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## Kant and the Physico-Theological Consideration of the Geographical Facts

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## KANT AND THE PHYSICO-THEOLOGICAL CONSIDERATION OF THE GEOGRAPHICAL FACTS

A contribution to the history of geography in its relation to theology and philosophy<sup>1</sup>. The geographical schools in Central Europe before 1800

### I. INTRODUCTION

The historian of geography has two tasks to fulfil<sup>2</sup>. First of all he must examine how geography used to be conducted<sup>3</sup>. With reference to Kant and his period this involves describing the principles according to which material then known (in our particular case this means the geographical

<sup>1</sup> The following ideas deal with the subject-matter which I first presented in my Tokyo-paper. (XIVth International Congress of the History of Science, August 1974) My thanks to Mr. Crosby (Bochum) for the English translation.

<sup>2</sup> I dealt in more detail with the task of the historian of geography in my habilitation-thesis which is entitled *Die Geographia generalis* (viz. References). The historian of geography must as a historian of science maintain as wide a perspective as possible and not be satisfied with geography alone.

<sup>3</sup> The positional value which geography assumes in the frame-work of the arts and sciences respectively and which task the historian of geography (as a historian of science!) correspondingly has to fulfil, especially before 1800, must be defined from case to case. We must not, however, take our present day concept of geography as the basis and then state that everything which we consider a part of geography today does not concern the historian of geography.

As a starting point we must dwell on what used to be understood by the term "geography". Since geography and cosmology were often given the same status right into the 18th century (the geographical works of Münster and Mercator amongst other works bear the title *Cosmographia* for instance) and since geography was even identified with the exegesis of Creation and Providential interpretation (cf. apart from my habilitation-thesis my essay in the *Plewe-Festschrift* — viz. References) the historian of geography has to consider not only the works where the word "geography" happens to appear in the title, but also those cosmological

facts) was ordered, the goals to which researchers aspired, and above all from which branch of thought one proceeded<sup>4</sup>.

But then comes the second, much more important task: the answering of the why-question. Why was in the eighteenth century one particular procedure adopted and not a different one? Why was it attempted, for example, to place up to the middle of the 18th century all of science (including geography) at the service of theology from which far reaching consequences for the inner structure of the respective disciplines ensued?<sup>5</sup> Why also Kant, although a product of the Wolffian tradition,<sup>6</sup> does not continue with this physico-theological view of the geographical facts, but

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or physical, theological and philosophical works of the authors concerned which come into the picture.

In Kant's case this means that it is not enough to take the obvious lecture heading Physical Geography (*Physische Geographie*, viz. References) as a basis when working on Kant, the geographer, for his cosmological and physical writings also enter the picture.

In his theological or philosophical works as well, however, Kant deals in part extensively with geographical thoughts.

In his work *Der einzig mögliche Beweisgrund* (viz. References) Kant tries to place geography at the service of theology in the way of his teacher Wolff. Since this work throws significant light on how much value the young Kant attaches to the position of the geographical description in the system of sciences, it is important also to deal with this treatise in particular which by reason of its title at first seems to be purely theological in content.

At this point I would also like to indicate that these present remarks constitute only an initial review of the problem of the relationship between geography, philosophy and theology in Kant's thinking. Further intensive research is necessary in this up till now scarcely investigated field. I would be pleased if this paper was to lead to an exchange of thoughts above all among our colleagues from the history of science, philosophy and theology.

<sup>4</sup> Whoever occupied himself with geography in Germany, respectively Central Europe, between 1500 and 1800, was generally a theologian or philosopher by nature. The centre of his thoughts was, therefore, in these fields. The theologian or the philosopher would develop their methods of thinking and then carry them over to geography. Thus, for example, the analytical method which was applied to general geography was taken from theology (cf. on this point my essay in the Plewe-Festschrift, viz. References). Only by going back to this centre of thought can we understand the value given to the position of certain geographical "thoughts" for example: The Flood, climate, earthquakes, or the complete concepts of physio-geography, humangeography, etc.

<sup>5</sup> To my knowledge Kühn (viz. References) first drew in recent times attention to the theological basis of the geography of the 18th century. He stresses that the geography of the Pietists is only meaningful when examined with their theology in mind. Inspired by Kühn, I have applied myself more closely to these matters. Cf. on this point my theological dissertation *Naturwissenschaft und Theologie im 18. Jahrhundert* (viz. References).

<sup>6</sup> I have dealt in detail with Wolff in the work I cited in note 5. A new essay has lately appeared in *Philosophia naturalis* (viz. References).

embarks instead on a new road, thereby founding the definitive basis for posterity, so that today we can speak simply of two epochs in the history of geography, at least in Germany, Central Europe respectively, the pre- and post-Kantian periods?

What were the intellectual forces which, in the person of Kant and no one else, and only at that particular time, brought about a revolution of this nature and what did this revolution look like? <sup>7</sup> Even today many geographers are of the opinion that it is not worth-while studying geography of the period up to 1800 for this was not "correct" geography, <sup>8</sup> for many "false" interpretations were made, and the task of geographers was considered to be so completely different from today's that it is really a waste of time bothering with these things. In answer to this we can say that the person who is solely interested in the question: When was the "correct" explanation which is still valid today <sup>9</sup> discovered, and when were the new methods, which led directly to the geography of today, used for the first time, such a person will indeed find little of interest to investigate in the 18 th century.

The picture changes, however, when one broadens one's perspective and asks, somewhat in the spirit of Alexander von Humboldt <sup>10</sup>, the following questions: Which branch of thought served as a starting point in the

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<sup>7</sup> I share the opinion of H. Beck (viz. References) that the history of geography (as a history of science) and the history of (world) discovery are two different things.

Although mostly new material known through new discoveries came into geographical works, geographical systematology (and thereby geography as a scientific discipline) was only influenced by this in very rare cases. For the most part transformation in philosophical-theological thinking generated the impulses which led to the development of geography.

Two relevant examples: Waldseemüller's geography is the same as that of his contemporaries although he was the first to deal with America in his works. Kant's geography differs fundamentally from that of his predecessors, although no new discoveries were known to him. (Cf. note 13) The same holds good for Kecker-mann, the founder of general geography. Cf. on this point my habilitation-thesis (viz. References).

<sup>8</sup> Günther's work on the history of geography has obviously had much effect here. Günther bases his book on the key-note, that geography has developed from youth to maturity.

<sup>9</sup> Historians of geography of this leaning ask, by way of example, when the false concept was discarded whereby earthquakes were caused by explosions of air, or that springs were formed in the centre of the earth by evaporation, etc. And when the first person to give the "correct" answer had been found, the task was regarded as completed.

<sup>10</sup> Cf. on this point Kühn (viz. References) who formulates the task of the historian of geography in this sense. Even Wisotzki (viz. References) began in this way and said that the climate of the times must be considered if one wants to come to an understanding of the contemporary geographical systematology. However, he was not able to prevail over the Günther-school.

earlier centuries?<sup>11</sup> How and why did it happen that interest was transferred from this to that field so that problems which stood in the centre were pushed out to the periphery later on and assumed a different positional value which sometimes occasioned an entire re-orientation in certain subjects and at times even a radical re-structuring of the entire canon of that subject?<sup>12</sup> (Consider the emancipation of the scientific disciplines from theology and philosophy with all its consequences.) Whoever sets out in this way will notice that precisely the period around and before 1800 is especially informative even for the development of geography. For at that time thought liberated by the Enlightenment began to make its presence felt, thereby bringing about far-reaching consequences for this discipline and leading to a decisive revolution<sup>13</sup>.

The significance of this revolution can only be measured when the development which our subject has undergone since its foundation in the 16th century is known. This aspect of the problem will be dealt with in particular.

## II. THE DEVELOPMENT OF GEOGRAPHY IN CENTRAL EUROPE SINCE THE REFORMATION<sup>14</sup>

### 1. THE BEGINNING WITH THE TWO SCHOOLS IN THE 16TH CENTURY

The origins of German geography are to be found at the beginning of the 16th century. At this time thinkers attempted for the first time to develop a systematology relatively independent of the Greeks. Up until then geography had been confined almost entirely to commenting on the works of Ptolemy; geography was, then, purely mathematical. Suddenly this part of our discipline was widened to include physiogeography and anthropogeography. For the first time such a thing as complete geography (*Vollgeographie*) became apparent. Modern, post-Reformation geography which differs fundamentally from the one-sided mathematically orientated geography of the 15th century was thus born.

<sup>11</sup> Today geology, meteorology, sociology, etc., form important related sciences. In contrast, theology or philosophy was the most important discipline in the past (cf. note 4).

<sup>12</sup> In my habilitation-thesis (viz. References) I have explained how, following upon the shift in the focal point of theology, a corresponding shift took place in geography (from mathematical to physico- and anthropogeography). Cf. on this point note 4. I deal with this briefly in the section II.

<sup>13</sup> As I already mentioned in note 7, they were not new discoveries which led to a new direction in geography in this period.

<sup>14</sup> In the following part I prefer to forgo giving source references, but instead draw attention to my habilitation-thesis in which I concern myself principally with this period of time. (viz. References). For reasons of space I am only able to depict the theological background in a brief and simplified way.

Until now the following two points were hard to explain:

(1) Why did not the expansion to complete geography occur until the middle of the 16th century, in other words, until after the Reformation?

(2) Why, from the very outset, are two schools evident? The founders of both schools (Münster and Melancthon) had after all studied geography under the same teacher (Stöffler). How did it come about that both his pupils separated in their thinking in a relatively short period of time?

Both these questions are easily answered if one takes into account the shift in the focal point of theology following the Reformation and if one further considers that geographers were theologians whose geographical concepts, therefore, developed from a branch of thought which lay outside the sphere of geography.

The shift in the focal point of theology. Before the Reformation God the Creator was the main interest of theologians. The teaching of the *Creatio* stood in the centre of thought. After the Reformation the teaching of the *Providentia* took over this position. The Creator-God was the one who created the world at the beginning and although omnipotent was at the same time the distant God. One of the main factors underlying the Reformation was, especially in Germany, that people are looking for the "near" God instead of the "distant" God, the God who mercifully devotes himself at this very moment to man. (We might remind ourselves of Luther's utterance: "How can I reach a merciful God?") The "near" God is the one who in his Providence (*Providentia*) remains active even after the Creation, and who ensures that everything functions correctly in the world for the benefit of man. In other words, whoever takes a look at the world and so perceives its correct functioning will find direct access to the now active God, *qua Providentia*.

From the above results the re-orientation in geography. Mathematical geography (for the greater part cartography), following the methods of Ptolemy, can be linked with the doctrine of the Creation but not with that of *Providentia*. The connection with the doctrine of the Creation can be seen in the following process of thinking: the geographer's maps show man what the world created by God looks like. There is no similar connection with the doctrine of *Providentia*. The Protestant geographers of Central Europe in this period were forced, therefore, to reform the subject in such a way as to relate it to the Providential doctrine.

Two possibilities presented themselves here:

(1) Expand mathematical geography to include physiogeography. If this was conducted on a teleological basis (which was a common practice at that time in all scientific subjects), it was possible to produce a Providential proof by concluding that God's Providence manifested itself by

the fact that He always sends rain or sunshine, summer or winter at the right time.

(2) Adopt anthropogeography as an expansion or develop a theologically based geography of man. This I call religious geography (*Religionsgeographie*) and it is from this that what we now know as anthropogeography, and cultural geography, etc., developed in the course of time. Then it is possible to establish the following relationship to the Providential doctrine: God's Providence can be recognized by the fact that God did not assume responsibility for man's well-being after expelling him from Paradise, but instead led him into inhabitable areas. Whether one decided for one or the other of these two possibilities depended on which particular Providential doctrine one subscribed to.

The Lutherans under Melanchthon took up the expansion to physiogeography for the Lutheran Providential doctrine (which by way of illustration was first expounded by Melanchthon in a geographical paper) aimed solely at the God who was active here and now, and who controlled nature for the benefit of man. What God did earlier was of no interest to the Lutherans. Peucer, the first theoretical scientist among the Lutheran geographers, stresses, therefore, that the geographer should go no further back than Christ for it was with Him that the salvation of the world and God's merciful concern for man began. The geographer need not and should not bother with what happened before that.

The Reformists had a different Providential doctrine and adopted therefore a different expansion of geography. *Providentia* began for them even before the Creation. It began with God's design. For this reason they developed an anthropogeography with a strong historical leaning. And whenever they concerned themselves with physiogeographical matters they predominantly directed their attention likewise to the past. Yet, in contrast to the Catholic Middle Ages, they turned not only to the Creation, but were principally interested in what happened in the period afterward. For this reason the geography of Paradise, for instance the Great Flood, etc., plays an important role for them. This is a further reason why the Reformist geographers had to lean more heavily on the Bible. The Lutheran geographers were able and indeed had to disregard the Bible for the most part in their investigation of the present functioning of the world. This explains again why the Reformist geographers had, even in the 18th century, greater recourse to the Scripture than the Lutherans.

## 2. KECKERMANN AND THE EMANCIPATION OF GEOGRAPHY: THE NEW SCHOOL IN THE 17TH CENTURY

In the 17th century a new shift in the focal point took place. Following the advent of the new analytic-distinctive method *Providentia* was divided into *Providentia generalis* and *Providentia specialis*. The former

deals with God's direction of the entire world, while the latter with God's leading man to salvation. It follows from this that theology was in fact interested only in *Providentia specialis*. It was the universal scholar Keckermann, one of the greatest scientists of his period (Alsted even reckons him amongst the greatest geographers of all time), who drew for geographers the conclusions which resulted from this recent shift in the focal point of theology. He says: "If God's intervention in nature is not or is no longer theologically interesting, geography can, at least as far as the physiogeographical branch is concerned, emancipate itself from theology. It no longer needs, as a servant of theology, to confirm the *Providentia*, but can construct its system on the basis of autonomous criteria, independent of theology and can set itself the goals of its own research" <sup>15</sup>.

Anthropogeography can be emancipated as well for the real *Providentia specialis*, namely the divine leadership of man to salvation, cannot be upheld geographically but only theologically <sup>16</sup>. The way is thus also clear for a theologically neutral human geography, indeed even for an emancipated religious geography (Bertius, Varenus, etc.).

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<sup>15</sup> In this context he achieves the development of the first "purely geographical" systematology. In the process he avails himself of the distinctive method which he successfully applied in theology and philosophy and which led to the notional classification of our discipline into *geographia generalis* and *geographia specialis*. Thus he becomes the founder of general geography (Cf. my essay in the *Plewe-Festschrift*, viz. References).

<sup>16</sup> I see in this the reason for the decline in interest in anthropogeography in the 17th century. Keckermann still says, admittedly, that the geographer must concern himself with man and his history, but neither he nor his successors (from Christiani, Alsted, etc., Varenus, down to Kant) proceed accordingly. Henceforth, man is neglected by geographers, especially when in the 18th century interest focuses on the possible proof for the existence of God using the physiogeographical facts, (cf. section III) and since the non-geographers (philosophers, sociologists) seized upon a geography of man in the frame work of a deterministically based religious geography (cf. on this point my essay *Ein neuer Wendepunkt..* viz. References).

In addition to this a second point must be considered. As the leading theologian of this time Keckermann says "Geography, as a natural science, is able to give back to man part of his former likeness to God which he had in Paradise. In Paradise man was the master over nature. This represented one part of his likeness to God. The other part which consisted in directly recognizing God was lost with original sin. The other part, however, man's dominion over nature, can be won back by intensive study of science".

From this additional thought it follows that mathematical and physical geography are of predominant importance for the reacquisition of the first part of man's likeness to God (his dominion over nature); in this respect anthropogeography is unable to contribute much. The other part of man's likeness to God (direct recognition) can only be obtained by way of revelation which is the role of theology. In both cases a geography of man is less important.



3. THE PHYSICO-THEOLOGICAL REACTION  
IN THE SCHOOLS OF THE EARLY 18TH CENTURY 17

The causal-mechanistic ideology<sup>18</sup> emerged shortly after Keckermann. This instigated a counterrevolution emanating from the theological side against the emancipation of the sciences (including geography). The reasons for this were as follows: the emancipated geography, practised by Keckermann and his successors who stood in within the Aristotelian tradition, was, despite its theological neutrality, nevertheless theologically applicable, if only indirectly, but at least it represented no danger for theology. Not so with geography based on causal-mechanistic principles, which was able to question seriously the biblical conception of the guidance of God.

People were able to accept the fact that the heliocentric view of the world<sup>19</sup> was gradually establishing itself, for after all theology depended in no way on this<sup>20</sup>. In any case God remained the Lord of the world. But since geographers were showing that all natural processes occurred "automatically", God's mission as the Lord and the director of the world was fundamentally questioned. Theology including the Church and ecclesiastically orientated scientists could not and dared not remain silent on this point especially since geography was an important subject at school.

Thus toward the end of the century what I call the "physico-theological reaction" in geography began. Thinkers now attempted to demonstrate that even the causal-mechanistic philosophy, if conducted correctly, did not in any way question the doctrine of Church, but actually confirmed it in quite a particular and novel way<sup>21</sup>. The antithesis between the cau-

<sup>17</sup> Cf. on this point my theological dissertation *Theologie und Naturwissenschaft*, the essay *Klimatologie und Theologie im 18. Jahrhundert* and the Wolff-essay in *Philosophia naturalis* (viz. References).

<sup>18</sup> Varenus was then responsible for introducing this concept to our discipline. For that reason it is his *Geographia generalis* and not Keckermann's which remains active in the minds of later geographers. (Cf. on this point my essay in the Plewe-Festschrift, viz. References). On the connection between Varenus and Keckermann compare also the recently published work of Kastrop (viz. References).

<sup>19</sup> Varenus, despite the fact that his thinking which he adopted from his teacher Jungius is sometimes truly modern, is nevertheless still and advocate of the geocentric concept of the world. Toward the end of the century, however, the heliocentric concept finally establishes itself.

<sup>20</sup> In reality it was not so much a question of defending the Bible; the Aristotelians among scientific researchers merely produced theological reasons in order to save their position (cf. the works mentioned in note 17).

<sup>21</sup> Comenius was certainly the first to carry through this step (after his stay in Amsterdam where he was confronted with causal mechanics). (A longer essay of mine is due to appear shortly in a pedagogical magazine.) Derham is regarded as the "father" of the physico-theological movement in England. Of the Lutherans Weigel must be mentioned and Nieuwentyt is considered the head of Dutch physico-theologians. Finally, it was Christian Wolff, Kant's tutor, who became the

sal-mechanistic conception of nature and the Providential doctrine was overcome in that the individual processes in nature were regarded as causal-mechanistic (self-completing), but the tendency as a whole (namely the choice of an "appropriate" chain of causes) was considered to proceed under the direction of a controlling spirit. I call this kind of physico-theological philosophy as practised above all by Wolff the «teleological elevation of causal mechanics»<sup>22</sup>. To all intents and purposes the situation returned to the same state as before Keckermann. Once again geography was in the service of theology. Its task was to lead to God through nature. It is precisely at this juncture that Kant joins the debate by making clear with inexorable poignancy (in doing so he goes decisively further than his teacher Wolff) that geography can help neither to prove the existence of God nor to furnish proof against his existence (as the advocates of the French Enlightenment especially had tried to do). Geography is theologically neutral. Thus Kant returns to the view of Keckermann. But only after Kant was it proved that this position is the only correct and tenable one. Previously only practical reflections had led to the emancipation of geography. It would have been possible to pursue geography under continued geographical servitude. Kant exposed the inadequacy of such a procedure.

I would like now to present briefly how Kant emancipated geography, what the driving intellectual forces were which motivated him to such an undertaking. We must further examine why permanent success was to be the lot of Kant's reasoning and not of Keckermann's. Certainly we must also take into account, next to the lucidity of his argumentation and his great personality, the phenomenon of the climate of the times.

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spokesman of this movement which has since caught root in the whole of Europe. Other well-known personalities of this period who practised geography in the Wolffian tradition are Büsching, Zinzendorff and Ritter. As the controversy raged only within physiogeography itself I see another reason why anthropogeography was of limited interest in the 18th century in comparison with physiogeography (cf. note 16).

Of course these were also conservative thinkers who wanted to turn back the wheel of history and who defended the old biblically based geography. Here we might mention Calvörs, the theologian who was responsible for education in Central Germany, and above all A. H. Francke who in other respects was most certainly not conservative. It was Francke who caused his opponent Wolff to leave Halle at 24 hours notice under threat of the gallows. Decades elapsed before Wolff returned to Halle carried by his students and was rehabilitated by Frederick the Great in person. On the Wolffian struggle compare my essay in *Philosophia naturalis* (viz. References).

<sup>22</sup> Today Nikolai Hartmann proceeds in a similar way albeit with the difference that he postulates that this directing God cannot be a divine but must be a human spirit.

III. KANT AND GEOGRAPHY SINCE THE MIDDLE  
OF THE EIGHTEENTH CENTURY:  
THE WOLFF- AND KANT-SCHOOL <sup>23</sup>

1. THE IMPROVED PHYSICO-THEOLOGICAL METHOD OF KANT

Kant spent much time studying philosophy and theology mostly in the spirit of his teacher, Wolff. Even in geography he took first of all from Wolff and his contemporaries. But he began, under the influence of Newton's ideas (which were not yet so important for Wolff), to doubt whether the physico-theological position with regard to geographical facts, which had been obtained until then, was correct. Initially he was concerned with some detailed improvements in Wolff's system. That this system as a whole could be replaced by a new one and that improvements in isolated points led to nothing became clear to him only later. I described Wolff's method as the "teleological elevation of causal mechanics": To explain what is meant by this we can consider the following example: the division of the Earth into mountains and valleys, water and land, and the change of seasons, and so on, is causal-mechanistically conditioned, but is not necessary! The situation could also be quite different. There could be, for example, a climate without seasons and the Earth could be devoid of mountains. But then it would result that mankind would not be able to live as well, if indeed life were at all possible. Wolff, therefore, comes to the conclusion that the world is the best possible and that a governing hand must be behind this teleological order of the causal-mechanistic phenomena in nature.

Kant then, in order to keep Wolff's attempted solution while at the same time taking Newton's new observations into consideration, makes a suggestion of improvement, departs thereby from the Melanchthonian-

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<sup>23</sup> Here the intention is not to treat Kant's geography in detail. Cf. notes 2, 3 and 4. I am not concerned with how but with why. I would like to find out why Kant first proceeds traditionally and which underlying forces finally motivate him to break away from this tradition. Whoever is interested in his geographical or cosmological works in detail is referred to the writings compiled in the References. In particular the book by May is mentioned here in which Kant's geography is compared with modern geography (that is, around 1960). The main feature of May's work — which is a Ph. D.-thesis — is that the philosophical aspect of Kant's thought is properly considered. As I stressed in my review in *Erdkunde* the theological aspects of Kant's thought should by no means remain untreated. Since I place this aspect in the foreground my discourse complements to a certain extent May's work. Attention must likewise be drawn to the Ph. D.-thesis of Yi-Fu Tuan (viz. References). Although the author does not deal so much with Kant, he reveals the relation between theology and geography in the 18th century. Yi-Fu Tuan and myself (cf. my theological Ph. D.-thesis) arrive independently of one another in part at the same conclusions. Our work is also mutually complementary in as much as Yi-Fu Tuan deals principally with the English physico-theologians whereas I have mostly investigated the Germans.

Lutheran position into the Reformist one, possibly without his being aware of it at first. This first step, which Kant made under the impact of Newton's research over and above Wolff, I call the "transition from the teleological to the cosmological elevation of causal mechanics" (*Übergang von der teleologischen zur kosmologischen Überhöhung der Kausalmechanik*).

Three examples demonstrate how Kant criticises and dismisses the teleological interpretation of geographical facts, how then admits only the purely causal concept as the sole legitimate one, which he then, however, elevates cosmologically (and later ontologically), and how he finally arrives at a concept (even if under a different hypothesis and by a new road) which was common for a long time among the Reformist geographers<sup>24</sup>.

#### A. The mountains of the Earth (*Die Gebirge der Erde*)

Nach der gewöhnlichen Methode der Physikotheologie werden die ausgebreiteten Vorteile dieser Bergstrecken erzählt, und darauf werden sie als eine göttliche Anstalt durch große Weisheit um so vielfältig abgezielter Nutzen willen angesehen. Nach einer solchen Art zu urteilen wird man auf die Gedanken gebracht: daß allgemeine Gesetze ohne eine eigene künstliche Anordnung auf diesen Fall, eine solche Gestalt der Erdoberfläche nicht zuwege gebracht hätten, und die Berufung auf den allmächtigen Willen gebietet der forschenden Vernunft ein ehrerbietiges Schweigen<sup>25</sup>.

In the following quotations Kant then comes to the conclusion that these are natural laws according to which the mountains are formed. The scientist (in this case the geographer, the cosmologist or the physicist) has to investigate these laws individually, but not to discuss whether the mountains were created by God to benefit or to punish man<sup>26</sup>.

<sup>24</sup> Here it has to be remembered that the Reformists arrived on theological grounds at a heavily retrogressive, therefore historically based, concept of nature. Kant, however, set in this direction along scientific lines.

<sup>25</sup> *Der einzig mögliche Beweisgrund...* quoted after the edition of 1781 A 126 (viz. References).

<sup>26</sup> Burnet, the great English „scientist“ who still enjoyed much authority around 1750 (cf. Zöckler, viz. References), stated that there were no mountains before the Flood. According to him, they were depository remains left after the invasion of the Flood which on God's decree inundated the Earth as a punishment for man's sin at that time. Burnet's geography in its entirety consisted solely in speculating what the Earth looked like before the Flood. He examines, for instance, the consequences for the climate and vegetation, etc., which would result from this lack of mountains. Consequently he comes to the conviction that man lived for several centuries in the then mild climate and that a paradisaical, luxuriant vegetation covered the entire surface of the Earth (cf. on this point Yi-Fu Tuan as well, viz. References). Kant expressly rejects Burnet's procedure and maintains that speculation of that nature has no place in science.

## B. Ebb and flow of the tides (*Ebbe und Flut*)

Die Natur bietet unzählige Beispiele von einer ausgebreiteten Nutzbarkeit einer und eben derselben Sache zu einem vielfältigen Gebrauch dar. Es ist verkehrt, diese Vorteile so gleich als Zwecke, und als diejenigen Erfolge anzusehen, welche die Beweggründe enthielten, weswegen die Ursachen desselben durch göttliche Willkür in der Welt angeordnet würden. Der Mond schafft unter anderen Vorteilen auch diesen, daß Ebbe und Flut Schiffe auch wider oder ohne Wind vermittelt der Ströme in den Strassen und nahe beim festen Lande in Bewegung setzen... Es ist eine widersinnige Art zu urteilen, wenn man, wie es gemeinlich geschieht, diese alle zu den Bewegungsgründen der göttlichen Wahl zählt...

Man hätte sich, daß man die Spötereie eines Voltaire nicht mit Recht auf sich ziehe, der in höhnischen Ton sagt: sehet da warum wir Nasen haben; ohne Zweifel damit wir Brillen darauf stecken können <sup>27</sup>.

This quotation speaks for itself and requires no further comment <sup>28</sup>.

## C. The courses of the rivers

Among the physico-theologians it was a common practice to deduce God's *Providentia* from the purposeful distribution of water on the Earth <sup>29</sup>. This aspect of physico-theology very much controlled geographical writing in the 18th century, its influence extending even into school-books <sup>30</sup>. This was to a certain extent the favourite topic of the geography-

<sup>27</sup> *Der einzig mögliche Beweisgrund...* A 134/135.

<sup>28</sup> In this context I would point out that in his attempt to impute a good purpose to all phenomena Wolff comes to the following interpretation of the spacing of the planets: God expressly positioned the planets at such a distance from one another to prevent them otherwise from mutually eclipsing each other from the light of the sun (*Vernünftige Gedanken von den Ansichten...* § 84, viz. References). Compare also on this point my essay in *Philosophia naturalis*. Here the difference between the Newtonian and Wolffian explanation of the heavenly mechanics becomes especially clear.

<sup>29</sup> Fabricius, the Hamburg theologian and scientist, is one of the principal advocates of this reasoning. With his epoch-making *Hydrotheologie* he brings not only this branch of physico-theology, but the entire physico-theological movement to a peak. Compare on this point my theological dissertation (References) and the essay *Klimatologie und Theologie*.

Philipp (viz. References) has incorporated nearly all physico-theological works in his list of references. It is easy to see from this that most of the many hundred works deal with the distribution of water.

Compare also on this point Yi-Fu Tuan who for the most part deals with English physico-theology (References).

<sup>30</sup> Particular at school geography had the task of leading man to God. The geography class was, therefore, for A. H. Francke a continuation of religious instruction albeit using different means (cf. on this point my essay *Klimatologie und Theologie*). This spirit of Halle soon spread over Germany as a whole. Even the geographers Büsching and Ritter who were both from Halle were instilled with this spirit. Kühn (cf. References) is, therefore, correct when he says that the geography of the 18th century can only be properly understood if one considers the theological climate of this period.

theologians for practically in no other field could God's goodness and wisdom be so convincingly depicted as here.

Kant, therefore, goes into this topic in depth. As a Lutheran geographer, whom the present situation interests more than the earlier, he turns above all against the advocates of the Reformist school who approached the problem of the distribution of water from the point of view of the history of the Creation. Kant rejects<sup>31</sup> the theories about the origin of the rivers in Paradise and the resulting consequences for the present river-system.

Indeed even here he repudiates, as a matter of principle all speculation and places the description of visible phenomena in the foreground, stressing repeatedly that one follows from the latter and that a succession of cause and effect has led to the present situation according to the law of nature<sup>32</sup>. In this context he even has a good laugh at certain Lutheran physico-theological enthusiasts who saw the goodness and wisdom of God precisely in the fact that He makes the rivers flow in the valleys and not over the mountains where they would be of no use to man.

So much for the three examples which should clarify how, to begin with, Kant disposes of the teleological superstructure, including all speculation in the most literal sense of the word and how he admits only the causal-mechanistic concept<sup>33</sup>.

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In respect of geography's servitude to theology the two opponents, Wolff and Francke, were, moreover, fundamentally in agreement. The Wolffian strife flared up only because opinion differed on small details. Wolff was not humble enough for the Lutherans or the Pietists and in addition his *Theologie der Geographie* dealt too much with the Creation and not enough with Providence (*Providentia*). Despite this, Francke introduced Wolff's text-book (for want of a better one) into the schools. This meant that Wolff's writings were not only standard at the universities, but were standard at schools as well for more than a generation. (Cf. on this point my theological dissertation, viz. References.)

<sup>31</sup> Following the example of *Genesis* the Reformist geographers claimed in general that all the great rivers of the world had their sources in Mesopotamia. As this assertion contradicted observation, one was forced to seek refuge in the theory that there existed at least one subterranean, non-observable connection of this kind. Compare on this point the work of Wisotzki, and my writings relevant to this.

<sup>32</sup> I am unable to present any short quotation to substantiate the above, but refer instead to the appropriate passage in the work mentioned in note 27. It seems to me, indeed, that Kant had no knowledge of the attempt at settlement on the part of Fabricius who is also mentioned above, which in my opinion succeeded admirably. Obviously both scientists reach independently of each other a similar improvement of the Wolffian system under the impact of Newton's modern physics. Compare on this point my theological Ph. D.-thesis and my essay *Klimatologie und Theologie* (viz. References).

<sup>33</sup> Thus, he reaches the position of the original Wolff for he (the latter) interpreted all natural processes in a causal-mechanistic way (viz. the first part of his concept of nature (*Naturbetrachtung*) cf. References). Only when he was blamed that such a view led to atheism did he feel himself compelled to prove in a second part (cf. References) that all the phenomena treated in the first part (this part is

His next step was to replace the teleological by the cosmological or the ontological elevation. Aware of Newton's discoveries he had become convinced that the natural laws necessarily follow from the very conception of the world and they did not happen by chance, as Wolff assumed. From this it follows that it is impossible to infer a helmsman from the completions of a causal succession dependent on certain laws, but only a Creator who at the beginning created the Earth and the laws at the same time, after which the processes continue with and within this Earth without further directions<sup>34</sup>.

Kant himself calls this improved physico-theological proof of God, which leads him close to Reformist geographers, the cosmological proof. But in fact not much is achieved by this cosmological proof or cosmological elevation of causal mechanics. For what can be the significance of a proof of the existence of God for the believing Christian, if this God is only a "distant" God who, although He once created the world, has since then sat back and let the "world-machine" run automatically in accordance with the laws he established<sup>35</sup>.

Kant recognizes this problem and tries to meet it by carrying over the cosmological proof into the ontological one. But even this does not lead to a goal which satisfies the Lutherans.

At this point I shall not go into the details of his argumentation<sup>36</sup>, but in this context I would nonetheless like to point out that we are not

from today's point of view a physiogeography) do, if considered correctly (that is teleologically elevated), furnish a proof for the existence of God. In my essay on Wolff I deal with these matters in detail (viz. References).

<sup>34</sup> I point out that even the later Wolff still came to similar conclusions. Compare here my essay in *Philosophia naturalis*.

<sup>35</sup> Such thinking did not worry the Reformists. For their providential doctrine — along with the doctrine of predestination — was of course designed from the very outset to make clear that everything in the world functions in the way God planned even before the creation (cf. Comenius). If one considers these facts, the reason why Newton met with little enmity in reformed Europe becomes clear. I even tend to the theory that in the 18th century Newton's philosophy could only have developed in an environment of reformed thinking.

Consider how hard it was for a Lutheran scientist who dared to draw similar conclusions as Kant at a time when the Enlightenment had not yet led to far-reaching secularization. He was either persecuted like Wolff or was obliged to make compromises (cf. Weigel, viz. on this point my essay in *Philosophia naturalis*).

<sup>36</sup> The *nervus probandi* of this proof is the differentiation into the formal and material possibility. (Notice the heavy dependence on Wolffian philosophy here, together with the attempt to break away from it.) Kant argues, still very much traditionally, that everything capable of being conceived (*Denkmögliche*) must have a basis in reality (*realmöglicher Hintergrund*) and that it is impossible that nothing at all exists.

From this premise Kant with the help of the doctrine of modality (*Modalität-tenlehre*) advances from the possibility and comes necessarily to the reality of God. Yet even this ontological elevation does not finally lead to the now active

dealing with the transcendental philosopher, but still with the pupil of Wolff. In no way does he present an *a priori* proof, valid independently of Empiricism, but bases his thought on what we can perceive with our senses. The following utterance, therefore, could only have been made in his pre-critical period and he would have certainly formulated it differently at a later date:

„Nichts ist fähiger, den gesunden Menschenverstand mehr aufzuhellen als gerade die Geographie. Denn da der gemeine Verstand sich auf die Erfahrung bezieht, so ist es ihm nicht möglich, sich ohne Kenntnis der Geographie auf eine nur einigermaßen beträchtliche Weise zu extendieren“<sup>37</sup>.

## 2. THE EMANCIPATION OF GEOGRAPHY TOWARD THE END OF THE CENTURY

In the eighties Kant recognizes the inadequacy both of a teleological and of a cosmological elevation of causal mechanics and of the corresponding servitude of geographic-cosmological factual material. For it has dawned on him that the empiric and the immanent prevent any progress toward the transcendental. There is no longer any justification for any form of interrelation between geography and theology. Different criteria than those for theology, or in this instance transcendental philosophy, are valid for geography which has to concern itself with the investigation of the immanent world. Geography is theologically neutral<sup>38</sup>.

Kant proves with the aid of his antinomial doctrine that it is impossible to proceed from the immanent to the transcendental. I conclude my article with Kant's argumentation:

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God, intervening in the functioning of natural phenomena. This real God reminds more of the passive God of the Deists than God, the helmsman, of Melanchthon. Here we can compare the concept of God apparent in Weigel's thinking. Weigel certainly speaks of the reality, but he stresses that God must re-establish the reality (that is the existence) of the world with every new second. Such a real (*wirklich*) God (who constantly effects (*erwirkt*) new being (*Sein*)) corresponds to the Lutheran concept of Providence, but not to the much more vaguely "active" (*wirkend*) God of Kant. Compare my essay in *Philosophia naturalis*.

<sup>37</sup> This sentence is placed at the end of the fourth paragraph of the introduction of his *Physische Geographie* (viz. References). Here Kant comes to speak of school geography and says: "Our customary school geography is inadequate although nothing is more capable." This utterance of Kant's should not be over-estimated.

<sup>38</sup> Here I take theology in its literal sense of the "teaching of God". If one further considers theology, then there is, as before, an interrelation between geography and theology. If theology (as it is very often said today) has to concern itself more and more with interhuman relationship, then a new contact between theology and geography (for that matter religious geography) will in the future come about by way of sociology and social geography. Cf. on this point my study on the history of religious geography (*Geschichte der Religionsgeographie*) viz. References.



Thesis: Die Welt hat einen Anfang in der Zeit, und ist dem Raum nach auch in Grenzen eingeschlossen.

Beweis: Denn, nehme man an, die Welt habe der Zeit nach keinen

Anfang: so ist bis zu jedem gegebenen Zeitpunkte eine Ewigkeit abgelaufen und mithin eine unendliche Reihe aufeinander folgender Zustände der Dinge in der Welt verfloßen. Nun besteht aber eben darin die Unendlichkeit einer Reihe, daß sie durch sukzessive Synthese niemals vollendet sein kann. Also ist eine unendliche verfloßene Weltreihe unmöglich, mithin ein Anfang der Welt eine notwendige Bedingung des Daseins... Antithesis: Die Welt hat keinen Anfang, und keine Grenzen im Raum, sondern ist, sowohl in Anschauung der Zeit, als des Raumes, unendlich.

Beweis: Denn man setze: sie habe einen Anfang. Da der Anfang ein Dasein ist, wovor eine Zeit vergeht, darin da Ding nicht ist, so muß eine Zeit vorhergegangen sein, darin die Welt nicht war, d.h. eine leere Zeit. Nun ist aber in einer leeren Zeit kein Entstehen irgendeines Dinges möglich, weil kein Teil einer solchen Zeit vor einem anderen irgendeine unterscheidende Bedingung des Daseins, vor der des Nichtseins, an sich hat (man mag annehmen, daß sie von sich selbst, oder durch eine andere Ursache entstehe). Also kann zwar in der Welt manche Reihe der Dinge anfangen, die Welt selber aber kann keinen Anfang haben, und ist also in Ansehung der vergangenen Zeit unendlich...<sup>39</sup>

This juxtapositioning of these two contradictory theses demonstrates the inability of reason to infer the transcendental from the empiric. With this Kant fundamentally proved once and for all that geography and theology are in no way interrelated.

#### IV. SUMMARY

Why did Kant proceed from the theological to the cosmological elevation of the casual-mechanistic concept of geographic factual material? And why did it happen that he emancipated geography? This resulted from three coincident facts:

(1) Kant was a Lutheran and stood, therefore, in the teleological-geographical tradition of Melancthon whose principal concern was to demonstrate the present good functioning of the geographical environment and to interpret this as directed by God.

(2) Newton's research led him from the theological direction to the cosmological-ontological one, thereby forcing him into the theologically based concept of nature of the Reformist geographers, which tended toward Deism.

(3) Finally he realised, after he had ascertained the limits of reason, that the new causal-mechanistic geography could not be used to serve metaphysics or theology.

<sup>39</sup> *Kritik der reinen Vernunft*. Cited from the 1781 edition A 426-427 (viz. References).

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