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### Kennis, geschiedenis, objectiviteit

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viteit en historiciteit van onze wetens-  
groeiende inzicht in de wezenlijk histo-  
ennis maakt het steeds urgenter, cate-  
ijkheidsvoorwaarden van onze kennis-  
nisttheoretische problematiek, die door  
is geworden, tot een oplossing te bren-  
werkelijkheid is, wat bedoelen we dan  
van kennis? Indien werkelijk van ge-  
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eoretische uitwerking van de categorie  
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van die situering de eenheid van de we-  
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reflectie zelf een dimensie is van een  
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van de arbeid leidt echter, zoals ik eer-  
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onsequent interpreteerbaar als *verhou-*  
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zich derhalve als noodzaak aan *in* de

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nisttheoretische vooronderstelling van  
werkelijkheid kritisch te herzien. Het  
leek om het wezenlijk historische ka-  
twoorden, blijkt deze verantwoording  
een bevredigende analyse van de ver-  
viteit van onze kennis en haar (mogelij-  
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kennisstheoretische *ruimte*, waarin de  
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## Summary

According to Popper's hypothetico-deductive conception of science, scientific knowledge starts not from experience, nor from collecting 'facts', but from problems. The edifice of science is not erected upon a solid foundation of reliable facts; it is rather raised on piles above a swamp: we can only enunciate hypotheses, fallible conjectures, which are subsequently to be submitted to severe criticism. The sciences take their alleged objectivity not from the reliability of their anchorage in experience, but from the critical method they pursue. It is the falsifiability of scientific statements that constitutes the criterion of objectivity. In Popper, this 'fallibilistic' view is connected with a 'realistic' thesis, according to which it is up to the sciences to furnish us with increasingly better conjectures about 'reality outside us'. Fallibilism and scientific realism constitute the main elements of Popper's attempt to offer an explanation, within the framework of a theory of science, of the possibility of scientific knowledge and of the increase of our knowledge: the development of the science is not brought about by means of positive verification, but by means of 'progress by refutation'. In the discussion that, also owing to Popper's theories, has arisen since, the issue of the development and possible growth of our knowledge is likewise pivotal. Notwithstanding the turn towards the history of the sciences and increasing attention to scientific practice that has been apparent in several theories of science in recent decades, we may infer that the epistemological presuppositions underlying this new orientation have remained largely unchanged.

This study attempts to answer three questions, also in the light of the work of Popper, Kuhn and (to a lesser degree) Lakatos, viz.:

(1) Does the tradition in the theory of science that has concerned itself with the development of knowledge and, subsequently, with the history of the sciences, indeed open up the prospect of a theoretically satisfactory interpretation of the central problem within this tradition: the problem of the relation between historicity and the possible objectivity of our knowledge?

(2) In what respect, and to what extent, do the problems that these theories of science are apparently unable to solve result from philosophical presuppositions affecting the way in which these theories of science approach their subject?

(3) Which conditions are to be satisfied that will make a more adequate theoretical treatment of the problem at hand possible?

The present study consists of two parts. The first, comprising chapters I and II, is mainly a summary of the main features of the positions that Popper, Kuhn and Lakatos occupy within the theory of science, thus preparing the way for the systematic analysis of the second part. In that second part (chapters III, IV and V) the technique of 'internal reconstruction' is abandoned. I outli-

ne some theoretical alternatives that induce me to arrange the subject matter around some pivotal issues. This requires a shift of perspective: the treatment of these issues leads to a boundary that can be crossed only by abandoning the philosophical presuppositions underlying the first part. In the second part I focus attention on the ontological and epistemological presuppositions that the authors under scrutiny take for their starting-point, and to conclude I specify some conditions that might make it possible to break out of the aporias in the theory of science that, in my opinion, are inherent in these presuppositions.

In chapter I some concepts that are central in Popper's theory are indicated by way of introduction to the issues raised later on, and the implications of these concepts for a theory of science are pointed out. Chapter II first marks the contours of the problem that arises from Popper's elaboration of the historicity of scientific knowledge, and subsequently focuses attention on some important aspects of the discussion that in the sixties followed the publication of Popper's studies. In the second part, in chapter III, I then specify three areas on which aporias emerge. Although remarkable results have been obtained in specific fields, it seems that these aporias cannot be solved any further on the basis of the presuppositions underlying the theories of science under consideration. The three areas concerned are: (a) the relation between a 'logic of science' and the actual history of the sciences; (b) place and function of the concept of convention within the theory of science; and (c) scope and function of the concept of law. The presupposition involved concerns the ontological and epistemological separation of (object of) knowledge and real object. This separation induces the authors under consideration to redefine two concepts that play a vital part in the theory of science, viz. objectivity and historicity. The first conclusion that presents itself runs as follows: a non-empiricist and consistently fallibilistic theory of science, in which the essentially relative, perspectival and historical nature of knowledge and its development is elucidated and accounted for, requires a materialistic ontology, which allows the knowledge relation to be interpreted as an ontological relation. The knowledge relation may thus be brought to bear upon and be located in a reality existing independently of consciousness. In the fourth and final section of chapter III, I raise the question whether constructing such an ontology would not inevitably imply a return to an empiricist foundation of knowledge, which Popper rightly rejected as being unsatisfactory. In III.4, I investigate the characteristic structure of the empiricist foundation of knowledge in the light of Feuerbach's 'genetico-critical philosophy', in which in my opinion the problematic nature of the empiricist foundation emerges in an exemplary way. The very core of the empiricist foundation, so it turns out, is that it inevitably arrives at a *locus* of pure identity, where thought and reality are supposed to 'coincide'. The pointing out of such a locus, however, is essentially contradictory, and turns out to eliminate in advance the epistemological *space* that is required to reflect upon the historical and perspectival nature of knowledge.

When attempting to lay a materialistic foundation it is therefore important to reject the 'empiricist' identity of knowledge and reality and to aim at the

construction of a system of reality to be maintained and be accounted for. This is done by Ruben in order to show that the material instruments of knowledge and development of knowledge should be situated, viz. labour and, out of this, offers the possibility of knowledge and development of knowledge, and the possibility of another

In the first section of chapter III, which is connected with philosophical differentiation of distinct levels of general description and explanation, and justify the epistemological philosophical starting-point *within* the second section elaborates the view that requires the construction of an ontology in which labour can be situated as a space consistently as labour relation. In the section of chapter V) some concepts of knowledge for a theory of science and the essential 'historicity' of knowledge. Both concepts are closely interlinked beyond the dichotomy of subject and object. In time opens up new avenues for the historical nature of scientific knowledge. In the texts from Marx's *Economic Critique of Capitalism* a possible starting-point for the construction of an ontology in which the 'gegenständliche Tätigkeit' (objectual activity), and the knowledge relation

The perspectival quality of our knowledge, all of which are inextricably linked to the subject, the social space in which exists independently of consciousness, and is situated in our knowledge. In this view of the view that an epistemology is in isolation, and as though it were in isolation, on the level of the theory, the perspectival nature of our knowledge between the everlasting historicity, an ontological foundation of material relations of reflection seem to be put at our disposal a fully developed ontology. In the present study I have only

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construction of a system of relations in which the knowledge *relation* can be maintained and be accounted for on a theoretical level. In chapter IV, I enter into some important conditions for such a system. In IV.1, I refer to the studies by Ruben in order to show the significance of scientific experiment and of the material instruments of knowledge. In IV.2, I elaborate the material relation in which, according to Ruben, the material instrument of knowledge should be situated, viz. labour. Introducing the concept of labour, so it turns out, offers the possibility of connecting the epistemological analysis of knowledge and development of knowledge in the sciences with an ontological analysis, and the possibility of anchoring them in the same.

In the first section of chapter V, I raise the matter of how a theory of science is connected with philosophical presuppositions. I argue in favour of a differentiation of distinct levels of generalisation that are indispensable to a theoretical description and explanation. I also emphasize the need to explicitly state and justify the epistemological and ontological implications of one's philosophical starting-point *within* the theory of science itself. Subsequently, the second section elaborates the view that an analysis of the concept of labour requires the construction of an ontological *system* of material relations, in which labour can be situated as a specific relation, if 'labour' is to be maintained consistently as labour *relation*. To conclude, I advance (in the third and final section of chapter V) some consequences of this approach to a foundation of knowledge for a theory of science, with regard to the definition and elaboration of the essential 'historicity' and possible 'objectivity' of our knowledge. Both concepts are closely interlinked. The way that I propose here to progress beyond the dichotomy of subject and object in the theory of science at the same time opens up new avenues for a more adequate reflection upon the historical nature of scientific knowledge. Starting also from an analysis of some texts from Marx's *Economic and philosophical manuscripts* I then discuss a possible starting-point for the construction of a materialistic ontology, in which the 'gegenständliche Tätigkeit' can be situated as a specific material relation, and the knowledge relation as a particular moment of this relation.

The perspectival quality of our knowledge is determined by a number of moments, all of which are inextricably interlinked: the specific point of view of the subject, the social space in which this point of view is located, and reality, which exists independently of our knowledge and which we approach perspectively in our knowledge. In this study I have tried to advance arguments in favour of the view that an epistemology which considers one of these moments in isolation, and as though it were entirely self-sufficient, results in abandoning, on the level of the theory of science, the historicity and necessarily perspectival nature of our knowledge. For a satisfactory analysis of the relation between the everlasting historicity of our knowledge and its possible objectivity, an ontological foundation of the knowledge relation in a system of material relations of reflection seems to be imperative. It is obvious that this does not put at our disposal a fully elaborated theory of truth corresponding to it. In the present study I have only attempted to specify the epistemological space

and the ontological conditions for that space, in which these issues in the theory of science come up again explicitly, and consequently can be dealt with more adequately.

## Zusammenfassung

Nach Poppers hypothetisch-wissenschaftliche Erkenntnis nicht mit 'Fakten', sondern mit Problemen auf einem Fundament verläßlicher Pfeiler in einem Sumpf: widerlegbare Vermutungen, die sich bewähren müssen. Die Wissenschaftler müssen die Verläßlichkeit ihres Fundaments durch sie befolgten kritischen Prüfbarkeit wissenschaftlicher Theorien verbindet sich bei Popper mit der Aufgabe der Wissenschaften sich außerhalb von uns' zu liefern, bilden die wichtigsten Bestandteile wissenschaftlicher Entwicklung, wissenschaftstheoretisch zu erklären, nicht durch positive Verifikation, 'Fortschritt durch Widerlegung', die seither mitbeeinflusst, steht ebenso die Problematik unserer Erkenntnis im Mittelpunkt der Wissenschaften und der Strukturen, die sich in den letzten Jahrzehnten nachweisen läßt, können wir Voraussetzungen, die dieser Natur unverändert geblieben sind.

In dieser Arbeit wird, auch nach Popper, Kuhn und, in geringerer Weise, folgende drei Fragen gesucht:

(1) Bietet die wissenschaftstheoretische Erkenntnis und, darauf aufbauend, auch eine Perspektive für die zentralen Probleme, das methodische Problem des Verhältnisses von Theorie und Objectivität unserer Erkenntnis?

(2) In welcher Hinsicht ist die wissenschaftstheoretische Erkenntnis Voraussetzungen, die man sich für die des wissenschaftstheoretischen Erkenntnis?

(3) Welche Voraussetzungen sind erforderlich, falls angemessenere wissenschaftliche Methoden zu ermöglichen?