Chapter 8. Kant versus Leibniz.

In this chapter I will examine the systematic differences between Leibniz and Kant in order to establish the relation between their systems. I will start with the differences in their systems concerning motion and change, then proceed with the differences concerning metaphysics and types of logic, especially concerning the concept of identity.

section 1. Motion, monads, and mediation.

One of the most striking differences which one comes across when examining and comparing the systems of Kant and Leibniz refers to the concept of motion. This concept seems so simple, but is philosophically so complicated and essential that Kant and Leibniz are found to maintain diametrically opposed views concerning it. This is no coincidence, it is typical of the relation between their systems. Since the concept of motion is, as will become clearer in this section, basic to their systems, it is proper to start the examination of the differences between their systems with this concept.

Leibniz’s idea of motion is, as has been made clear (see division 1), twofold. On the one hand there is, according to him, the abstract motion of physical bodies. This type of motion pertains to singular bodies, therefore it abstracts from the universe as one harmonious whole; it is expressed in terms of time and space, which are abstractions too. As a consequence, this type of motion is relative. On the other hand there is absolute motion, that is, the motion of the universe as one harmonious whole, which is exactly and completely represented in and in a differentiated form expressed by the monads. This latter type of motion is mediated and actualized by the monad’s essence: primitive force (which is a metaphysical concept). It is universal, because it pertains to monads which represent in themselves the entire universe. As has been made clear, this type of self-incited motion makes the universe in Leibniz’s system self-mediating, therefore completely self-sufficient, because it establishes the circular form of self-foundation: the ultimate foundation of the universe is the universe itself, mediated by the representation and expression of it in the monads. In the monads, and by their primitive force, universality and singularity are unified.

Kant’s idea of motion is also twofold. But with him, abstract motion is the motion as laid down in the laws of harmony which govern it and which are present in the divine intellect; it is universal, but not yet mediated, and it is, therefore, not relative at all. Relative motion exists in the form of the motion of physical bodies, that is, as their external relations which form the mediated harmonious interdependency which is in its not yet mediated form presented in the divine laws of harmony. These external relations, expressed in terms of (relative) time and space, amount in general to two basic forms of motion, that is, to two basic forms of activity, viz. the activity of repulsion and attraction; hence the Kantian concept of two basic forces (which are physical, not metaphy-
sical concepts) which are the basic determining activity of the physically existing universe. This type of motion is not universal in the sense that it encompasses everything there is (because the physically existing universe is never completed), but it is not singular either (because it only pertains to external relations); it is particular. As concerns the singular bodies, that is, their internal states or monads, these are void of motion because they are in fact nothing but existence. Universality and singularity are, therefore, not unified; the physically existing universe is not self-sufficient, motion is not self-incited, but needs an ultimate foundation outside the universe, viz. God.

Kant’s and Leibniz’s concepts of motion are, therefore, in every respect opposed to each other. Yet they make use of apparently the same conceptual elements (viz. monads, bodies, motion, time, space, physically existing universe, universe as one whole, mediation, and force), except for one: Kant’s system lacks Leibniz’s expression-representation concept, and Leibniz’s system lacks Kant’s concept of externally related bodies. This deserves closer examination.

Concerning Leibniz’s distinction between monads and bodies I have said that it would be erroneous to interpret this as amounting to a two-worlds world-picture, viz. the metaphysical world of monads and the physical world of bodies. The concept of complete substances makes clear that one should understand this analytical distinction as to be sublated in the total circular ontological form of the universe, in which monads and bodies are merely analytical moments. Yet it is true that in Leibniz’s system bodies are essentially related in their monads, not physically.

Exactly why is this?

Assume for argument’s sake that, with Leibniz, all bodies were physically interrelated. If everything else in his system were to remain unaltered, the following situation would arise.

Every body would, in its physical relation with any other body, determine this other body and be determined by it. Since Leibniz’s universe is basically a closed one, therefore complete, this physical interrelation would transport all information present in the universe. No other mediation would be necessary besides physical interrelation. In fact, this situation would result in turning Leibniz’s monads inside out: the representation of the universe would be the actual universe itself, that is, the universe as it physically appears. Moreover, there would be no difference between this representation and the expression of this representation. The physical universe would be at the same time and in the same respect both its representation and its expression. The metaphysical level of the monads would vanish, it would become obsolete, because the bodies themselves would take over the monad’s function of mediation; but they would do this in such a way, that this mediation actually disappears, because the distinction between representation and expression (which distinction is essential to this mediation) has vanished. This means that each body is at the same time and in the same respect universal and singular: it is both all (because it receives all information, that is, all existing determination) and only one part (because it is still a single determinate body). In fact, this is a physi-
cal multiplication of the universe equal to the number of its constituent parts which takes the place of the metaphysical multiplication in the monads Leibniz actually intended. For a body to be physically the entire universe, however, contradicts the original assumption, viz. that it is physically related with all other bodies: the universe is all there is, therefore it is related to nothing outside itself - from which follows that, if a body is the universe, then it cannot be related to other bodies.

It is clear that this contradiction prevents Leibniz systematically to assume an immediate identity of the universal and the singular by way of physical interrelatedness.

But now consider Kant’s system. Here one finds the very physical interrelatedness Leibniz is forced to reject in his system. One finds this physical interrelatedness as apparently the only meaningful level, for the monads seem to be empty compared with those of Leibniz. The consequence should be the physical multiplication of the universe, since by way of the physical interrelatedness all information would be transported to every monad, and (because the interrelatedness is external) there externally (therefore physically) expressed completely. Or so it seems.

But is all this really the case?

True, Kant introduces physical interrelatedness. He assumes that bodies are related and are determining each other physically, that is, in terms of time and space. However, he does not assume that this physical determination includes the transport of all information which pertains to the universe as a whole. On the contrary, he states that the universe, insofar as it physically exists, is not even a completed whole; physical interrelation cannot, therefore, transport all information, simply because this information does not yet exist (55). This lack of universality is accompanied complementary by a just as essential lack of singularity: the physical determination does not establish the individual existence of the bodies. In order to understand why this lack of singularity is the necessary complement of the lack of universality one must once again turn to Leibniz’s model of unification. As one will remember, with Leibniz the universe is brought into the singular monad by representation, and is expressed accordingly. Representation brings the (completed) infinite into the finite individual, expression brings the finite into the infinite; in this way, the universe is differentiated and yet one whole. Now, this is only possible, if the universe is indeed completed (56); only then the necessarily circular relation of representation and expression will be closed. I have called this hyperception (see chapter 4, section 2): the circular incorporation of opposites which contain each other both simply and complementary. This structure makes clear why the individual derives its individuality from the completed whole of the universe (and vice versa): the individual is what it is because it is the expression of the universe determined by this universe itself. Then, of course, if the universe is not yet completed, it cannot act as the ultimate foundation of itself mediated by its constituent singular individuals; hence it will not be able to determine the individuality of these individuals. Therefore, since Kant’s physically existing universe of interrelated bodies lacks true universality, it
must also lack true singularity. Kant himself, as one will remember, pointed this out in concluding that the physical universe could not be its own ground, as could nothing in it be its own ground.

In Kant’s system, this lack of universality and singularity, that is, the absence of their unification, is systematically expressed by the difference between internal and external state of the monad. Leibniz proposed to establish exactly here the unification of universality and singularity, viz. by the special relation of expression and representation. Kant opposes him by rejecting this unification. Yet the result, in both systems, seems to be to a great extent the same. In both systems, the universe as a harmonious whole is distinguished from the universe in its differentiated form, and yet these forms of the universe are also unified in some way (if one understands Kant’s system as intended as one whole).

From this, it is clear that the relation between expression and representation in Leibniz’s system and the relation (or rather the absence of it) between internal and external state in Kant’s system refer to the same basic ontological problem, viz. both the establishing of universality and singularity as such and their unification which are necessary to form a systematically consistent concept of determined motion and change in general, that is (since it concerns ordered change, not chaos), of force.

The question is, then: how do Kant and Leibniz precisely differ as concerns the conceptualization of this basic ontological problem, and why?

Before answering that question, it will be useful to answer this one: what are the conditions that make it necessary for Kant and Leibniz to face this basic problem? Is there a systematic reason for it?

There are, in fact, several.

One reason for it is the approach they share: both philosophers assume that the universe is one whole, and that this ultimate total coherence determines everything in it, but at the same time that this determination can be analyzed to the activity of the singular constituent parts of this whole. It is no coincidence that they both use the concept of monads (although in a different way), that is, of smallest indestructible singular elements of the universe. Neither, that they both use the concept of an overall harmony. The two go together: harmony presupposes something which (in itself) lacks harmony, therefore something which exists differentiated (since a lack of harmony implies at least a number of two, and in general a multitude), that is, as a multitude of singular things. Therefore, if one introduces the concept of harmony in one’s system, one has to introduce the concept of individual things also, and, as a consequence, one has to try and find a way to relate them since they partake of the same system.

A further reason is Kant’s and Leibniz’s obvious desire to explain motion and change. If one wants to explain motion and change, one has to assume that there is an overall harmony. If one does not, motion and change reduce to chaos which is by its very nature inexplicable.

Then, if one has introduced in one’s system harmony and individual beings in order to explain motion and change, one
is not only forced to try and relate them, but one is compelled to do so in a certain way. For in fact harmony and individual beings are concepts which result from the analysis of motion and change: they must serve to explain them, therefore they must contain the essential elements of motion and change. In other words: motion and change themselves actually are the relation of harmony and individual beings — this must be expressed in the system.

It is clear, then, that Kant and Leibniz have no choice (if they want to devise a consistent system) but to face the problem of both establishing and unifying singularity and universality.

They share this problem, but seem to solve it in a different way. However, they share this problem so much that actually the difference between them not only distinguishes their systems from each other, but also links them together. As I intend to demonstrate below, Kant’s system is basically the analytical form of Leibniz’s system.

In Leibniz’s system, the unification of universality and singularity can be succinctly described as follows.

There is a universe, which consists of an infinite number of moving substances, in which everything is interrelated and interdependent, but not directly and not physically so. This universe can be called the external form of what is to be the complete universe. It is interrelated by the complete and exact representation of it in the monads of its infinite number of constituent substances; this multitude of representations, which is also infinite (in number, because there is an infinite number of substances which have each their monad, and in contents, since each monad represents the total number of substances), can be called the internal form of the complete universe. Since each representation essentially represents the universal motion in the universe, it is essentially active and, as a consequence, expressing itself, but, as it is differentiated by being in a single substance, it is expressing itself in a series of successive activities, that is, determined in terms of time and space. This expression restores the external form of the universe, adding, however, the internal form to it, thus establishing the complete form of the universe, viz. the multitude of, now also complete, substances which, now being truly interrelated, compound the whole the universe is.

The crucial relation which is, in Kant’s system, analyzed is the relation of expression and representation, that is, the relation of internalization of the external form and externalization of the internal form. In Leibniz’s system, this relation has its seat in one and the same being, viz. the monads of the complete substances. The first thing to do is, of course, to make a rigorous distinction between internal and external. For in Leibniz’s system it is implied that internal and external are (ultimately) the same (since they are unified). In Kant’s system they are not: the external form of the universe is exclusively linked with the external state of a substance, the internal form of the universe exclusively with the internal state of a substance. As this analytical distinction is indeed rigorously applied, the two forms of the universe are also rigorously distinguished. In fact, they are
separated, just as the internal and external state of substances are. This separation is, however, only conceptual: each distinguished analytical concept contains as such only itself (that is, internal is only internal, not also external; etc.) - but in the end, they are related by the system as a whole; that, at least, is the system’s intention.

In this separation, the contents of external and internal is surprisingly inverted. Leibniz’s external universe is as yet unrelated, the relations are established in the internal form. Kant’s external universe, however, is already related, and more than that: it is nothing but relatedness, whilst his internal form is void of relatedness (that is, in a mediated form). Closer examination reveals why. The analysis of the unification of the two levels of the universe cannot, of course, be carried out with analytical moments of this unification; it must be applied to the crucial and essential moment of it, that is, the moment which synthetizes it all. This means, that it must be applied to that concept in which the unification actually takes place. This is the monad, yes, but the monad of the already complete substance. As I have explained before, the internalization of the external form and the externalization of the internal form mutually presuppose each other; therefore, the represented external form is essentially the representation of the external form which already contains the internal form (and vice versa) - this is the essence of what has been called hyperception. As a consequence, if the analysis of the monad is carried out, the monad is dissected into its two complete parts, viz. the actually interrelated and, therefore, extended universe on the one hand, and the comprised, for not yet mediated, single whole of the universe on the other. Thus the external form now is only relatedness, and the internal form only wholeness. The external form of this analysis is, of course, Kant’s concept of the physically existing universe. The internal form is not, however, his concept of the internal state or monad; it is the harmonious idea of the universe in God’s intellect, for this idea is the unmediated wholeness of the universe.

As one will remember, the monad is, in Kant’s system, only the individual existence as such. This is, in fact, the third moment of the analysis of Leibniz’s unifying monad: its singularity which, in Leibniz’s system, is referred to by perspectivity. But perspectivity is, after this analysis, a term which can only be applied to the physically existing extended universe. The monad as such - and this is the way it must be conceived of in the analysis - has no external relations other than in its representative nature (which has already been analyzed as the external form or state), therefore no perspectivity; of its indivuality only the quantitative aspect remains, viz. its singularity or, in other words, its mere existence as only one thing.

The result of this analysis is clear: the Leibnizian circle of hyperception has been broken, and only a linear structure remains.

The universe does not contain its own ground and foundation anymore, its ultimate point of support lies outside it, viz. in God’s intellect. Instead of a unification of two levels, viz. the levels of universality and singularity, there are now
three distinct and separated levels: universality in God, singularity in the monads, particularity in the physically extended universe.

Particularity is new. Leibniz’s system had to do without it, because he rejected actual relatedness; as I have explained, this rejection is, in his system, necessary. But in Kant’s system, this particularity is not only gain, it is also loss. For Leibniz could do without a First Mover, and Kant cannot. This is typical of the kind of linear structure his system possesses and which features in the historical process his physically existing universe is. In Leibniz’s system, time is only an abstraction, as is space. The Leibnizian universe is ultimately one whole which as such exceeds time and space; time and space are physical dimensions of the differentiated form of the universe, but this differentiated form is as such not the complete universe. The Kantian universe, however, has no existence but as temporal and spatial: time and space are together the very substance of the physical universe which as such is as complete as it possibly can be. Leibniz’s system does not have a substance or subject to attribute particularity to; in this system, universality and singularity are directly unified in the monads, and there is no other being which acts as intermediary as such. In Kant’s system, however, there is indeed such an intermediary apart from both universal and singular beings, viz. the substance time and space form together, that is, the fabric of the physically existing universe.

In Leibniz’s system, the absence of an intermediary as such rendered the complete substances quantitatively indeterminate, and this, as I have pointed out before, furnishes a problem for physics, viz. that these substances - and this means, of course, also the universe itself, that is, as a whole - cannot be measured. In Kant’s system, however, the substance of the universe can be quantitatively determined; Kant offers even the quantitative laws which must govern the activity of bodies of the universe (see chapter 6, section 4). What remained, for physics, hidden in Leibniz’s system, viz. the activity of primitive force which could only be determined incompletely (that is, as relative and abstract motion), can, in Kant’s system, be completely determined in a quantitative way (that is, as repulsion and attraction): one can, as Laplace showed, in fact compute the universe by addition and subtraction of its elementary forces. The point one should note, however, is that what is completely determinable with Kant is itself incomplete. One can rightly conclude that it is a disadvantage of Leibniz’s system that the actually active essence of the complete substances (viz. primitive force) remains hidden, because its expression unifies its universal nature with its singular existence. One could say that this unification succeeds too well: it renders its elements unrecognizable. They are, in fact, recognizable only for analytic thought. And Kant, thinking analytically, does recognize and present this elements, but, in doing so, the completeness of the elements (which they have in Leibniz’s system) is lost. This is certainly a disadvantage of Kant’s analytical system and it offers a problem which will be expounded in the subsequent section.

The crucial point is, I think, that the too successful
unification in Leibniz’s system lacks a clear exposition of the actual process of mediation because it lacks a concept for the intermediate as such between singularity and universality, and that the analytical form of this unification in Kant’s system lacks a clear exposition of the actual process of mediation because it merely posits that intermediate without relating it with what should be mediated. Kant, by analyzing it, clarifies Leibniz’s unification and at the same time falls short of establishing that unification. The explanation for this can be found in his concept of identity which will be the subject of the next section.

section 2. Identity and non-identity.

In Kant’s system, as will be made clear, identity appears in more than one form. This is consistent with the fact, that the universe has more than one form in this system, and with the fact that these different forms of the universe are separated.

Analytically, this aspect of the Kantian system can be presented in the following scheme (57):

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universal                           singular

:.................................:                      :
non- : G: God’s idea of the    S: singular existences
 : ex- : universe as one ----- (= monads/inter-
    :    : tended: harmonious whole state)
     : ..........:
     : ........:|...................................|...........:
     : | |
     : ex- : U: universe as a    B: physically existing
        : tended: historical process ----- bodies as such
        : (external states)       (external state)
        :

:.................................:
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The relations in the scheme are as follows. G is the ground of S, S of B, B of U; this is a linear series of relations. S is the differentiated form (which is not yet mediated) of G; it is, however, not an extended form, because the singular existences are as such not related to each other. G is, of course, also a non-extended form. U is an extended form, as is B, which is the differentiated form of U. U is a mediated representation of G, and its physical complement; B is the physical complement of S, and its representation.

S and B both are forms of differentiation, but there is a distinction in the type of differentiation. S is the logical complement of G; G is truly universal, S is truly singular – G should, therefore, contain S but it only lacks the differentiation for this, and S should compound G but it only lacks the wholeness for that. Now B cannot be such a complement of
G, for it possesses determinations which G does not contain, viz. physical relations (that is, determinations in terms of time and space; G does not possess these determinations, since it is not within the physically existing universe). B is, therefore, the complement of U; but as U is, in Kant’s system, actually a form of mediation, that is, a form which contains its own complement, B seems to be superfluous, which indeed it would be but for the fact that one must analytically distinguish between U and its complement in itself which is B. The universe as a physically existing historical process consists of determinate bodies and determining relations; U signifies the relational aspect, B the corpuscular aspect. This means that U and B are on the same level, whereas S and G are not. Hence the difference in type of differentiation. U and B form, together and as one, the level of particularity; the universality of U and the singularity of B are mere analytical moments. This leads to another point which should be made, viz. that U and B are incomplete, whereas G and S are complete. G and S can, therefore, be related with each other without difficulty: it is absolutely certain that each singular existence can be related with its proper complement in God’s idea of the universe, for each singular existence is nothing but the differentiated expression of this complement and the whole of singular existences is exactly the whole of God’s idea: it is a one-to-one relationship. It makes no difference that both God’s idea and the number of singular existences are infinite; they are complete, therefore each one-to-one relation between them can be established with certainty. As concerns the relation between U and B, however, the same does not apply. Considered in themselves, U and B as a pair are incomplete. There is, in fact, a guarantee that for each relation there will be its constituent elements (that is, external states of bodies), but this is guaranteed not by U or B, but by G and S. It is God who is the ultimate ground of each and every existence, and it are these existences which establish the reality of every body and relation. As Kant points out, the rule which governs the physical relations (viz. that on the whole every decay is a negative coming into existence) is a rule which determines the physically existing universe but which is founded in God, that is, outside this universe; the ultimate point of support is not within this universe itself, therefore it cannot itself establish its own complement.

This fact is directly related with the different types of identity in Kant’s system.

As will be clear after the exposition above, on the level of G and S identity is immediate. Each element of S is directly identical with itself, and the collection which S is as a whole is completely, exactly and directly defined by G. G is also directly identical with itself, and the collection it is is exactly, completely and directly defined by S. In fact, the relation between G and S could be described in terms of the hyperception which has been demonstrated in Leibniz’s system but without its dynamical character. That is, each element of S implies G as a whole (since, as has been expounded above, each element is directly related with its implied complement in G), and each element of S is implied in G (for the same reason). The absence of the dynamical character follows from
the fact that S remains absolutely singular (since its elements are essentially unrelated), and G remains absolutely universal (since it is essentially one whole).

On the level of U and B, however, identity is not immediate, but mediated. Consider a body; it is, of course, determined by its physical relations with other bodies, that is, with all other bodies, for it is determined by the entire historical process of which it is a part. But this determination is not a complete definition of the identity of the body, for the historical process itself cannot completely determine itself: its ultimate ground is God’s idea of it, and this is outside this process. Therefore, the identity of a body is, insofar as it is considered within the physical universe, not completely determined. In other words: a physically existing body is in constant change. As such, it cannot be identified exactly (which means, strictly speaking, that it cannot be identified at all). This means, of course, also that it cannot be measured as such (which is the problem I alluded to in the section above). But whereas a body as such may be indeterminate, the whole of all bodies, that is, the whole of the historical process the physically existing universe is, is, ultimately, completely determined. Not by itself, but by G and S. For physical measurement this would mean that one cannot measure a body, but that it is the process (of which it is a part) one can measure; consequently, physical theories do not apply to singular bodies, but to processes, or, to be exact, to the process the universe is (58). A complete theory should be, then, not only physical but also metaphysical, for physical processes as such are insufficient to determine themselves completely. The complete theory would contain God’s idea of the universe, but even then it would only be virtually complete, for the universe itself will never be completed. A body’s identity, then, is completely determined, but only in a mediated way. But in Kant’s system this mediation is not given. That is, the mediated form of identity is, of course, presented, viz. the historical process; this form of mediation is the activity of the two elementary forces, viz. attraction and repulsion, which determine the change the historical process is. But this form is not the mediation itself, it is only the result of it, in Kant’s system; the mediation itself is the relation between God’s idea of the universe and this determining activity – and this relation is absent, that is, it is not explicated. The key question: "How is God’s idea of the universe, possibly through the internal state of bodies, actually realizing itself in the external activity of the forces?" is not answered. The reason for this lies, I think, in the difference between the types of identity.

I have said above that U is the mediated representation of G, and B the representation of S. However, Kant does not exactly say so. He does say that U is interrelated, because and insofar as God’s idea of it includes interrelation. This, I think, can justifiably be interpreted as a form of representation: there is no direct physical contact between G and U, yet U is in accordance with G. Leibniz formulates his concept of representation similarly. But Leibniz also presents a means which makes this representative relation conclusive, viz. the monad’s primitive force which expresses what it represents, thus establishing a physical universe which is in accordance
with the harmonious idea of it. Kant does not; it seems questionable whether B represents S, since Kant’s monad does not have the same expressive force which Leibniz’s monad possesses. This representation is, I think, strongly implied in Kant’s system, but there is also a problem with this implication.

It is strongly implied, because Kant obviously intends his system as a whole to be conclusive. It can only be one whole, if and insofar as the physical level and the metaphysical level are related. In order to be related the physical level must represent the metaphysical, for Kant rejects physical relatedness. Therefore, as U represents G, B should represent S.

There is, however, a problem with this. U represents G, because U is virtually a whole (and G is really this whole). Could one, in the same sense, also say that B is virtually singular, as S is really singular? No, for, as I have expounded above, B is not in the same way a complement of U as is S of G; but also: yes, because B is indeed as singular a complement of U as U can have, that is, B’s identity is ultimately determined by G and S as is U’s identity; but then again: no, since the identity of U and B, as ultimately determined by G and S, unifies them and renders them indistinguishable within the whole of the historical process.

This means that U and B only can be considered as analytical moments, as I have already pointed out; it also means that their representation of G and S is only formal. U represents no contents of G, for G is not yet mediated and has, therefore, nothing which U (which is the mediated form) can represent exactly, except for its form, that is, its being one whole. B can in the same way represent S, that is, it can represent its singularity; for S, the monad, has no contents, and is only singular existence. This formal representation is what makes Kant’s system conclusive. Its conclusiveness is, therefore, only formal; which is not surprising in an analytical system.

This form of representation stresses the fact that Leibniz’s expression is, with Kant, absent. There is no exchange of contents whatsoever between the non-extended and the extended level. All determination (except the unifying harmony, that is, the most universal and elementary laws of motion) is developed on the extended level in the course of the historical process this level is. This historical development of determination needs a specific type of identity. Change is, of course, necessary in this development. This means that the ultimate unity, that is, the ultimate identity of the universe is constantly being divided into conflicting elements; these elements must conflict, they must oppose each other, for else they would not be able to negate each other and thus establish as their total sum the required ultimate identity of the universe. But this kind of opposition must also be actualized, that is, the negation must be actually carried out. This means that the opposition exists not only between different beings, but is transferred into the beings itself.

Consider, for example, two bodies on a collision-course; they oppose each other, but when they actually collide this opposition is transferred into both of them: each body receives the opposing determination of the other as, now, its own and thus in direct conflict with at least one of its other
determinations.
Consider, for another example, a body which is determined by two opposing forces (attraction and repulsion) as, in fact, with Kant all bodies are; here also there are opposing determinations within one body. This *oppositio realis* would negate the identity of the body but for one thing: Kant claims that is does not, because this type of opposition affects not the body’s existence but only its physical appearance. In other words: physical determination does not affect monads. The monad’s type of identity is, as I have pointed out, rather simple; it is immediate identity. It can be immediate, since it is not affected by physical determination, that is, not affected by *change*. But the physical identity of the body is; this identity cannot avoid change — in fact, it is constantly changing, and change is, therefore, its very identity. Physically, there is a constant exchange of determinations going on between bodies which Kant calls *privatio*, that is, deprivation. Each body is constantly deprived of a number of its determinations, as it is constantly depriving other bodies of a number of their determinations, for this is how determination is actually taking place, according to Kant (59). This type of identity obviously envelops non-identity. One can and must, of course, point out that the ultimate physical identity is that of the idea God has of the universe, and that this is a simple identity without logical oppositions in it. But one must also point out that this ultimate identity is mediated by other identity, viz. the identities of bodies which are historically changing; these identities are real oppositions, that is, non-identities.

**section 3. Conclusions.**

It has been demonstrated that Kant’s system is the analytical form of Leibniz’s system. Both systems are identical to the extent that they assume a harmonious universe which physically exists as a number of interrelated individual bodies in motion which have each a monad that is the elementary level of the universe. But whereas Leibniz conceptualizes this in a synthetical model, in which the universal and the singular are unified by hyperception, Kant conceptualizes this in an analytical model, in which the universal and the singular are separated by introducing yet another separate level for their unification.

Kant’s analysis (60) introduces a number of new conceptual determinations which are absent in Leibniz’s system.

The first new aspect concerns the external relation of bodies. With Leibniz, this type of relation is systematically rejected. It has to be, because the unification of singularity and universality (that is, the interrelation of singular bodies to form one whole, thus establishing the universal level) takes place in the monads of the bodies themselves, and, as a consequence, any other extra type of relation would not only be superfluous but problematical (as I have explained in section 1). Kant, who does not unify the singular and the universal in Leibniz’s way, can introduce external relation, but on one condition. He has to introduce it as a process which is infi-
nity. That it is a process is caused by the fact that it is external, therefore extended in time and space (as I have explained in the previous chapter). That it is infinite is caused by the fact that the universal level (viz. God's idea of the universe) is kept separate from it; if this were not the case, there would be a physical multiplication of the universe (as I have explained in section 1). This ontological state of affairs is linked indissolubly with a certain type of identity in logic.

The external relatedness is in fact a separate concept of mediation, which is contrary to Leibniz's system in which there is no separate concept of mediation. In Leibniz's system, the mediation of the universe in the monad gives rise to the problem that the monad has two identities. On the one hand it is the universe as a whole, and, as a consequence, its identity is fixed and does not change. On the other hand it is a part of the universe which has yet to establish the universe as a whole (together with other monads) and, in order to do this, has to change in a series of successive activities. Leibniz's monad, which is the basic element of the universe and, therefore, of existence, has to incorporate both change and fixed identity; this self-contradiction in the basic element of existence makes existence itself contradictory. In Kant's system, this problem, which derives from the unification of the universal and the singular in the monad, is tackled by separating the universal and the singular, and introducing with it a separate form of mediation instead of their unification. Thus change is separated from fixed existence, and the self-contradiction disappears. Kant uses a concept of identity which is different from Leibniz's, because he distinguishes between two forms of contradiction: real and logical opposition. Fixed identity implies the absence of (logical) opposition; in this concept, Kant has a firm basis for existence, contrary to Leibniz. Change implies the presence of (real) opposition; but this does not affect the basis for existence, since real opposition is not logical opposition. Instead of Leibniz's two levels (singularity and universality) which merge into one, Kant introduces three levels (singularity and universality outside the physically existing universe, particularity inside it) which do not merge into each other at all but remain separate. In this way, Leibniz's duality of identity is analyzed in its constituent parts. This, however, brings back the original problem that the universal and the singular are not unified — for the dual identity is the very means Leibniz uses to accomplish this unification; Leibniz's universe is closed and completed, self-mediating and self-inciting, but Kant's universe is open and incomplete, and has its central point of support outside itself. The inversion of interior and exterior which I have mentioned above is directly related to this; it seems the inevitable result of analyzing the Leibnizian synthesis.

As has been made clear, Leibniz's force has two faculties: the faculty of representation and the faculty of expression. Representation brings the infinite into the singular finite, that is, analytically speaking, it establishes differentiation of the universe. Expression does the opposite; thus it esta-
bles the unification of the universe. As also has been pointed out above, Kant’s force is also twofold: repulsion which differentiates, attraction which unifies. Representation and expression, as a dual entity, are a means to conceptualize the actual activity of the process of mediation. So are repulsion and attraction, but they are, strictly speaking, two forces instead of two faculties of one force, and they are externally active instead of internally. The analysis of Leibniz’s unification results, obviously, not only in the introduction of a separate concept of mediation, viz. the universe as a historical process, that is, external relatedness, but also in the introduction of a separate concept of the necessary activity for this which is, in Kant’s system, also external. This is another confirmation of the interpretation that Kant analyzes Leibniz, and does so consistently; that is to say, it supports the view that these two systems are identical in everything except in form.

The two forces, attraction and repulsion, establish in fact the identity of the universe; they equal each other in their influence on the bodies at every moment, thus establishing the simple identity of the universe in God’s intellect in an extended way. Their external activity of mediation is, therefore, the analytical form of the self-mediation which, in Leibniz’s system, establishes the identity of both the monad and the universe.

As a general conclusion one can, therefore, content that in Kant’s system the elements which are implied in Leibniz’s system are made clear, but in such a way that their synthesis is lacking. I intend to demonstrate in the subsequent part of this thesis that this synthesis can be found in Hegel’s system.
notes to division 2.

1. G. Buchdahl (Metaphysics and the Philosophy of Science. The Classical origens. Descartes to Kant, Oxford, 1969, pp. 477 ff.) gives the following main ideas of Kant’s pre-critical period: 

   (1) The central position of the concepts of law and systematic theory. [...] (2) Attempts at a reconciliation of the concept of law-like and mechanically evolving universe with the competing model of a universe subject to design. [...] (3) The distinction between the object as phenomenal substance (matter) which has only ‘outer relations’, and substance possessing an ‘inner nature’ (which later becomes: the thing as it is in itself [...]. (4) A corresponding contrast between the ‘mathematical’ and the ‘metaphysical’ approach. [...] (5) The more straightforward distinction between a ‘mechanical’ and a ‘dynamical’ approach in physics which emerges confusedly from both (3) and (4) (though fully emancipated therefrom in the final version of M [i.e. Kant’s Metaphysical Foundations of Natural Science, 1786] [...]. (6) The distinction between the province of purely logical relations and that of nonlogical relations [...]. (7) Corresponding to (6), the concept of ‘construction’, central both for the characterisation of mathematical reasoning on the one side, and of physical reasoning on the other; [...]. (8) Under the influence of (6) and (7), the distinction between what is ‘necessary’ and what is ‘contingent’, or again that between what is ‘sensed’ and what is ‘thought’ (and the later finer distinctions between the ‘synthetic’ - ‘analytic’ and a posteriori - a priori) all of which are affected by the notion of ‘construction’, linked in a complex way to the concepts of space and time. [...] (9) The proper appraisal of the concept of the ‘universe’, regarded as a ‘whole’, consisting of ‘parts’ that are themselves independent substances, bodies, material particles; or (by abstracting from body) the same universe regarded as a purely spatio-temporal whole. [...] (10) The concepts of space and time: viewed, first, as functionally derivative from those laws which govern the structure of the physical universe; then, as the medium for ‘construction’ of whole from part; then, as something which is ‘given’ in addition to material body, non-reducible to the latter; and finally regarded as an independent ‘form’ (or ‘manner’ or ‘mode’) through which the conscious and constructive processes involved in Kant’s definition of ‘experience’ and of ‘phenomena’ are to be understood (or ‘made possible’). [...]

Although this inventory of key concepts has been compiled with a knowledge of hindsight of the part they play in the final Critique [...], most of them are developed, and certainly acquire much of their semantic significance in Kant’s pre-critical, and especially the ‘scientific’, writings [...]."
2. Buchdahl (op.cit, p.552) speaking about Kant’s ‘scientific writings’ of the pre-critical period, remarks: "Many of these distinctions and classifications, with the general presuppositions underlying them, continue to linger on in Kant’s later work, and seldom are the intellectual spectacles through which these problems are approached abandoned altogether [...]. Above all, the meanings involved in the terminology of the earlier treatises are never quite lost in these transformations [i.e. those of the critical period] - a fact that makes a reference to these writings essential."

Although he is obviously aware of the specific meanings of the pre-critical concepts, Buchdahl nevertheless proceeds as if they were nothing much more than attempts to insights which are only fully developed in the critical period. I think this is stressing too much the continuity in Kant’s development as a philosopher; Buchdahl’s exposition, which is extensive and very interesting in itself, does too little justice to the fact that Kant’s thoughts of the pre-critical period can be understood as forming a system for itself.

3. In referring to these texts I will give the numbers of the pages of the Weischedel-edition (Weischedel, W. (hrsg.), Immanuel Kant; Werke in zehn Bänden, Darmstadt 1983), adding the numbers of the corresponding pages of the Akademie-Ausgabe (as:”/A...”) insofar as these are given by Weischedel.


5. The Leibnizian concept of force is formulated by Kant as the product of a quantity of matter and the square of its velocity, whereas the Cartesian concept is formulated as the product of a certain quantity of matter and its velocity (Gedanken von der wahren Schätzung der lebendigen Kräfte und Beurteilung der Beweise, derer sich Herr von Leibniz und andere Mechaniker in dieser Streitsache bedient haben, nebst einigen vorhergehenden Betrachtungen, welche die
Kraft der Körper überhaupt betreffen, henceforth to be referred to as WSDLK, section 22, pp.43-44/A24-25.

WSDLK was first published in 1746 (but see note 4), and not reprinted during Kant’s lifetime.

6. This view, viz. that existence is not a determination of a substance, is an important one for Kant. He adheres to it in the Critique of Pure Reason also, where he refuted the ontological argument for God’s existence; to this argument, "[...] Kant replied that existence is not an attribute or determination of anything and so cannot be involved in the essence of anything. The point had been made already by Gassendi in his objections to Descartes’s Meditations, but it had been overlooked or forgotten, and Kant has the credit of making the criticism generally understood." (W. & M. Kneale, The Development of Logic, Oxford, 1968, p.358).

It is, however, uncertain if for Kant, in his pre-critical period, the conclusion that existence "cannot be involved in the essence of anything" is correct. In my opinion, his view on existence, viz. that it is not a determination of anything, means that it is not involved in physical reality; for only in physical reality there is determination, viz. by relation. As will appear, there is good reason to assume that Kant thinks that existence is in fact involved in monads, that is, in their internal state.

7. Kant quotes the following definition of ‘world’: "Mundus est rerum omnium contingentium simultaneorum et successivarum inter se connexarum series." (The world is the series of all things which are simultaneously contingent and successively connected to each other).

It is interesting that in this view physical existence and contingency are conceptionally related, that is, that physical existence is conceived as the existence of a multitude of things which are, as concerns this physical existence, dependent on one another. It means that in the physical world there are no things whose existence is absolutely necessary.

8. Kant even offers an explanation for the fact that our universe has three spatial dimensions. He argues that the activity of force is not well conceivable without some sort of law. According to this law, substances act upon each other. Space, that is a totality of substances, should be measured according to the activity by which they draw together, that is, form a whole. This activity is the activity of gravity. The law of gravity says that its activity spreads inversely proportionally to the square of the distance it covers. This means, geometrically, a plane moving along a perpendicular; hence one obtains three dimensions (WSDLK, s.10, p.34/A12-13). But, Kant
says, this law may be connected to our world only; there is no reason why it should apply to other worlds as well. And if it does not, such a world will have other dimensions (id.)

9. Buchdahl (op.cit., pp.553-554) remarks the following: "This concept of 'living force', whose task it is to preserve a body in inertial motion, evidently still follows Leibniz's doctrine according to which an 'internal force' is required to preserve such motion. But, unlike Leibniz's living force, Kant's is not subject to a law of conservation. Not therefore being a mathematical conception, it is really more like Leibniz's 'primitive' rather than 'derivative active force', despite the quantitative specification. For, like the former, it is not only altogether 'internal' but also 'different in kind' from those 'external' forces which are subject to conservation."

10. It is surprising, because it seems that Kant's concept of living force which can diminish and intensify violates the laws of conservation that were widely accepted since Descartes (see also note 9). It might seem wrong to posit a force which grows stronger by its own virtue.

But in fact there is no violation here. Descartes stated that the total amount of motion in the universe had to remain constant. In Kant's theory, it does. The living force establishes this conservation. It is, however, in conflict with the spirit of Cartesian metaphysics, that a living force should be needed to establish this conservation.

In fact, Kant has to introduce a new principle of conservation, which does not differ at all that much from the Cartesian principle, as I will explain further below.

11. In my opinion, Kant missed the point Leibniz made. The latter never claimed that the physical world was completely continuous, but, quite the contrary, that every existing thing was unique and, therefore, distinguished from any other thing. The law of continuity is applicable only together with its counterpart.

Kant, however, seems to be deluded by the beautiful use one can make of this law in mathematics, where, indeed, it is used to overcome the difference between what is very small and what is zero. In mathematics it may be true that, as Kant says, a very small inequality can be exchanged with an equality (WSDLK, s.26, p.49/A31). But this does not justify the ontological or metaphysical statement Kant makes use of, viz. that a very small inidentity is in fact an identity. He should have remembered his own observation that mathematical laws do not always concur with physical laws.

12. The conclusion demonstrates the capriciousness of
Kant’s law of continuity. If it is true that a very small inequality is an equality, it is simply impossible to summarize very small periods of time or very small amounts of intensity, since they are all, as such, equal to zero. It is the user’s whim that decides whether to consider very small to be zero or to consider very small to be something, that is, to decide between the infinite and the finite.

In fact, this is quite understandable. The law of continuity cannot stand on its own, it has no ontological value as such. This means that, if it is used in ontological matters, it must either lead to problems and contradictions, or be implicitly combined with its counterpart. What seems on first sight capricious, is, therefore, in fact dictated by the implicit combination of the two principles in one.


ANTH was first published 1755, officially not reprinted during Kant’s lifetime, but actually reprinted as an excerpt by J.F.Gensichen (together with three treatises by William Herschell, translated in German, in an edition by Friedrich Nicolovius) which Kant carefully corrected himself.

14. Kant’s tactics may seem preposterous, but in fact he was wise to be extremely careful in matters which touched upon religion; about his treatise on the only possible proof for God’s existence, Gulyga (op.cit., p.70) remarks: "Die Arbeit erschien Ende 1762 und brachte dem Autor ersten literarischen Ruhm, die Theologen jedoch merkten auf. Magister Weymann ging sofort mit einer Widerlegung an die Öffentlichkeit; im katholischen Wien gelangte der "Beweisgrund" auf den Index."

15. The Weischedel-Edition and the Akademie-Ausgabe differ. I quote the latter, since the former, reading "[...] diese zugleich mit ihrer Schöpfung [...]", seems to me to make less sense. In the Akademie-Ausgabe, "dieser" refers to "Urstoff", which can indeed be denser ("dichter gehäuft"). In the Weischedel-Edition, "diese" refers to "Grade der Dichtigkeit", and a denser degree of density seems to me to be an unlikely syntaxis.

Of course, the meaning of the sentence does not differ essentially with these variant readings.

16. Kant comes very close to Plato in this respect, although he is much less pessimistic than Plato about the actual and potential perfection of the real
world. Probably, this similarity to Platonic ideas is due to the Leibnizian influences on Kant’s philosophy. But Kant does not share Leibniz’s ideas on the perfection of this world.

17. Kant himself had published two smaller treatises anticipating ANTH, viz. Ob die Erde in ihrer Umdrehung einige Veränderung erlitten habe... (June 1754) and Die Frage ob die Erde veralte, physikalisch Erwogen (end of the summer, 1754). In the first treatise, he argues that the rotation of the earth is obstructed by the influence of the tides of the oceans; his mathematical treatment of the question is mistaken, but the basic idea is right (Gulyga, op.cit., p.27) and taken up some hundred years later by W.Thomson and P.G.Tait (A Treatise on Natural Philosophy, Oxford, 1867), and only by this time Kant’s idea was generally acknowledged. In the second treatise, Kant states that everything in nature comes into being, grows, ripens, and decays; the earth is no exception, although one should be careful as regards the interpretation of geological processes in this respect (Gulyga, op.cit., p.28). Gulyga remarks: "Diese beiden Aufsätze waren eigenartige Präludien zum Traktat über die Kosmogonie." (op.cit., p.28), since "[...]
der philosophische Hauptgedanke [ist] die Vorstellung von einer allgemeinen Geschichtlichkeit, der Idee der Entwicklung [...]."

One can conclude, therefore, that Kant was convinced that nature in general is a historical process, but that he was at the same time very careful in applying this idea to singular natural phenomena.

18. It would have been more correct to say that it is not described in Newton’s system. In Newton’s system the force opposing gravitational pull towards a centre is the tendency of an orbiting body to fly away along the tangent of its circular course, that is, its force of inertia. This is quite different from Kant’s repulsive force.

19. M.Immanuel Kants Neuer Lehrbegriff der Bewegung und Ruhe, und der damit verknüpften Folgerungen in den ersten Gründen der Naturwissenschaft, wodurch zugleich seine Vorlesungen in diesem halben Jahre angekündigt werden; te be referred to as NLBR.

The treatise was first published 1758, reprinted in 1759, and 1762, during Kant’s lifetime.


21. Obviously, Kant is not in accord with Newtonian mechanics, here.
22. In his "Definitions" (numbers iii to v), which precede his exposition in the Principia, Newton distinguishes between vis insita (which refers to inertia), vis impressa (which refers to percussion), and vis centripeta or vis acceleratrix (which refers to free fall).

Gravity, according to Newton, is not like other qualities, for it is diminished as a body recedes from the earth; hence Newton claims it is universal, but not essential to bodies (Koyre, A & I. B. Cohen, Isaac Newton's Philosophiae naturalis principia mathematica, Harvard University Press, 1972, p. 555).

As a matter of fact, Newton is not quite clear in his formulations, here. He seems to distinguish between universal and essential qualities of corporeal matter. But what is called in his definition of universal qualities (id., p. 552) a universal quality turns out to be an essential quality. A universal quality differs from this in that it can diminish (and, probably, intensify) and need not be in a single body. In fact, gravitation is a relation between at least two bodies, as is implied by Newton's use of words (he speaks for instance of bodies that mutually gravitate towards one another); this makes it indeed impossible to assume that gravity inheres in single bodies.

Of course, Kant's living force is not identical with Newton's gravity. The similarity between them arises from the fact that, according to Kant, living forces can diminish and intensify, and living forces imply a relation with other bodies.


24. Henceforth to be referred to as PPCMND. In the Weischedel-edition (see note 3), this treatise occupies the pages 401-509. Weischedel gives the original Latin and a translation in German; but not the numbers of the pages of the Akademie-Ausgabe, since he quotes (making a few typographical amendments) the edition of Cassirer (1922; I 389-426 and 485-500). Cassirer says that he treated the Latin text more conservatively than is done in the Akademie-Ausgabe, since it is not the purpose of his edition to amend Kant's Latin (Weischedel, band II (see note 3) p. 1004). In other words, the Akademie-Ausgabe seems to be not the original text, whereas Weischedel's edition is.

The treatise was first published in 1755, and not reprinted during Kant's lifetime.

25. Kant's distinction between affirmative and negative propositions seems to be absolute, which may be surprising. One has, however, to bear in mind that Kant is certainly not only writing on concepts here,
and that, as a consequence, his logic is not strictly formal logic. In formal logic, affirmation and negation is a simple matter of a sign which can or cannot be put before a proposition. Not so for Kant. Perhaps his absolute distinction can be understood as the consequence of his idea of existence, viz. that existence is not a determination of a thing or of things. This idea, it seems to me, entails that affirmative propositions (which state that something exists) are different from negative propositions (which state that something does not exist); in this view, affirmation cannot be the ground of negation, and vice versa, as existence cannot be the ground of non-existence, vice versa.

26. Kant rejects principles which are not single: "Principium primum et vere unicum propositio simplex sit necesse est; alias plures tacite complexa propositiones unici principii speciem tantummodo mentire-tur." (PPCMND, p.408) (A first and truly single principle must be simple; if it tacitly would comprise other propositions, it would only deceivingly pretend to be a single principle).

27. The Latin term "ratio" could perhaps better be translated by "reason", but only if it were a neutral term. Kant, I think, does not use this term in a neutral way; when writing in German he uses the term "Grund" which, as does "ground", signifies a reason which contains its consequences in some way or other; as will become clear, this containment is important to Kant - especially as concerns the logical ground (which is to be distinguished from the real ground which does not contain its consequences) (see chapter 6, section 4).

Apart from this consideration, there is at least one precedent; Buchdahl uses "ground" for Kant's "Grund" and for his "ratio" (Buchdahl, op.cit., for instance pp.571 ff.)

28. This is in agreement with Kant’s physical theory about motion and force as expounded in WSdLK; see chapter 1, section 1. The inner state of a body or substance does not change as long as its state of motion (which is an external state) does not change; for the internal force preserves this state as long as it is not obstructed by a change of state.

29. But not a determination, for determinations presuppose relations.

30. Henceforth to be referred to as MPH. This text is also the version Cassirer edited (see note 24). It was first published 1756, and never reprinted during Kant’s life.

31. The term ‘monadology’ refers to the Leibnizian/Wolffian metaphysical system. The adjective
‘physical’, however, must be a addition which Kant made consciously to discriminate between his system and that of Leibniz/Wolff.

It is, perhaps, here the place to remark that Kant was very familiar with a number of Wolff’s ideas. According to Gulyga (op.cit., p.23), Kant’s teacher Martin Knutzen was a "Wolffianer". Kant was more critical, or perhaps more eclectic. He accepted the criticism of Crusius against Wolff’s (alleged) rejection of the free will (Gulyga, op.cit., p.42), but he also accepted Wolff’s point of view regarding the rather humble place of Man in the whole of the Creation (id., p.46). According to NLBR (see note 19), Kant taught mathematics from an excerpt of Wolff, and, according to Versuch einiger Betrachtungen ueber den Optimismus (1759), he also used a text by Wolff to teach mechanics. It seems reasonable to assume Kant must have been familiar with Wolff’s metaphysics too (although he taught metaphysics from a work by Baumgarten, as is mentioned in both texts). There are many indications of this in Kant’s expositions on metaphysical concepts.

Kant probably was also familiar with the work of Leibniz. But it is hard to establish the extent of his direct knowledge of Leibniz’s publications. The Theodicy was published in 1714, Principes de la Nature et de la Grace in 1721, Monumenta Varia in 1724, and there were publications (both after and before 1714) of articles in journals, but only as late as 1768 the first (and, still, the most) really comprehensive edition of Leibniz’s work was published by Louis Dutens (a Dutchman, but the edition was published in Geneva); this edition contains the most important texts of Leibniz, neatly categorized, on mathematics, geometry, physics, metaphysics, etc. If Kant has acquainted himself in a systematical way with original texts of Leibniz before 1768, he must have had some difficulty in finding the essential texts. It is much more probable that he knew Leibniz at least partly through the works of Wolff, for instance from the Petersburgischen Commentarii (see WSDLK, p.139/A142).

32. It is perhaps here the place to point out the kind of confusion which arises if one ignores the systematic implications of Kant’s pre-critical works. Buchdahl writes on Kant’s concept of "noumena" (which belongs to the critical period), claiming that it is modelled on Leibniz’s concept of "monad" (Buchdahl, op.cit., pp.543-544). He backs this up by referring to the obvious Leibnizian influence in WSDLK: "We referred earlier to the difficulty of understanding phrases like 'out of space and time', and suggested that the theory of monads may have met this deficiency in Kant’s eyes. Kant’s first published work, Thoughts on the True Estimation of Living Forces, still strongly under Leibnizian influence, gives evidence of this. When discussing the question of
'other worlds', he throws in the suggestion that 'things may actually exist and yet not be present anywhere in the world'. And he characterises these things as 'substances [which] contain within themselves the complete source of all their determinations', and thus have no 'outer relations to anything': from which he infers that they are 'nowhere present in the world'. This is obviously an interpretation of monadic reality regarded as outside space and time, and whatever meaning the theory of Leibniz may hold would also be infused into this phrase as used by Kant."

First of all, I think it very strange that Buchdahl does not refer to Kant's own monadology; indeed, he ignores this text completely (see the bibliography referring to Kant's works, Buchdahl, op.cit., pp.684-685).

Secondly, Buchdahl overestimates Leibniz's influence on Kant. He is wrong in assuming that Kant accepted the Leibnizian concept of the monad; with Kant, force is external to the monads, but with Leibniz force is internal and expressing itself externally (a state of affairs which is in Kant's system, where internal state and external state are separated, totally incomprehensible); with Leibniz, the dynamics of the monad originate in the monad's representation of the universe, but with Kant there is no such representation at all (at least, not in the monads). These differences (among other ones) are so crucial that ignoring them leads to a totally false view of Kant's pre-critical monadology.

Thirdly, if this is so, I cannot see that referring to Kant's early reception of Leibniz's monadology sheds any light at all on Kant's modelling of the 'noumenon' in his critical period.

One should, however, add to this that Buchdahl himself admits that his method stresses "[...] the basic continuity, rather than the discontinuity, of his [i.e. Kant's] thought [...]. This will mean [...] using the method of shuttling between pre- and post-critical writings, so that each may illuminate the other. This is at times confusing but I think that only thus we can steer close to the centre of Kant's thought [...]" (Buchdahl, op.cit., pp.558-559). It will be clear that I do share Buchdahl's view that his method is confusing.

33. Kant states that repulsion and attraction neutralize each other at a certain point for the following reason. Repulsion is active from the centre of a body outwards; it decreases in the direction it is active in; it decreases, therefore, along the three dimensions of a body, that is, its overall decrease is proportional to the cubic of the distance. Attraction is active towards the centre of bodies; it decreases in the direction it is active in; it decreases, therefore, along the inwardly directed dimension and the surface it is active on, that is, its decrease is proportional to the square of the distance. Since
repulsion decreases more rapidly than attraction, there is a point in which they neutralize each other, and this will be the outer boundary, that is, the superficies of the body. (MPH, pp.548-550)

34. pp. 617-738 in the Weischedel-Edition; henceforth to be referred to as BDDG. In Kant’s lifetime, the treatise was first published in December 1762, then reprinted in 1770, and 1783 (without alterations reprinted in 1794).

It is the only treatise, together with ANTH, which was reprinted in the critical period; a fact which, it seems to me, indicates that Kant thought them to be very significant treatises (and, I think, rightly so).

35. Obviously, Kant refers to the function of ‘is’ in ‘x is p’, in which proposition p is a determination of x.

36. This would, with Kant, refer to the function of ‘is’ in ‘x is’, which proposition simply but absolutely asserts the existence of x.

37. Buchdahl remarks that, obviously, according to Kant God is "[...] both the ground of the 'inner possibility' of matter and its laws, and of the higher-order unity of all empirical laws [...]"; but he adds that this "attempted reconciliation of mechanism and teleology" is "highly artificial" (Buchdahl, op.cit., p.493). Buchdahl prefers the separation of these two levels, as is attempted in Kant’s critical period (id., p.494). That may be one of the reasons why he ignores the systematic implications of this unification. As I will point out in the systematical part, God is as a unifying ground very important in Kant’s system.

38. Kants critique of Leibniz, implicitly present throughout this treatise, is very apparent here. Leibniz argued that the pre-established harmony is established by an act of divine will, that is a choice God made, hence this world is the most perfect of all possible worlds. Kant rejects this. Harmony is not a thing which can be chosen, it is necessary. Existence is a thing which can, insofar as it concerns contingent things, be chosen. Therefore, the actual harmonious existence of the world is a necessity mediated by wisdom.

39. In the correspondence of Leibniz with Clarke, this topic is one of the issues about which Leibniz and Clarke (who was prompted by Newton) disagreed.

In his first letter Leibniz writes that Newton and his followers have a very odd opinion concerning the work of God, viz. that He needs to "wind up his watch" (that is, to renew the amount of motion in the world) from time to time; surely God is a better
craftsman than that, says Leibniz. Clarke replies that one should not apply to God the same criteria of craftsmanship as one does to human beings; things which seem amendments to us are in fact examples of God’s glorious creatorship. In his second letter Leibniz answers to this piece of sophistry that God’s perfectness is glory enough, and that there is no reason to assume that amendments are necessary to prove his great creatorship; the world must be a watch which does not need rewinding. Clarke replies that Leibniz has misunderstood the meaning of amendment; it does not imply being imperfect as it does with human beings - God creates things to last for a certain period of time and then to die, and in this consists His wisdom and foresight, not in having created in His creation itself a cure for every disorder and eternal motion for all things. But Leibniz insists, in his third letter, that the diminishing of active force in the universe is not only an imperfection for us, it is also an imperfection with respect to God, for He might have prevented it (as indeed he actually did). In his third reply, Clarke says that the diminishing of active forces in the universe is no imperfection, since it lies in the nature of all dependent things, which dependency is not a matter that wants to be rectified. Leibniz, in his fourth letter, repeats his point of view; Clarke does the same in his fourth reply, adding as an example that when two elastic and soft bodies collide there is a diminishing of active forces there too - which is only natural. Leibniz denies in his fifth letter; he adds that furthermore the example is no example of active forces; and that Clarke has avoided to demonstrate that the diminishing of active forces arises from the dependency of things, as he was asked to do - but of course he could not have demonstrated it, since it is not so.

Kant’s view of this matter is typical; he finds a middle way. But even so, this solution is not an ad hoc solution, but consistent with his system, as will become more clear in the section on negative quantities (see also note 40).

40. Interestingly, Kant does not object that God has made the world a perfect mechanism in which nothing which is in motion will ever cease to move. In his view, the harmony of the universe is universal harmony, that is, a harmony which every existing thing helps to establish (since it is part of it) but does not possess in any other way than to be capable of helping to establish it as a part of it. If Kant conceives of the universe as a mechanism (which he seems to do, carefully making allowances for the possible exclusion of organic matter), it is, in his view, only perfect as a whole. His remarks in ANTH on the continuing rise and fall of the universe demonstrate this.
41. Henceforth to be referred to as NQ. The treatise was, during Kant’s lifetime, printed twice, both times in 1763.

42. This would, in fact, be a negative quantity for itself, viz. -A; Kant consistently rejects this.

43. To be referred to as UDG. The essay was published in 1764, but Kant wrote it in the end of 1762, that is, before he wrote NQ. As it contributes, however, less to his system as compared to NQ, I decided not to deal with it before expounding the interesting elements of NQ.

44. In this treatise, Kant writes that "Spatium non est aliquid objectivi et realis, nec substantia, nec accidens, nec relatio; sed subjectivum et ideale [...]" (space is not something which is objective and real, nor is it a substance, nor an accident, nor a relation; but it is something subjective and ideal [...] (Kants Werke, Akademie Textausgabe, Band 2, Berlin 1968, p.403).

45. see Weischedel (Band II, see note 3), pp.928 ff.

46. see Weischedel (Band II; see note 3), pp.994 ff.

47. By historical I refer to the fact that in his system the universe is conceived of as a process which evolves or develops with time.

48. I will, for the moment, ignore the concept of matter and save it for section 3, for, although it is obvious that bodies are material, in Kant’s system they are determined by the forces of attraction and repulsion, and the concept of matter refers only to their existence as such.

49. This is not merely playing with words. A paradox contains two extremes which oppose each other. Within the paradox as one whole these extremes are one, they are therefore compatible, even reconcilable; if not, they would not form the one paradoxical whole which the paradox is. Within the paradox, therefore, these extremes cannot be separated from each other; one cannot determine each extreme in itself. To be determined as an extreme, both extremes have to be placed outside the one whole of the paradox.

50. To be precise, it is the elementary level of the physical universe. Kant himself does not claim that this level can explain every feature of the universe, e.g. human conduct, the multitude of differently shaped flowers, etc. But then again, he does not claim that it cannot. In my reconstruction, therefore, I restrict Kantian ontology to inorganic matter, to evade this particular problem. I do not think that Kant’s modest claim is inspired by anything else than
extreme cautiousness, especially in such a theologically defying matter, but I shall not undertake here to deliver the proof of this opinion.

51. Force, as one will remember, is in Kant's system the external relations between substances, that is, that which keeps together (by its activity which is spatially as well as temporally extended) what is essentially separated.

52. Not: it simply exists. Existence implies determination, determination involves relation and, therefore, mediation.

53. Mediation itself involves differentiation, but if it is separated from that which it is mediating (in this instance from the bodies) it does not, only the relatedness as such remains.

54. This is obvious. Kant makes clear that the external state of bodies is nothing but the relative position and motion, or in other words, nothing but the physically existing respectivity. But this is precisely what the activity of the forces is: the existence of relations between bodies. Physical reality is, with Kant, in fact nothing but the activity of forces. A dynamical concept of reality indeed.

55. The information does not yet exist; it is available, viz. in God's intellect, but not physically so. Of course, it will become available, all information eventually will in due time, but that is precisely what is the point: it will become available with time, that is, it is essentially differentiated and not available as one whole, as it is in Leibniz's completed universe.

56. Of course, being completed does not prevent the universe from being infinite; there is, for instance, an infinite number of points in a finite line-segment.

57. The categories in the scheme are derived from the previous analysis.

As concerns textual corroboration from Kant, for S (singular existences) and for B (physically existing bodies) see chapter 5, sections 1 and 2, chapter 6, sections 1 and 2; for G (God's ideas of the universe) see chapter 6, sections 3 and 5; for U (universe as a historical process) see chapter 5, section 2.

58. It would also mean that, ultimately, physical theory could make propositions about the whole of the universe as one process only, not about bodies or other parts of this whole. For every partial proposition would be conditional to all other parts this specific part is connected with. This is, in fact, a
very consistent and plausible explanation for the phenomenon that physical theories have to be revised every time physics has broadened its scope. In practice it may seem that we are confronted with specific objects or systems of objects, and we eagerly form theories about them; such theories have, however, very limited value as history proves again and again, and taking them for true pictures of reality has lead to disaster, as is clear in, for instance, the history of nuclear energy or, to name another example, chemical fertilizers, or the use of insecticides, and antibiotics, and so forth.

59. As one will remember, Kant asserts that there is a limited number of determinations, even if this number may be infinite, for the quantity of reality remains constant; the other rule governing this constant deprivation is that all deprivations must in sum amount to zero.

60. I do not, of course, intend to say that Kant consciously devised his system to be the analytical form of Leibniz’s system. The fact that it is, is a matter of systematical analysis, not of historical representation.