DITION OF THE WORKS
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IMMANUEL KANT

Theoretical philosophy, 1755–1770

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A NEW ELUCIDATION OF T
PRINCIPLES OF METAPHYS
(1755)

Purpose of the undertaking
Section 1. Concerning the principle

Verſuch

den Begriff

tiven Größen

Weltweisheit einzuführen

von

Immanuel Kant.

Attempt to introduce the concept of negative magnitudes into philosophy

by
M. Immanuel Kant

Preface

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The use to which mathematics can be put in philosophy consists either in the imitation of its method or in the genuine application of its propositions to the objects of philosophy. With respect to the first of these two uses: it has not been noticed that it has had only one benefit,[a] in spite of the great advantage expected of it to start with. Furthermore, the high-sounding titles, with which philosophers, jealous of geometry, were induced to decorate the propositions of philosophy, have now been gradually abandoned. The impropriety of provocative gestures made in lowly circumstances, and the stubborn refusal of the importunate *non liquet*[1] to yield to all this pomp, have come to be modestly recognised.

By contrast, the second use to which mathematics has been put in philosophy has been all the more beneficial to the parts of philosophy affected. These parts of philosophy, by turning the doctrines of mathematics to their own advantage, have attained to heights, to which they would not otherwise have been able to aspire.[2] But the parts of philosophy to which I am referring are only the insights of physics – unless, that is, one is obliged to include in philosophy the logic of probability.[b] As for metaphysics, this science, instead of turning certain of the concepts or doctrines of mathematics to its own advantage, has, on the contrary, frequently armed itself against them. And where it might, perhaps, have been able to gain secure foundations on which to base its reflections, it is to be seen trying to turn mathematical concepts into subtle fictions, which have little truth to them outside the field of mathematics. It is not difficult to guess which side will have the advantage if two sciences enter into a 2:168
dispute with each other, where the one excels all others in certainty and distinctness, while the other has only just started out on the path to these objectives.

Take an example. Metaphysics seeks to discover the nature of space and establish the ultimate principles, in terms of which its possibility can be understood.[3] Now, nothing could be of more use in such an undertaking

[a] *von einigem Nutzen* / Carabellese (Assunto) (hereafter C): *di una qualche utilità* / Ferrari (hereafter F) & Kempf (hereafter K): *de quelque utilité* / (Kant is employing the word *einiger* in the now archaic sense of 'one single', 'only one'; the modern sense would, in the present context, yield an incoherency).

[b] *die Logik der Erwartungen in Glücksfällen.*

than the capacity to acquire reliably established data from some source or other, with a view to using them as the foundation of one's reflection. Geometry furnishes a number of such data relating to the most universal properties of space, for example, that space does not consist of simple parts.[4] And yet these data are ignored and one relies simply on one's ambiguous consciousness of the concept, which is thought in an entirely abstract fashion. If it should then happen that speculation, conducted in accordance with this procedure, should fail to agree with the propositions of mathematics, then an attempt is made to save the artificially contrived[c] concept by raising a specious objection against this science, and claiming that its fundamental concepts have not been derived from the true nature of space at all, but arbitrarily invented![d] The mathematical observation of motion, combined with cognition of space, likewise furnishes many data, which are capable of keeping the reflections of metaphysics concerning time on the path of truth. The celebrated *Euler,* among others, has provided a stimulus to reflections such as these.* But it seems easier to linger among obscure abstractions which are difficult to test, than to enter into relations with a science which only admits intelligible and obvious insights.

The concept of the infinitely small, in which mathematics so frequently issues, is rejected with presumptuous audacity as a figment of the imagination[e] by people who ought rather to consider the possibility that they do not understand the matter well enough to pass judgement on it. Notwithstanding, nature herself seems to yield proofs of no little distinctness showing that this concept is very true. For if there are forces which operate continuously for a given time so as to produce movements – and gravity, to all appearances, is such a force – then the force which gravity exercises at the very beginning or in a state of rest must be infinitely small in comparison with that which it communicates over a period of time.[f] It is difficult, I
2:169 admit, to penetrate the nature of these concepts. But this difficulty can, at best, only justify the cautiousness with which hesitant conjectures are made; it cannot justify the dogmatic declarations of impossibility.

My present intention is to consider a concept which is familiar enough in mathematics but which is still very unfamiliar in philosophy; and I wish to consider this concept in relation to philosophy itself. The considerations which I am about to offer only constitute modest beginnings, which is what generally happens when an attempt is made to open up new perspectives. But perhaps they may give rise to some important consequences. The neglect from which the concept of negative magnitudes has

* *Histoire de l'académie royale des sciences et belles lettres: l'année 1748.*[5]

[c] *erkünstelten.* [d] *willkürlich ersonnen* / (*willkürlich* in the sense of: 'as a result of choice').
[e] *als erdichtet.*
[f] *so muss die Kraft, die sie im Anfangsaugenblick oder in Ruhe ausübt, gegen die, welche sie in einer Zeit mittheilt, unendlich klein sein.*

suffered has given rise in philosophy to a number of errors. It has also occasioned some misinterpretations of the views of others. For example, if the celebrated *Dr Crusius*[6] had chosen to acquaint himself with what the mathematicians think when they employ this concept, he would not have thought that the following comparison made by *Newton* was false, and indeed, false to the point of being astonishing.* Newton, namely, compares[8] the attractive force which, at an increased distance though still in close proximity to the bodies, gradually turns into a repulsive force,[g] with those series in which the cessation of positive magnitudes marks the start of negative magnitudes. For negative magnitudes[h] are not negations of magnitudes,[i] as the similarity of the expressions has suggested, but something truly positive in itself, albeit something opposed to the positive magnitude. And thus negative attraction is not rest, as *Crusius* supposed, but genuine repulsion.[9]

But let me proceed to the treatise itself, in order to show what application this concept may have in philosophy generally.

* Crusius, *Naturlehre,* Part II, §295.[7]

[g] *welche in vermehrter Weite, doch nahe bei den Körpern, nach und nach in eine zurückstossende ausartet.*
[h] *die negative Grössen.* [i] *Negationen von Grössen.*

2:170 The concept of negative magnitudes has long been employed in mathematics,[10] and it has also been of the utmost consequence there. Nonetheless, the representation which most people have formed of the concept of negative magnitudes, and the elucidation[j] which they have given of it, have been strange and inconsistent. This has not, however, resulted in any errors of application, for the particular rules governing its employment took the place of the definition and guaranteed its correct use. And whatever error there may have been in the judgement about the nature of this abstract concept it remained fruitless and without effect. No one, perhaps, has indicated with greater distinctness and precision[k] what is to be understood by negative magnitudes than the celebrated *Kästner** in whose hands everything becomes exact, intelligible and agreeable.[12] In connection with his discussion of negative qualities, he criticises the mania for division and subdivision, characteristic of one highly abstract philosopher.[13] The force of the criticism is much more general than is actually expressed there. It may be regarded as a challenge to establish exactly how powerful the pretended perspicacity of many thinkers actually is, by testing it against a true and useful concept, with a view to fixing its nature philosophically, the correctness of the concept having already been secured by mathematics. And this is the sort of situation which spurious metaphysics is eager to avoid, for learned nonsense cannot create the illusion of thoroughness[l] here as easily as it can elsewhere. My purpose is to secure for philosophy the benefit of a concept which has hitherto not been used but which is nonetheless of the utmost importance. Since this is my purpose, I wish for no other judges than those who, endowed with general understanding,[m] are similar to the author whose writings have stimulated me to undertake this task. As for the metaphysical intelligentsia[n] who are in possession of a perfect understanding of things, one would have to be very inexperienced to imagine that their wisdom could be increased by any addition, or their madness diminished by any subtraction.

* *Anfangsgründe der Arithmetik*, pp. 59–62.[11]

[j] *Erläuterung.* [k] *deutlicher und bestimmter.* [l] *das Blendwerk der Gründlichkeit.*
[m] *von allgemeiner Einsicht.* [n] *die metaphysische Intelligenzen.*

Section 1. Elucidation of the concept of negative magnitudes in general

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Two things are opposed to each other if one thing cancels[o] that which is posited[p] by the other. This opposition is two-fold: it is either *logical* through contradiction, or it is *real*, that is to say, without contradiction.

The first opposition, namely logical opposition, is that upon which attention has been exclusively and uniquely concentrated until now. The opposition consists in the fact that something is simultaneously affirmed and denied of the very same thing. The consequence of the logical conjunction is *nothing at all* (*nihil negativum irrepraesentabile*),[14] as the law of contradiction asserts. A body which is in motion is something; a body which is not in motion is also something (*cogitabile*);[15] but a body which is both in motion and also, in the very same sense, not in motion, is nothing at all.

The second opposition, namely real opposition, is that where two predicates of a thing are opposed to each other, but not through the law of contradiction. Here, too, one thing cancels that which is posited by the other; but the consequence is *something* (*cogitabile*).[16] The motive force of a body in one direction and an equal tendency of the same body in the opposite direction do not contradict each other; as predicates, they are simultaneously possible in one body. The consequence of such an opposition is rest, which is something (*repraesentabile*).[17] It is, nonetheless, a true opposition. For that which is posited by the one tendency, construed as existing on its own, is cancelled by the other tendency, and the two tendencies are true predicates of one and the self-same thing, and they belong to it 2:172
simultaneously. The consequence of the opposition is also nothing, but nothing in another sense to that in which it occurs in a contradiction (*nihil privativum, repraesentabile*).[18] We shall, in future, call this nothing: zero = 0. Its meaning is the same as that of negation (*negatio*), lack, absence – notions which are in general use among philosophers – albeit with a more precise determination which will be specified later on.

In the case of logical repugnancy,[q] attention is concentrated exclusively on that relation in virtue of which the predicates of a thing cancel each other and their respective consequences through contradiction. And in

[o] *aufhebt.* [p] *gesetzt.* [q] *Bei der logischen Repugnanz.*

the case of such logical repugnancy, no attention is paid to which of the two predicates is truly affirmative (*realitas*)[19] and which truly negative (*negatio*).[20] For example: being dark and not dark at the same time and in the same sense is a contradiction in the same subject. The first predicate is logically affirmative, the other logically negative, although, in the metaphysical sense, the former is a negation. Real repugnancy[r] is also based upon the relation of the two predicates of the same thing to each other; but this relation is quite different from that which is present in logical repugnancy. That which is affirmed by the one is not negated by the other, for that is impossible. It is rather the case that both predicates, A and B, are affirmative. However, since the consequences of the two, each construed as existing on its own, would be *a* and *b*, it follows that, if the two are construed as existing together, neither consequence *a* nor consequence *b* is to be found in the subject; the consequence of the two predicates A and B, construed as existing together, is therefore zero. Suppose that someone has an active debt[s] A = 100 thalers with regard to another person; that active debt is the ground of a correspondingly large income.[t] But suppose that this same person also has a passive debt[u] B = 100 thalers; then that passive debt is the ground of a correspondingly large expenditure.[v] The two debts together are the ground of zero, that is to say, the ground for neither giving nor receiving money. It is easy to see that this zero is a relative nothing,[w] for it is only a certain consequence which does not exist. In the present case, it is a certain capital which does not exist, and, in the case mentioned above, it was a certain motion which did not exist. On the other hand, in the case of cancellation through contradiction it is absolutely nothing[x] which exists. Accordingly, the *nihil negativum*[21] cannot be expressed by zero = 0, for this involves no contradiction. It is possible to think that a certain motion should not be; but that a certain motion should both be and not be cannot be thought at all.

Mathematicians make use of the concepts of this real opposition in the case of mathematical magnitudes. In order to indicate them, the mathematicians designate them by means of the signs '+' and '−'.[22] Since every such opposition is reciprocal, it can easily be seen that one magnitude
2:173 cancels the other, either complete or in part, without, for that reason, any distinction being made between those magnitudes which are preceded by '+' and those which are preceded by '−'. Suppose that a ship sails from Portugal to Brazil. Let all the distances which it covers with the east wind be designated by '+', while those which it covers with the west wind are designated by '−'. The numbers themselves signify miles. The week's journey is +12 +7 −3 −5 + 8 = 19 miles; this is the distance the ship

[r] *Realrepugnanz.* [s] *Activschuld.* [t] *ein Grund einer eben so grossen Einnahme.* [u] *Passivschuld.* [v] *so ist dieses ein Grund, so viel wegzugeben.* [w] *ein verhältnissmässiges Nichts.* [x] *schlechthin Nichts.*

has sailed westwards. The magnitudes preceded by '−' have this sign in front of them simply to signify opposition, for they are to be combined with those magnitudes which are preceded by '+'. But if they are combined with magnitudes which are preceded by '−', then there is no longer any opposition, for opposition is a reciprocal relation[y] which only holds between '+' and '−'. And since subtraction is a cancelling which occurs when opposed magnitudes are taken together, it is evident that the '−' cannot really be a sign of subtraction, as is commonly supposed; it is only the combination of '+' and '−' together which signifies subtraction. Hence the proposition '−4 −5 = −9' is not a subtraction at all, but a genuine increase and addition[z] of magnitudes of the same kind. On the other hand, the proposition '+9 −5 = 4' does signify a subtraction, for the signs of opposition indicate that the one cancels as much in the other as is equal to itself. Likewise, the sign '+' on its own does not really signify addition itself. The sign '+' only signifies addition in so far as the magnitude which it precedes is supposed to be combined with another magnitude which is also preceded by '+', or is thought of as preceded by '+'. If, however, it is to be combined with a magnitude preceded by '−', this can only occur by means of opposition, and then both the sign '+' and the sign '−' signify a subtraction, one magnitude cancelling as much in the second magnitude as is equal, namely, to the first, as for example '−9 +4 = −5'. For this reason, the sign '−', as it occurs in the example '−9 −4 = −13', does not signify a subtraction but an addition, in exactly the same way as the sign '+', as it occurs in the example '+9 +4 = +13', signifies addition. For, in general, if the signs are the same, then the signified things must be simply added together, but if the signs are different they can only be combined through opposition, that is to say, by means of subtraction. Accordingly, in mathematics these two signs only serve to distinguish magnitudes which are opposed to each other, in other words, those magnitudes which, when combined, cancel each other either wholly or in part. The two signs have the following functions: firstly, they enable one to recognise the reciprocal relationship holding between magnitudes; secondly, they enable one to establish to which of the two types of magnitude the balance belongs, after one magnitude has been subtracted from 2:174
the other. Thus, in the case above, one would arrive at the same result if the ship's course with the east wind had been indicated by '−' and its course with the west wind by '+'. The only difference would be that the final balance[a] would have been designated by '−'.

This is the origin of the mathematical concept of **negative magnitudes.** A magnitude is, relative to another magnitude, negative, in so far as it can only be combined with it by means of opposition; in other words, it can only be combined with it so that the one magnitude cancels as much

[y] *Gegenverhältniss.* [z] *Zusammenthuung.* [a] *Facit.*

in the other as is equal to itself. Now this, of course, is a reciprocal relation, and magnitudes which are opposed to each other in this way reciprocally cancel an equal amount in each other. It follows that, strictly speaking, no magnitude can be called absolutely negative: '+a' and '−a' must each be called the negative magnitude of the other. However, since this can always be added in thought,[b] the mathematicians have in the past adopted the practise of calling the magnitudes preceded by '−' 'negative magnitudes'. But, in adopting this practise, one must not lose sight of the fact that the above designation does not signify a special kind of thing, which is distinctive in virtue of its inner constitution; it rather signifies the following reciprocal relation: magnitudes preceded by '−' are to be taken together in an opposition with certain other things which are designated by '+'.

In order to extract what is philosophically significant from this concept and to do so without particularly looking at magnitude, we shall begin by offering the following remark. The mathematical concept of negative magnitudes involves the opposition which we have above called 'real opposition'. Suppose that there are +8 units of capital[c] and −8 units of passive debt; no contradiction is involved in attributing them to the same person. However, one of these magnitudes cancels an amount which is equal to that which is posited by the other, and the consequence is zero. I shall, accordingly, call the debts 'negative units of capital'.[d] But in doing so I do not mean that they are negations or mere denials[e] of units of capital, for if they were they would themselves be designated by zero, and then the capital, combined with the debts, would yield as the value of the property '8 +o = 8', which is false. What I mean when I call debts 'negative units of capital' is this: debts are the positive grounds of the diminishment of the units of capital.[f] Now, this whole nomenclature only ever signifies the relation of certain things to each other, and without this relation the concept would instantly cease to exist. It follows that it would be absurd to
2:175 think of a special sort of thing and to call such things negative things, for even the mathematical term 'negative magnitudes' is not sufficiently exact. For negative things would in general signify negations (*negationes*), but that is not at all the concept we wish to establish. On the contrary, it is sufficient that we have now defined[g] the reciprocal relations which constitute the whole concept and which consist in real opposition. However, we should like to make it immediately clear from the expressions themselves which we are employing that the one member of the opposition is not the contradictory opposite of the other member, and that, if the second member of the opposition is something positive, the first member is not a mere

[b] *im Sinne.* [c] *+8 Capitalien.* [d] *negative Capitalien.*
[e] *Negationen oder blosse Verneinungen* / (elsewhere, both *Negation* and *Verneinung* are translated by 'negation').
[f] *positive Gründe der Verminderung der Capitalien.* [g] *erklärt.*

negation of the second, but, as we shall be seeing in a moment, something affirmative which is opposed to it. In order to make this clear, we shall adopt the method of the mathematicians and call descent 'negative ascent'; falling 'negative rising'; retreat 'negative advance'. In this way, it is instantly apparent from the expression itself that, for example, falling is not to be distinguished from rising merely in the way in which 'not a' is distinguished from 'a'. It is rather the case that falling is just as positive as rising. It is only when the former is combined with the latter that it contains the ground of a negation. It is, of course, obvious that, since everything depends here on the reciprocal relation, I can just as well call descent 'negative rising', as I can call rising 'negative descent'. Similarly, units of capital are just as much negative debts, as the latter are negative units of capital. But it is rather more appropriate to apply the name '*negative*' to that on which the intention is primarily focused in a given case, if one wishes to designate its real opposite.[h] For example, it is rather more appropriate to call debts negative 'negative units of capital' than to call units of capital 'negative debts', although there is no difference to be found in the reciprocal relation itself; the difference is to be found, rather, in the connection which the result of this reciprocal relation has to the rest of the intention. There is only one other thing which I wish to do and that is to remind the reader that I shall, on occasion, make use of the expression, 'one thing is the *negative* (thing) of the other'.[i] Take the following example: 'The negative of rising is setting'. What I intend to convey by this expression is not that the one thing is the negation of the other, but rather that there is something which stands in a relation of real opposition to something else.

In the case of such real opposition, notice should be taken of the following principle, which is to be regarded as a **fundamental rule.** A real repugnancy only occurs where there are two things, as *positive grounds,* and where one of them cancels the consequence of the other. Suppose that motive force is a positive ground: a real conflict[j] can only occur in so far as there is a second motive force[k] connected with it, and in so far as each reciprocally cancels the effect of the other. The following consider- 2:176
ation may serve as a general proof. *Firstly:* the determinations which conflict with each other must exist in the same subject. For suppose that there is one determination in one thing and another determination, no matter what, in a second thing: no actual opposition[l] arises in such a situation.* *Secondly:* one of the opposed determinations in a real opposition[n] cannot be the contradictory opposite[o] of the other; for if it were, the

* We shall discuss *potential* opposition[m] at a later stage.[23]

[h] *sein reales Gegentheil.* [i] *dass ein Ding die Negative (Sache) von dem andern sei.*
[j] *realer Widerstreit,* [k] *Bewegkraft.* [l] *keine wirkliche Entgegensetzung* (alt: no real opposition).
[m] *potentialen Entgegensetzung.* [n] *Realentgegensetzung.* [o] *das contradictorische Gegentheil.*

conflict would be logical and, as we proved above, impossible. *Thirdly:* a determination cannot negate anything other than what is posited by the other determination, for otherwise there would be no opposition at all. *Fourthly:* in so far as they conflict with each other, the two determinations cannot both be negative, for if they were neither of them would posit anything to be cancelled by the other. Accordingly, in every real opposition the two predicates must both of them be positive, but positive in such a way that, when they are combined, there is a reciprocal cancellation of the consequences in the same subject. In this way, if two things, of which one is regarded as the negative of the other, are viewed in themselves, they are both positive; but if they are combined in one subject, the consequence of the combination is zero. The passage of the ship westwards is just as much a positive motion as its passage eastwards; but if we are dealing with one and the same ship, the distances thus covered cancel each other out, either completely or in part.

Now, in saying this I do not wish to be taken to mean that these things, which are really opposed to each other, do not contain within themselves many negations as well. A ship which is sailing westwards is, in virtue of that very fact, not sailing eastwards, or in a southerly direction, *etc, etc;* nor is it in all places at the same time – all of these determinations being just so many negations which all attach to the ship's motion. But that which, in spite of all these negations, is positive, both in the easterly and in the westerly motion, is the only thing which can be involved in a real conflict, of which the consequence is zero.

It is precisely this which can be explained by means of general signs.[p] All true negations which are hence possible (for the negation of what is being simultaneously posited in the subject is impossible), can be expressed by zero = 0; the affirmation can be expressed by any positive sign.
2:177 Their combination, however, in one and the same subject can be expressed by '+' and '−'. Here it can be seen that 'A + 0 = A', 'A − 0 = A', '0 + 0 = 0', '0 − 0 = 0'* are none of them oppositions; in no case is something cancelled which had been posited. Likewise, A + A is not a cancellation. The only other case left is this: 'A − A = 0'; this formula expresses the following idea: there are two things, of which one is the

* It might be thought that '0 − A' constituted another case, and one which has been omitted here. Philosophically speaking, however, this case is impossible, for something positive can never be subtracted from nothing. If this expression has a valid use in mathematics, it is because zero does not in the least degree modify either the increase or the decrease which is produced by other magnitudes.[q] A + 0 − A is still A − A; the zero is accordingly completely superfluous. The idea, deriving from this, that negative magnitudes are *less than nothing,* is accordingly empty and absurd.[24]

[p] *durch allgemeine Zeichen.*
[q] *so kommt es daher, weil das Zero weder die Vermehrung noch Verminderung durch andre Grössen im geringsten etwas ändert.*

negative of the other; both are A and both are therefore truly positive; but they are positive in such a way that one of them cancels that which is posited by the other; the cancellation is signified by means of the sign '−'.

The **second rule,** which is really the reverse of the first, runs as follows: wherever there is a positive ground and the consequence is nonetheless zero then there is a real opposition. In other words: this ground is connected with another positive ground, which is the negative of the first ground. If a ship on the open sea is actually being driven by an easterly wind, but it still fails to move from the spot, or at any rate does not move as much as the force of the wind would lead one to expect, then there must be a current in the sea which is flowing in the opposite direction. Generally speaking this means: the cancellation of the consequence of a positive ground always demands a positive ground as well. Suppose that there is some ground or other for a consequence b; it follows that the consequence can never be 0, unless there exists a ground for −b, in other words, a ground for something truly positive which is opposed to the first ground: b − b = 0. If the estate left by someone at his death amounts to a capital of 10,000 thalers, then it follows that the whole inheritance cannot amount to a mere 6000 thalers, except in so far as 10,000 − 4000 = 6000, that is to say, in so far as the inheritance is combined with a debt or some other expense which amounts to 4000 thalers. What I shall be saying later will contribute substantially to the elucidation of these laws.

The following remark is offered by way of conclusion to the present section. A negation, in so far as it is the consequence of a real opposition, will be designated a *deprivation*[r] (*privatio*). But any negation, in so far as it does not arise from this type of repugnancy, will be called a *lack*[s] (*defectus, absentia*).[25] The latter does not require a positive ground, but merely the lack of such a ground. But the former involves a true ground of the positing and another ground which is opposed to it and which is of the same magnitude. In a body, rest is either merely a lack, that is to say, a negation of motion, in so far as no motive force is present, or alternatively, such rest is a deprivation, in so far as there is, indeed, a motive force present, though its consequence, namely the motion, is cancelled by an opposed force:
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[r] *Beraubung.* [s] *Mangel.*

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Section 2. In which philosophical examples embodying the concept of negative magnitudes are adduced

1. A body, in virtue of its impenetrability, resists the motive force of another body attempting to penetrate the space which it occupies.[t] In spite of the motive force of the second body, the impenetrability of the first body is nonetheless a ground of that second body's rest. It follows from what has already been said that impenetrability just as much presupposes a true force in the parts of the body, in virtue of which they collectively occupy a space, as does the force in virtue of which another body strives to enter this space.[26]

By way of elucidation, imagine two springs which are opposed to each other. Without any doubt they maintain each other in a state of rest by means of forces which are equal to each other. Place between the two a spring of the same elasticity; this spring, by its effort, will produce the same effect, and, in accordance with the rule of the equality of action and reaction,[u] it will maintain the two springs in a state of rest. On the other hand, if this spring is replaced by a solid body which is put between the other two springs, the same effect will be produced: the impenetrability of the solid body will maintain the aforementioned springs in a state of rest. The cause of impenetrability is thus a true force, for it produces the same effect as a true force.[v] Now, if you call *attraction* a cause, of any kind you please,[w] in virtue of which one body constrains other bodies to press upon the space which it itself occupies or to set it in motion (though here it is sufficient simply to think of this attraction), then impenetrability is a *negative attraction.* This serves to show that impenetrability is as much a positive ground as any other motive force in nature. And since negative attraction is really true repulsion, it follows that the forces with which the elements are invested and in virtue of which these latter occupy a space, albeit in such a way that they impose limitations even on space itself by means of the conflict of the

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[t] *einnimmt.* [u] *Wirkung und Gegenwirkung.* [v] *denn sie thut dasselbe, was eine wahre Kraft thut.* [w] *welche es auch sein mag /* (The *es* ought strictly to be *sie* in order to agree with the feminine *Kraft.* The sentence may be ambiguous and could be read to mean: 'which it may well be').

two forces which are opposed to each other – it follows, I say, that these forces will give rise to the elucidation of many phenomena.[x] And in this matter, I think that I have arrived at knowledge which is distinct and reliable, and which I propose to make known in another treatise.[27]

2. Let us take an example from psychology. Consider the following question: Is displeasure[y] simply the lack of pleasure? Or is displeasure a ground of the deprivation of pleasure? And in this case, displeasure, while being indeed something positive in itself and not merely the contradictory opposite of pleasure, is opposed to pleasure in the real sense of the term. The question thus amounts to this: can displeasure be called *negative pleasure?* Now, right from the beginning, inner feeling[z] tells us that displeasure is more than a mere negation. For no matter what pleasure one may have, there will always, as long as we remain finite beings, be lacking some other possible pleasure. If someone takes a medicine which tastes like pure water, he may perhaps take pleasure in[a] the expectation of health; on the other hand, he experiences no pleasure in the taste; but this lack is not yet displeasure. Now administer to him a medicine which consists of wormwood. The sensation which wormwood produces is very positive. What we have here is not a mere lack of pleasure, but something which is a true ground of the feeling which we call displeasure.

But our elucidation can, at best, only establish that displeasure is not merely a lack, but a positive sensation. That it is also something positive, as well as something which is really opposed to pleasure, can be rendered most clearly apparent by the following consideration. Suppose that the news is brought to a Spartan mother that her son has fought heroically for his native country in battle. An agreeable feeling of pleasure takes possession of her soul. She is thereupon told that her son has died a glorious death in battle. This news diminishes her pleasure a great deal, and reduces it to a lower degree. Let us say that the number of degrees of pleasure which are produced by the first announcement on its own are 4a. And let the displeasure merely be a negation = 0. It follows that, when these two are combined, the value of the pleasure is 4a + 0 = 4a; and in that case the pleasure produced by the first announcement would thus not be diminished by the news of her son's death, and that is wrong. Let the pleasure which is produced by the news of his attested valour accordingly 2:181

[x] *und da die negative Anziehung eigentlich eine wahre Zurückstossung ist, so wird in den Kräften der Elemente, vermöge deren sie einen Raum einnehmen, oder aber so, dass sie diesem selbst Schranken setzen, durch den Conflictus zweier Kräfte, die einander entgegengesetzt sind, Anlass zu vielen Erläuterungen gegeben.*

[y] *Unlust /* (Kant's argument depends on the explicit contrast between *Lust* and the negative *Unlust.* In order to preserve this contrast *Unlust* has been translated by 'displeasure' in the now archaic and obsolete sense signifying the opposite of 'pleasure' [not in its modern sense signifying 'annoyance at' or 'anger with']).

[z] *die innere Empfindung.* [a] *hat vielleicht eine Lust über.*

be = 4a; and let the pleasure which remains, once the displeasure produced by the announcement of his death has taken effect, be = 3a; it follows that the displeasure is = a, and it is the negative of pleasure, namely −a, and hence the value of the resulting balance of pleasure is 4a − a = 3a.

The calculation[b] of the total value of the complete pleasure in a mixed state would also be highly absurd if displeasure were a mere negation and equal to zero. Suppose that someone has purchased an estate, and that the annual yield of that estate amounted to 2000 thalers. Let the degree of pleasure arising from this income, in so far as the pleasure is pure, be expressed as 2000. However, everything which the owner has to spend from this income and of which he has to forego the enjoyment, is a ground of displeasure: ground rent: 200 thalers; servants' wages: 100 thalers; renovations: 150 thalers annually. If displeasure were a mere negation = 0, then it would follow that, all in all, the pleasure which he would derive from his purchase would be 2000 + 0 + 0 + 0 = 2000. In other words, his pleasure would be as great as it would have been if he had been able to enjoy the income from the estate without any outgoings at all. But it is obvious that the degree of the pleasure he takes in these incomes is determined by what he has left after his expenditures have been deducted; and thus the degree of his pleasure is 2000 −200 −100 −150 = 1550. Displeasure is accordingly not simply a lack of pleasure. It is a positive ground which, wholly or partly, cancels the pleasure which arises from another ground. For this reason, I call it a *negative pleasure.* The lack of both pleasure and displeasure, in so far as it arises from the absence of their respective grounds, is called *indifference*[c] (*indifferentia*). The lack of both pleasure and displeasure, in so far as it is a consequence of the real opposition of equal grounds, is called *equilibrium*[d] (*aequilibrium*). Both indifference and equilibrium are zero, though the former is a negation absolutely,[e] whereas the latter is a deprivation. The state of mind, in which pleasure and displeasure are equally opposed so that there is something which is left over from one of these two feelings, is the *preponderance*[f] of pleasure or displeasure (*suprapondium voluptatis vel taedii*). *Maupertuis,* employing concepts such as these, attempts in his essay on moral philosophy, to calculate the sum of human happiness.[28] And, indeed, his would be the only way in which it could be calculated; but, unfortunately, the calculation is not humanly possible, for it is only feelings of the same kind[g] which can feature in such calculations. But the feelings which we experience in the highly complex circumstances of life appear to vary a great
2:182 deal, according to the variety of ways in which our emotions are affected.

[b] *Schätzung* / (alt: estimation). [c] *Gleichgültigkeit.* [d] *Gleichgewicht.*
[e] *eine Verneinung schlechthin.* [f] *Übergewicht.* [g] *gleichartige Empfindungen.*

The calculation performed by this learned man yielded a negative balance, a result with which, however, I do not concur.

For these reasons, *aversion* can be called a *negative desire, hate* a *negative love, ugliness* a *negative beauty, blame* a *negative praise.* It might, perhaps, be thought that all this is nothing but juggling with words.[h] But the only people who will judge in this way will be those who do not realise what advantage is to be derived from an expression's directly indicating a relation to concepts which are already familiar – an advantage of which the slightest experience of mathematics will easily convince everyone. The error into which many philosophers have fallen as a result of neglecting this truth is obvious. One finds that they generally treat evils[i] as if they were mere negations, even though it is obvious from our explanations that there are evils of lack (*mala defectus*) and evils of deprivation (*mala privationis*). Evils of lack are negations: there is no ground for the positing of what is opposed to them.[j] Evils of deprivation presuppose that there are positive grounds which cancel the good for which there really exists another ground. Such evils of deprivation are *negative* goods. These latter evils are greater than the former. Not giving is, relatively to someone in need, an evil; but taking from, extorting from, stealing from are, relatively to someone in need, far greater evils. *Taking from* is a *negative giving* to. A similar thing can be seen in the case of logical relations. *Errors* are *negative truths* (and negative truths are not to be confused with the truth of negative propositions); a *refutation* is a *negative proof.* But I fear I am spending too much time on this matter. My only purpose is to give currency[k] to these concepts. Their usefulness will become apparent when they are employed, and I shall try to say something about this in the Third Section.

3. The concepts of real opposition also have a useful application in moral philosophy. *Vice*[l] (*demeritum*) is not merely a negation; it is a *negative virtue*[m] (*meritum negativum*). For vice can only occur in so far as a being has within him an inner law (either simply conscience[n] or consciousness of a positive law as well), which is contravened by this actions. This inner law is a positive reason for a good action, and the consequence can only be zero if the consequence which would result from consciousness of the law on its own is cancelled. What we have here is, accordingly, a deprivation, a 2:183
real opposition, and not merely a lack. Let it not be supposed that what I have just said relates only to *errors of commission*[o] (*demerita commissionis*) but not to *errors of omission*[p] (*demerita omissionis*) as well. An animal lacking reason does not practise any virtue. But this omission is not a vice (*demeritum*), for the animal has not contravened any inner law. It was not driven by inner moral feeling[q] to a good action. And the zero, the omission

[h] *Krämerei mit Worten.* [i] *die Übel.* [j] *zu deren entgegengesetzter Position kein Grund ist.*
[k] *in den Gang zu bringen.* [l] *Untugend.* [m] *negative Tugend.* [n] *bloss das Gewissen.*
[o] *Begehungsfehler.* [p] *Unterlassungsfehler.* [q] *inneres moralisches Gefühl.*

construed as a consequence, was not the product of its resisting that inner moral feeling, nor was it the result of the operation of a counteracting force.[r] The omission under consideration here is a negation absolutely, arising from the lack of a positive ground; it is not a deprivation. By contrast, imagine a human being who fails to help someone whom he sees in distress and whom he could easily help. There is a positive law to be found in the heart of every human being, and it is a law which is present in this man's heart as well; it commands that we love our neighbour. In the present example, the law must be outweighed. For this omission to be possible, it is necessary that there should be actual inner action arising from motives.[s] This zero is the consequence of a real opposition. And it really does initially cost some people a noticeable effort to omit performing some good, to the performance of which they detect within themselves positive impulses. Habit facilitates everything, and this action is in the end scarcely noticed any longer. Accordingly, sins of commission and sins of omission do not differ *morally* from each other in kind, but only in *magnitude.*[t] *Physically,* that is to say, from the point of view of their external consequences, they may also well differ from each other in kind. The person who receives nothing suffers an evil of lack, and the person from whom something has been taken suffers an evil of deprivation. But, as far as the moral state of the person responsible for the sin of omission is concerned: all that is needed for the sin of commission is a greater degree of action. The situation is like that of a counterweight at the end of a lever: it exercises a genuine force merely to maintain the burden in a state of equilibrium; there only needs to be a slight increase of force in order actually to shift the burden on the other side. In exactly the same way, someone who fails to honour his debts will, in certain circumstances, cheat in order to make a profit. And the person who fails to help another person when it is in his power to do so will, as soon as the motives are stronger,[u] harm that person. Love and lovelessness[v] are the contradictory opposites of each other. *Lovelessness* is a true negation. But in respect of the person, towards whom one is conscious of an obligation to love, this negation is only possible through a real opposition, and consequently only
2:184 as a deprivation. And, in such a case, *not to love* and *to hate* differ only in degree. All omissions, while being instances of a lack of greater moral perfection, though not *sins* of omission, are, on the other hand, nothing but negations absolutely of a certain virtue, not deprivations or vice. The instances of lack in the case of saints[w] and the errors of noble souls[x] are of

[r] *vermittelst eines Gegengewichtes.* [s] *eine wirkliche innere Handlung aus Bewegungsursachen.*
[t] *der Grösse nach.* [u] *so bald sich die Bewegungsursachen vergrössern.*
[v] *Liebe und Nicht-Liebe /* (both *Unlust* and *Untugend* are common words; *Nicht-Liebe,* although not a neologism, is very uncommon; *Unliebe,* although common, would not suit Kant's purposes, for it signifies the mere *absence* of love).
[w] *die Mängel der Heiligen.* [x] *die Fehler edler Seelen.*

this kind. What is missing is a certain more powerful ground of perfection. It is not on account of the operation of a countervailing cause that the lack obtains.[y]

One could extend the application of the above concepts to the objects of moral philosophy a great deal further. *Prohibitions* are *negative commands, punishments* are *negative rewards,* and so on. But if I have explained the use of this idea in general then my purpose has been, for the moment, attained. I realise, of course, that readers of an enlightened understanding will have found the above explanation unnecessarily long. But I shall be pardoned for my discursiveness if they remember that, apart from themselves, there is a breed of people who are not very amenable to teaching, and who, having spent their whole lives poring over a single book, understand nothing which is not contained therein; in their case even the most extreme discursiveness would not be superfluous.

4. Let us now take an example from natural science. In nature there are many deprivations which result from the conflict of two operative causes,[z] of which the one cancels the effect of the other through real opposition. It is, however, often uncertain whether it is not perhaps merely the negation of lack, due to the absence of a positive case, or whether it is not the effect of the opposition of genuine forces, just as rest may be attributed either to the absence of a cause of motion or to the conflict of two motive forces impeding each other. There is, for example, the well-known question whether coolness requires a positive cause, or whether as a lack it is to be attributed simply to the absence of the cause of heat.[29] I should like to consider this matter a little, at least as far as it is relevant to my purposes. Doubtless, coldness itself is simply the negation of warmth, and it can easily be seen that it is possible in itself, even in the absence of any positive cause. But it can with equal ease be seen that it can also be the effect of a positive cause, and that it does actually on occasion arise from such a cause – and all this can be understood independently of what opinion one may entertain concerning the origin of warmth. Absolute coldness is unknown in nature, and if it is discussed, then it is understood only in a
comparative sense.[a] Now, experience and rational argument[b] agree in con- 2:185
firming the thought of the celebrated *van Muschenbroek*[30] that increase in temperature consists not in internal concussion,[c] but rather in the real passage of the elemental fire[d] from one material to the other,[31] though this passage is probably accompanied by an inner concussion, the concussion thus excited also serving to facilitate the exit of the elemental fire from the bodies. On this basis, if the element of fire is in a state of equilibrium among the bodies in a certain space they are, relative to each other,

[y] *und der Mangel äussert sich nicht um der Entgegenwirkung willen.*
[z] *zweier wirkenden Ursachen.* [a] *vergleichungsweise.* [b] *Vernunftgründe.*
[c] *in der innern Erschütterung.* [d] *des Elementarfeuers.*

neither hot nor cold. If this equilibrium is removed, then the material into which the elemental fire passes is, relatively to the body which is thus deprived of the elemental fire, *cold*, whereas the latter body, in so far as it yields this heat to that material, is called, relatively to the material receiving the elemental fire, *warm*. The state which prevails during this change is called, in the former case, 'growing warm'[e] and in the latter case 'growing cold';[f] this process of change continues until everything reaches the state of equilibrium again.

Now, there is probably nothing which can be more easily imagined than that the attractive forces of matter should continue to set this subtle and elastic fluid[g] in motion and to fill the mass of bodies with it, until it has everywhere reached a state of equilibrium.[32] That state of equilibrium is reached, namely, when the spaces are filled with that subtle and elastic fluid proportionately to the attractive forces operating there. And here it is obvious that a material which cools another material when it is in contact with it steals the elemental fire, with which the mass of the second body is filled, by means of a true force (attraction). It is also clear that the coldness of the first body can be called a *negative warmth*, for the negation, resulting from it in the warmer body, is a deprivation. But the introduction of this designation here serves no useful purpose; it is scarcely better than juggling with words.[h] In my discussion of this matter, my attention is focused exclusively on what follows.

It has long been known that magnetic bodies have two extremities which are opposed to each other and which are called 'poles'. Of these two poles, the one repels the like-named pole in another such body, and attracts the other. However, the celebrated Professor *Aepinus* showed in his treatise on the similarity between electrical and magnetic energy[33] that electrified bodies, when treated in a certain way, likewise display two poles, of which he called the one the *positive* pole and the other the
2:186 *negative*. This phenomenon can be perceived most clearly when a tube is brought sufficiently close to an electrified body, but in such a way that it draws no spark from it. Now, my contention is this: whenever the temperature is raised or lowered, in other words, whenever the degree of heat or coldness is changed, and in particular changed rapidly, and whenever that change occurs at one end of a continuous intervening space, or at one end of an elongated body[i] what happens is this. There are always two poles, so to speak, of warmth to be found: one of them is positive, that is to say, its temperature is higher than the previous temperature of the body in question, while the other pole is negative, its temperature, namely, being lower than the previous temperature of the body, in other words, it is cold. It is

[e] *Erwärmung.* [f] *Erkältung.* [g] *dieses subtile und elastische Flüssige.* [h] *Wortspiel.*
[i] *in einem zusammenhängenden Mittelraum oder in die Länge ausgebreiteten Körper an einem Ende* / C: *in una zone centrale unica oppure ad una estremità di un corpo esteso in lunghezza* / F: *dans un milieu continu ou dans un corps allongé* / K: *dans un milieu continu.*

known that there are various underground caverns within which frost prevails with an intensity which is proportionate to the intensity with which the sun heats the air and the ground above the cavern. *Mathias Bel*,[34] who describes such underground caverns in the Carpathian Mountains, adds that it is a custom of the peasants in Transylvania to cool their drink by burying it in the ground and making a fast burning fire above the spot. It seems that, during this process,[j] the layer of earth cannot grow positively warm on the upper surface without the negative of it being produced at a somewhat greater depth. *Boerhave* also mentions[35] the fact that the fire of the blacksmith's forge causes coldness at a certain distance. This opposition also seems to prevail in the open air above the surface of the earth as well, particularly when rapid changes of temperature are taking place. *Jacobi* somewhere in the *Hamburger Magazin* mentions[36] the fact that, when intensely cold weather occurs, which frequently affects countries extending over a considerable area, then it commonly happens that there is an extensive stretch of territory in the interior of which there are substantial areas where the weather is temperate and mild. Similarly, *Aepinus*[37] found in the case of the tube, of which I made mention above, that, from the positive pole at one end to the negative pole at the other extremity, the positively electric and the negatively electric areas alternated with each other at certain intervals. It seems that a rise in temperature cannot occur in one region of the atmosphere without producing the effect, so to speak, of a negative pole in some other region, that is to say, coldness. On the same basis, the converse happens as well: a sudden drop in temperature in one place leads to an increase in temperature somewhere else. A similar phenomenon can be observed in the following case: if a metal rod is heated at one end, and if the rod is suddenly cooled by being plunged into water, the temperature at the other end increases.* 2:187
The difference between the temperature poles accordingly vanishes once

* The experiments needed to verify the existence of opposed temperature poles could, it seems to me, be easily carried out. Take an horizontal lead tube about a foot long; bend an inch or two of each end into a vertical position; fill the tube with alcohol and then, having inserted a thermometer at one end, ignite the alcohol at the other extremity. My surmise is that the negative opposition would quickly show itself. Similarly, in order to perceive the effect produced by cooling one end of the tube, one could employ salinated water, and insert crushed ice at one end. I shall take this opportunity to make a further comment on the sort of observation I should like to see made which would, in all probability, do much to explain the coldness and heat which is artificially generated when certain compound substances are dissolved. I am persuaded, namely, that the difference between these phenomena is primarily related to whether or not the compound liquids, once they have been thoroughly mixed, occupy a greater or a smaller volume than that occupied by the constituents combined before they were mixed together. I maintain that in the former case the thermometer will register an increase in temperature, while in the latter case it will indicate a drop in temperature. For when the constituents produce a medium of greater density after they have been mixed

[j] *in dieser Zeit.*

the transmission[l] of heat or the deprivation of heat has had time enough to be diffused uniformly throughout the whole material, just as Professor *Aepinus's*[38] tube is uniformly electrified once it has drawn the spark. It is perhaps also the case that the extreme coldness of the upper regions of the atmosphere is not to be attributed simply to the absence of any means of heating them. Perhaps it is rather to be attributed to a positive ground: in respect of temperature, the upper regions of the atmosphere become negative in proportion to the degree in which the lower regions of the atmosphere and the ground are positive. In general, the force of magnetism, electricity and heat seem to occur in virtue of the self-same mediating matter.[m39] All these phenomena can be produced by friction, and I
2:188 suspect that the difference of the poles and the opposition of the positive and negative causality[n] may, if the matter is handled skillfully, be detected in the phenomena of heat as well. *Galileo's* inclined surface,[40] *Huygen's* pendulum clock,[41] *Torricelli's* column of mercury,[42] *Otto Guerick's* atmospheric pump,[43] and *Newton's* glass prism[44] have furnished us with the key to some of the great mysteries of nature. The negative and positive causality of different forms of matter, particularly in the case of electricity, seems to conceal important truths. It is to be hoped that a more fortunate posterity, on whose happy existence we direct our gaze, will one day discover the universal laws which govern these phenomena, which for the moment only appear to us under the form of a still ambiguous harmony.[o]

together there is more matter exercising attractive force to draw the element of the nearby fire into itself than there was beforehand in the same volume of space. But not only that, it is also to be surmised that the power of attraction will itself increase as the density increases. It is furthermore to be surmised that the power of expansion inherent in the condensed aether only increases, perhaps, in proportion to its density, just as is the case with air. For according to *Newton*, the forces of attraction operating between bodies which are very close to each other stand in a proportion which is much greater than the inverse proportion of the distances.[k] Thus, if the mixture has a density which is greater than the density of the two mixable constituents taken in conjunction before they have been mixed together, it will, relatively to nearby bodies, exercise a greater attraction on the elemental fire; by robbing the thermometer of that elemental fire it will thus cause coldness to make its appearance. But everything will take place in the reverse fashion if the compound yields a medium of less density. For, in so far as it surrenders a quantity of elemental fire, nearby materials will draw it to themselves and display the phenomenon of heat. Not all the experiments yield results which correspond to one's surmises. But if experiments are to be more than a matter of mere accident, they must be instituted by and conducted in accordance with a surmise.

[k] *weil nach dem Newton die Anziehung in grosser Naheit in viel grösserer Proportion stehen als der umgekehrten der Entfernungen.*
[l] *Mittheilung.* [m] *durch einerlei Mittelmaterie.*
[n] *die Entgegensetzung der positiven und negativen Wirksamkeit.*
[o] *zweideutigen Zusammenstimmung.*

Section 3. Containing some reflections which may serve to prepare the application of the above concept to the objects of philosophy

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What I have said so far merely amounts to a preliminary examination of an object[p] which is as important as it is difficult. In advancing to general principles from the examples which have been introduced and which are easy enough to understand, there are good grounds for extreme concern: in pursuing this untrodden path mistakes may be made which only come to be noticed as one advances. Accordingly, what I have yet to say on the matter is to be regarded as an experiment[q] which is very imperfect. And yet it is my expectation that any attention, which may be paid to it, will be beneficial in a variety of different ways. I am fully aware that an admission of this kind is a very poor sort of recommendation to those who demand an assertive and dogmatic tone, if they are to permit themselves to be steered in the desired direction. I do not feel the least regret at losing this kind of acclaim. It seems to me, however, that, in a branch of knowledge as difficult to handle[r] as metaphysics, it is much more appropriate that one's thought should first of all be presented to public examination in the guise of tentative experiments[s] than that they should be announced from the beginning with all the adornments of pretended thoroughness[t] and complete conviction. It commonly happens with that latter course that all improvement is rejected out of hand, and any weakness which may be found in what one has to say becomes incurable.

1. Anybody can easily understand why something does not exist, when 2:190
the positive ground for its existence is lacking. But how that which exists should cease to be – that is not so easy to understand. There exists at this moment in my soul, for example, the representation of the sun, and it exists in virtue of the power of my imagination. The next moment, I cease to think of this object. The representation which was, ceases to be in me, and the next state is the zero of the preceding one. Supposing that I wanted to offer the following as an explanation of this ceasing to be: the thought ceased to be because I stopped producing the representation the

[p] *die erste Blicke, die ich auf einen Gegenstand . . . werfe.* [q] *Versuch.*
[r] *einer so schlupfrigen Erkenntnis.* [s] *unsicherer Versuche.* [t] *angemasster Gründlichkeit.*

moment afterwards. If that were my explanation, the answer would not differ from the question at all, for what is at issue here is precisely how an action, which really occurs, can stop, that is to say, how it can cease to be.

I accordingly maintain that *every passing-away is a negative coming-to-be.*[u] In other words, for something positive which exists to be cancelled, it is just as necessary that there should be a true real ground as it is necessary that a true real ground should exist in order to bring it into existence when it does not already exist. The reason for this is to be found in what has been said above. Suppose that a is posited, then only $a - a = 0$. In other words, only in so far as an equal but opposed real ground is combined with the ground of a is it possible for a to be cancelled. Physical nature everywhere offers examples of this principle. A movement never stops, either completely or in part, unless a motive force which is equal to the force which would have been able to generate the lost movement is combined with it in a relation of opposition.[v] But also our inner experience of the cancellation of representations and desires which have become real in virtue of the activity of the soul completely agrees with this. In order to banish and eliminate a sorrowful thought a genuine effort, and commonly a large one, is required. And that this is so is something which we experience very distinctly within ourselves. It costs a real effort to eradicate an amusing representation which incites us to laughter, if we wish to concentrate our minds on something serious. Every abstraction is simply the cancelling of certain clear representations; the purpose of the cancellation is normally to ensure that what remains is that much more clearly represented. But everybody knows how much effort is needed to attain this purpose. *Abstraction*[w] can therefore be called *negative attention.* In other words, abstraction can be called a genuine doing and acting[x] which is opposed to the action[y] by means of which the representation is rendered clear; the combination of the two yields zero, or the lack of a clear
2:191 representation. For otherwise, if it were a negation and a lack absolutely, it would not require any more expenditure of energy than is required not to know something, for not knowing something never needs a ground.

Exactly the same necessity for a positive ground for cancelling an inner accident[z] of the soul is manifested in overcoming the appetites. And here one can make use of the examples introduced above. In general, however, even leaving aside the cases adduced above where one is actually conscious of this opposed activity, there is no good reason for doubting the occurrence of this activity, even if we do not clearly notice it within us. I am now thinking, for example, of a tiger. This thought disappears, and in its stead the thought of a jackal occurs to me. It is, of course, true that, in the succession of representations, one cannot detect within oneself any

[u] *ein jedes Vergehen ist ein negatives Entstehen.* [v] *in der Entgegensetzung.* [w] *Abstraction.*
[x] *Thun und Handeln.* [y] *Handlung.* [z] *Accidens.*

special effort of the soul operating[a] to cancel one of the representations mentioned above. But what an admirably busy activity[b] is concealed within the depths of our minds which goes unnoticed even while it is being exercised. And it goes unnoticed because the actions in question are very numerous and because each of them is represented only very obscurely. Everybody is familiar with the facts which prove that this is the case. One need only consider, for example, the actions which take place unnoticed within us when we *read.* The phenomenon cannot fail to fill us with astonishment. For discussions of this matter, reference can be made, for instance, to the logic of *Reimarus,*[45] which considers the phenomenon. We must therefore conclude that the play of our representations and, in general, of all the activities of our soul, in so far as the consequences which they produce are actual and then cease to exist, presuppose the occurrence of opposed actions of which one is the negative of the other. The conclusion follows from the certain grounds which we have adduced above, even though inner experience cannot always inform us of such opposed activities.

If one considers the grounds which form the foundation of the rule which we have here introduced, the following point will be instantly noticed: in what concerns the *cancellation* of an existing *something,* there can be no difference between the accidents of mental natures[c] and the effects of operative forces[d] in the physical world. These latter effects, namely, are never cancelled except by means of a true, opposed motive force *of something else.* And an inner accident, a thought of the soul, cannot cease to be without a truly active power of exactly *the self-same* thinking subject. The difference here only relates to the different laws governing the two types 2:192
of being; for the state of matter can only ever be changed by means of an *external* cause, whereas the state of the mind can also be changed by means of an *internal* cause. The necessity of the real opposition, however, always remains the same, in spite of the above difference.

I would repeat what I have already said: the supposition that one has understood the cancellation of the positive effects of the activity of our souls by calling them *omissions* involves the use of a deceptive concept.[e] It is a very remarkable fact that the more one subjects one's most common and most reliable judgements to scrutiny, the more one discovers such delusions,[f] for we rest satisfied with words, but fail to understand the things themselves. The fact that I do not now have a certain thought, assuming that I did not have that thought before, can, of course, be understood well enough if I say that I am omitting to think the thought in question; for, in this case, the expression signifies the absence of the

[a] *die da wirkte.* [b] *bewunderungswürdige Geschäftigkeit.*
[c] *unter den Accidenzien der geistigen Naturen.* [d] *wirksamer Kräfte.* [e] *ein betrügerischer Begriff.*
[f] *Blendwerke.*

ground; and it is by reference to that absence that the absence of the consequence is understood. But if the question is: why does the thought which existed in me a little while ago no longer exist in me? then the answer given above is utterly inadequate. For this non-existence is now a deprivation, and the omission[g] here has quite a different sense,* namely, the cancellation of an activity which existed a little while ago. But it is the question which I am raising, and in raising it I shall not so easily allow myself to be fobbed off[h] with a word. In applying the above-mentioned rule to all kinds of natural phenomena, great care is necessary, if one is to avoid confusing something negative with something positive – a confusion which can easily occur. For the sense of the proposition which I have here introduced relates to the coming-into-being and passing-away of something which, in this case, is positive. For example: the ceasing to exist of a flame because the fuel which nourishes it has been exhausted is not a negative coming-to-be; that is to say, it is not based upon a true motive force which is opposed to that which brings the flame into being. For the continued existence of a flame is not the continuation of a motion, which already exists, but rather the constant generation of new motions of other combustible particles of vapour.†[i] The flame's ceasing to exist is, accordingly, not the cancellation of an actual motion, but the lack of new motions and the absence of several separations,[j] for their cause is missing, namely, the continued feeding of the fire. And in that case, this must be regarded, not as the cancellation of an existing thing, but rather as the lack of the ground of a possible positing (of further separation).[k] But enough of this problem. My purpose in writing this is to provide those experienced in this type of knowledge with an occasion for further reflection. Needless to say, those who are not experienced in this type of knowledge would, of course, be entitled to demand a fuller explanation.

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2. The propositions, which I intend to present under this number, seem to me to be extremely important. Before presenting them, however, I must add a further determination to the general concept of negative magnitudes. It is a determination which I have hitherto deliberately ignored, so as not unnecessarily to increase the number of the objects requiring careful attention. So far I have merely considered the grounds of real opposition, in so far as they *actually* posit in one and the same thing determinations, of which one is the opposite of the other. A case in point

* This sense itself does not even really belong to the word.

† All bodies, the parts of which are suddenly transformed into vapour and thus exercise repulsion, which is opposed to cohesion, emit fire and burn. The reason for this is that the elementary fire, which previously existed in a state of compression, is suddenly released and expands.[46]

[g] *das Unterlassen.* [h] *abspeisen.* [i] *brennbare Dunsttheilchen.* [j] *mehrerer Trennungen.*
[k] *der weiteren Absonderung.*

would be the motive forces of one and the same body which tend in exactly the opposite direction; and here the grounds cancel their reciprocal consequences, namely the motions. For this reason, I shall, for the time being, call this opposition *actual opposition* (*oppositio actualis*). On the other hand, to take predicates of the following kind: although they belong to different things and although the one predicate does not immediately cancel the consequence of the other predicate, nonetheless, they may each legitimately be called the negative of the other; and they may be legitimately so called in virtue of the fact that each is so constituted that it is either capable of cancelling the consequence of the other, or it is capable of cancelling something which is determined like that consequence and which is equal to it.[l] This opposition may be called *possible opposition* (*oppositio potentialis*). Both oppositions are real; that is to say, they are both different from logical opposition; both of them are constantly being employed in mathematics, and they both deserve to be employed in philosophy as well. Take the case of two bodies which are moving towards each other along precisely the same straight line, each with the same force as the other. These forces are communicated to each other when the two bodies collide. For this reason, one of them can be called the negative of the other, and that in the first sense of the word, namely through actual opposition. In the case of two bodies which are moving away from each other in opposite directions along the same straight line, each with the same force as the other, one is the negative of the other. But, in this case, they do not communicate their forces to each other. For this reason, they only stand in potential opposition to each other, for each body would, if it were to collide with a body moving in the same direction as the other, cancel as much force in it as exists in that other body. And that is also how, in what is about to follow, I shall understand all the grounds of real opposition in the world, not merely those which belong to motive forces. However, in order to give an example of the other cases, one could say that the pleasure which one person has, and the displeasure[m] which another person has, stand in potential opposition to each other, for it sometimes happens that the one really does cancel the consequences of the other, for when there is such real conflict, one person often destroys what the other person has taken pleasure in creating. Since I am taking the grounds, which are really opposed to each

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[l] *Dagegen nennt man mit Recht solche Prädikate, die zwar verschiedenen Dingen zukommen und eins die Folgen des andern unmittelbar nicht aufheben, dennoch eins die Negative des andern, in so fern ein jedes so beschaffen ist, dass es doch entweder die Folge des andern, oder wenigstens etwas, was eben so bestimmt ist wie diese Folge und ihr gleich ist, aufheben könnte* (Only C has recognised the structure of this complex sentence [*Dagegen nennt man . . . solche Prädikate . . . eins die Negative des andern* ('on the other hand, one calls . . . such predicates . . . one the negative of the other')).

* *Univ.*/ (See note *y*, page 219).

other in both senses of the word, in an entirely general sense, I hope that no one will insist on my always making these concepts clear by means of examples *in concreto*. Just as everything which appertains to motions can be rendered clear and intelligible to intuition, so, by contrast, the real grounds within us, which are not mechanical in character, reveal themselves to be difficult and indistinct,[n] if any attempt is made to explain the relationship between them and their consequences, whether in opposition or in harmony. Accordingly, I shall rest content with explaining the following propositions in their general sense.

The first proposition is this: *In all the natural changes which occur in the world, the sum of that which is positive is neither increased nor diminished, provided that the sum is calculated by adding together positings which agree with each other*[o] *(not opposed to each other) and subtracting from each other positings which are really opposed to each other.*

All change consists in this: either something positive, which was not, is posited; or something positive, which was, is cancelled. The change is natural if its cause, like its effect, belongs to the world. In the first case, accordingly, where a positing, which was not, is posited,[p] the change is a *coming-to-be*. The state of the world prior to this change is, in respect of this positing, equal to zero = 0, and the real effect = A exists in virtue of this coming-to-be.[q] I maintain, however, that if A arises,[r] then, in a natural change occurring in the world, −A must also arise. In other words, no natural ground of a real consequence can exist without its being at the same time the ground of another consequence, which is the negative of
2:195 the first.* For since the consequence is nothing = 0, unless the ground is posited, the sum of the positing contains no more in the consequence than was contained in the state of the world, in so far as it contained the ground of that consequence. But this state contained the zero of that positing, which is to be found in the consequences. That is to say, the positing, which is to be found in the consequence, did not exist in the previous state. It follows that the change which issues from it can only ever be equal to zero in the totality of the world, viewed from the perspective of its real or potential consequence.[s] Now, on the one hand, the consequence is

* Such is the case, for example, when one body collides with another: the production of a new motion occurs simultaneously with the cancellation of another motion which is equal to it and which precedes it. Similarly, too, it is not possible for someone in a boat to push a floating object away from him in a given direction without himself being propelled in the opposite direction.

[n] *schwer und undeutlich.* [o] *einstimmig.* [p] *eine Position, die nicht war, gesetzt wird.*
[q] *ein Enstehen.* [r] *entspringt.*
[s] *Es enthielt aber dieser Zustand von derjenigen Position, die in der Folge ist, das Zero, das heisst, in dem vorigen Zustand war die Position nicht, die in der Folge anzutreffen ist, folglich kann die Veränderung, die daraus fliesst, im Ganzen der Welt nach ihren wirklichen oder potentialen Folgen auch nicht anders als dem Zero gleich sein.*

positive and = A; on the other hand, however, the whole state of the universe is, as before in respect of the change A, supposed to be zero = 0; but this is impossible, unless A − A is to be taken together. It follows from these considerations that a positive change only ever occurs naturally in the world, if its consequence consists, as a whole, in a real or potential opposition, which cancels itself. But this sum total yields zero = 0; prior to the change it was also = 0; it follows that it is neither increased nor diminished by the change.

In the second case, where the change consists in the cancellation of something positive, the consequence = 0. But, according to what was said before, the state of the entire ground was not merely = A, but A − A = 0. Thus, according to the mode of calculation which I am here presupposing, positing[t] in the world is neither increased nor diminished.

I should like to attempt to clarify this principle, which seems to me to be important. In the changes which occur in the physical world, the following mechanical rule is firmly established and has long since proved to be true. The rule is expressed as follows: *Quantitas motus, summando vires corporum in easdem partes et subtrahendo eas quae vergunt in contrarias, per mutuam illorum actionem (conflictum, pressionem, attractionem) non mutatur.*[47] Although, in pure mechanics, this rule is not derived immediately from the metaphysical ground, from which we have derived the general proposition, its validity does indeed, as a matter of fact, depend on this foundation. For the law of inertia, which is the foundation of the usual proof, derives its truth simply from the argument[u] adduced, as I could easily show, if I could go into the matter in detail.[v]

The elucidation of the rule, with which we are concerned, is by nature 2:196
difficult in those cases of change which are not mechanical, such as those occurring in our soul, or which depend in any way on the soul. In general, it is not possible to offer an account of these effects or their causes which is nearly as intelligible or as intuitively distinct[w] as can be offered of those which occur in the physical world. Notwithstanding, I should like to try to cast some light on the matter, as far as it seems possible to me to do so.

Aversion[x] is just as much something positive as desire. The former is a consequence of a positive displeasure,[y] just as desire is the positive consequence of a pleasure. Only in so far as we simultaneously experience pleasure and displeasure in relation to one and the same object do feelings of desire and aversion stand in actual opposition to each other. But in so far as the same ground which occasions pleasure in an object is at the same time the ground of a true displeasure relative to *another* object, the grounds of the desires are at the same time the grounds of the feelings of aversion; and the ground of a desire is at the same time the ground of something

[t] *die Position.* [u] *Beweisgrund.* [v] *wenn ich weitläufig sein dürfte.*
[w] *fasslich und anschauend deutlich.* [x] *Verabscheuung.* [y] *Unlust.*

which stands in a real, albeit only potential, opposition to it. The situation is the same as that of the movements of bodies which are moving away from each other along the same straight line in opposite directions: even though neither strives to cancel the movement of the other, the one may still be regarded as the negative of the other, for they are posited as being potentially opposed to each other. In the same way, a degree of desire for fame arises in someone, and the same degree of revulsion[a] arises in that same person at the same time in relation to the opposite of fame. The revulsion is, it is true, only potential, as long as circumstances do not yet stand in actual opposition to the desire for fame. Nonetheless, what firmly establishes in the soul a positive ground of the same degree of displeasure is exactly the same as the cause of the desire for fame, for the circumstances in the world may turn out to be opposed to what favours the desire for fame.* In a little while we shall see that such is not the case with the Most Perfect Being. We shall, indeed, see that the ground of His supreme pleasure[c] actually excludes all possibility of displeasure.

In the case of the actions of the understanding we even find that the
2:197 clearer or the distincter a certain idea is made, the more the remaining ideas are obscured and the more their clarity is diminished, so that that which is positive and becomes actual in the case of such a change, is combined with a real and actual opposition. If one takes everything together, following the method of calculation mentioned above, then the degree of what is positive is neither increased nor diminished by the opposition as a result of the change.

The second proposition is as follows: *All the real grounds of the universe, if one adds those together which agree with each other and subtracts from one another those which are opposed to each other, yields a result[d] which is equal to zero.* The totality of the world is in itself nothing, except in so far as it is something in virtue of the will of another.[e] Accordingly, the sum of all existing reality, in so far as it is grounded in the world, is equal to zero = 0, if it is regarded in itself. Now, although all possible reality in relation to the divine will yield a result[f] which is positive, the essence[g] of a world is nonetheless not thereby cancelled. But the being of the world necessarily implies that the existence of that which is grounded in the world, is, in and

* It is for this reason that the Stoic wise man has to eradicate all those drives which involve feelings of great sensual desire; for those feelings also lay the foundations of deep dissatisfaction and discontent,[a] which may, according to the vicissitudes of fortune,[b] cancel out the entire value of those sensual pleasures.

[a] *Abscheu.* [a] *Unzufriedenheit und Missvergnugens.*
[b] *nach dem abwechselnden Spiel des Weltlaufs.* [c] *Lust.* [d] *Fazit.*
[e] *Das Ganze der Welt ist an sich selbst Nichts, ausser in so fern es durch den Willen eines andern Etwas ist /* (the sentence is ambiguous: the second clause could be translated 'except in so far as it is [exists] in virtue of the will of another Something').
[f] *Fazit.* [g] *Wesen* (alt. being).

for itself alone, equal to zero. Thus, the sum of that which exists in the world is, in relation to the ground which exists externally to it, positive. But, the sum of that which exists in the world is, in relation to the real grounds within the world relatively to each other, equal to zero. Now, since in the first relation there can never occur an opposition between the real grounds of the world and the divine will, it follows that, from this point of view, there is no cancellation, and the sum is positive. But since, in the second relation, the result is zero, it follows that the positive grounds must stand in an opposition, and that when they are regarded as standing in this opposition and when they are added together they must then yield zero.[48]

NOTE TO THE SECOND NUMBER

I have discussed these two propositions with a view to inviting the reader to reflect on the matter. I also admit that even for me they are not sufficiently clear, and I concede that they cannot be understood with enough clarity[h] in terms of their grounds. However, I am deeply convinced that incomplete experiments, presented in the form of abstract cognition in a problematic fashion,[i] can contribute a great deal to the growth of higher philosophy, for it is often the case that, in the examination of a very deep and obscure question,[j] a second person arrives at enlightenment more easily than the person who raised the question in the first place and whose efforts had perhaps been able to resolve only half the difficulties. 2:198
The content of these propositions seems to me to have a certain dignity about it, which may well encourage a precise examination of them – provided, of course, that a thorough understanding of their sense has been attained, and that is not so easy in cognition of this kind.

I shall, however, attempt to anticipate a number of misinterpretations. I would have been completely misunderstood, if I had been taken to be using the first principle to mean that the sum of reality, in general, is neither increased nor diminished by changes in the world. This is so remote from my meaning that even the mechanical rule, which was introduced as an example, establishes exactly the opposite. For the collision of bodies with each other sometimes increases and sometimes diminishes the sum of the movements, considered in themselves; what remains the same, however, is the result,[k] *when it is calculated in the manner which has been specified.*[l] For in many cases the oppositions are merely potential; and then the motive forces do not actually cancel each other, and an increase therefore occurs. However, if one performs the calculation in accordance

[h] *Augenscheinlichkeit.* [i] *im abstracten Erkenntnisse problematisch vorgetragen.*
[j] *in einer tief verborgenen Frage.* [k] *das Fazit.* [l] *nach der zugleich beigefügten Art geschätzt.*

with the method specified as a guide,[m] then these forces must also be subtracted from each other.

One must judge in exactly the same way when this principle is applied to changes of a non-mechanical character. One would be guilty of the same misunderstanding if one were to suppose, on the basis of that same principle, that the perfection of the world could in no wise increase. For that principle does not, of course, at all deny that the sum of reality in general could increase by natural means. Furthermore, the perfection of the world in general very much consists in this conflict of real opposed grounds, just as the material part of the world is, in the most obvious fashion, maintained in a regular course simply by means of the conflict of forces, and it is always a serious mistake to conflate the sum of reality with the magnitude of perfection."[49] We have seen above that displeasure is just as positive as pleasure, but who would call it a perfection?

3. We have already remarked that it is often difficult to decide whether certain negations of nature are merely lacks arising from the absence of a ground, or deprivations resulting from the real opposition of two positive grounds. Examples of this are common in the material world. The parts of any body which cohere together press against each other with true forces
2:199 (of *attraction*) and the effect of these strivings would be a reduction in spatial volume, were it not for the fact that equally true activities operated in the same degree against them[o] as a result of the repulsion of the elements, the operation of the repulsion being the ground of impenetrability.[50] Rest occurs in this case, not because there is any lack of motive forces, but because there are motive forces acting against each other. It is in exactly this fashion that the weights on the arms of scales are at rest, if the weights are placed in the scale-pans in accordance with the laws of equilibrium. This concept can be extended far beyond the limits of the material world. In exactly the same way, there is no reason to suppose that, when we seem to be in a state of complete mental inactivity, the sum of the real grounds of thought and desire is smaller than it is in the state when some degrees of this activity[p] reveal themselves to consciousness. If you ask a man of even the greatest learning at a moment when he is relaxing and at rest to recount something to you or to share part of his knowledge of things with you, you will find that he knows nothing in this state, that he is empty and that he has no definite thoughts or judgements. But stimulate him by asking him a question or by expressing a view of your own, and his learning will reveal itself in a series of activities. And the tendency[q] of that succession of activities will be to make both him and you aware of his understanding of things.[r] Without any doubt, the real grounds of this

[m] *nach der einmal zur Richtschnur angenommenen Schätzung.*
[n] *die Summe der Realität mit der Grösse der Vollkommenheit.*
[o] *inhen im gleichen Grade entgegenwirkten.* [p] *Wirksamkeit.* [q] *Richtung* (lit: direction).
[r] *Einsicht.*

occurrence had long been present in him, but since the consequence, as far as consciousness was concerned, was zero, those real grounds must have been opposed to each other. Thus it is with the thunder which, invented by art for our destruction and carefully preserved in the arsenal of a prince ready for a future war, lies in menacing silence until, touched by a treacherous spark, it explodes in lightning and lays waste to everything around it. Tensions, constantly ready to explode, lay dormant within it, the prisoners of powerful forces of attraction, waiting for the stimulus of a spark of fire, to be released.[51] There is something imposing and, it seems to me, profoundly true in this thought of *Leibniz:* the soul embraces the whole universe with its faculty of representation, though only an infinitesimally tiny part of these representations is clear.[52] It is, indeed, the case that concepts of every kind must have as the foundation on which alone they are based the inner activity of our minds.[s] External things may well contain the condition under which concepts present themselves[t] in one way or another; but external things do not have the power actually to produce those concepts. The power of thought possessed by the soul[u] must contain the real grounds of all concepts, in so far as they are supposed to arise in a natural fashion within the soul. The phenomena of the coming-to-be and passing-away of cognitions are to be attributed, it 2:200
would seem, simply to the agreement or opposition of all this activity. The views expressed here may be regarded as elucidations of the first proposition of the previous number.[53]

In moral matters, likewise, zero is not always to be regarded as a negation due to lack; nor is a positive consequence of greater magnitude always to be regarded as proof of greater activity having been employed to bring about this consequence. Suppose that someone has ten degrees of passion – miserliness,[v] say – and that this is sufficient, under certain circumstances, to conflict with the rules of duty. Let him apply twelve degrees of effort, and let them be exercised in accordance with the principles of benevolence.[w] The result will be two degrees, and that will be the extent to which he will be benevolent and beneficent.[x] Imagine another person who has three degrees of miserliness and seven degrees of capacity to act in accordance with the principles of obligation. The action will be four degrees in magnitude, and that will be the extent to which he will benefit another person after the conflict of his desires. But what is indisputable is this: in so far as the passion in question can be regarded as natural and involuntary,[y] the moral value of the action performed by the first person will be greater than that performed by the second, even though, if one were to assess the actions by reference to the *living* force,

[s] *auf der inneren Thätigkeit des Geistes.* [t] *sie sich . . . hervorthun.*
[u] *Die Denkungskraft der Seele.* [v] *Geldgeiz.*
[w] *nach Grundsätzen der Nächstenliebe* (alt: principles of charity). [x] *wohlthätig und hulfreich.*
[y] *unwillkürlich.*

the consequence of the latter case exceeds that of the former. For this reason, it is impossible for us, with certainty, to infer from another person's actions the degree of that person's virtuous disposition.[z] He who sees into the inmost chambers of the heart[a] has reserved for Himself alone the right to pass judgement on others.

4. If one wished to venture the application of these concepts to the cognition which men may have of the Infinite Divinity – a cognition which is so fragile – with what difficulties are our greatest efforts not then surrounded? The foundation of these concepts can only be found within ourselves.[b] It is therefore in most cases unclear whether this idea is to be applied by us to this incomprehensible object in a literal fashion or only by means of a certain analogy.[c] Even today, *Simonides* is still regarded as a man of wisdom; after a great deal of hesitation and delay he gave the following answer to his prince: the more I reflect on God, the less able I am to understand Him.[54] That answer is not the language of the learned rabble:[d] it knows nothing and understands nothing, but it talks about everything; and what it says – on that it stubbornly insists.[e] In the Supreme Being there can be neither grounds of deprivation nor of real opposition. For since everything is given in and through Him, it follows that, in virtue of His possessing all determinations[f] in His own existence,
2:201 no inner cancellation is possible. For this reason, the feeling of displeasure[g] is not a predicate which can be appropriately applied to the Divinity. No one ever desires an object without positively feeling aversion for its opposite. In other words, if someone desires something, that person's will relates not only to the contradictory opposite of his desire; it also relates to that which is really opposed to his desire (aversion), namely, a consequence which arises from positive displeasure.[h] To every desire, which a conscientious teacher has to educate his pupil well, there is positively opposed any outcome which is not in agreement with his desire, such an outcome being a ground for displeasure. The relations of objects to the Divine Will are of quite a different nature. Strictly speaking, in that Being, no external object is a ground of either pleasure or displeasure; for He does not in the least depend on anything distinct from Himself. The reason why this pure pleasure does not inhere in the Being, who is the ground of His own blessedness, is not because the good exists externally to Him. On the contrary, the reason is this: the good exists because the eternal representation of its possibility, and the pleasure connected with it, is the ground of the desire being satisfied.[i] If this is compared with the

[z] *den Grad der tugendhaften Gesinnung.* [a] *das Innerste der Herzen.*
[b] *nur von uns selbst hernehmen können.* [c] *vermittelst einiger Analogie.* [d] *des gelehrten Pöbels.*
[e] *darauf pocht er.* [f] *den Allbesitz der Bestimmungen.* [g] *Unlust.*
[h] *d.i. nicht allein so, dass die Beziehung seines Willens das contradictorische Gegentheil der Begierde, sondern ihr Realentgegengesetztes (Abscheu), nämlich eine Folge aus positiver Unlust, ist.*
[i] *der vollzogenen Begierde.*

concrete representation of the nature of the desire of all creatures, it will be noticed that the will of the Uncreated Being can have very little in common[j] with that of created beings. And even when one considers the other determinations as well, what we have just said will come as no surprise if the following fact is properly understood. The difference in quality must be immeasurably great when a comparison is made between things, on the one hand, which are nothing in themselves, and that Being, on the other, in virtue of which alone everything is.

GENERAL REMARK

The self-styled 'thorough' philosophers increase daily in number. They look so deeply into everything that nothing remains hidden from them which they cannot explain or understand. I can thus already anticipate that the concept of real opposition, which I laid down as a foundation at the beginning of this treatise, will strike them as very shallow. And the concept of negative magnitudes, which is based on the concept of real opposition, will seem to them not to be thorough enough. I make no secret of the frailty of my understanding.[k] This frailty is the explanation of my understanding least what everybody else seems to understand with ease. I flatter myself that my incapacity entitles me to the support of these great minds, so that their high wisdom may bridge the gaps which my imperfect under- 2:202
standing found itself unable to fill.

I fully understand how a consequence is posited by a ground in accordance with the rule of identity: analysis of the concepts shows that the consequence is contained in the ground. It is in this way that necessity is a ground of immutability; that composition is a ground of divisibility; that infinity is a ground of omniscience, *etc.*, *etc.* And I can clearly understand the connection of the ground with the consequence, for the consequence is really identical with part of the concept of the ground. And, in virtue of the fact that the consequence is already contained in the ground, it is posited by the ground, in accordance with the rule of agreement.[l] But what I should dearly like to have distinctly explained to me, however, is how one thing issues from another thing, though not by means of the law of identity. The first kind of ground I call the logical ground, for the relation of the ground to its consequence can be understood logically. In other words, it can be clearly understood by appeal to the law of identity. The second kind of ground, however, I call the real ground, for this relation belongs, presumably, to my true concepts, but the manner of the relating can in no wise be judged.

As for this real ground and its relation to its consequence my question presents itself in the following simple form: How am I to understand **the fact that, because something is, something else is?** A logical conse-

[j] *wenig Ähnliches.* [k] *aus der Schwäche meiner Einsicht.* [l] *nach der Regel der Einstimmung.*

quence is only really posited because it is identical with the ground. Human beings are capable of error: the ground of this fallibility is to be found in the finitude of man's nature, for if I analyse the concept of a finite mind, I see that fallibility is to be found in it. In other words, I recognise that fallibility is identical with what is contained in the concept of a mind.[m] But the will of God contains the real ground of the existence of the world. The will of God is something. The world which exists is *something completely different.* Nonetheless, the one is posited by the other. The state of mind in which I hear the name *Stagirite* is something, and it is in virtue of that something that something else, namely my thought of a philosopher, is posited. A body A is in motion; another body B, lying in the direct path of A, is at rest. The motion of A is something; the motion of B is something else; and yet the one is posited by the other. Now, you may subject the concept of divine willing to as much analysis as you please: you will never encounter in that concept an existent world as something which is contained within the concept of God's willing, or as
2:203 something posited by that concept through identity. Likewise in the other cases. Nor am I willing to be fobbed off[n] by the words 'cause' and 'effect', 'force' and 'action'. For if I already regard something as a cause of something else, or if I attach the concept of force to it, then I am already thinking of the cause as containing the relation of the real ground to its consequence, and then it is easy to understand that the consequence is posited in accordance with the rule of identity. For example, the existence of the world can be understood with complete distinctness in terms of the omnipotent will of God. But here 'power' signifies something in God, in virtue of which other things are posited. But this word already designates the relation of a real ground to its consequence; but it is this relation which I wish to have explained. I would take this opportunity merely to remark that the distinction made by *Crusius*[55] between the ideal and the real ground[o] is completely different from my own distinction. *Crusius*'s ideal ground is identical with the ground of cognition;[p] and in that case it is easy to understand that if I already regard something as a ground, I can infer from it the consequence. Hence, according to his principles, the west wind is a real ground of rain clouds; but it is also an ideal ground, for I am able to recognise[q] and protect the latter by appeal to the former. But according to our concepts, the real ground is never a logical ground, and the rain is not posited by the wind in virtue of the rule of identity. The distinction between logical opposition and real opposition, which we drew above, is parallel to the distinction between the logical ground and the real ground, which is under discussion here.

[m] *Geistes* / (strictly speaking: *finite mind;* cf. Lasswitz, AK 2:480).
[n] *Ich lasse mich auch . . . nicht abspeisen.* [o] *Ideal- und Realgrund.* [p] *Erkenntnissgrund.*
[q] *erkennen.*

The former distinction, that between logical and real opposition, is clearly understood by means of the law of contradiction. And I understand how, if I posit the infinity of God, the predicate of mortality is cancelled by it, and it is cancelled because mortality contradicts infinity. But how the motion of one body is cancelled by the motion of another body – that is another question, for the motion of the second body does not stand in contradiction[r] to the motion of the first body. If I presuppose impenetrability, which stands in real opposition[s] to any force which strives to penetrate the space occupied by a given body, I can already understand why the motions are cancelled. But in making that presupposition, I have reduced one real opposition to another. Now, let the attempt be made to see whether real opposition in general can be explained. Let us see whether we can offer a distinct explanation of how it is that, *because something is, something else is cancelled,* and whether we can say anything more than I have already said on the matter, namely that it simply does not take place in virtue of the law of contradiction. I have reflected upon the nature of our cognition with respect to our judgement concerning grounds and consequences, and one day I shall present a detailed account of the fruits 2:204
of my reflections.[56] One of my conclusions is this:[t] the relation of a real ground to something, which is either posited or cancelled by it, cannot be expressed by a judgement; it can only be expressed by a concept. That concept can probably be reduced by means of analysis[u] to simple concepts of real grounds, albeit in such a fashion that in the end all our cognitions of this relation reduce to simple, unanalysable concepts of real grounds, the relation of which to their consequences cannot be rendered distinct at all. In the meantime, those philosophers who lay claim to the possession of an understanding which knows no limitations[v] will test the methods of their philosophy to see how far they can advance in a question such as this present one.

[r] *im Widerspruch steht.* [s] *im realer Entgegensetzung steht.* [t] *Aus demselben findet sich.*
[u] *durch Auflösung.* [v] *Schranken.*