nature of the individual – and this body is what is being ‘expressed’. Therefore whatever ‘flux’ may be presupposed to take place in these interactions, whether by impact or collision, action and reaction, is metaphysically apprehensible as *occasions of energy flow* among the embodied monads.

We may draw a useful comparison again to interactions among humans to elucidate this conception, for how one person reacts to another depends not merely on their instantaneous and quasi-mechanical response, but on their momentary frame of mind (angry, conciliatory, depressed, jovial etc.) and on whether reflexive or unreflex-

consciousness and the hermetic privacy of its contents, which is more difficult to contradict than to concede.

54 Disc. Met. §26; Mon. §7.
55 Mon. §7.
56 Cf. Leibniz’s repudiation in Nizolius, G IV 148, L 121ff.
57 Ishiguro, pp. 65-6. Ishiguro adds that we still say ‘transfer of momentum’ apropos physical collisions, but we do not thereby mean that some actual feature is changing its ‘owner’.
ive apperception occurs and finally on what I perceive of the substantial form of the other — so that, e.g., if I ram a pedestrian accidentally on a busy mall, their reaction will not be ‘influenced’ by the mere act of my ramming, but on these states of mind in combination with their perception of who I am: unknown, famous, friend, lover, en-
emy, old or young, man, woman or child, and so on. In short, even this straightforward example exhibits nothing like a simple causal chain, but a conglomeration of highly complex affective and cognitive features.

It is precisely against the popular acceptance of causation, together with the allied notion of an active and passive partner in that interchange, that Leibniz directs the shaft of his doctrine. “The many texts where Leibniz hammers away at the reader to clarify that there can be no influence physique immediate between individuals,” writes H. Busche, “show that an embodied monad can only ‘act on’ something for which it is designed by its substantial form. … An organised creature in turn can only ‘react’ to something that is for it a stimulus and impulse.”58 This specificity precludes a genuine, unmediated communicatio motus, i.e. communication and transfer of force or motive impulses from one body to another.

On the contrary, force being inherent in bodies, there is an eigencausality at play which elicits a different interpretation, namely an understanding that the action of one body furnishes the occasion for another to release its inner action potential.59 There is a precise analogy to this in biology which was not known to Leibniz, but is extremely relevant to the case. Muscular action appears to be something we do; but in fact the delivery of suitable chemical and electric differential potentials (‘signals’) to the receptor site of a muscle does not ‘induce’ the muscle to act, but releases the prohibitor function which keeps the muscle ‘wound up’, somewhat like a spring. In a like manner, then, we may interpret Leibniz’s term ‘solicitation’ as the release of (the removal of impediments to) the monad’s eigencausality.

Martial Gueroult is, incidentally, of the same opinion, as he made clear in an address at the commemoration of the 250th anniversary of the philosopher’s death:

Physics apprehends the appearance of living force in an external way, that it as an accumulation of external occasions, as if body acquired from external sources its power to move. In reality no power is received, and cannot ever be: for the concept of a received power is a contradiction in itself. Power, force is activity; while receptivity is passivity. Power cannot therefore be received, it must be released. It must be understood that a movement occurs when the inner power, which is concentrated and therefore virtual and without perceivable effect – in other words dead force – becomes restituted to its essence by the disappearance of its impediment, and then flows outward as active and living force.60

To return: Differentiation is the generatrix of information. Exerted force necessarily results in changes, internal as well as external, and is accordingly perceivable. Hence the principle of agency contains in its specifications the capacity for both creat-

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59 ‘Eigencausality’ denotes in Leibniz the general specification that “a substance/monad acts unless inhibited”. The best exemplification is Daseinstreben, for it is clear that ‘striving’ means the endeavour to overcome suppression of act-uality.

Perception is perception of other monads, as Leibniz tells us repeatedly. But hitherto this has been somewhat misunderstood as the monads’ perceiving other monads (or chains thereof) as bodies. That this is missing the point should now be clear. Monads perceive the activity of other monads; where the issue of well-founded phenomena comes in is in the perception of passive force as matter. There is more to be said on this below; but in its main features this has already been dealt with in Part I.

When we speak of agency, differentiation and information, it is no mean thing we have discovered. If we can say of Leibniz’s ontology generally that it forms the centrepiece of his ‘substance metaphysics’, then this can only mean, as I think we have amply shown, active substance. The highest goal of monads and of monadic activity is the achievement of reason. Existence is based in sufficient reason, therefore ‘Dasein’ is the actualisation of reason in the world. Hence reason and agency exist in mutual accord. Accordingly, and finally, ‘Dasein’ is the ultimate goal of agency.

3. The ‘primordial existential question’

With this we reach a very unorthodox conclusion (alluded to in passing in Part I) to Leibniz’s notorious ontological conundrum, “Why is there something rather than nothing?” Philosophy and religion both presuppose, on the whole, that God created the universe and put life into it. The issue always is, did life arise from the matter God had created, or does it comprise a second creation? The Bible clearly opts for the latter. The result of Leibniz’s metaphysics is very different. God did not create the universe, because there was no need for it. He created monads, and the monads went on to become the universe. And it goes without saying that in this conception the universe is imbued with force. Force, a.k.a. agency, has priority before matter. The question of how life came to exist as a result of matter congregations is therefore plain sailing. Life is a result of monads consorting in specific ways to create organisation; and in this respect it is indifferent to the distinction between life being based in matter and matter being based in life. The concept of matter without life to support it is a misnomer. The question of existence may not be solved, in a Berkeleyan sense, as esse est percipi, but rather in the sense that existence, being, are meaningless terms outside of the reach of that organisation of living force which is identified with reason. If force is substance, and substance is subject, then it is the subject’s prerogative to call something ‘life’. And then, by way of the simplest and most obvious logic, life has priority. So the primordial existential question is the same as the question of ontology. What exists, exists in virtue of life existing. In that sense every human, every animal, ant, blade of grass or bacterium enjoys access to the same principle of perception. But perception is knowledge, however primitive. Perception is the seedbed of reason. Therefore reason is laid into the cradle of the universe in its inception.

What this amounts to is a somewhat elusively presented theory of a self-constructing universe. It suggests that in order to fashion the universe, little more was required of

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61 So baptised by Adolf Grünbaum in his paper, “Why is there Something rather than Nothing?”, Leibniz Lecture I, delivered at University of Hannover, June 25, 2003 [pre-publication copy conveyed to me by the author].

God than to set his monads free in the midst of nothingness, after having imbued them with a small cluster of attributes and laws of assembly which point to a final end, and they would proceed with creation. This is hardly what the average reader of Leibniz or indeed 17th century natural philosophy would expect; rather they might look into the pages of contemporary complexity theorists such as Stuart Kauffman for ideas of this kind: and it is obvious from the pages of Leibniz’s own writings that he scarcely breathed a public word that this reflects the underlying conception of his whole substance metaphysics. All the same, one wonders what his readers made of such hints with a garden pole as:

There are even good grounds for doubting whether God made anything other than monads.

It certainly makes perfect sense in terms of an ontology of agency and is a conclusion that stares us in the face when Leibniz’s principles of agency are assembled in one place as here. One must be able to read between the lines, so to speak, although even this does not pose undue difficulties for the question at issue. As it happens, C. Wilson introduces this notion into her discussion of Leibniz’s theodicy — not totally out of the blue, though a little unexpectedly in the conclusion to Chapter 45 of her study of Leibniz’s metaphysics. She writes:

The doctrine that the world is self-creating was evidently not one Leibniz was eager to advertise. Yet we find it entertained at every period of his life: in 1677, 1697 in the Radical Origination and again in 1712-13 in a letter to Bourguet. ‘The concourse of all the tendencies to good produces the best,’ he says here, leaving God’s alleged selection out of it altogether; ‘but because some goods are incompatible, this concourse and the result may entail the destruction of some good, and thus some evil.’ . . . Even in the Principles of Nature and Grace §10, the struggle for existence is depicted as taking place within God’s mind, leaving it open whether God is to be conceived simply as the locus of the process or as the active manipulator of his own thoughts. Finally a comparison of early and later drafts of the Monadology indicates that Leibniz systematically replaced phrases which suggested the self-actuating powers of the monads with phrases referring to God’s selective power.

This gives point to Bertrand Russell’s notorious claim that there is an esoteric and an exoteric Leibniz, though (as C. Wilson says) he makes it too easy on himself to lay blame without adducing reasons. In any case the two cannot be neatly disentangled; the esoteric frequently intruding on the exoteric and vice versa. But Leibniz himself was inclined on occasion to confess that his true philosophy was not for the ears of

63 Stuart Kauffman, *Investigations*, Oxford University Press, New York 2000, Ch. 10. Kauffman’s major investigative thrust is ‘Order from Chaos’; the whole work is devoted to discovering ‘candidate laws’ for such a theory and he is *au fait* with the most advanced and recondite theoretical principles of his discipline. But the name Leibniz does not occur in his pages; yet to a reader familiar with Leibniz it seems evident that his pursuit might have benefited from a study of this philosopher’s ideas — the more so as even in his last paragraph he is compelled to admit that solutions to his search are far from his grasp and to be entrusted to future research.

64 Philarète, AG 265.

65 Bourguet, G III 558.

66 I think it is fairly clear that the former supposition meets the case and this is the conclusion drawn infra in the section devoted to the ‘law of the series’: cf. Sect. F, §5 and Note 148.

akusmatici. For scholarship, however, the lesson from Russell’s example is that accusations of ‘confusion’, far too frequently laid at Leibniz’s doors, do not necessarily reflect flaws in his thinking, but the pressures on him to accommodate all the many would-be cognoscenti in his vast address book, whom all too often he gave what he knew they wanted to read. This is a subject that cannot be further pursued in this place, but it is well to be aware of it when Leibniz’s ‘lapses from grace’ are under scrutiny.

4. Summary on Agency

Let the run-down below, together with the chart which ends the section, stand as the counterpart to the phenomenotaxis offered in Part I:

A) Agency is distinguished from substance in that the former represents the action of the latter. But under the Leibnizian ontology of agency this discrimination is eroded insofar as substance is not a thing by any conceivable description but an ‘a.k.a.’ of agency. Further,

B) It is an implication of the aforesaid that agency is a monad’s being-as-activity. Monads are not standalone structures, whereas the more usual concept of substance is concerned with something that is a being-in-itself.

C) Accordingly ‘agency’ cannot be denoted as a being-in-itself, for it ‘exists’ as an expression of the substance/subject: it is the actuality of that substance/subject. – In this context, we must not short-change the expression of any substance whose nature is passivity, for non-activity does not stand in absolute contrast to activity, but is an attenuated species of the latter.

D) From this derives the mutuality of ‘expression’ on which Leibniz’s concept hinges – as Feuerbach put it beautifully many years ago: “The being-for-itself of the monad is its soul, the being-for-another its matter. The monad is not only an entity that expresses itself, but also a being that is perceived as an expressive entity; it is not a pure and absolute subject (otherwise it would be God), but necessarily an object to other monads.”

E) Moreover, non-activity may, and as a rule does, elicit effects of agency of non-self sources. (A general of an army may decide not to attack at a particular moment; an on/off switch in an electrical circuit does not lose either its relational nor its ontological status while in the ‘off’ position). Pertains generally to the release of eigencausality.

F) Agency always stands in a specific relation to other agency, whether positive or negative. Hence ‘interaction’, ‘interdependence’, ‘interdetermination’ give us these relations as well as the ‘states’ of their relata.

G) ‘Appearances’ are such moments of the intersection of acting forces, from which an apprehensible ‘picture’ may result. The ontology of agency is expressed in this picture. To the extent that the interaction is governed by lawful processes, the ‘picture’ conveys a notion of predictability.

H) Larger interactions and processes become amenable to correlation in and as systematic structures. When Leibniz speaks of ‘organic machines’, he denotes such interdependent processes, where every monad contributes to and co-operates within the functioning of the systematic process.

68 Cf. Paidius, in LoC 169: “It is very important to keep the uninitiated away from the sacred matters of philosophy.”
69 Feuerbach, op. cit., p. 78.
I) *Telos* designates the ‘rules’ of this behaviour as geared to its end.

J) *Harmony* designates the dovetailing of all individual activities in accordance with the final cause of the body/organic machine they comprise, and ultimately of the whole cosmos.

Every drop of water in the oceans is connected to every other drop. This may serve as an apprehensible image of the total interdependence of all created monads. Nothing in such a totality is ‘by itself alone’. Activity in any sector will in some way be reflected in all other sectors. (This is taking the notion of a smallest possible drop in the radical sense. It is a physical possibility, though impractical). We may look at this picture from the vantage point of immediate neighbourhood, where one drop (monad) affects the perceptions of its neighbour. This correlation affects the perception of more distant neighbours, and thus *ad infinitum*, in an endless series of ripples. However, the energy generated in one sector must diminish unless it is re-potentiated in another. This is the function of hierarchical organisation. The single monad mirrors the whole universe not in the sense of picking up the ripples of every single monad elsewhere, but as a member of its cohort. What has been said of single monads, applies equally to these cohorts. Ripples flow from pocket to pocket — *ad infinitum*.

5. Why ontology of ‘agency’ rather than ‘force’?

Force is primordial. But in Leibniz’s canons, existence is based in agency: firstly, because of God as the creator, whose creations are so to speak as like to like; but also because ultimately only mind-like monads can affirm existence. Only they can *organise* other monads, including those which appertain to bodies, into coherent structures. Leibniz’s stated fundamental criterion for the attributes of monads is *striving and perception* which in his metaphysics functions as the basic ontological category.

It should not be necessary (since Leibniz never associates the two) to stress that the *perception* of a monad has no epistemic content. Rather, it designates a form of being, in which every existent is entangled in a totality of reciprocal perceptions, some distinct, some confused. At its highest level, that of *apperception*, this function acquires a gnoseological component — *being-consciousness*, a.k.a. *Dasein*.

But this determination of being-consciousness as ontology entails that perception must be of something that exists — some ‘other’ having actual existence. The fact that confused perceptions are possible even in the apperceptive condition (which therefore include errors, illusions, hallucinations etc.) indicates that apperception has to do with facts, that is, the *facts* of the world, of which the monad itself is one and which is the enabling condition that permits it to perceive and apprehend its like — other monads. As Leibniz says, there is nothing, and there can be nothing, in consciousness that has not previously gone through the sieve of sensory apprehension: *nihil est in intellectu, quod non fuerit in sensu*. But he adds, significantly, * nisi intellectus ipse*, except reason itself.70 For it is an axiom of his philosophy that innate ideas are not only possible, but indeed indispensable. For the same reason he rebuts the Platonic notion of anamnesis.71 Cognition is not of pre-formed ideas; and innate ideas are not the same as those. They are but templates for thinking that need to be actualised in the process of experience;72 in other words, restricted to the kind of *a priori* notions that aid and abet apperception.

70 *Nouv. Ess.*, Bk. II, §2.

71 *Disc. Met.* §26. Leibniz approves of Plato’s recollection theory, but only if it is “cleansed of the error of pre-existence”. But this seems to be of the essence to Plato?

72 *Nouv. Ess.*, §74.
The term ‘templates’ refers here only to such categories as arise *with* consciousness and without which consciousness would be inconceivable.

Above all, Leibniz emphasises that *expression*, the representation of the world, characterises the monad, and this criterion obviously does not stand still with one monad, but embraces their totality. It is therefore a universal and fundamental process, appropriate to being itself. Two dangers we must beware of in this connection. Firstly, we must not confuse this ‘representation’ with the Kantian species, i.e. the mental apprehension of a physical object according to certain categories of thought, with what Leibniz has in mind, which is not unlike the way diplomats ‘represent and express’ their nation. Secondly, since it figures as the ontological bedrock of Leibniz’s metaphysics, it opposes the being-for-itself (*Ansichsein*) of the monad-as-subject to the phenominality of the monad-as-another. The latter can only be phenomenon to the monad-as-subject, albeit a well-founded phenomenon. The meaning of this term is now surely self-explanatory. It does not comprehend ‘mere’ phenominality, nor an idealistic notion, but actuality itself. In one sense, this confirms that all being is phenominal; but as we have seen already, for Leibniz this does not contradict its essential quality of being. Being as body is not any less real than being as substance, since only both together comprehend reality. The concept of ‘phase’ applies here: in that substance and body are *unum ens*, or the two phases of their perceivability.

What all this adds up to is *harmony in variety* – the basis of existence. It could be said, then, that Leibniz does not have a single entity as his fundamental metaphysical unit; but this is mistaking the wood for the trees. For the *source* of variety is a single principle, although it is unlike what we are accustomed to from ontologies before Leibniz, which tended to the identification of some *thing* to which the appellation ‘substance’ could be affixed. Accordingly there is virtue in schematising what has been written above, which then needs only a few comments to yield the result to whose extraction this chapter has been devoted:

<table>
<thead>
<tr>
<th>Entelechy, Soul, Substantial Form [Eigencausality]</th>
<th>Primitive passive power [Eigenforce]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Monad [Substance] Perception, Appetition [Agency]</td>
<td></td>
</tr>
<tr>
<td>Mass or Secondary Matter [Phenomena]</td>
<td></td>
</tr>
<tr>
<td>Organic Machine</td>
<td></td>
</tr>
<tr>
<td>Animal w. dominant monad [Corporeal Substance]</td>
<td></td>
</tr>
</tbody>
</table>

The recourse to dashed lines at the top serves to emphasise that entelechy (*qua* eigencausality) and eigenforce do not exist independently, nor are they prior to the monad. Rather they are the conditions of existence of the monad, which in turn is (not *has*) a combination of perception and appetition, i.e. *agency*. Further, it is incon-

73 Indeed, they are also the conditions for existence of those monads which do not become actualised, as we shall see later in this section.
ceivable for a monad to exist without a body: from which it is to be assumed that this is represented by the passive power (secondary matter, or inertial principle). The minor concession to the slight ambiguity involved in this is denoted by putting it into a box by itself: for although it should be in the central ‘monad’ box, the being-of-the-monad (i.e. its actual existence) rests with the principle of agency. — Thence from mass ensues matter in one direction, and organic machinery in another. The culmination of the latter is the animal body animated by a dominant monad.

However, the crucial point that should be inscribed in the reader’s mind is that both shanks of the graph proceed from monads. Existence as Da
d
ein, or as the actualisation of the principle of agency, flows down the right hand side. This, then, is the graphic representation of Leibniz’s ontology as an ontology of agency.

*  

E) RETURN TO CORPOREAL SUBSTANCE

1. One being  
The question Leibniz put to Malebranche in his aforementioned letter (22 June 1679), “if the spirit can be said to exist without being bonded to a body?”, did not solicit an answer which he might have accepted as a contribution to his knowledge. Rather, it was Leibniz’s hope that Malebranche would be induced to see that this is not only a false, but indeed inconceivable supposition.

We have seen how Leibniz insisted on the union of both; but we may expect him to go much further, since he also insists that body matter is not ‘dead’ matter while that body is alive, but only after it has died and suffered the disintegration ensuing upon loss of the organising principle which made it one entity in life. This entity is a composite of substances; and this is the notion we need to pursue now in order to draw out certain features which connect it to the ontology of agency which is our present concern.

It is covered, for example, in the famous ‘ontological equation’ from the Arnauld correspondence, viz “What is not truly one being, is not truly one being either.”\footnote{Arnauld LA/G II 97.} Taken in conjunction with the above definition of what comprises a living unity, it provides a sufficient grounding for being and removes the need for transcendence: for monad and body are clearly in mutual dependence for their respective ontological status. But this mutuality does not, in fact, imply the possibility of severing one from the other, as in Descartes’ mind/body duality.

One difficulty turns up almost immediately. The expression ‘mutual support’ still suggests a binary opposition, and this is what we need to dispel. It simply does not pertain, for no monad without an associated body can be considered to be actual, and thus it is precisely Leibniz’s point that this unity is merely the model for larger structures. A human body consists of an innumerable ensemble of monads that are all bodies with the qualities that Leibniz’s definition of body includes; these in turn are hierarchically organised as an ensemble of organs, bones, muscles, tissues etc. The sum
total of this ensemble is organised as an entity by a dominant monad, in humans by the mind.

2. Coordination, superordination, cosmos

We are dealing here with an entity comprised of many individuals, which is however also an individual. It seems paradoxical to speak like this, but we need only consider some basic biological facts about the human body to see at once that the picture here drawn is completely true. For the human body is composed of some 6.5 billion cells, each of them individuated as muscle, nerve, tissue, endocrine etc. cells, which build the larger structures (heart, lungs, brain etc.) that function together as a cooperative. But the cells are themselves composites already (endosymbionts), and we need not stop there. The analogy certainly holds.

Looking at these instances as model cases, allows us to draw further comparisons. We can look at the human body as a mesocosmos in exemplification of what is for Leibniz a universal principle, applicable as well to the micro- and macrocosmos. The aforesaid mutuality is not indeed to be understood as a two-way traffic between a substance and ‘its’ body (even though of course the monad perceives because it has a body), but rather in light of the total relations that pertain within any such structural entity, large or small. Its essence is (to employ a modern term which is nonetheless wholly apposite) total connectivity. All elements stand in mutually supportive and cooperative relation to each other, and each element draws its warrant for its momentary states from the momentary state of the ensemble in which it finds itself. But not only is it a case of ‘nothing wasted’ in such an ensemble, rather the uniqueness which is a further quality of each is reflected in those momentary states (both singly and in ensemble). Accordingly one inviting definition of ‘Dasein’ would be that it is according to what is happening in these ensembles that their existence is identifiable. But this is merely another of saying, existence qua Dasein is that state of a monad and/or an ensemble in which it acts.

Leibniz employed for this kind of total ‘connectivity’ and its concomitant essence-cum-agency the term ‘substantial form’. This is not always clear from his own texts, but can be gathered from them without contradiction, e.g.:

On the True Method in Philosophy and Theology:

What must we then add to extension to complete the concept of body? Nothing except what the senses themselves testify to. They inform us at once of three things: first, that we observe, and that we observe bodies, and that what we observe is a variety of things, composite or extended. Consequently action has to be added to the notion of extension and variety. Therefore body is extended activity, and a substance may be said to be extended if we hold that every substance is active and every active thing is called a substance … there are certainly many and important things to be said of the nature of effort (conatus) and of the principle of activity, or as the scholastics called them, substantial forms …

On the Elements of Natural Science:

But the way in which a body operates cannot be explained distinctly unless we explain what its parts contribute. This cannot be understood, however, unless we understand their relation to each other and to the whole in a mechanical sense. … But those who are wise know that every effect has a final as well as an efficient cause – final because everything that happens is done by a perceiving being, efficient because everything that happens naturally in a body takes place through the corporeal organs and according to the laws
of bodies. … Hence I believe that there is in every body a kind of sense and appetite, or a soul, and furthermore, that to ascribe a substantial form and perception or a soul to man alone is as ridiculous as to believe that the earth is the centre of the universe.\[76\]

On Nature itself:

There must be found in corporeal substance a primary entelechy or first recipient of activity … [and] it is this substantial principle itself which is called the soul in living beings and substantial form in other beings, and inasmuch as it truly constitutes one substance with matter, or a unit in itself, it makes up what I call a monad.\[77\]

For what is substantial form if not the organisation of all those relations which pertain to an existent? As we shall see, it is (a little regarded) fact of his monadological theory that although he describes ‘the’ monad in the Monadology, Principles of Grace (etc.), there is no pretence that it is intelligible (let alone practical) to speak of just one monad. For Leibniz, monads belong into larger wholes, and there is no way they can they play a role – any role – on their own. Thus his concept of being, of existents, is that of elements comprising and composing ensembles; and only as a member of superordinated structures is it possible for a monad to have actual existence. But at the same time, it is only possible for the superordinated structure itself to be regarded as actual existent because it subsumes and coordinates those elements. And of all these structures, the cosmos is that which comprises them all, and which in turn can be said to ‘have existence’ by reason of the same criteria.

As we learnt in the previous section, the ensemble of all monads is the real universe.\[78\] We may take our cue from Leibniz’s manner of denoting this by the monads ‘expressing’ each their own unique perspective on it. This is unproblematic in itself, for it simply means that each has its own unique location; but implied in this is also a ‘non-residue condition’, as he explains to Des Bosses:

You ask further, why actually infinitely many monads? I answer, for this possibility of their being infinitely many will suffice, since it is better that the works of God be the richest possible; but the same is required by the order of things, otherwise phenomena will not correspond to all assignable percipients.\[79\]

In other words: it is not so much that that the sum of all monadic expressions conveys a complete picture of the universe (a somewhat questionable supposition, since it presumes on the independent pre-existence of the universe) but rather that, as Montgomery Furth pointed out, “every conceivable point of view of the universe is already enlisted among the monads”. The monads comprise the universe; in the other situation we would be confronted with the dubious possibility of “far too many gaps in the population’s actual experience, too many unrepresented viewpoints and interrupted conscious histories.”\[80\]

3. More on substantial form

But if we now were to ask, in our perplexity, why Leibniz perseveres with this outmoded terminology and conceptuality, then we are led to another aspect of his

\[76\] L 288-89 [emphasis added in this paragraph].
\[77\] G IV 504ff, L 503-4 [italics per original].
\[78\] “The collection of all bodies that are understood to be in space, i.e. those that have a mutual relation, is called the world.” Met. Def., op. cit.
\[79\] Des Bosses, G II 460; L 607.
\[80\] Montgomery Furth, “Monadology”; in Frankfurt (op. cit.), p. 118.
thinking, which is concerned with harmony. We have described substance plus substantial form as an 'irregular' kind of twosome: not as a duality in the Cartesian sense, but nonetheless a 'mutuality' or manifold. This is adequate so far as it goes for our cognition; but nature knows nothing of substances and substantial forms. Nature, the cosmos, is One. To separate substance from non-substance is already an artificial dissection. Leibniz’s resuscitation of the outmoded substantial form is therefore also an act of conceptual reintegration of what philosophy must needs segregate. Therefore the term invites us to think unity where the language of philosophy proposes a plurality.

This is well outlined in a passage from the *Theodicy*, a document dating from 1710 and a period in Leibniz’s creative life from near its end and well after the formulation of the monadic theory. He writes:

Aristotle and scholastic philosophy after him called *Form* that which is a principle of action and is found in that which acts. This inward principle is either substantial, being then termed ‘Soul’, when it is in an organic body, or accidental, and customarily termed ‘Quality’. The same philosopher gave to the soul the generic name Entelechy or *Act*. Now the Philosopher of Stagira supposes that there are two kinds of acts, the permanent act and the successive act. The permanent and lasting act is nothing but the substantial or Accidental Form: the substantial form (as for example the soul) is altogether permanent, at least according to my judgement, and the accidental form is only so for a time. But the momentary act, whose nature is transitory, consists in action itself. I have shown elsewhere that the notion of Entelechy is not altogether to be scorned, and that, being permanent, it carries with it not only a mere faculty of action, but also that which is called ‘force’, ‘effort’, ‘conatus’, from which action must follow if nothing prevents it. Faculty is only an *attribute*, or rather sometimes a mode; but force, which is not an ingredient of substance itself (that is, force which is not primitive but derivative), is a *quality*, which is distinct and separable from substance. I have shown also how one may suppose that the soul is a primitive force which is modified and varied by derivative forces or qualities, and exercised in actions.81

The emphasis in the italicised phrase has been added. It provides us with as clear an articulation as one might wish for the principle that to exist is to act and to act is to exist. A thing that merely ‘is’ does not, in this sense, have actual existence.

Bearing in mind the popular character of this exposé, it nonetheless expresses the discrepancy which lies at the heart of the matter, namely the distinction between substantial and accidental forms. What remains steady and persistent amid the accidental changes which are so to speak added to the formal unity of a substance is its essence; in the *Theodicy* this is the inner nature of the soul as the exhibited specimen of substance. Leibniz does not burden the reader with the complexities of his conception which, in the letter to Arnauld that has been quoted above, is a substantial form “imbued with real unity” of spirit and substance which is expressed in the fact that the matter of the body is structured by the entelechial directedness, in other words, its *being-as-force*, or in our terminology as *agency*. In Leibniz’s thought, substantial being corresponds to *energeia*, and identity is understood as the outcome of exerted power, not as eigenforce or substrate in the meaning of the tradition, where the latter comprises a kind of quiescent focus amid the ceaseless swirl of appearances.

81 *Theod*. I, §87.
4. Parts and requisites

In turning now to the Monadology for further enlightenment on certain important details, we are mindful of the likelihood that yet another discussion of its elementary principles is apt to provoke a sentiment of déjà-vu in the reader. It cannot be avoided; but we shall be as concise as possible.

Our principal concern must be with the interpretation of the first six paragraphs. Something is laid down in them which is often disregarded because it is not spelt out by Leibniz who, presumably, thought it was self-understood.

Paragaphs 1-3 describe substance lacking extension, figure and in particular divisibility: it would seem to make an unlikely candidate for aggregation. But if we attend not only to what is being said, but left unsaid, then we shall find that the juxtaposition of 'simple' and 'compound' must be read in conjunction with §§4-6 (the all-or-nothing criteria), which taken together clearly prepare the overall conception of being which is being unfolded and elucidated in these paragraphs.

For what is critical here, according to H. Holz, is that “the being of an existent is necessarily simple, even though formal; it is unthinkable as a composition of parts, but only as the provision of a higher unity in which those parts surrender their individuality in order to fashion an individual whole.” In other words, the Leibnizian aggregate of §§4-6 is no sum-of-parts, but the forming of an individual entity.

A world of difference is revealed in this emphasis. The monad must not be viewed as a thing, but as a structure focused on a locus of energy which is destined to become the inner kernel of an aggregate (Substanzkern in Leibniz’s German). A letter to Fardella spells out that this must not be conceived as, somehow, being ‘in’ body (as a quasi-spatial entity) or as ‘comprising’ the aggregate:

One must not infer that the indivisible substance enters into the composition of body as a part, but rather as an essential internal requisite, just as one grants that a point is not a part that makes up a line, but rather something of a different sort which is, nevertheless, necessarily required for the line to be, and to be understood.

Moreover, as we pass on to §8, we meet another critical juncture in the debate, for here Leibniz writes in naked, unembellished words of “change in things” resulting from the qualities of monads. We already know what these qualities are, although it is still somewhat obscure how they could possibly generate the thingness of things. But we will not need to wait long for clarification on this aspect. En passant, however, we take note of the fact that Leibniz does speak of ‘things’ in a text in which we are not encouraged to find such a locution. But it is at this point that a certain ambiguity manifests itself – a sin of omission, if you like. Leibniz does not tell us anywhere in the Monadology that his monad is not identical to the concept of substance transmitted by the metaphysical tradition nor to his Bernoulli monad. Rather it is a scaled down version, a “true atom”, he has in mind. Presumably he did not feel the need to burden either Prince Eugene nor Rémond (his designated audience) with these subtleties; but for students of his philosophy such an

82 Mon. §§ 1-3.
84 Fardella, AG 103.
85 Indeed, Leibniz pre-empted his phenomenalist/idealist critics in his drafts by writing: “But if the simple substances were nothing, then we would also have to reduce their composites to nothing.” Unfortunately he crossed it out, so that it does not appear in the ‘official’ manuscript text nor in the printed version.
awareness is indispensable. Therefore we have to confront the twofold meaning of the “true atoms” clause at once: firstly, that this monad is nothing as high as a soul; and secondly that all existents (including material things) arise from monads, in the manner suggested to Fardella.

The two attributes of the monad, *perceptio* and *appetitus*, unveil further puzzles which are too often solved by a knee-jerk association with idealism. But there is a more profound problem buried here which in its way marks quite a decisive caesura in the manner in which Leibniz should or must be read:

There does not seem to be much evidence throughout his writing career (including on mundane matters) of an other-worldly turn in Leibniz’s writings; in fact, we have seen him stress time and again his agreement on many points of his science with the mechanists. It is possible, of course, that Leibniz changed his mind radically as he aged; but evidence for this turn apart from the *Monadology* is hard to come by. Even so, the *Monadology* now explicitly informs us that the mentality of monads is characterised in their mirroring of the world; and it is the whole world which is being mirrored. But monads are in the world; there is no hint of apartheid; and further, they are the world of actuality. Finally, the world is not a soul; in fact it is composed of the monads. Yet a world composed of purely mental beings would be a bizarre confetti, for it can be nothing other than one mental cosmos. The logic of this would have left Leibniz horrified, for it means there is no world, just a thought. What, then, did God create?

The point is that Leibniz nowhere left a line of his writing which puts such a suggestion abroad. He was too much of a physicist, to his last days, to ever seriously entertain the idea that there is no world – no world of actual, handy and tangible things, but only phantoms of the mind posing as a surrogate reality.

But to return. The second attribute of the monad is force (*appetitus, conatus*); and this is nothing other than the directedness of perceptions, as we have already noted – in other words its direction, bearing, course, coefficient. It follows that perception must not be understood in the singular, but as a continuity; not as a still, but a movie; and this directedness is borne by striving.

Taken together, then, as they must, the monad’s two attributes define it as an active thing. It is what it does. We always come back to this. It is the warrant for our insistence on describing Leibniz’s metaphysics as an ontology of agency. Therefore Leibniz refrains from introducing the older style of definition by essence for his monads, for essence is a static quality, whereas the essence of monads is agency.

The association of perception/appetitus with force is excellently illustrated in the famous ‘parable of the mill’:

We are moreover obliged to confess that perception and that which depends on it cannot be explained mechanically, that is to say by figures and motions. Suppose that there were a machine so constructed as to produce thought, feeling and perception, we could imagine it increased in size while retaining the same proportions, so that one could enter as one might a mill. On going inside we should only see the parts impinging upon one another; one could enter as one might a mill. On going inside we should only see the parts impinging upon one another; we should not see anything which would explain a perception. The explanation

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86 As *Mon.* §14 makes evident. But Anthony Savile (2000), p. 103, demurs and writes that “his ontology of simples, on which everything else depends, is an ontology of incorporeal mental substances, or minds.” Then, bafflingly, in the next sentences he takes it all back, noting that Leibniz reserves the term *esprits* (minds) for higher developed monads like ourselves!

87 Savile, p. 104.

of perception must therefore be sought in a simple substance, and not in a compound or in a machine. Moreover, there is nothing else whatever to be found in the simple substance except just this, viz. perceptions and their changes. It is in this alone that all the internal actions of a simple substance must subsist.\textsuperscript{89}

What is being said here has complications which lead beyond our immediate needs, but can be reduced to a declaration that mechanism cannot furnish an adequate explanation for unity of perception and force. Plainly the activity of the wheels and cantilevers and other mechanical itinerary are neither explanations nor visualisations of force: their source is as obscure as before we entered the mill to inspect the works.

Yet an interesting issue arises out of these considerations, namely that both the activity of the monads and the activity of the bits and pieces in the mill generate \textit{information}. A mistake to which we are prone is to leave that distinction unresolved – a conceptual defect which we have not overcome even in today’s information science. We continue to suppose without deeper examination that information is as indifferently ‘inherent’ in objective as in subjective structures, but this is not the case. The mill metaphor makes this point as well, and it therefore invites us to devote a few lines to this essential feature, which is intrinsic to the ontological dilemma concealed in it.

The question of existence is bound up with differentiation. “Pure being and pure nothingness are the same”, writes Hegel.\textsuperscript{90} “To be’ denotes being-in-difference. An existent is what it is in its discrimination of itself from whatever else there may be, including ‘nothing’. In this we find the warrant for Leibniz’s insistence on the individuality of each existent. Nothing can exist except as an individual. Therefore nothing can exist that has no capacity to individuate itself. To be individuated means to be actual; and to be actual means to be capable of some activity which has an effect.

The corollary to this stipulation is that making an effect of whatever kind is to generate something capable of being perceived by another existent. We call this effect \textit{information}. All existents are therefore engaged in a process of creating and dispersing information.

But information is a relatum. It is not an independent existent, but some feature or quality by which an existent can be discernible to another existent. To think this one step further reveals that discernment is a capacity reserved to a perceiving existent. The quality of inert existence we associate with matter is still discernible to an agent. It is evidently not discernible to an existent lacking the ability to discriminate. Accordingly ‘matter’ may suffer the effect of information upon itself, but cannot act on it; whereas an agent is distinguished from a non-agent by the capacity to recognise (perceive) information, and to evaluate it, in however rudimentary a fashion.\textsuperscript{91}

In short, difference generates perceivable information. Differentiation is basic to individuality. Therefore to differentiate (oneself) is the same as \textit{to be}.

Differentiation qua information must therefore generate pattern. An individual that is part of this pattern reflects their unique situation within this pattern – as Leibniz declares, ‘mirrors’ the pattern (the universe) from and in its particular vantage

\textsuperscript{89} Mon. §17.
\textsuperscript{90} \textit{Logik}, Book I, Part I, i, c.
\textsuperscript{91} To be precise on what meaning is involved here: a bacterium is perfectly capable of discriminating food from poison and to enact volitional manoeuvres to evade danger from the latter or engulf the former. A crystal being seeded, however, does not ‘willingly’ enact its replication; it is an objective process. The deeper point here is that cohorts of bacteria (endosymbionts) are perfectly capable of exploiting this feature and to seed crystals to achieve their own purposes from the resulting structures.
point. The elements of this pattern are the features which connect all individuals to
each other. The pattern is the tapestry which reveals not only the place held by each
individual in the overall design, but also reflects the way in which they are each con-
nected to all others. To be a member of a pattern means to be connected.

Naturalist Gregory Bateson asked, how can we discern the world of physical ob-
jects, where forces and collisions provide an objective basis for study and the deriva-
tion of invariant and predictable laws, and the living world, “where nothing can be
understood until differences and distinctions are invoked?” He answers, “by the pat-
tern which connects”. There is no evidence in his book that the Leibnizian founda-
tion of his writing has any support from the study of Leibniz. But the philosopher of
pattern and harmony would have applauded.

The benchmark of individuality is furthermore ‘process’. Information would not
be discriminable if it stayed the same for all eternity. Agency thus also denotes the
ability to respond: for to ‘evaluate’ serves plainly a purpose; and this purpose can be
none other than to obey the dictates laid into the cradle of each monad to strive to
actualise itself in ‘perfection’. Perfection does not here mean what our modern lan-
guage has made of it: ‘so good that it cannot be bettered’. Rather in the 17th century it
meant, ‘complete’. An acorn is not perfect: we might say it is a perfect exemplar of
acornhood, but to the philosophers around Leibniz perfection meant the equivalence
of full individuality, the point of development towards which an individual strives, that
marks the apex of its existence as an individual.

One final point which requires discussion now is the representatio mundi. We a-
already have a fair inkling of what is meant by this from the foregoing and one might say that
it is a well-described and no longer deeply problematic issue in the scholarly literature.
In saying that the sum-of-monads (alternatively describable as the sum-of-perceptions)
effectively comprise the universe, so that there is no genuine distinction between being
and expression, we are positing a unity among them which reflects the substantial unity
on a higher tier. All single perceptions, as a continuity of states of being of the indi-
vidual monads, comprise in their totality the continuity of states of the universe. This
reciprocity is essential in respect of both structures: since the individual monad is a
“mirror of the whole universe”, the universe is comprised within it, so that the uni-
verse is also in effect its own multiplication in its constituent monads. The figure of
the mirror was a philosophical stock in trade of the era: but we are not concerned here
with the fascination exerted by it on those thinkers, but simply to bring home the
point that as much as the monad is ‘in’ the universe, the universe is ‘in’ the monad as
its mirror.

From this it is evident that we are here dealing with an ontological conception
which differs in crucial ways from the more usual conceptions associated with this
term. Each individual monad is a unity-of-being; but the structure(s) they comprise,
from body to universe, also comprise unities-of-being. “In the mirroring, that which is
being mirrored is fused into unity and the essence of connection among the parts ren-
dered visible.” To invoke an image often used by Leibniz, each monad is situated at
the focus of all lines which intersect with it; in this case the lines being representative
of the actual forces, so that each point also mirrors in the representatio the forces alive
in the ensemble, albeit confusedly; while the sum total of foci comprises the plenar

93 Holz (1958), p. 43.
representatio. This is a difficult notion to visualise, especially in view of the additional condition of perpetual change, for which the answer can only be sought in the principle of convergence.

This conception is therefore of a self-exerting monad, a singular and individual being of which it is the necessary and sufficient condition of its existence to be integrated into the plenum, of which (so to speak) it is also the container of a full and complete copy. And this is a further reason why it does not need ‘windows’ for messages from the ‘outside’ world – there is no outside world for a locus of force: only for a body. Hence windowlessness denotes a singular perspective, every monad differing from every other by its unique angle on the cosmic ensemble. It follows from this, as H. Holz affirms, “that the thesis of windowlessness excludes that of the transcendence of the monad; it is thought of as its world immanence. In this sense the thesis is also to be understood in strictly ontological terms, by no means epistemologically, which is confirmed by Leibniz time and again when he describes it as ‘à la rigueur métaphysique’."

The final consequence of being for a monad is, so to speak, to have a ‘career’. This is what the striving for actuality amounts to. Only God has knowledge of what this ‘having a career’ entails for each monad. Paramount to any such consideration is, however, whether the monad, as an individual, as an agent expressive of itself, is free to exert its individuality, albeit within the constraints posed by the existence of other monads. This is a question of importance not merely to monads as such, but to those monads which are called ‘minds’ and thought to be united to a human body. Involved in the question is, from God’s perspective, the amount of control exerted by the divinity on the evolution of his cosmos. Let us now turn to Leibniz’s thoughts on this issue, which (one might say) is from an agent’s point of view – that is, from a moral point of view – the greatest enduring issue in the way we humans try to sort out our lives.

*

F) FROM THE COMPLETE CONCEPT TO THE LAW OF THE SERIES

1. Complete concept and the abiding law

Judging from a position of hindsight, the idea of a complete concept was a predictable, indeed inevitable adjunct of Leibniz’s metaphysics. For in one sense, a substance is precisely that which has no need of explanations for itself lying beyond itself (always excepting its creation by God): therefore all its attributes, possible and actual, past and future, must be capable of being enclosed in a concept:

Every true proposition has some basis in the nature of things, and when a proposition is not identical – that is, when the predicate is not expressly contained in the subject – it must be contained in it virtually. That is what philosophers call in esse, when they say that the predicate is ‘in’ the subject. … That being so, we can say that it is in the nature of an individual substance, or complete being, to have a notion so complete that it is

94 Ibid., p. 49.
sufficient to contain, and render deducible from itself, all the predicates of the subject
to which this notion is attributed.\textsuperscript{95}

The notion of a complete concept differs, however, depending on whether we are
dealing with a material or spiritual substance, for evidently the former does not qualify
as a \textit{subject}. Accordingly we may be equipped in principle with sufficient knowledge to
produce an all-inclusive definition of, say, gold, because its primary attributes are
permanent. However, gold as a material substance commonly enters the definition of
other substances as an attribute; and lacking individuality it cannot then enjoy an au-
tonomous history.

Similarly Leibniz excludes abstract notions from eligibility, arguing that they can-
not be subsumed under complete concepts. For example, ‘kingship’ is such a notion;
but kingship is not sufficiently defined by its exemplification in a king. An abstraction,
writes Parkinson, “is not sufficiently determinate since it does not contain the other
qualities of subjects to which it is attributed”.\textsuperscript{96}

We must also devote a few words to the provenance of complete and incomplete
concepts. The latter is typically an abstraction which isolates certain features and ig-
nores others. Thus the geometrical concept of a sphere describes its essence and form
without considering the specifics of particular circumstances (such as its diameter); but
the sphere on Archimedes’ tombstone is amenable to a complete description.\textsuperscript{97} This
stands in contrast to the complete concept which derives from Leibniz’s logical doc-
trines. To the latter the criterion applies that true statements can be made about indi-
vidual substances (e.g. human individuals): but these statements are subject to the
proof postulate, and in this respect Leibniz holds that provability is \textit{a priori} even in the
case of contingent statements. Implied in this is the contention that the truth or falsity
of all statements is predetermined. Once the facticity of a particular fact is complete,
i.e. true, this shows that it was true even at the time before this conditions was ful-
filled.

Having eliminated these borderline cases, we turn now to the quintessentially
Leibnizian conception which looms so large in the Arnauld correspondence. The idea
of a ‘complete concept’ is ultimately drawn from Aristotle whose specification of a
subject as a substance is that of a collection of predicates that are unique to the sub-
ject.\textsuperscript{98} For Leibniz this is not a sufficient specification; it fails to show that the sub-
stance is possible and also that the \textit{in esse} definition entails that a true proposition is
reducible to an identical (i.e. tautological) proposition, as in the above quotation. It
goes without saying that only God can have this knowledge, for it is not possible for
us to foresee the future course of any subject and the attributes which may attach
themselves to it; nor are we in a position to establish the complete concept of any his-
torical person, because no such complete account is possible even were the subject
able to write down every thought they have for the full length of their conscious exi-
tence. There are more predicates clinging to a subject than anyone can be aware of. As
Wilfrid Sellars notes, this reflects on \textit{nameability} as a common mode of reference inas-
much as the complete concept is inextricably bound up with the principle of indis-

\textsuperscript{95} Disc. Met. §8.
\textsuperscript{96} Parkinson (1965), pp. 125-7. Accordingly Leibniz concedes to abstractions the notion of a ‘full
concept’, by which it is differentiated from a ‘complete concept’.
\textsuperscript{97} Arnauld, LA/G 39. See Sleigh, op. cit., p. 55 for a discussion of the intriguing possibility that
Leibniz might have regarded this inscription as a substance.
\textsuperscript{98} Aristotle, Categories 2a11-13.
cernibles (but not, as Sellars, writes, by way of ‘standing in relation’ to it: for naming in this case asserts a unique individual, so that any relation can only be identity). The issue of human limits in accounting for a complete concept, however, leads us at once to the conclusion that this ‘naming’ is ultimately God’s prerogative – at least to the extent of being able to affix a name to every complete concept unequivocally. Yet occasions may arise when this completeness is unnecessary for identification, for if some predicates unique to the subject are sufficiently public, they may suffice to identify the subject uniquely – e.g. Caesar crossing the Rubicon.

Thus Leibniz’s substance is an individual and a subject, which has a constantly changing cluster of accidents attaching to it. Since these must be captured by the complete concept, the whole definition is tantamount to a record of the subject’s life-long association with its predicates; so that the notion of a complete concept of a subject contains the same data as the sum of its predicates. Where Leibniz goes beyond scholastic notions is (a) in his insistence that the subject’s predicates include its entire history, i.e. all the events of its life, down to the last second,100 and (b) furthermore, all those events which might have formed part of its life trajectory, but which were contingent on the subject’s responses and decisions from time to time and therefore did not actually eventuate. This latter clause, part of Leibniz’s notorious ‘possible worlds’ suggestion, has intrigued contemporary researchers on accounts of its complex logical consequences; but we cannot enter into this discussion here and so for our purposes it must suffice to note that these bifurcations represent the set of all conceivable alternate pathways, of which one represents the actualised subject.

However, there is one implication in this which must be pursued here. This is the equally intriguing problem that there is no fixed instant at which one could take a ‘snapshot’ of the substance and gaze at its ‘present’ state, or for that matter, isolate the substrate from its predicates in any intelligible manner.

To approach this and related issues, which all have a bearing on the ontology of agency, let us begin with Leibniz’s basic proposition. The complete concept refers to the entire history of a substance as if it were all (as it must be in God’s view) a single state:

Substantial unity requires a complete, indivisible and naturally indestructible entity, since its concept embraces everything that is to happen to it, … but in a soul or substantial form after the example of what one calls Self.101

Arnauld expressed his worry that this would lead to “a necessity worse than fatal” and felt sure it was an heretical thought. In reply Leibniz stressed (perhaps ingenuously, as R. C. Sleigh surmises102) that leaving a gap in the concept for free action would surely not be beyond the means of God’s power.103

100 That this is, historically, a novel idea was emphasised by Sellars (op. cit., §1), who points out that prior to this, “capacities, powers, dispositions etc. were traditionally connected with the natures of things”, whereas Leibniz “was the first to see clearly that the individuality of a substance can only be understood in terms of episodes in its history” and that to account for its individuality, one must account for all those episodes.
101 Arnauld, LA/G II 76.
102 Sleigh, op. cit, p. 49.
103 Arnauld, LA/G 17.
Garber on the other hand has trouble with the obscurity of the quotation; but it is not so much obscure as tautological. An existent that is indestructible can hardly help being indivisible, nor being the exemplification of its own complete concept. What is apt to confuse a reader with his/her normal expectations of temporality superimposed on the text, is that these criteria ineluctably imply atemporality. Time, in Leibniz’s doctrine, is a collateral effect of events impinging on consciousness and thus an order of relations which correlates actions to each other. But in an absolute sense, i.e. in the perspective of God as creator, these acts do not comprise a temporal chronological sequence – after all, in the very act of creation, God fashioned those complete concepts with all their ‘futures’ necessarily contemporaneous. Without pre-empting later discussions, let it be said here that freedom of the will, choice and the subjects’ ability to act autonomously are nothing more to God than a network of branching pathways which are all nested in his divine mind as simultaneous possible worlds to one of which he gave his stamp of approval. Garber’s difficulties with some “truth that endures” in the relations between substance and predicates will then be seen to resolve itself in a way not dissimilar to what he suggests in this passage:

Since a complete individual concept includes facts about the future (and past) states of a substance, there must be something that persists from the past, to the present, and into the future, something that is present whenever the substance is, something to which the past, present and future can attach themselves. This something makes the substance the individual it is, and since it is that which persists in a substance, it is that which serves as a permanent subject for the concepts that make up the complete individual concept. … This something is, of course, the form or soul that unites the corporeal substance, and creates a genuine persisting individual …

But we see here the trap of thinking in terms of an ‘abiding quality’ that must from time to time be accessible – like household electricity that is always there, even when it’s not switched on. It is undoubtedly true and does meet the case in a way, but it offers nothing one would call an explanation of what this individuality is; and in particular it fails to explain how the substance, which is not influenced by outside factors, can in fact have such a history. What is the special relation of a (corporeal) substance to the events in which soul and body participate equally? Is it, as Garber proposes, “the form or soul … to which the complete individual concept attaches”? He quotes in his support the celebrated Leibnizian passage about the soul of Alexander the Great in which we find “traces of all that has happened to him and marks of all that will happen to him” – but it seems rather calculated to contradict him, for the complete concept is already laid into the cradle of the substance at the instant of its creation; and in this the predicates figure as co-identifiers of the subject. The tautology accordingly is this, that taken in its consummated sense, the complete concept of Alexander and Alexander himself are simply two names for the same thing. Leibniz, disarmingly, admits it.

2. On freedom: what is certain and what is necessary

Arnauld’s worry was not, however, entirely assuaged; and scholarly literature reflects this in its persistence with the attribution of a fully-fledged determinism to

104 Garber (185), p. 61.
105 Loc. cit.
106 Disc. Met. §8.
107 Arnauld, LA/G 30. – This is of course the point of Sellar’s interpretation cited supra.
Leibniz. On the face of it, his specification seems unambiguous – if Leibniz meant what he wrote, then the logic of the situation leaves no room for a created agent to act with any freedom at all. And to this extent the aforesaid scholarly interpretations are precisely on target – Leibniz was a determinist. What this literature omits to reflect, however, is that Leibniz changed his mind – and that he did so in surprisingly short order.

For what is this loophole to which he referred Arnauld? In the Discourse (which Arnauld never received), Leibniz tackles the problem as follows. Although God has ordered and fore-ordained every action by the agents, “one must distinguish between what is certain and what is necessary”. As we have seen, the complete concept contains every predicate, including future ones and unactualised branches, which belong to that subject, “as the properties of a circle are contained in its definition.” But whereas in the latter the connexion between the specification and an actual circle is necessary (because its contrary would result in a contradiction), the specifications of a complete concept are necessary only hypothetically – which means, a contrary action would not involve a contradiction. Accordingly, a subject’s action – say, Julius Caesar crossing the Rubicon – which is performed ‘in character’ and on the basis of the subject’s predilections, is certain but not necessary, ultimately because “nothing is necessary whose opposite is possible”. Caesar might have done differently; and the fact that he didn’t is due only to the prior fact that God so arranged matters that Caesar’s choice was approved by God long before he ever made it. Yet we might come away from this analysis with our doubts still in place, because it seems to leave the conflict between God’s choice and the agent’s choice unresolved. For all its fineness as a logical exercise, in the real world of human decisions this does not look like a leaving a gap for a genuinely free decision: for if it is pre-ordained, we can say no more of it than that it leaves us with fine illusions based on the fact that the future is opaque to us.

What remains problematic, therefore, is this: That Caesar’s choice in the example (as indeed any agent’s whatever in exercising their putative freedom) implies a decision made on the basis of inner dispositions and external circumstances, some of them in conflict with each other, which is free to the extent that in the agent’s consciousness there is an awareness of himself being required to perform one of several actions at his option, or to perform none of them. Whatever his decision the outcome is incalculable in its consequences, as well as in its wider ramifications in respect of the thousands or millions of agents whose future depends on Caesar’s action. Thus from Caesar’s point of view, there is no God commanding or approving or having pre-ordained his decision: it was entirely his own. To Caesar, accordingly, Leibniz’s thesis would seem like a supererogatory explanatory layer: it would seem quite indifferent whether pre-ordination was involved or not, since he was one way or another obliged to follow his own inner dictates and the force of external circumstances, which was difficult enough. Yet this is surely cold comfort within the tenets of Leibniz’s philosophical determinism. For when it is seen as from the throne of God, the agent’s freedom is purely nominal, and thus the clash remains. In neither of these doctrines can the agent be said to be ultimately free in the sense of having a genuine choice in which no pre-determination is visible even to the philosopher. So to this point we have to admit that the philosophical challenge remains standing.

108 All quotations in this paragraph from Disc. Met., §13.
As his continuing engagement shows, Leibniz himself was not insensitive to the predicament. The ‘loophole’ issue was obviously the key factor; somehow this would have to be rationalised in some other way, more cogently than the *Discourse* had achieved. And so we find in a slightly later paper a modified attack on the problem:

There is an essential distinction between necessary or eternal truths, and truths of fact or contingent truths; they differ from one another very much in the way that rational numbers and surds differ. For necessary truths can be reduced to identical truths, just as commensurable quantities can be reduced to a common measure; but in the case of contingent truths, as in the case of surds, the reduction proceeds to infinity and is never terminated. So the certitude and perfect reason of contingent truths is known only to God, who grasps the infinite with one intuition.\footnote{Spec. Disc., P 75.}

The reference to surds provides us with a first hint as to the direction in which Leibniz’s thinking is now turning. In a manner of speaking, it pries open the oyster shell of the complete concept to allow access to non-terminating strands among the subject’s predicates. A new consideration enters the picture. Compare the analysis of a mathematical proposition: “Just as a larger number contains another which is incommensurable with it, though even if one continues to infinity with a resolution one will never arrive at a common measure, so in the case of a contingent truth you will never arrive at a demonstration, no matter how far you resolve the notions [included in the concept].”\footnote{Nec. Cont. Truths, P 97.} About this insight, Leibniz writes, “I think I have disentangled a secret which had me perplexed for a long time; for I did not understand how a predicate could be in a subject and yet the proposition would not be a necessary one.”

It is clear from this that contingent propositions can be understood *a priori* only by an infinite mind. There is, however, a class of propositions which constitutes in some ways an exception,

for there are (and can be inferred by induction) certain propositions which are for the most part true; there are also propositions which are almost always true, in the course of nature at any rate, so that an exception would be ascribed to a miracle. Indeed, I think that in this series of things there are certain propositions which are true with absolute universality and which cannot be violated even by a miracle. This is not to say that they could not be violated by God, but rather that, when he chose this series of things, *by that very act he decreed that he would observe them*, as the specific properties of just this chosen series.\footnote{Ibid, P 99.}

This is an extremely important concession on Leibniz’s part. If God is the supreme rational being (as unquestionably he is), and we, as his creatures, are imbued with at least the capacity for understanding his cosmos in its rationality, then it is clearly important to see that God could not condone the higgledy-piggledy of miraculous intervention in lawful processes – on Leibniz’s notion, miracles are miracles only because of some undiscovered connection among natural processes that would cease to be regarded as miracles once we understood their logical integration into the final cause. And this has implications for a different notion of freedom which is edging its way to the light and is further adumbrated by Leibniz’s urging in the same paper that “from the first essential laws of the series ... and subordinate laws of nature which have only physical necessity ... are inferred others whose universality is still less; ... but never by...
any analysis can one arrive at the absolutely universal laws nor at the perfect reasons for individual things; for that knowledge necessarily belongs to God alone.”112 And “since the fact that the series itself exists is contingent... its laws will also be contingent in the absolute sense; but they will be hypothetically necessary and will only be essential given the series.”113

How does this impinge on the scope of freedom available to a subject? It transpires that on the heels of the above comes a quotation with perplexing import:

But free or intelligent substances possess something greater and more marvellous, in a kind of imitation of God. For they are not bound by any certain subordinate laws of the universe, but act as it were by a private miracle, on the sole initiative of their own power, and by looking towards a final cause they interrupt the connexion and the course of the efficient causes that act on their will ... so the course of the mind’s thoughts is changed by its free will; so that, in the case of minds, no subordinate universal laws can be established (as is possible in the case of bodies) which are sufficient for predicting a mind’s choice.114

Something is coming to the surface in these surprising words which finds further elaboration in a gradual adjustment of focus on what precisely Leibniz purports to understand by the complete concept of an individual substance. Still in the aforementioned paper, he gives us a fascinating analysis of how it may be possible to reconcile the apparent disparities in the freedom of subjects while they are yet in the grip of the pre-ordained network of the sum of all complete concepts. The ‘loophole’ is clearly widening:

Although it is most true that the mind never chooses what at present appears the worse, yet it does not always choose what at present appears the better; for it can delay and suspend its judgement until a later deliberation, and turn the mind aside to think of other things, which of the two it will do is not determined by any adequate sign or prescribed law. ... From this it can be understood what is that ‘indifference’ which accompanies freedom. Just as contingence is opposed to metaphysical necessity, so indifference excludes not only metaphysical but also physical necessity ... it is not a matter of physical necessity that men should choose something in this life, however specious and apparent a particular good may be; though there is sometimes a very strong presumption to that effect. It may indeed never be possible for there to be an absolute metaphysical indifference, such that the mind is in exactly the same state with respect to each contradictory, and that anything should be in a state of equilibrium with, so to speak, its whole nature. ... Yet this mind has this much physical indifference, that it is not even subject to physical necessity, far less to metaphysical; that is, no universal reason or law of nature is assignable from which any creature, no matter how well-informed about the state of this mind, can infer with certainty what the mind will choose.115

This is an indication that Leibniz’s intensive labyrinth studies brought before his mind the puzzling truth that it can be a feature of the mind’s inclining that it will eventually tilt this way rather than the other way (or not tilting at all) without having a

112 Cf. the discussion of phenomena giving rise to phenomena in Part I, B §1.
114 Ibid, P 100-1.
compelling reason in the background to urge its preference.\textsuperscript{116} Or, differently put, that decisions can at times hang in a balance so delicately poised between equally persuasive reasons that a perfect equilibrium prevails and only the \textit{spontaneous expression of will} can resolve it. We find examples of this in the discussions of \textit{perceptions petites} in the \textit{New Essays} and elsewhere; and it also throws an intriguing light on Leibniz's solution of the related conundrum of \textit{Buridan's Ass}, which is a fine specimen of the underlying malaise. According to Leibniz, the beast will eventually come to a decision, because the presupposition of the indiscernibility of the two stacks of hay being offered to it is untenable for the reason that there is only one condition under which this is even conceivable, namely, if the ass were at that moment standing at the exact line which divides the universe in half and that it runs longitudinally through the exact centre of its body. This is plainly impossible; but for a mind confronted with an irresolvable dilemma, the decision does not rest on the apparent physical sameness of each object of choice (i.e. an impossible absolute symmetry of the bifurcation), but rather on the metaphysical need to resolve the equipollence of an \textit{asymmetrical} relation whose bifurcation leads to incompatible futures – in other words, the objects of decision are ‘equal’ only in the metaphysical sense that they have equal weight \textit{for the subject}.

In the cited paper, the above passage is augmented by an argument, the gist of which is as follows. Whatever is perfect in us human subjects, i.e. spirit, is owing to God; but as creatures we are beset by limitations owing to the fact that we comprise spirit as well as body mass. As physical beings we are accordingly subject to the laws of physical necessity (a human body in free fall obeys the same law of nature as a stuffed doll). But mind is not a subject to those laws, hence the plausibility of metaphysical ‘indifference’ as above. Now the difficulties we found Leibniz’s earlier account (to what extent is Julius Caesar’s decision at the Rubicon absolutely his own?) involve in fact a contradiction which none other than Leibniz himself articulated in consummate detail:

God understands perfectly the notion of the free individual substance, considered as possible, and therefore he decides to accommodate to it his predetermination in time, it being granted that he decides to admit it among existing things. But if one examines the innermost reasons a new difficulty arises. For the choice of a creature is an act which essentially involves predetermination, without which it is impossible for that choice to be exercised; further, we cannot accept the placing of an impossible condition on the divine decree. From this it follows that God, whilst he foresees the future choice of the creature, by that very act foresees his own predetermination also, and so his own future predetermination; therefore he foresees his own decree, insofar as all contingent things essentially involve the divine decree. Therefore he would decree something because he sees that he has already decreed it, which is absurd.\textsuperscript{117}

In the paper this culminates in a rigorous demonstration of how nonetheless God defeats this contradiction and thus saves Leibniz from having to come down from his present hobby horse of total determinism; but this is of less interest than the admi-

\textsuperscript{116} Another text by Leibniz proceeds on similar lines, viz.: “It can scarcely be doubted that every person has the freedom of doing what he wills. ... There is no volition where all the conditions requisite for both willing and being unwilling are equal. Rather there is indifference, that is, even if all the conditions requisite for acting are assumed, an action can be prevented if contrary conditions obtain. A person resists reasons through forgetfulness alone, that is, by turning his mind away from them. And so it is indeed possible to resist reasons.” \textit{Freed. Post.}, AG 19.

\textsuperscript{117} Ibid, P 103.
sion we find in *On Freedom*, written some three years later, that “I was not far from the view of those who think that all things are absolutely necessary; who think that security from compulsion is enough for freedom.” The ‘loophole’ is now taking on the appearance of a crack in the facade, for this passus virtually amounts to an admission by Leibniz that his former ultra-deterministic stance, of which the complete concept is the perfect exhibit, cannot fully answer to the conception of radical contingency to which he was being led by his forays into the “labyrinth of the continuum”.

But the principal *philosophical* outcome was a change of focus – away from the complete concept which together with its associated notion of predestination slowly fades from sight, and towards a closer reliance on the more malleable conception of

the *law of the series*, which is simultaneously wrenched out of its dependent status vis-à-vis the complete concept. This change of focus obtains, for example, in the revealing passus below:

> In the case of contingent truths, even though the predicate is in the subject, this can never be demonstrated of it, nor can the proposition ever be reduced to an equation or identity. Instead the analysis proceeds to infinity, God alone seeing – *not indeed the end of the analysis, since it has no end* – but the connection of terms or the inclusion of the predicate in the subject ...

Reading between the lines and focusing on the (added) italics, it is not difficult to establish that here we have a clear inkling of Leibniz struggling through to the notion that *it is not a truly necessary condition of God’s omniscience to analyse an infinite series to its end*. The later German idealists (Fichte, Schelling) will identify this faculty of instantaneous grasp of unanalysable concepts with ‘intellectual intuition’.

Thus to this point we have been in the presence of a notion which holds the substance to be the ontological embodiment of its complete concept. There is no doubt that this is commensurate with Leibniz’s conception at the time of his exchanges with Arnauld; but it no longer met his metaphysical intentions thereafter for a number of interesting reasons. Most important among these is that the perfect freedom of God turns out to be largely replicated in individual subjects, and this has ramifications to which the notion of a deterministic complete concept posed a severe roadblock: essentially the self-contradiction between the idea of agency itself and its articulation in terms of a matrix of pre-ordained constraints on its full expression.

3. *Sum of predicates or system?*

Returning momentarily to the platform from which we set out on this foray: If the substance is the sum of its predicates, we seem to have lost something – namely the ability to articulate the concept of substance as something ‘in itself’ which is the very thing that worried Garber (see above). Firstly, it is impossible to interrogate the substance at any particular moment on its present state; or, to put it into different words, to write a specification of the instantaneous composition of the substance including its present predicates and accidents. The complete concept cannot, it appears, denote at any specific moment its content, and therefore seems a sum-of-contents merely in a nominal sense rather than in the sense of an actual uniquely specifiable existent. Further, what precisely is assumed in this description of continuously changing attributes

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118 *On Freedom*, P 106. This is the quotation which includes the famous claim that he was “dragged back from this precipice” (Spinozist determinism) by the discovery that not all possibilities must exist now or indeed at any temporal juncture whatever.

Clearly if only God has complete knowledge of all the possible predicates that may enter its specification, the concept becomes unstateable for us humans. And then the question arises how we may locate this unchanging substrate, i.e. that absolute inhering quality which serves to identify the subject’s individuality apart from its predicates. For the notion of inherence brings with it a logical dilemma that the subject must be a plurality; and further that the accidents are of indifferent specificity themselves: in other words, are not determinable within that unique context, but are indifferently associable with this or that substance. The invitation lies to hand to look upon the term ‘substance’ as meaningless in such a context.

These are features of the problem which engaged Leibniz’s attention. To surmount these difficulties, we must use a different tack than the quasi-mechanical notion of accidents ‘attaching’ themselves to a substance to form a whole and look on the problem from a different orientation. What Leibniz names sujet commun is in this orientation not a sum but a system of predicates and accidents. The substance can then be re-defined as the principle of its own organisation of its attributes and predicates. Thus a substance is an instantiation of that system principle. The system and the complete concept comprise, in this point of view, two different ways of understanding the same process, where the latter yields the former as an explanatory modus operandi: System implies direction and a final cause and (though still rather vaguely) a certain selectivity in the harvesting of attributes. Of such a substance may be described, at least in principle and approximately, the moment which is transpiring ‘now’ in the progress of its life cycle.

However, this solution brings problems of a different kind in its train. Where they lie may be indicated briefly by analysing the idea of an instantaneous snapshot, in which it will be revealed that the solution of the preceding paragraph is only a halfway house – a solution which eventually points beyond itself.

The concept of a system is that of a plurality of interdependent processes whose joint activity comprises an integral whole. Implied therein is (a) their complete hierarchical cooperation and (b) their relative functional autonomy. Point (a) denotes the dependence of each process on all others in the sense that none can be said to be capable of a function unless all other system units contribute to that function. Point (b) in turn signifies that no functionality in the system is duplicated. For this to make sense a constant percolation of system properties must be assumed. But it is an ineluctable feature of the latter that no single process is ever complete (achieves an independently meaningful state) without simultaneous reference to all other process states; so that the only way one can legitimately enquire about ‘states’ in the system is to enquire about the whole system state.

Yet on the same logic it cannot be assumed that any such ‘system state’ could ever be ‘frozen’ in an instantaneous snapshot, i.e. subjected to an interrogation of its state, since patently there is no single such instantaneous ‘whole system state’. We can draw for illustrative purposes on the system of an animal body and query it on its present system state at, say, the instant of killing it. It will be evident from the most rudimentary biological knowledge that even on the point of extinguishing the principle of organisation which confers life on that body, innumerable (millions if not billions) of its subprocesses will continue to function, each according to their inherent rhythm (but

of course as ‘freenwheeling’ processes, since they are no longer coordinated), until the
resources of the whole system are utterly depleted – and this occurs not at a finite
moment, but on different time scales for all members of the ensemble, whose cessation
in turn depletes the resources for processes still in operation. So the conclusion is
plain: that no enquiry can be made on the system state of that corporeal entity. In a
sense it would be legitimate to say that the flow of information through the whole
system is being flushed out: but traces of it remain active for some considerable time
afterwards even while the principal motor and organiser has become fatally dis-
abled.  

Considerations of this sort point the limitations of the complete concept, even in
its final incarnation as a system. This is because the principle of the interconnected-
ess of all predicates and accidents of a substance necessarily designates a dynamic
entity, but the complete concept fulfils this criterion only partially and reluctantly. To it,
the critique of Bertrand Russell applies, who said that if one rejects the sum of predi-
cates notion, one is left with a mere causal chain.  

But evidently this is vulnerable to the objection that a causal chain does not confer either unity or coherence; indeed there is a scarcely a serious objection to conceiving of it as a succession of indiffer-
ently contiguous events lacking all connection except their coincidental impinge-
ment.  

In short, the proposition that substance \( S = p_1, p_2, \ldots \) does not vouchsafe the
emergence of a system, but merely of a collective, unless the predicates can somehow
be unified as a logical whole. Accordingly it is necessary to find some principle of
identity which defines the predicates as necessarily and uniquely integrable and identi-
able with a particular substance.

4. The substance as generatrix of its predicates

After a decade of fruitless struggles with the complete concept, Leibniz had come
to this recognition himself. Namely, that something more integral than ‘attachment’ or
‘community’ is required to solve this dilemma. The solution he aimed at – the dynami-
sation of the principle – greets us in a letter to de Volder,  

where he states that the predicates are not in the substance “unico et invariata modo”, but rather that their se-
quence and organisation must proceed from a principle in the substance itself. What is an-
nounced here is that it must be possible for a reason to be given by recourse to the nature of

121 The idea of an instantaneous snapshot may also be usefully illustrated by considering an actual
photograph of an object in motion before a stationery backdrop, e.g. a sprinter and spectators
in their rungs. Depending on the use of a fast or slow film, one of two kinds of picture would
result: (a) a sharp image of the runner with the background in a blur, or (b) a blurred patch in
front of well-defined spectators. With the first, what we see is, objectively regarded, an athlete
standing still and balancing on one leg; in the other a man-sized fog being watched by a well-
focused audience. In both cases the essential feature – the movement of the sprinter – is indisc-
cernible (our awareness of motion coming from our extrapolation of experience upon the still image). But the lesson of even this simple example relative to ‘system states’ is the impossibility
of ascertaining the rhythm of events in the picture, hence the indeterminability of the instanta-
neous state of the system comprising athlete and audience. A comparison of the two pictures
cannot in itself determine whether it is the sprinter or the audience which is in motion; yet
under objective criteria (the runner passing smoothly through that instant) there is strictly
speaking no instant at which that runner can be said to stand still as one of the photographs
suggests and thus to reflect accurately the ‘state’ of the whole system.

122 Bertrand Russell: A Critical Exposition of the Philosophy of Leibniz, George Allen & Unwin, Lon-
don 1900/1937, p. 48.
124 Gurwitsch, op. cit., p. 301.
125 De Volder, G II 262-5, I. 533ff.
the specific substance why, when and how certain predicates and accidents become affiliated with it. – This is a very different way of thinking about substance: namely, not as a collecting pool of appropriate attributes or even as a system for their proper disposition and organisation, but as the agent of generation of its own unique set of predicates and accidents.

The transformation of this conception from its previously static ontological aspect to an agency-generated system of predicates henceforth occupies Leibniz’s attention as a conception that is more in tune with his ‘worlds within worlds’ thinking.

This defines the moment when, after running the complete concept and the law of the series in tandem over a stretch of years, Leibniz broke through to an understanding of the latter as unrelated to and indeed superseding the former – a recognition not without its measure of pain as the staunchly deterministic façade of his thinking was jolted out of its hitherto somewhat complacent certainty that the two are merely facets of each other.

We can see this at once when the two prominent features of our account of eigen-force – as the vehicle for the dynamics of agency and for the generation of phenomena from the activity of the monads – are integrated as per their design. The law of the series is more than just the correlation of a persisting substrate with a multitude of accidents,126 for the substance does not correlate accidents which so to speak come flying to it as birds to their nest. This would be presupposing that accidents might have existence of their own, which is patently absurd; and thus in consequence of their phenomenal status (for all accidents must be phenomenal in one sense or another of Leibniz’s aforesaid taxonomy), the substance instantiates them in a continuous emanation of its activity. This is but another way of saying that the substance is the law of its series in the full ontological equivalence of this statement. To substitute the word ‘has’ or ‘implies’ for ‘is’ already seriously compromises that equivalence. Thus: “All individual things are successions and are subject to succession.”127 And: “[A substance is] a primitive entelechy … whose nature consists in a certain perpetual law of the series of the changes through which it runs unhindered.”128

The law of the series thus transforms the ‘system’ from a fixed and merely kinetic principle of organisation to a fluid, dynamic and indeed complex process. The new principle is that the system ingenerates accidents and predicates, this being the only avenue towards the upholding of the laws of indiscernibles and sufficient reason.

“Nothing can be deemed a substance which merely characterises a present state (e.g. a spatial figure),” writes Gurwitsch,129 which agrees with the connotations we have articulated above relative to the designation of ‘system states’. The law of the series is a law of evolution, of unfolding; and accordingly it would be a catastrophic misrepresentation to see in it something that ‘happens to’ the substance. As an analogous example: laws of nature do not ‘happen’ to a body, since they are not events but objective conditions which limit what kind of events can occur in such a situation (including what kind of accidents may arise from it). And similarly again, comparison with mathematical functions shows that the law of the series engenders an infinitude

126 As Cassirer understood it: op. cit., p. 186f.
127 De Volder, G II 263, I. 534.
128 Ibid, G II 171, I. 517.
129 Gurwitsch, op. cit., p. 304.
of derivatives from any variable inserted into the equation e.g. of a curve, that value representing the unique trajectory of that curve.130

Accordingly the substance, understood as the generatrix of its accidents, has its ontological being in this functional manifestation. Moreover, in its application to the soul the law of the series is nothing other than a redefinition – that is to say the dynamisation of the complete concept. The transformation, as we now understand, involves the principles of agency and self-actualisation, both of them infinitary in principle, but in practice constrained by the individuation of those substances which so to speak 'make the grade'. The difference in this latter context demarcates virtual and actual existence, or possible and actual worlds, of which the last-named is of course the one actual cosmos.

Gurwitsch adds a very pertinent rider that may legitimately be appropriated to substance so understood; namely that the monad is the natura naturans of its accidents, or in Leibniz’s characterisation “substantia ideans”. Inasmuch as the accidents emerge from its activity, they comprise in turn the natura naturata.131 The monad as “a being capable of action” is a being that unfolds its law of the series, this comprising another term of Leibniz which we shall encounter again in the continuity section. It may be briefly discussed here in the context of life, as an exemplification of Leibniz’s principle that a monad cannot be annihilated on its own, but only as a member of the total collective of monads (all monads together, once and for all).

The question arises on the telos of this unfolding, bearing in mind that embodied souls have such a telos and that altogether Leibniz’s philosophy, including his natural philosophy, is driven by teleological considerations. The answer is that for Leibniz the vocable ‘life’ bears more than one semantic. In the meaning to which we are accustomed, namely creature life, the principle holds that this form of life represents an organisation and thus an ‘unfolding’ of clusters of monads into the spatiotemporal amplitude of conscious Dasein; so that death is explained by the converse, namely ‘in-folding’ or disintegration of the organisation:

There is never, strictly speaking, absolute generation nor perfect death, consisting of the separation of the soul. And what we call generation is a development and a growth, while what we call death is an envelopment and a diminution.132

The effect of this understanding is, however, that some minuscule forms of life that are strapped to this larger organisation need not share in its demise; nor does it affect the individual monads, which are simply 'let loose'.133 In this respect the narrow conceptuality of telos defended by Parkinson is put in question, whose explication disregards this differentiation.134 In sum, the telos of an organised ensemble such as an

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130 This comparison is apt in the particular sense in which it is offered, although it limps, of course, in the other respect that a curve is repeatable, and therefore not ontologically unique. However, Leibniz himself was fond of drawing analogies of this kind, cf. de Volder, G II 263, L 534.
131 Gurwitsch, op. cit., p. 309.
132 Mon. §73.
133 A better word would be ‘recycled’; in which context it is noteworthy that the idea of a plenum is certainly well exemplified in the biological realm, where substances either find new employment in other living environments or else fall to bits into their atomic constituents (and here it is intriguing that biochemistry has recently discovered many new uses for carbonaceous ensembles that have returned to ‘matter’ status, e.g. petroleum, plastics etc.).
134 Parkinson (1965) writes, p. 172: “A substance is such that it is ideally possible to infer from any of its states to its past and future states, and that it can only be explained how this is possible if the substance is regarded as having an end for which it strives.” He then compounds this error by comparing monadic states with the states (positions) in a chess game, which permit similar
animal or vegetative body may well exhibit that organism’s striving towards its own final cause, but this is not a telos that has any specific or individual meaning for the monads themselves.

It remains to be added that the law of the series appertaining to a monad, and the monad itself, are ontologically equivalent. This extends to the fundamental criterion of atemporality and nonspatiality. This is more intuitively apprehensible in the case of the law than of the monad; but as we have already seen, the difficulties entangled with these notions are more imaginary than real. As much as spatiality is grounded in perceptions which depend on the dimension of existence in which these perceptions eventuate, so temporality is the outcome of activity and the associated perceptions of simultaneity and succession. Jalabert purported to understand this in terms of the transcendence of temporality, in which the monads, in process of engendering their accidents, engender duration as the logical correlate of their order of succession. But this idea has to be handled with care, since temporality applies solely to accidents; the substance itself can no more be affected by it than the law of the series. Substances, in a word, generate accidents, but are not determined by them.

5. Individuality, autonomy and the law of the series

The law of the series is governed by limits. In this idea we see the germ of many misunderstandings, such as the importation of a faulty notion of telos into the lifespan of a single monad. In the context of a monad, the term has no connotations of telos whatever, but simply represents the constraints upon the monad in its endeavour for self-actualisation. As mentioned before, there is no invitation expressed in this to ‘look at’ a monad engaged in this process for the purpose determining its present state and to ascertain the stage it may have reached en route to full actualisation. There is no such definitive or even transient state or stage that could be isolated as a temporal ‘now’ – the process never ends. This was overlooked by Jalabert when he proposed that the substance may be understood in two ways, firstly as the law and source of its modifications and secondly as substrate and/or principle of inherence. But we have already seen that the latter is altogether incompatible with the conception of the monad as ontologically identical to its law of series. Hence ‘limits’ refers solely to the capacity of the monad to attain one or another degree of ‘perfection’.

We should now be in a position to articulate the essential difference between the complete concept and the law of the series. An intuitive approach would at once point to the former as of the character of a graph, tracing the consummated trajectory of a curve and indicating its innumerable bifurcations as unconsummated possible pathways. Clearly, however, this curve does not represent an evolutionary process; it was so to speak already consummated before the initialisation of the substance whose ‘career’ it represents. In effect, every possible event in that substance’s existence was and is known in principle from the very onset of its mapping, since it has only one true track. For us humans, the bifurcations represent contingent alternatives; but it is not in the nature of a complete concept to include them as actually feasible alternatives.

inferences upon past moves and future stratagems; but in this he remains fully unmindful of the crucial incompatibility between chess, where positions are frozen while the players ponder their moves, and the incessant activity of all constituents of a substance even in the midst of what we might call an ‘instant’.

136 Jalabert, op. cit., p. 139ff.
137 Ibid, pp. 60, 70, 151 & 233.
The complete concept is in fact an ultra-deterministic structure, which to an omniscient intelligence harbours no secrets or loopholes through which a genuine contingency could creep in. In God’s mind, accordingly, the sum total of all complete concepts represents the sum total of compossible existents; and those which are actualisable with the greatest parsimony of exertion while yielding the richest results, are the ones which he decided to actualise. Logically, according to Leibniz, this would have to be the existing cosmos; and logically there can only be one such cosmos, namely the one in which we live.

The problem for Leibniz is that this rigid structure is in a certain sense a thing. It bears resemblance to a great machine in which all parts play out their predetermined function with the whole ensemble reposing in perfect symmetry and directional reversibility — and then what? There is no saving grace in it such as a little elbow for substances to exert their individuality which is, after all, what their authentic being presumes for them. Despite Leibniz’s efforts to extrude a logical notion of freedom from this, it remains strictly pro forma — when ‘cashed in’ it transpires not only that all possible variations of activity are already included in the complete concept, but the substance as a subject cannot help executing whatever course of action is predetermined for it by the law of compossibility. None of its ‘decisions’ is free in the true sense of the word; they are merely exemplifications of the old saw of the ‘straw that broke the camel’s back’: e.g. whatever the accumulated pressure of its perceptions petites brings to the fore as plausible or indeed compelling, this is what the subject will do — and this too is thoroughly predetermined. But plainly this renders all considerations of the spatiotemporality of phenomenal existence pointless: for whether time or space exist, are real or illusory, is perfectly indifferent to the determinations. In short, the idea of the complete concept is an odd bedfellow to the idea of physics; it puts into doubt why we need a physics at all. To itemise it further than has already been done seems pointless — and the more so since Leibniz himself failed to make the complete concept mesh with his physics and by the 1690s had practically abandoned it.

Viewed from the throne of God, it might seem that refashioning it into the ‘law of the series’ which every substance enacts, is merely a minor readjustment. But this involves a serious misreading of what is entailed in the notion of contingency which the law of the series liberates from the constraints of the aforesaid determinism. In any case, the law of the series is not compressible into a pithy little picture like the complete concept. As a provisional helpmate, the idea of an algorithm offers itself; and it suits inasmuch (as we know today), some types of very simple algorithms are capable of generating structures of mind-boggling complexity.\(^{138}\) We shall return to this intriguing possibility in a moment.

But first, a description of the law of the series can be offered in terms as simple as that which applied to the complete concept. As a prior condition it is ineluctably necessary for the individuated law of the series not to incur the liability that the principle of indiscernibles suffers exceptions. It is not superfluous to stress that this principle is one of the pillars which sustains the whole edifice of the Leibnizian metaphysics. It is not therefore the trajectory of the complete concept which ensures this — even assuming it could\(^{139}\) — but the law of the unfolding of individuality which, as its fundamental cri-

\(^{138}\) E.g. the algorithm required to generate the Mandelbrot Set takes no more than four short lines of simple code.

\(^{139}\) It is perhaps arguable that the complete concept of an individual substance, despite its seemingly inexhaustible variety, is truly capable of yielding the maximal richness Leibniz stipulates
terion, leaves every decision of the substance entirely free. The law for the accomplishment of this principle is startlingly simple. It is that the activity of monads generates an information flow of which, necessarily, every scintilla is unique owing to its spatiotemporal monodirectionality. Hence it is asymmetrical and irreversible; for it represents the process from minimal laws to maximal perfection. Thus it reflects the principle of becoming, or continuous self-creation. Evidently no indiscernible identities are possible in such a scenario. The point is, however, that ‘information flow’ denotes by definition the necessity of free choice, for information is not things, but conditions of choice – an infinite multitude of conditions, each of which is unique to itself. Self-evidently ‘information’ is a meaningless term in the absence of perceptions capable of discerning and evaluating it; it entails a relation between itself and a subject. Hence every subject in the throes of self-actualisation cannot help taking at every step a decision that is entirely conditional in an infinite multitude of ways and thus have no opportunity for ever duplicating an event actualised by another subject.\(^{140}\)

The hinge of difference between the two concepts is thus seen in the safeguarding of the indiscernibility principle. For although both the complete concept and the law of series appear to vouchsafe it, the former obliges the Creator to exert total and infallible control beforehand to ensure that not the faintest possibility of infringement occurs; whereas the latter can guarantee indiscernibility effortlessly and thereby offers a perfectly transparent sufficient reason to a divine intellect with an instantaneous intuition of the non-repeatability of contingent possibilities and non-terminating series. The setting up of laws of series throughout all of the cosmos’ infinite pathways and dimensions would require nothing more.

In a word, asymmetry is the logical hinge on which irreversibility is predicated; and monodirectionality guarantees it, so to speak without even trying. This is the crucial difference to the complete concept, which must be wound back by the Creator prior to actualising it. And now the most convincing argument in favour of the law of the series is the very minimax principle which, according to Leibniz, God adopts in the foundations of his cosmos. It seems highly questionable in the context of this principle that God must be obliged to create the world idealiter and then again realiter in every detail – including the infinite totality of all unactualised alternate worlds – when a handful of code setting both initial conditions and boundary conditions would suffice!

6. The law of the series as an algorithm

One way this could be accomplished involves the devising of an algorithm which executes certain functions based on the momentary state of an individual substance. The algorithm picks up that state as a value and performs an appropriate incrementation by reference to contingent functions. We may add as many logic gates as desired, so that the substance may exercise choices from among a variety of optional pathways. In this feature the law of the series obviously differs from the EITHER/OR/AND func-

\(^{140}\) The crucial difference between information and ‘data’ is frequently disregarded in today’s information science and thus conduces to confusion and eroding of the demarcation line between living and non-living entities. E.g. a computer is not an information system, but a data processing system. Whatever information there is, has no meaning to its operations, but only to the operator.
tions we program into our computers; but then we are assuming God’s insights to exceed those of our present-day technology.\textsuperscript{141}

However, a crucial element is still lacking in this picture. It suggests that the law of the series cannot have a first state, unless God artificially manufactures one for each substance.\textsuperscript{142} But this seems a pseudo-argument, for Leibniz repeatedly claims that all monads are created at once and in their most primitive state, so that nothing more is required than to endow each monad with a unique \textit{initial condition} from which all other contingencies proceed.\textsuperscript{143}

Two further items of interest invite comment. Firstly, the foregoing suggests that actual creation by God is not necessary in the way we understand it from tradition: for both ‘creation’ and ‘annihilation’ can be written into the script itself by a single ‘start-up’ or ‘terminate’ function conditionally picked up by the law of series. If this is written into all actualisable monads simultaneously, then clearly all of them will execute their own beginning and/or end. Secondly, it offers a rational way (which would undoubtedly have won Leibniz’s approval) of permitting ‘miracles’ to occur once in a while. As Cover and O’Leary write: “Let suitable arguments for immanent functions in the created order be two-place. One place is occupied by a state belonging to a substance … the other state is occupied by a divine decree.” Then one decree can be ‘bland endorsement’, another the insertion of a ‘miracle decree’.\textsuperscript{144} This would accordingly represent a kind of ‘auto-intervention’ by God in case of undesirable events developing – but in a manner which removes the stigma of fiddling with the system which Leibniz was so radically opposed to.

Now it is evident that this account leads us back to the beginning – so to speak to the spark in the Creator’s mind when it pleased him to set up these conditions and confer actuality upon the world of his choice. That decision must have favoured the method just described; and we might be curious how Leibniz sees this as having come to pass.

\textsuperscript{141} J. A. Cover and John O’Leary-Hawthorne, in their book \textit{Substance and Individuation in Leibniz}, Cambridge University Press 1999, p. 229, do not concede this foresight to God and describe only a one-function setup, which yields an evidently fully deterministic routine. In every other respect, however, the chapter in question is an innovative account of the problems raised by treating the law of the series as a sequence of law-functions.

\textsuperscript{142} Ibid, p. 230.

\textsuperscript{143} Since this description appears to conflict with earlier remarks in denial of the possibility of discrete states, a (provisional) clarification seems called for, ahead of its elaboration in Part III. Thus each ‘state’ of a monad expresses a point of view on the universe; in this the monad takes itself to be ‘at rest’, relative to all other motion. In the larger perspective, however, the monad is a single embodiment (\textit{vis viva}) of the law of conservation, so that insofar as it is a temporal continuant, it preserves the total motive force in the universe by action and reaction. While therefore it is true in one sense that “no moment can be assigned at which it acts”, as Leibniz confirms in the \textit{Paidicus}, “yet it is true that it will always be possible to draw an imaginary line each instant … [and] that line will endure in the same parts only for this instant, because each part has a movement different from every other.” (A iv 310). But in that instant, returning the subject’s perspective, “it is as if the present state were all one.” If in addition we bear in mind the ‘confused perceptions’ which assail the subject continuously in the form of \textit{perceptiones petitiones}, then the instant at which the monad may be said to exhibit a state, is that moment at which one of these impingings on its consciousness and elicits a distinct (and unique) reaction. As (finally) Leibniz explained to de Volder (L 536), instantaneous parts do not constitute an existent, hence temporal continua are \textit{not made up} of states; but they are the foundations from which existents arise.

\textsuperscript{144} Ibid, pp. 238-9.
We can begin with the plenum of all possible substances in which actuality is laid down as a contingent possibility. Evidently this does not include the specification of actual existence. Rather, it denotes the substances’ claim to existence, the conatus or striving for Dasein. But this claim depends for its realisation on two criteria: namely the degree of perfection attainable to the individual substance and, secondly, its com-possibility within the scheme of any realisable cosmos. The divine will accordingly acts as an umpire of this universal contention among substances for actualisation, i.e. the concession of actual existence – for which Leibniz’s own word is combat:

 Upon God’s decision to proceed to creation, all possibles came into contention with each other, since all strive for real existence; and in this conflict those disporting the highest degree of reality, perfection and rationality emerged triumphant.

Naturally, Leibniz adds, this ‘combat’ is carried out in an ideal plane, since it can only be understood as a contention of reasons taking place in the mind of the supreme rational entity. The Creator’s decision (mathesis quaedam divina) was then to actualise the one possible world which is characterised by the most parsimonious ‘input’ of laws which at the same time generates the most ample abundance of phenomena.

In these various descriptions one thing is very clear: that from the moment of inception of the whole collective of substances, when their collective laws of the series are laid down, a certain autonomy was already conceded to each individual by the Creator. Even prior to the actualisation by the Creator of the Dasein in which the successful monads find their place, they must have organised themselves into an infinitude of possible worlds within the constraints set by God. For example, it would not make much sense to attribute to God the will to allow a world to be brought into being in which the moral good predominates unless he chose among alternatives inclusive of good and bad (and evil) such a mix that would satisfy him as to the constitution of one best possible world. Autonomy seems therefore not merely a concession, but indeed the central and indispensable characteristic in the creation of a world founded in the principle of agency in which the free choices of these agents are an indispensable ingredient.

Therein at length lies the answer to the problem which animated David Blumenfeld. Perplexed at the texts before his eyes, he writes, “It seems that it is the nature of the possibles and nothing more that guarantees that the best world will exist. We have already seen that Leibniz says that essence tends of itself towards existence and that as a result anything possible will exist unless something else with which it is incompatible prevents it. This suggests that no external force such as the will of God would be required to actualise the possibles.” Clearly Blumenfeld put his finger on the pulse of something important here, but then failed to acknowledge it through trying to reconcile what he sees as inconsistencies among Leibnizian dicta. (And most annoyingly to him, the ‘secret doctrine’ exhibits the same propositions as the ‘public

145 Résumé, §§5-6, P 145; Rad. Orig., G VII 303, L 487.
146 Princ. Gr. §10; Mon. §54; Rad. Orig. loc. cit.
147 Théod. II 201, G VI 236: “L’on peut dire qu’aussitost que Dieu a decerné de créer quelque chose, il y a un combat entre tous les possibles, tous pretendans à l’existence; et que ceux qui joints ensemble produisent le plus de réalité, le plus de perfection, le plus d’intelligibilité, l’emportent.”
148 Rad. Orig., G VII 304, L. 188; Théod. II 225, G VI 252.
149 Théod. II 201, G VI 236.
150 The reader may at this point wish to consult again the idea of a ‘self-constructing universe’ described under Sect. D, §3.
Part II

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doctrine’. But the plain consequer of his passage is that God prevented the actualisation of (unwanted, discarded, incompossible) ‘essences’, for which one possible scenario was given supra. Accordingly Blumenfeld’s further complaint that “if the Daseinstreiben theory is taken literally, then its incompatibility with the free will account is so obvious that it is almost impossible to believe that Leibniz could have been oblivious to it.” The point is, of course, that Leibniz was not oblivious; rather, his commentators tend to be so from decades of habitual pursuit of his supposed necessitarianism or even crypto-Spinozism and thus simply fail to concede that Leibniz, in speaking of freedom and autonomy, actually meant what he said.

It is moreover of capital importance to this scenario that the principle of sufficient reason is satisfied, since the creation of the best possible specimen of an actual world, with the richest conceivable set of phenomena and containing free, self-responsible moral agents sounds like a self-recommending project to a divinity. In contrast, we would be hard put to find a sufficient reason for God to construct this world entirely in his mind, down to the last detail and in fully deterministic completeness, and then set the whole apparatus in motion: for to God this would simply be a repeat performance and not the minutest event of it unforeseen. Even a mere human might wonder why he would bother.

In other words, the determination by the divine will to actualise a world is not governed by the perfections attainable to individual monads, but to those which as a coherent and integrated collective result in the desired cosmos.

Now we recall that the complete concept of an individual substance included its inactualised possibilities. But taken in its full weight, this leads to a self-contradiction, for in this concatenation the element of choice has already been pre-empted. This precisely is the gist of the objections outlined earlier. It conflicts in particular with the notion of the richest set of possibilities (allowing for consonances and dissonances) if choice is curtailed by pre-determination. The law of the series on the other hand pertains to actualised substances. It points to concessions of the divine will to vouchsafe the aforesaid autonomy by giving subjects the choice between consonant and inconsonant decisions of their own, only constrained by the ‘blanket criterion’ of facilitating that greatest good which the divine mind has decided to unfold. In this sense, for example, the celebrated crossing of the Rubicon by Julius Caesar is not (as Leibniz confirms) a decision preformulated by God, but allowed and perhaps even strongly insinuated to Caesar by the conatus with which his soul is imbued; but it is not a compelled decision and may not, in the Creator’s mind, have led to an actual world directly incompatible with his designs if Caesar had failed to implement this decision. Rather all such free decisions are encompassed in this world and thus the complete concept of Caesar is no longer applicable: it has, so to speak, been withdrawn and replaced by the law of the series of his actions, which in this actual world he enacts by his own free choices.

So the difference is now clear: that (to stay with the example in hand) Caesar still has a multitude of choices available to him; but it is his responsibility to actualise one of a large (perhaps infinite) range of possible worlds that are compatible and compos-

152 Leibniz was fond of pointing to dissonances in music as engendering a greater intensity of experience of the ‘good’ (i.e. consonance): “The great composers frequently mingle discords with harmonious chords so that the listener may be stimulated and pricked as it were, and become in a way anxious about the outcome; presently when all is restated to order he feels so much the more content.” Rad. Orig. loc. cit., P 142.
sible in the Creator’s mind with the one cosmos his divine will has decided to actualise. “There are many mansions in my house”, it is written; and thus the law of the series defines an ambit of compatible possibilities for the plenum of substances which are nonetheless in harmony within the context of the one evolving world.

The law of the series may therefore be described, in terms of each individual substance, as those possibilities which inhere in it as a result of its place in the cosmos: its (spatiotemporal) location, its innate character, its degree of perfection, its reactability to external events, and so on. All these are attuned to the world as it is; and the law of the series is nothing other than the range of decisions to which this substance will come at each cross-roads in its existence. That range, but not every decision, is pre-set. Here is the explanation of why, earlier in this section, we made the comment that the law of the series opens doors which the complete concept keeps closed.

In sum: the complete concept was supplanted by the law of the series because, in framing the former, Leibniz erroneously believed to have provided for genuine contingency. But in fact it is only a logical, not an actual contingency; and on the human scale it is unhinged from its logical propositionality and thrown into the arms of a necessitarian determinism that is indeed, for all of Leibniz’s protestations against, essentially indistinguishable from fatalism (as indeed we recall Arnauld objecting!). In contrast, the law of the series is not concerned with my actions and choices one by one, but with their overall patterning and their compliance with the telos of the world. As Buchdahl writes:

> It should be noted that this world is a unique individual sequence; the principle of the identity of indiscernibles is enough to forbid the recurrence of absolutely identical states of affairs, on the lines of the instances of our natural laws; and although Leibniz refers to the ‘general order’ sometimes as governed by the ‘most general laws of God’ (and not allowing of any exceptions), the notion of lawfulness is here itself only a metaphysical or analogical way of expressing the fact that the members of the sequence are linked by natural necessity.\(^{153}\)

To God, accordingly, it is indifferent whether I decide to walk today on the left side of the road instead of the right, as long as this action conforms to my ‘series profile’ (which in turn must conform to the ‘series profile’ of the entirety of agents); and if as a result of changing my mind thus, there should accidentally ensue the outbreak of a global catastrophe, this is a legitimate outcome so long as the ‘series profile’ of the world as a whole contains that possibility.

These conclusions – so to speak Leibniz’s effort to ‘save the freedom of agents’ as earlier we have depicted his agenda as ‘saving phenomena’ – are certainly persuasive in themselves. We might rephrase this as the principle that agency and freedom are two aspects of the same thing; if you take away freedom, then the notion of agency (at least in its highest instantiation among humans) is greatly impaired, and this cannot be the point of God’s creation.

When we recur to the notion of the individual substance, this translates into the following criteria. As bodies, we are subject to the laws of nature as all bodies are, whether animate or inanimate, and we are self-evidently constrained by these laws in the range of physical actions possible to us. But it is another issue to derive from this, via a deductive-reductive process, a putative determinism on all our actions – as if physical constraints had actual repercussions on what I wish and will, and on the choi-

\(^{153}\) Buchdahl, op. cit., p. 463.
ces and alternatives on which I might excogitate. Such a reductionism makes large borrowings from principles which have infinite regress written all over them and cannot therefore be repaid in a cogent conclusion – indeed Leibniz’s struggles related above, with necessity and contingency, may be said to have at least this result, that they show such deductions to pursue an impossible agenda. Accordingly an agent’s freedom to act is not a question of how many forces, atoms and particles conspire to produce a particular frame of mind (even assuming such a scenario to be intelligible), but rather that the choices available to the agent, on a second by second basis, are productive of a certain repertoire of responses which yet are never identically the same: and they are individual both for the agent himself and for all agents taken en masse. That repertoire is otherwise called ‘character’.

The reader of this thesis is likely to have a predilection for philosophy, but possibly for art, tennis and gardening as well. That ‘character’ and its attributes are a guide, not a compulsion. As Leibniz says, anything I can choose not to do is obviously contingent and defeats what he called the ‘lazy sophismata’ of those who choose to believe that any choices they make amount in the end to the same thing (but, he adds, if you do not sow your beans, none will grow, and will you make God responsible if there-upon you starve?). Accordingly it is character that is the intrinsic component in freedom. As long as behaviour is in keeping with character, the gates of freedom remain open. In the large (i.e. on the cosmic scale), determinism may well be conceded; but in the small, the proliferation of an infinitude of contingent details, each a unique opportunity and choice, leaves freedom intact.

The law of the series, then, relates to individual substances and in particular to their freedom of self-actualisation; it thus belongs properly to this part of our thesis which is concerned with the ontology of agency. But although it may without falsification be depicted as a ‘development’ of the complete concept, it marks in truth a caesura in Leibniz’s thinking on the nature of contingency and the continuum, which is so to speak its ‘home ground’. The whole Continuum section can be seen as a great melting pot, in which many another ‘figure’ of Leibniz’s system, his philosophy as well as his physics, underwent momentous changes. The repercussions of this new philosophical venture endure to this day, although they were forgotten to some extent in the centuries between Newton and Einstein, when the term ‘exact science’ denoted a criterion and ideal of knowledge in which the seeming vagueness of Leibniz’s principles would not serve. But we are today asking many of the same questions again, and thus Leibniz’s researches into what he called “The Labyrinth of the Continuum”, which shall be our next topic, reveal his capacity for posing philosophical questions of perennially undiminished relevance.

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Appendix: Spinoza, Leibniz and double-aspect theory

The influence of Spinoza on Leibniz is palpable and indeed never denied by Leibniz – though he claims to have overcome it in what he defined as its unacceptable consequences. Yet there are scholars who still maintain that Leibniz’s own philosophy is chiefly the (none-too-successful) endeavour to ‘get around’ Spinoza – a crypto-
Spinozism and watering down of the stringent logicity of Spinoza to commonplace Christian philosophical habits. Notable proponents of this view included Bertrand Russell and Arthur Lovejoy. With few exceptions, however, recent scholarship has turned critical of this school of thought, and there is no doubt that they overshot the mark by a considerable margin. Nevertheless, a fundamental propinquity between Leibniz and Spinoza cannot be overlooked by the most fervent Leibniz aficionado, as indeed it would be equally unthinkable to deny the influence of Descartes. Altogether these two thinkers exerted the most powerful of any influences on Leibniz, a fact testified by the frequency of his critical engagement with their respective legacies.

The most accessible text in this genre is in fact his little booklet *De Summa rerum*, which is full of Spinozist ‘borrowings’ as well as ‘relapses’ to his former atomism, while at the same time thrusting forward into a terrain of which not even the outline was known to him. The point to emerge from a study of its chapters is not only the rashness, but indeed impropriety of decrying Leibniz’s philosophy as derivative. For beyond the evident merits of Spinoza’s thinking there are also severe limitations, blind alleys and uncrossed thresholds where Leibniz went well past Spinoza, as he did past Descartes.

We can draw instructive, contrasting parallel lines on sundry subjects they treat in common; the list below seems to cover the most important ones:

1. **For Spinoza, God is nature** – nature understood as the totality of all things and events. Leibniz’s God is the creator of a cosmos and finite creatures, reflecting the traditional theistic conception;
2. **Spinoza establishes a logical cosmos** based on the divine substance and conducive to logical deduction of its attributes and modi. Leibniz’s created world is the outcome of a *choice* on God’s part to actualise the monadic cosmos described *infra* in Sect. F, §5;
3. **Consistent with the above, and indeed based on the rigorous application of the term, there is but one substance in Spinoza’s cosmos** (more precisely, *it is* that cosmos), while Leibniz populates his cosmos with an infinitude of *created* substances (more precisely again, his monads *are* that cosmos);
4. **In both systems, conatus denotes a fundamental disposition of elements**; in Spinoza of the attributes, in Leibniz of the monads;
5. **In both philosophies, phases of being reveal as aspects of one another to a perceiving subject**, obviating the need for an interface between *res cogitants* and *res extensa* which bedevilled the Cartesian metaphysics;

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154 Bertrand Russell, *Critical Exposition*, op. cit; Arthur O. Lovejoy: *The Great Chain of Being*, Cambridge Mass., Harvard University Press 1956. – Russell’s case is interesting for its stubbornness: he reprinted his book unchanged in 1937, saying that none of the recent work had caught up with him yet; and he remained unrepentant in his *History of Western Philosophy* (1945) and *My Philosophical Development* (1959); yet although in his estimate Leibniz’s best philosophy is just Spinozism, he calls him “one of the supreme intellects of all time”, an encomium not reserved for Spinoza. How this is meant to rhyme itself I do not know.

155 Cf. the book-length studies of C. Wilson, N. Rescher, R. Adams a.o.

156 Apart from innumerable incidental references in his correspondence, Leibniz also devoted several specific studies to both his predecessors, e.g. *Notes on Descartes’ Principles of Philosophy* (1675), *Annotated Excerpts from Spinoza* (1676), *On the Ethics of Spinoza* (1678), *A Brief Demonstration of a Notable Error of Descartes* (1686), *On the Nature of Body and the Laws of Motion* (1690), *Critical Thoughts on the Principle of Descartes* (1692), *Of Body and Force, against the Cartesian* (1702), *Refutation of Spinoza* (1708).
6. Pantheism is overt in Spinoza; but although discarded by Leibniz, it remains as a subsurface tension in many of his public statements;

7. Spinoza’s philosophy is an absolute determinism; Leibniz began in the same mould, but later extracted contingency from his substance-predicate logic so as to validate the freedom of his ‘autonomous agents’;

8. Spinoza’s metaphysics has been represented as both a total materialism and total idealism – it is not essential for our purposes to resolve that issue although we incline to the idealist persuasion. Respecting Leibniz, we have made abundantly clear what our position is.

These remarks indicate some of the major signposts in the vis-à-vis of Leibniz and Spinoza. But all have in common one fundamental issue on which they took up diametrically opposed positions. It is the question of whether there is a world and what kind of a world it is. And in both we find a double-aspect theory employed in explanatory purposes, so that the present digression seems necessary to clarify its relevance to each of these philosophers; and indeed to what extent they feature the same, or not the same, kinds of aspects.

In Spinoza the double-aspect theory is relatively more simple than in Leibniz. The issue is, however, whether this simplicity is bought at the price of intelligibility. It transpires that this is the case from the perspective of Leibniz, though whether this conclusion is warranted from a non-Leibnizian point of view is somewhat more difficult to establish.

Spinoza, acknowledging the impossibility under the Cartesian metaphysics of welding back together the two separated substances, reallocated their functionality. In the context of his own conception of substance, he is enabled to uphold the duality, but this of course entails their demotion from the status of substances. For now, both become expressions of one and the same underlying substance. For example, res cogitans is the idea of the body; “the body is the object of the mind”. Spinoza is thus in a position to assert that the idea of the body in the mind and the body itself are

one and the same individual which at one time is considered under the attribute of thought, at another under that of extension: the idea of the mind therefore, and the mind itself, are one and the same thing, which is considered under one and the same attribute, that of thought.\(^\text{157}\)

There is an implication to this which it is necessary to broach. That, if the affections of a body are the soul of the same, which means it is united to it, then everything which is a mode of nature must be ensouled. For every mode of thinking has a corresponding mode of nature; and what applies in this way to human beings must apply, multis mutandis, to all things. So this idea forms the basis of the pantheism of Spinoza.

Some immediate consequences of these principles may be illustrated at once. In Spinoza’s substance all individuals can only be temporary modifications of the one existing substance. From this it follows that the world of things and humans is a dependent, derived reality: “Everything which exists in the universe is to be conceived as a ‘modification’ or particular differentiation of the unique, all-inclusive substance whose nature is revealed to us solely under the two infinite attributes, Thought and Extension”.\(^\text{158}\) A second consequence denotes the difference between Spinoza’s modi

\(^{157}\) Eth. II, Prop. 21, Schol.

and the accidents which they replaced: Modi are integral and therefore necessary. This implies the exclusion of contingency from his cosmos; in Spinoza’s words:

In the nature of things nothing contingent is admitted, but all things are determined by the necessity of divine nature to exist and act in a certain way.\(^{159}\)

It follows further that a Spinozian substance is being-as-essence: which means it cannot be created or annihilated. But Spinoza’s argument culminates, of course, in the denial that two or more substances are possible co-existent; and therefore his absolute substance involves a repudiation of the traditional conception of substance. Spinoza identifies the insufficiency of former views as a way of arriving at substance by sub-

traction of its modi, which (he says) betrays a lack of understanding of the nature of substance.\(^{160}\)

In this, Leibniz parts company with him. Yet the departure is not total. Where Spinoza’s and Leibniz’s God retain some resemblance is in their non-interference with the world, even though there are different reasons for this insistence. Again, on the question of substance, if we disregard for a moment the One of Spinoza and the Many of Leibniz, it transpires that the infinitude of monads is a near equivalent of the infinitude of Spinozian attributes. The question is also frequently raised whether Leibniz’s dispersion of the infinite Spinozian substance into individualised substances is not merely a form of panpsychism. It is a tempting point of view, but in the end untenable as we have amply observed in this chapter: for Leibniz in fact ‘saves’ (as actual reality) the phenomena which Spinoza’s philosophy practically eliminated. Moreover, we cannot discard the principal point of panpsychism, which is that “all things are in God” or “God is in all things”; and no stretch of concession can make Leibniz’s monads – exemplifications of the principle of autonomous agency – conform to such a meaning.

So the problem which a double-aspect theory seeks to solve – in a sense the wound it seeks to heal which Cartesius had dealt philosophy with his dual substance doctrine – is how to account for the understanding we can have of the world outside of our mind. Thought and object are evidently united in us: as mentioned earlier in this study, one of Leibniz’s endeavours was to re-unite in philosophy what philosophy had been obliged to rend asunder. That was also Spinoza’s principal agenda. His solution, as would be understood from the preceding, was to emphasise our ideal nature and to ‘reduce’ the world of objects to affectations and determinations of that ideal constitution, so that “thinking substance and extended substance are one and the same substance, which is now comprehended under this attribute, now under that.”\(^{161}\) As his great admirer Schelling wrote,

we could not become aware of the real save in contrast to the ideal, or of the ideal save in contrast to the real. Accordingly no separation could occur in the actual things and our ideas upon them. Concepts and things, thought and extension were, for this reason, one and the same for him, both only modifications of one and the same ideal nature.\(^{162}\)

The difference on which Leibniz’s system is predicated can be perceived without trouble, for Leibniz relocates the affectations and determinations into his punctiform

\(^{159}\) Eth. I, Prop. 29.

\(^{160}\) Eth. I, Prop. 8, Schol. 2.

\(^{161}\) Eth. II, Prop. 7, Schol.

web of monads, so that in contrast to Spinoza’s theory, it emerges as a genetic and evolutionary account which facilitates the transformation into the conception of an independently real world of physics.

On this point it is rather discomfiting that there is no discussion of either force or motion in the *Ethica* apart from a perfunctory résumé in Book II.\(^{163}\) Hence it is remarkable that Hampshire takes his cue from this to propose that

> it seems natural to translate … ‘motion and rest’ as ‘energy’; one can then represent Spinoza as in effect saying that the extended world is to be conceived as a self-contained and all-inclusive mechanical system in which the total amount of energy is constant … and that all the changing qualities and configurations of extended bodies can be adequately represented solely as transmissions or exchanges of energy within this single mechanical system.\(^{164}\)

Yet Hampshire omits an account of what in his opinion Spinoza actually understands by motion and force, which is surely indispensable to any claim of Spinoza’s scientific relevance; for failing this it leaves us to conclude that Spinoza simply adopted Descartes’ account in the *Principles*. But since that account was found to be defective by Leibniz, it is here that the application of the crowbar is apt to do much damage.\(^{165}\)

For it was this Achilles heel of the Cartesian account which propelled Leibniz towards a double-aspect theory. If the world of nature were compared to the ocean, then Spinoza’s would suggest that the motions of waves, wind and spray are simply the self-motion of the ocean which carries all its elements with it. It is difficult to see how one can attach a workable physics to this. Whereas in Leibniz the elements and their motions are the foundations of the ocean; indeed in the broadest meaning of the term they are the ocean. But Spinoza also rejects Descartes’ conception of motion as an effect of the creator’s will, hence he is obliged to replace “the hypothesis of a transcendent God implanting motion in the system of extended bodies” with the notion of “an intrinsic characteristic of the extended or spatial world that everything within it is constituted of particular proportions of motion and rest.”\(^{166}\) Obviously this claim would benefit from a more detailed presentation, but it is hard to see where it might come from.

Motion and force relate to *conatus*, where once again Leibniz soon pulled away from Spinoza. This is especially noticeable in the role played by conatus in the maintenance of physical order, which is to some extent the linchpin of the double-aspect theory. Spinoza asserts that “each thing insofar as it is in itself, endeavours to persevere in its being” and this effort is “the actual essence of the thing”.\(^{167}\) But in this proposition it is God who is acting. The ocean is in motion and conveys the illusion that its ‘drops’ are acting. What is problematic in this claim (vis-à-vis Leibniz’s monadistic doctrine) is the undifferentiated and unindividuated notion of striving: for

\(^{163}\) *Eth*. II, Prop. 13, Lem. 1-6.

\(^{164}\) Hampshire, op. cit., p. 71.

\(^{165}\) Hampshire passes over this deeply problematic liability and indulges instead on pp. 71-81 in a wholly fantastic account of Spinoza’s supposed anticipations of modern theoretical science. Inevitably these reduce to wishful extrapolations of thoroughly impotent parallels – indeed they do not even serve emblematic purposes. In contrast Leibniz produced a genuine and abundant resource of enduring scientific ideas; but when Norbert Wiener adopted him as the ‘Vater’ of cybernetics, although a true line of succession could be invoked, he was honest enough not to decontextualise it and contented himself with homage to an idea.

\(^{166}\) Hampshire, loc. cit.

\(^{167}\) *Eth*. III, Prop. 6 and 7.
things-in-general do not strive for cohesion, though living things do; and things-in-general, after coming into cohesion more or less by accident, are subject to corrosive forces. Living things, on the contrary, replace by their own action those of their ‘parts’ which are abraded. Thus the issue boils down to where the conatus is located—a question which is a *non sequitur* for Spinoza, but mandatory for Leibniz. In Spinoza the interdependence of existents and the laws of nature amount to a *logical monism*; but for Leibniz, the logician *par excellence*, this was an unacceptable methodology. If conatus is to have a definable meaning, then it must be localisable, hence the necessity for severing existents from their adjectival status as well as their proliferation into an infinity of existents, each a conatus-bearing entelechy.

Here is where Schelling, too, sees demerit in Spinoza’s thinking, being worried by the hypertrophying of infinitudes:

Instead of explaining from our nature how finite and infinite, originally united in us, proceed reciprocally from each other, he lost himself forthwith in the idea of an infinite outside us. In this infinity there arose—one knows not whence—affections and modifications, and with these an endless series of finite things. For because there was no transition in his system from infinite to finite, a beginning of *becoming* was for him inconceivable as a beginning of *being*. Yet that this endless succession is envisaged by me, and is envisaged with necessity, followed from the fact that the things and my ideas were originally one and the same. I myself was only one of the Infinite’s thoughts, or rather just a constant succession of presentations. But Spinoza was unable to make it intelligible how I myself in turn became aware of this succession.

“It is impossible” adds Schelling, “to understand Leibniz without having stationed oneself at this point”. We have no difficulty agreeing with this, but not without considering where the Leibnizian road leads us. For ultimately the problem here touched upon is what it might mean for a subject to say “I”. If every finite mind is an idea in the absolute mind of God and acquires its particularity only by way of self-encapsulation, then the “I” of the mind is a mere mode in which the finite idea of self acquires self-presence. This means that Spinoza has abandoned the substantiality of the thinking soul; the *perceptio as perceptum* is in fact the *percipiens* and makes the notion of an autonomous finite mind obsolete. This strikes us as a strange employment for the double-aspect theory. And so Leibniz, appropriately, objects how a *perceptio* can possibly be a *percipiens*! I cannot hear through another’s ears; and even if I could there is judgement involved, and what I hear could be something quite different from what the owner of those ears perceives. My noise is your music; my boredom your fascination! And this, if nothing else, seems to demand an autonomy for perceptors which is difficult to reconcile with Spinoza’s solipsistic substance.

168 The key to Russell’s pro-Spinoza argument is the claim that Leibniz himself was a logical monist, but motivated to disguise this fact for a variety of reasons. It is found in Book III, Ch. XI, ‘Leibniz’, in his *History*, op. cit., p. 594, which reflects his mature view over the 1901 publication of his original study. Russell’s point is that Leibniz’s criterion of existence, based in the principle of compossibles, reduces to a definition of existence from logical principles: “In this account there is no mention of God, and apparently no act of creation. Nor is there need of anything but pure logic for determining what exists.” This view does not enjoy much acceptance in the scholarly community.

169 Schelling, loc. cit.


171 *Eth.* II, Prop. 11, Cor.

172 *Refut. Spin.*, W 488. On the same score, Leibniz objects against Spinoza that the soul is not an idea, for “ideas cannot act”. (op. cit., W 491).
Spinoza’s system is grounded in absolute necessity and therefore totally deterministic, including its human constituents:

If the individual human being is only an affection of the substance, then he never be described as free. Everything is determined; we are slaves of God; and even our cognition is a merely an aspect of suffering. … Individuality or unique identity are incompatible with absolute substance; the conception of an individual redeemed to freedom is altogether foreign to Spinoza; for he admits individuation only as a modification.\textsuperscript{173}

Thus the active and vital, i.e. \textit{creative} processes of nature, he calls \textit{natura naturans}, as against those which are ‘begotten’ in this ferment, which are \textit{natura naturata}. God is not (in the sense of \textit{auctor} ‘in’ the latter; the identity of nature and substance rests on the ideal plane; and the world is thus divided into eternal and temporal orders, active and passive natures, and the former of these must not be confounded with the latter – a point which is of supreme importance again in Leibniz. Accordingly nature as the appearing phenomenon relates to nature as substance in the same way as the palace to its blueprint: the laws of construction, the design, the mechanics of assembly comprise the underlying conditions which sustain realizability in the material world. But Spinoza replaces \textit{telos} with determination. Evidently there can be no ‘ends’ for created things, even humans, whose notions are thus revealed as anthropocentrism.\textsuperscript{174}

It follows from Spinoza’s criteria that “God alone is a free cause”; accordingly “neither intellect nor will pertain to the nature of God”.\textsuperscript{175} The will of God is indeed the sum of all causes and his intellect the sum of all minds.\textsuperscript{176} Hence mind is one \textit{phase} or \textit{aspect} of the appearing cosmos; the other being extended matter. But mind is not matter, nor vice versa; the two are parallel instances of perspective, of the \textit{one process} perceived as mind in one phase, as matter in another. Accordingly mind does not act on matter, nor matter on mind, as indeed Descartes taught; but for Spinoza there is no need for such interaction since it is entirely perspectival.\textsuperscript{177}

Spinoza refers to phases as ‘attributes’; Leibniz retaining the appellation ‘phenomena’, though structured in accordance with the phenomenotaxis given in Part I. But this is not a cosmetic distinction – in fact no greater difference than this apparently insignificant departure can be conceived. For if we must now proceed to a conclusion which accounts for the outcome of all these resemblances and divergences, it can only be done by stressing the effort of Leibniz to overcome what he saw as the deadlock on the actualisation of a real (phenomenal) world in Spinoza’s image of the cosmos. The result of the latter is that ultimate reality and the source of all laws and causal nexus is the One Substance. The ‘world’ of subjects is thus reduced to a grand illusion, to a ‘mere phenomenon’ as Leibniz complains. In contrast, the double-aspect theory of Leibniz culminates in an actually existing material world, in which matter and mind,

\textsuperscript{174} \textit{Eth.} I, Appendix.
\textsuperscript{175} \textit{Eth.} I, Prop. 17, Cor. 2 & Scholium.
\textsuperscript{176} However, it is of some importance to draw the correct inference from this, namely that \textit{God is not a mind}. Spinoza accordingly makes a distinction where Descartes bequeathed a ‘thinking thing’ to us, which might safely be understood as of the same category of being as the divine spirit. \textit{Eth.} I, Def. 6 and Prop. 1 leave no doubt that this incompatible with Spinoza’s conception.
\textsuperscript{177} \textit{Eth.} III, Prop. 2.
and the processes of generation and decay owe their design to God, but are not in any sense aspects, attributes or modifications of God.

In short: the world is either a thought and an unum per se (only God actually exists) or it is a manifold of infinitely numerous and infinitely varied individual actual existents. To Leibniz, the idealistic notion of the world was utterly repugnant and inconsistent with the majesty and infinite creativity of God. Whether this resulted from his predilections as a Christian is an issue we must leave to one side; but this much can be said in his favour, that his double aspect theory offers an account which does not have to cut down reality to a mere figment of the finite minds of human thinkers.178

One last consideration enters this picture. It is that we have here construed, in common with Spinoza’s own view and underwritten by scholarly tradition, Spinoza’s philosophy as a double aspect theory. But this position appears to be vulnerable to challenge. It could be argued that Spinoza’s double aspect theory fails to hang together in certain of its crucial features. One such argument would pinpoint an unresolved ambiguity in Spinoza’s insistence that the cause of the multiplicity of phenomena must be sought in the one uncaused substance. For this would require some kind of principle of transition from the One to the Many; but

if the Many are to be perceived as well as derived — since this is the only way their contingent Being can participate in the substantial Being — then they must emerge out of the One Substance in virtue of their own disposition to act ... But in Spinoza’s substance we find no such dispositional moment as would promote the emergence of its modi. The plurality of natural existents does not spring up from the substance-nature, but is merely clipped on from the outside.179

Did Spinoza become a victim of his own concept of substance, as Holz believes? It seems he did; for whereas Leibniz relentlessly pursued the system concept of a plural-substance metaphysics in order to gain access to a rational cosmic structure that would satisfy the desiderata of both physics (natural philosophy) and metaphysics, Spinoza began with the Cartesian manifold and produced from it a confection of synonyms for the one substance. All finite existents are recalled into the fold of God-Nature and stripped not only of their autonomy and reality, but of their very being. But with this all claims to a double-aspect theory collapse, for it is evidently incompatible to speak on the one hand of phases in which matter appears to the subject while these remain attributes of God, and vice versa of the modi of God’s thoughts, which are the subject’s thoughts only to the extent that they are cogitationes Dei. It seems that in this feature the logic of Spinoza’s monism collides with itself.

178 This can be seen especially clearly in the contrast offered by Spinoza’s specification of the mind. The latter writes in Eth. III, Prop. 1: “Our mind acts at times and at times suffers: in so far as it has adequate ideas, it necessarily acts; and in so far as it has inadequate ideas it necessarily suffers.” This is straightforwardly comparable to the specifications of the monad; but in Spinoza there is no connection to the ‘world’, whereas for Leibniz the same criteria lead to the differentiation (and individuation) of monadic species into those whose power exhausts itself in passive resistance and upwards on a wide spectrum of increasing sensitivity to that dominant monad which is the human mind.

179 Holz, op. cit., pp. 250 & 257.