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THE METAPHYSICAL FOUNDATIONS
OF THE EPISTEMOLOGICAL PARADOX
IN ÉMILE MEYERSON'S PHILOSOPHY
OF MIND

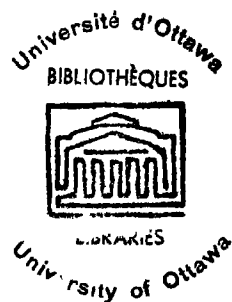
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FOREWORD

From the first appearance of Identité et réalité in 1908, Émile Meyerson has been acclaimed as one of the most stimulating thinkers of our time. The title of "Profound Philosopher" which Bergson conferred upon him in 1909 has never left him. The erudition of Meyerson is immense. His first work alone is the fruit of 19 years of research. His voluminous works are saturated with fact after fact of scientific accounts taken from the development of science from its earliest beginnings to its latest developments. Einstein published an article in 1928 in which he expressed approval and admiration of Meyerson's doctrine. Competent critics such as Boas, Blumberg, Bachelard, Brunschvicg, Lalande, Lichtenstein, Maritain and Sée, to name a few, have each been impressed by his work. André Metz has devoted a life time to the study of his works.

The program of Émile Meyerson is to show that a concern for ontology cannot remain foreign to science. He is critical of the positivistic epistemology of Auguste Comte for having sought to dispense from metaphysics. Comte believes that describing phenomena is the only business of science. Meyerson, on the other hand, says that this is not the case, as the history of scientific inductions is a tale of ontological preoccupations. The point of our research is to uncover the metaphysical foundations of Meyerson's defense of ontology.

Such a study has not been undertaken before. It is a worthy issue since this foundation is the ultimate judge of Meyerson's program. Whether or not there is the ontological preoccupation in science that Meyerson says there is, depends on the nature of his assumptions on scientific inquiry, particularly as concerns the origin nature and function which he ascribes to concepts in scientific explanation. We believe that the analysis of the concept and of its relation to the term of knowledge in the philosophy of Meyerson, will enable us to determine whether or not science explains its phenomena in the manner demanded by his formula. G. Boas and T.R. Kelly have pointed out that Meyerson's defense of ontology raises certain metaphysical difficulties but they did not develop this aspect of the problem. Nor has anyone else.

In order to situate our problematic within the perspective of what has already been done on Meyerson's philosophy, it is best first of all, to say a few words about his doctrine of explanation in general. The particular avenues of investigation which have attracted the attention of critics will then be pointed out as they arise. The most striking feature about Meyerson's philosophy is his unequivocal affirmation that to reason is to identify. The experience of *sensa* spontaneously brings to it an a priori tendency of identification. No other

process is involved. To explain phenomena is to identify phenomena. The rule of identification is a categorical imperative of the highest order as it commands strictly that whenever we think, we identify. It admits of no exception. But the equating of explanation and identification remains one of the most disputed issues of Meyerson's philosophy. It has received the attention of Bachelard, Boas, DeKoninck, Habert, Hillman, Maritain, Mourélos, Parodi, Sée, Spaier and many others. The consensus of opinion is that although identification is involved in thinking, that it is not the whole of it. Necessity is not exhibited in this way. Mourélos says of identification that it is a simplistic process.* Boas, on the other hand, concludes his critical analysis with the remark that Meyerson's doctrine of identification "raises certain metaphysical problems which would not be raised if the theory were not adopted." Others still, have preferred to approach identification from the side of the a priori. On this score, J. Lowenberg published an excellent paper comparing Meyerson's a priori to the a priori of Kant. We however, are not immediately concerned with the equating of thought and identification as such but with the metaphysics it presupposes.

A further major area of interest that has caught the attention of critics is the epistemological paradox that arises from the equating of thought and identification. If, as

Meyerson says, thought is identificatory, it means that either we consider change in the Eleatic tradition, or that we confess to a fundamental inability of reason to know the real. In the first case the situation Meyerson pictures is clearly rationalistic, as the goal of reason is the attainment of the homogeneous and motionless sphere of the Parmenidean One from which all diversity has been emptied. The ideal of thought is to reduce the whole of diversity to the tautological proposition $A = A$ from which all obtains necessarily. At the same time should reason succeed it would also posit itself into nonbeing, as nothing would be left to identify. But there is a further difficulty with this view; which brings us to the second case. The real does not lend itself to the Parmenidean ideal. The entropic diffusion of heat means that there is not the reversibility of phenomena that identification presupposes. Far from it, the real is growing progressively more diverse. This is the second law of Thermodynamics. But how is it possible to reconcile the Meyersonian reason with the real? It does not seem possible because the two appear to be mutually exclusive. The identities of reason spatialize time, while change not only implies a temporal horizon but also the increasing diversification of things. Thus explanation and that which

is explained will diverge. Yet, unless explanations are explanations of the real, the claim to knowledge is an empty absurdity. But why does Meyerson equate reasoning and identification when this leads to positivism at one time and to rationalism at another?

The solution to this problem lies in Meyerson's use of the paradox as a sine qua non condition of knowledge. The antinomies of reason and reality do not result in dissolution nor in mutual exclusion but in partial identities. The life of reason is seen to consist in a dialectical movement from opposite to opposite in which something of the a priori and something of the a posteriori fuses in "plausible" propositions. Thus the ideal of total identification is as chimerical as the affirmation of total disparateness. Reason and reality are neither totally divergent nor totally convergent as something of each figures in the propositions of science. In short, Meyerson maintains that the propositions of science are at once total identifications and rents in identity.

This situation opens up several possible avenues of investigation, particularly since Meyerson's earlier works are not so explicit on the compromise of reason and reality. T.R. Kelly, who has made a special study of the epistemological paradox divides Meyerson's writings into

two parts. The first group, Identité et réalité, De l'explication dans les sciences, and La déduction relativiste, corresponds to the divergent phase of reason and reality. Identity and diversity are seen to be mutually exclusive. Reason goes one way and reality the other. Positivism appears to be the only possible issue of the first movement. C.G. Sterling also concludes that the knowing activity will not take place because the real is not amenable to reason. Meyerson's Du cheminement de la pensée, the solitary work of the second group, corresponds, according to Kelly, to the convergent phase of reason and reality. It is an attempt to bridge the gap between reason and reality while avoiding the extreme of solipsism. The ways of reason and reality are convergent but not totally so as identification is but a tendency of reason. This consideration is founded on Meyerson's doctrine of "irrationality", or places at which reason and reality diverge. The irrationals of sensation, impact, transitive action etc., are proffered by Meyerson as proof that at each reduction something of the real is left behind.

Several interesting studies have been made on the function of the irrationals in the philosophy of Meyerson. O. Stumper, for example, says that the preservational nature of the irrationals makes a complete rationalism

impossible. Reason will not totally dissolve the real because it cannot, as at each identification something of the real is left behind. A. Bonnard, who also makes a study of the irrationals, believes that they mediate the dispute between idealism and positivism. His point is that they reveal what emphasis is to be placed upon the a priori of identification and the a posteriori of diversity in order to avoid the extremes of solipsism and positivism respectively. This work however, assumes that Meyerson's program is normative. In addition to these studies, several good papers have been written on the irrationals. They are listed in the bibliography.

In summary, the work that has been done on Meyerson's philosophy is pretty much confined to some aspect of his doctrine of identification, to the epistemological paradox and to the irrationals. The exception to these is Marcel Gillet who sees in Meyerson's philosophy a cosmological proof for the existence of God. This is a novel interpretation but we are inclined to think that if Meyerson's work can be given this sense that the ontological argument would be more to the point. Finally, the work of J. La Lumia is unique since it recognizes that Meyerson's program of investigation is not normative but strictly within the province of a philosophy of mind.

This aspect of it seems to have escaped the attention of the majority of critics.

Our analysis of the metaphysical foundations of Meyerson's philosophy proceeds as follows. The first chapter is a study of Meyerson's object and method. The second chapter probes the principles of reason which Meyerson says evince a concern for ontology. The third chapter consists in the application of these principles to the study of reality. It is divided into 4 sections. Section 1 studies the ways of reason and the progressive elimination of diversity. Section 2 studies reality's recalcitrance to the ways of reason. Sadi Carnot is seen to be "the hero of science". But the end result is that reason and reality are divergent. Section 3 probes Meyerson's fusion of reason and reality in "plausible" propositions. Section 4 concludes that the plausibility of propositions gives rise to certain metaphysical difficulties. The fourth chapter is a comparative study of the origin, nature and function of concepts to the real. It is shown that what results if the concept represents the real is a real that is hypostatic as to its existence and noumenal as to its essence. Thus the Meyersonian science is ultimately reducible to the description of what nature does - which is the cornerstone of positivistic

epistemology. The final chapter is a verification of what has been said. Mechanical theories and the principle of Sadi Carnot are in stark opposition as Meyerson conceives of them. His fusion of the two in plausible propositions or tertium quid unions is in evidence from what he says of induction and the principles of conservation. But this defense of ontology does not only preclude a knowledge of things as they are in ~~themselves~~ themselves, but it also means that reason cannot pronounce itself on the existence of things. In final analysis, there does not appear to be the difference between the principles of reason that Meyerson says there is because when all is said and done, they both end up doing the same things.

The vocabulary which we make use of in this work might appear to be unduly involved at times, but it is Meyerson's. We think that in order to remain faithful to the thought of a man, that we should also remain faithful to the man's vocabulary. Further, it has been necessary for us in the course of this study to discuss physical theories, but we have done so within Meyerson's treatment of them. We have not sought to trespass on the field of the physicist.

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INTRODUCTION

The program of Émile Meyerson is to analyze the products of scientific inductions from the earliest beginnings of science to its latest developments in order to show that science is now and has always been concerned with ontologies. Meyerson is guided in this investigation by two leading assumptions. The first is that reason has not modified its essence and the second is that the study of the theories which scientific thinking has produced will reveal the psychology of scientific induction.¹ Thus if Meyerson can prove in this way that a concern for ontology cannot remain foreign to science, he will have shown that the ideal of positivistic epistemology is illusory. The issue facing Meyerson, therefore, is to investigate the structure of scientific inquiry in order to show that the physicist has never been content to stop at a description of phenomena but that he also seeks to know why the law is as it is and not otherwise. But the difficulties which

1 "La première, c'est qu'il ne se peut pas que les hommes du passé aient pensé autrement que nous. (...) (et la seconde) c'est que si je ne sais comment je pense, il me suffit d'étudier la marche de la science pour avoir un 'échantillon saisissable, palpable de la pensée.' (...) ce chemin détourné est le seul chemin véritable." FRÉDÉRIC LEFEVRE, "Une heure avec M. Émile Meyerson", in Les nouvelles littéraires, Paris, Nov. 6, (1926.)

Meyerson encounters on the way are perplexing.

Meyerson's fundamental thesis revolves about the distinction which he institutes between two a priori principles of human reason. The first of these principles states that phenomena occur according to fixed laws and that these laws can be determined. The second principle adds the provision of the identity of phenomena in time. In short, the first principle states a relation between the conditions and the properties of a body, while the second affirms the equality between the initial and the terminal state of a change. The name Meyerson reserves for these principles is legality and causality respectively. Although these principles are distinct, they are not separate. Both principles are involved whenever thinking takes place. Thus Meyerson argues that the attempt of Comte to limit the study of phenomena to the rule of law alone is synecdoche. But assuming that it is correct to equate reasoning and identification, does it follow that science is ontological? As far as Meyerson is concerned, the equating of the two means that we conceive of change in the Eleatic tradition while continuing to recognize the entropic and consequently irreversible character of becoming. This is a paradoxical situation but it is precisely the manner in which Meyerson proposes to defend the ontological activity in science. The principle of Sadi Carnot

is what leads him to recognize that the real does not lend itself to the formula of identity, otherwise Meyerson would continue to consider change in the Eleatic tradition.² But no, the antinomies of reason and reality are at the root of knowledge. The expression he reserves for this process of knowledge is "le flottement de la raison". It results in the fusion of rational and empirical elements. The propositions of science are each affirmed by Meyerson to be of this type. The principles of conservation, for example, are said to result from the fusion of an a priori tendency of identification with the a posteriori elements of sensation. The proof that these principles are the result of such a fusion is that they were not known to the ancients (and thus that they are not wholly a priori), and that they cannot be proven empirically. If this, is the case however, Comte seems to be right in excluding the search for causes from the scientific inquiry because the fusion of antinomies precludes ontology.

2 In spite of this apparent difficulty, the Eleatic conception of change continues to exert a positive influence on the thought of Meyerson. Cf. Id., Réel et déterminisme dans la physique quantique, Paris, Hermann, (1933), p. 11. Cf. also J. Maritain, The Degrees of Knowledge, G. Phelan (trans.), New York, Charles Scribners Sons, (1959), p. 43.

Meyerson's defense of ontology seems to arise out of the consideration of one type of science only, namely, the physico-mathematical sciences. The advantage of mathematics is that it provides him with an ideal vehicle for the fusion of the antinomies of reason and reality.

Émile Meyerson was strongly influenced by Descartes³ but he is critical of him for having abused of mathematical reasoning. While he acknowledges the merits of Descartes for attempting the global deduction, he is critical of him for having thought it possible. This is Meyerson's distinction between total identification as the ideal of reason, and identity as the partial realization of this goal. The fact that Meyerson read Kant before he read Descartes is of possible significance here.⁴ Meyerson was strongly

3 "Je crois que c'est Descartes qu'entre tous les grands esprits vous mettez au premier rang?" - "Je place au-dessus de tout, en effet ce mortel dont on eût fait un Dieu chez les anciens..." FRÉDÉRIC LEFEVRE, "Une heure avec M. Émile Meyerson", in Les nouvelles littéraires, samedi le 6 novembre, (1926). This interview also contains a clear expression of Meyerson's preoccupation with the mathematics of Descartes "...je trouve qu'on a parfaitement raison de déceler dans la pensée de Descartes une influence scolastique pour les neuf dixièmes, mais ce qui m'intéresse, c'est précisément le dernier dixième, le côté par où il échappe au moyen âge."

4 Cf., Ibid. The plausibility of propositions is significant in this respect. Cf. Infra, Ch. 3, 3, 3.

influenced by Hume and Kant but he is also critical of these thinkers; the one for having exaggerated the a posteriori character of knowledge and the other for having assigned too large a role to reason. Strictly speaking, Meyerson is neither a Cartesian nor a Kantian. In fact, there are times when he is more of a positivist than anything else. It seems that the influence which Auguste Comte had upon him never left him.

Meyerson often gives the impression that he is searching for a "halfway house" between idealism and positivism - depending on which extreme of the epistemological paradox we consider - , but it would be a mistake to read more than this into his philosophy as he never intended his work in a normative sense. He seems to be caught up within the dilemma of a desire for total identification on the one hand, with a real that is foreign to reason on the other. The fact that Meyerson conceives of change in the Eleatic tradition while continuing to think of Sadi Carnot as being "the hero of science" is an instance of this dilemma. Further, this situation is most probably the source of his fundamental indecision concerning the ontological status of sensations. The metamorphosis of quantitative relations into perdurable entities which Meyerson advances in defense of ontology does not seem to have anything to do with

substance in the sense of an enduring substratum. Science does not appear to explain its phenomena in the manner demanded by Meyerson's formula. It seems that an epistemological paradox of sorts is destined to arise whenever we think of empiriometric explanation in this way.

BEYOND POSITIVISTIC EPISTEMOLOGY

CHAPTER I

I. The Object: The Rejection of Comtian Epistemology

A. The Epistemology of Auguste Comte

The work¹ of Émile Meyerson is above all a rejection of Auguste Comte's positivistic² epistemology. Comte's epistemology limits the scientific method to the rule of law.³ The Positive science rests its case on the belief that a knowledge of what nature does satisfies reason. All else is "metaphysical" and suspect. The Philosophy that man's search for the causes of phenomena must come to an end corresponds, according to the father

1 References to Émile Meyerson's work will be abbreviated as follows: I.R., for Identité et réalité, Identity and Reality, trans. K. LOWENBERG, E.S., for De l'explication dans les science, D.R., for La déduction relativiste, C.P., for Du cheminement de la pensée, R.D., for Réel et déterminisme dans la physique quantique. These along with Essais, a posthumous publication of Meyerson's major articles, make up the whole of his work. The editions which are used are given in the bibliography.

2 The word positive is used in accordance with the sense first given to it by Comte namely, of data that is free from metaphysical speculations.

3 "...le caractère fondamental de la philosophie positive est de regarder tous les phénomènes comme assujettis à des lois naturelles invariables, dont la découverte précise et la réduction au moindre nombre possible sont le but de tous nos efforts..." A.COMTE, Cours de philosophie positive, 1, Paris, Librairie J.B. Baillière et Fils, (1877), p. 16.

according to the father of this movement, to the third and final development of the human mind⁴ in which questions of theological and metaphysical ordination are affirmed to be insoluble and impracticable speculations.⁵ All such counterfeit questions are to be discarded from now on. Thus the task of positivists, setting aside sociological considerations, is to redeem men from the illusions of the

4 Comte's law of the development of the human mind is not secured on the basis of an inductive examination of facts but appears to be wholly a priori. "Ainsi, la loi des trois états d'Auguste Comte, se présente, lorsqu'elle est soumise à l'analyse, comme ne reposant pas sur une démonstration précise, soit historique, soit rationnelle. Elle apparaît, plutôt comme une loi conçue intuitivement, qui contient, certes de grandes vérités, mais qui, en fin de compte, n'est qu'une loi hypothétique." G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, Paris, Presses Universitaires de France, (1962), p. 46. Cf. also C.P., p. 638.

5 "Dans l'état théologique, l'esprit humain, dirigeant essentiellement ses recherches vers la nature intime des êtres (...) se représente les phénomènes comme produits par l'action directe et continue d'agents surnaturel (...). Dans l'état métaphysique, qui n'est au fond qu'une simple modification générale du premier, les agents surnaturels sont remplacés par des forces abstraites (...) Enfin, dans l'état positif, l'esprit humain, reconnaissant l'impossibilité d'obtenir des notions absolues, renonce à chercher l'origine et la destination de l'univers et à connaître les causes intimes des phénomènes, pour s'attacher uniquement à découvrir leur lois effectives." A. COMTE, Cours de philosophie positive, I, p. 9.

past.⁶ What Comte presents us with is a new humanism in which he, as high priest, is inspired with an apocalyptic vision of the future. That which Émile Meyerson reacts against is not so much the prophecy as the affirmation that the rule of law satisfies reason. There is little doubt that positivistic epistemology does not satisfy his mind. The arguments which he proffers in defense of the ontological explanations of science constitute an unequivocal repudiation of legalism or the rule that the law alone suffices. But before we enter into this aspect of the problem, a word more must be said about Comte's rule of law.

6 Meyerson's criticisms of Comte stop short of sociological considerations. His concern is to show that the structure of scientific thinking does not conform to the positivist scheme of things. G. Mourélos criticizes Meyerson for having divorced the epistemology of Comte from its sociological setting. "...la méthode positive ne doit pas être conçue indépendamment de l'objet auquel elle s'applique (...). Il ne s'agit donc pas, pour l'épistémologie de Comte, de dégager les lois logiques de l'intelligence, mais de se constituer en un système tel qu'elle puisse embrasser toutes les sciences en montrant la façon dont l'une tient de l'autre." G. MOURÉLOS, L'épistémologie positive et la critique Meyersonienne, p. 63. Whether or not it is possible to so separate epistemology from sociology in the work of Comte is a legitimate question, but one that Meyerson, to our knowledge, does not ask. However we do not think that it is a serious criticism. Meyerson's analysis of the psychology of scientific induction is an exacting study of the whole of science from its earliest beginnings to its latest developments and is meritorious in its own rights.

The scientific method consists in observations and explanations. Comte does not object to this. But to the question is science causal or legal, Meyerson and Comte answer differently. The explanations of science, according to Comte are always put forth as laws of association which in turn are reducible to systems of probabilities. After having observed a sufficient number of phenomena⁷, we formulate a hypothesis concerning the expected behaviour of phenomena in the future. Probable conclusions are deduced from the hypothesis which controlled experimentation will either prove or disprove. Propositions involving the successful verification of hypothetical ideas become scientific laws. A scientific law states a relation of association and not of cause and

7 It is interesting to note that Comte objects to methods of investigation in which too precise measuring instruments are used "he protests strongly against the use of microscopic research." I.R., p. 21. Comte is mistaking since the investigations of science are necessarily more and more detailed. Nature is complex and to know it in its complexity we must be precise. Precision leads to accuracy and the greater the precision the more we can distinguish the multiple aspects of nature. Heisenberg's Uncertainty Principle deals a severe blow to the science of predictions on this score for not only is the observed data minute, but legalism loses of its rigidity, as we cannot determine simultaneously the place and the speed of an electron.

effect. This is the properly explicative aspect of the positivistic science.⁸ The explicative value of laws of association is mathematical. There is no causal necessity involved. The greater the number of instances in which events are observed to be related in past situations, the higher the probability of their recurrence at some future time. The appeal of this science lies in the security of being able to predict the course of nature and of passing on to immediate action. The knowledge of the manner in which phenomena are related and the ensuing economy of effort, according to Comte, satisfies the human mind, "la connaissance des lois est ainsi présentée par Comte, non seulement comme une prélude à l'action, mais surtout comme une satisfaction accordée aux exigences mêmes de notre esprit."⁹

B. The Insufficiencies of Positivistic Epistemology

The theme which underscores the whole of Meyerson's rejection of positivistic epistemology is his belief that

8 "L'explication des faits, réduites alors à ses termes réels, n'est plus désormais que la liaison établie entre les divers phénomènes particuliers..." A.COMTE, Cours de philosophie positive, 1, p. 9.

9 G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, p. 50.

description does not satisfy reason. Science, he exclaims, is not now and never was content to stop at a description of phenomena.¹⁰ The conception of a science which would concern itself exclusively with relations without stopping to ask itself about the causes of such relations is chimerical "...the law itself must be made clear, the law requires an explanation. Science has never been content to stop without asking, why? Why must this law be and be as it is and not otherwise."¹¹

Comte's refusal to ask the question leads Meyerson to suppose that the positivistic study of phenomena is an investigation of sensations. Unless the law bears a reference to the object, the supposed cause of the sensation, it is difficult to see how sensation and phenomenon are not synonymous terms. In such a case, positivistic epistemology is an investigation of sensations and their relations¹²

10 Cf. E.S., p. 44.

11 Thomas R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, Princeton N.J., Princeton University Press, (1937), p. 18.

12 Cf. Ibid., p. 16. Cf. also A. METZ, Une nouvelle philosophie de la connaissance, Paris, Librairie Félix Alcan, (1934), p. 26. Cf. also the comment of Meyerson on Physiology in C.P., 3, p. 788, footnote 15.

"que ce que l'on doit rechercher véritablement, ce sont des rapports entre les sensations concues comme dépouillées de toute ontologie."¹³ Comte's insistence on action as the sole end of science confirms the interpretation of Meyerson. But science, as Meyerson rightly points out, has moved further and further away from anthropomorphic considerations. Qualitative theories naturally tend to mechanical theories as to their term. The success of Post Keplerian science is a testimony to the triumph of quantity over quality.

Et en ce qui concerne la physique de nos jours en particulier, il est manifeste qu'en progressant elle s'éloigne constamment de l'anthropomorphisme de la sensation (...) qu'elle édifie des constructions de plus indépendantes, de plus en plus détachées du moi,¹⁴

Thus, Meyerson concludes that action is not the only concern of science.¹⁵ This is not to say however, that he rejects action as one of the possible ends of science. On the contrary, man must be able to predict in order to live,¹⁶

13 E.S., p. 32.

14 C.P., p. 115.

15 Cf. E.S., p. 567. Cf. also C.P., p. 190.

16 Cf. C.P., pp. 6 - 7. Cf. also D.R., p. 4.

but he rejects prevision as the only goal of science. "La nature ne se montre pas seulement ordonnée, mais aussi, jusqu'à un certain point, réellement intelligible."¹⁷ The scheme of things which explains phenomena by the law alone is synecdoche.¹⁸

C. Science is Ontological

The central argument which Meyerson proffers in defense of ontology is that reasoning is identificatory and that to identify phenomena is to posit the persistence of "something" throughout change. Thus science is not only explicative in Comte's sense of the term but is also a search for ontology. Meyerson's argument is basically with the manner in which the experimenter questions reality. If it is admitted that identification is the essence of thought, it follows that science is a search for identity in multiplicity, that is, for what persists in relation to what changes. The persistent residuums of

17 I.R., p. 360.

18 Synecdoche is a figure of speech in which a part is put for a whole or a whole for a part. The attempt of positivistic epistemology to explain phenomena by the rule of law is a reductionism which frustrates the ways of reason"...the positivist error lies in the confusion between law and cause..." I.R., p. 389. Reason's concern with phenomena is twofold. First there is a need of "practical" reason to predict the outcome of events - this is the rule of law, and second, there is the equally pressing need of

science constitute what Meyerson takes to be ontology. That science should require the persistence of something and thus evince a concern for ontology is a direct result of the structure of identification which Meyerson takes to be the essence of reasoning. What it is that persists, on the other hand, is of no immediate interest to Meyerson's philosophy of mind."¹⁹ In short, Meyerson says that science is ontological because reasoning is an ontological operation. The structure of identification cannot not-be ontological. It answers to a natural propensity of reason.

L'homme, avons-nous dit, fait de la métaphysique comme il respire, et celui qui fait de la science, c'est-à-dire, qui travaille lui-même à étendre le domaine du connu ou qui cherche seulement à suivre ceux qui travaillent ainsi, est donc métaphysicien

(18 Con't) "speculative" reason to understand "substance - stand under" phenomena in order to distinguish what persists from what changes. This is the explicative function of scientific causality. Although these principles are distinct, they are not separate. Thus description is not the only business of science.

¹⁹ Cf. infra., ch. 1, part 2. Metaphysics as Meyerson understands it, is an inquiry into what reality is "in itself." He expressly disavows any ambition of doing metaphysics in this sense "...nous excluons, non pas toute métaphysique, - cela serait, assurément, impossible, - mais toute recherche de cet ordre..." C.P., p. 66. Cf. also Essais, p. 104 and D.R., p. 354. What Meyerson proposes to show is that science cannot free itself from first order questions. The rest does not concern him.

tout autant qu'un autre.²⁰

In summary, the insufficiencies of positivistic epistemology rest in its failure to grasp the essential nature of the rational operation. Science is not legalistic because the description of phenomena, of itself, does not satisfy reason. The investigation of "rapports" without a concern for "supports" is synecdoche. Meyerson's philosophy is an investigation into the structure of scientific induction in order to show that a concern for "supports" cannot remain foreign to science. Meyerson does not set out to do metaphysics as such rather, he comes to remind us of the metaphysical structure (intentionality) of consciousness "...notre ambition suprême sera comblée, si nos travaux sont reconnus comme faisant partie des prolégomènes à toute métaphysique future."²¹

D. Statement of the Problem: Identification and Ontology

The whole effort of Meyerson is to show that the description of phenomena, although an integral part of science, does not satisfy the human mind. He tells us that the scientific activity is characterized by two great

20 Essais, p. 140.

21 E.S., p. 12.

principles. The first of these is the properly descriptive part of science or the principle of legality which states that all phenomena will transpire according to laws. But the mirroring of phenomena into mathematical laws is not the whole of science since reason must also inquire into that which underlies phenomena. This is the explicative part of science or the principle of scientific causality which, as we saw earlier, Comte says is characteristic of prescientific times. Meyerson, on the other hand, is convinced that a concern for ontology cannot remain foreign to science. His program is to show that science has always been concerned with ontology.

There are two fundamental points which must be clearly distinguished here. First of all, Meyerson claims that the explanatory power of laws of association does not satisfy reason, and second, that science is ontological because reasoning is identificatory. With the possible exception of Comte's disciples, all critics are in agreement with Meyerson on the first of these points. "The point that Meyerson has so strongly made against Positivism (and also against Duhem), is that a concern for "ontology" - explanation by physical causes - cannot remain foreign to

science."²² A belief in the validity of the law as an instrument of prediction is also a belief in the intelligibility of reality²³ and in^{the} ontological foundation of the law.²⁴ These metaphysical presuppositions, although indispensable to the formulation of laws, are not admitted by Comte.

M. Meyerson nous semble avoir mis hors de toute contestation, du point de vue de la recherche positive elle-même, l'insuffisance du pur positivisme; il aura contribué à rendre à la science la conscience et le courage d'elle-même, de sa fonction et de sa portée

22 Jacques MARITAIN, The Degrees of Knowledge, p. 43.

23 "Le positivisme, qui est une théorie édifiant la science sur la légalité seule, ne saurait cependant se passer de la supposition d'un accord entre notre raison et le monde extérieur" E.S., p. 658.

24 The success of prevision presupposes in the first place that there is something in nature which corresponds to the law. The whole of science would collapse without a belief in the objectivity of things. Cf. E.S., p. 44 and C.P., p. 139. Cf. also A. METZ, Une nouvelle philosophie de la connaissance, p. 25 and p. 33. On the insufficiency of positivistic epistemology, Cf. also A. BONNARD, La notion d'irrationnel chez Émile Meyerson, Paris, Université de Grenoble, Edition Jé, (1936), p. 17. Unless science admits of the objectivity of things, it transforms itself into a metaphysics of laws. Cf. T.R. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, pp. 15 - 17.

ontologique.²⁵

While we agree with Meyerson that science cannot dispense from all metaphysics, we do not believe that the defense of ontology rests its case on identifications. The equating of **scientific** causality with identity in time is the single most rejected issue of Meyerson's philosophy. All critics are generally in agreement that although identification is involved in thinking that it is not the whole of it. It must be said in behalf of Meyerson however, that the arguments which he proffers in defense of identification are amply supported by a detailed investigation of scientific theories from their first inception to their latest developments. In order to refute him on this score, it is necessary to retake the whole of his work in order to show that the physicist does not think in this way.²⁶ This task is made doubly difficult by the fact that Meyerson says that identification is only a tendency of reason (this is clearest in his last major work, Du cheminement de la pensée). In short, reason must make do with

25 D. PARODI, Du positivisme à l'idéalisme, Paris, Vrin, (1930), p. 213.

26 Cf. C.P., pp. XXX - XX, and p. 70.

partial identities. Further, it appears singularly difficult to dispute the claim that identification is involved in rational mechanics, as the reversibility of phenomena is a principal feature of these theories. Qualitative theories also seem to fall in the same category of explanations, as they generally tend toward mechanical theories as to their completion. But in spite of these concessions, we do not think that identification is the whole of thought. Certainly it is not the whole of explanation, as this situation precludes a philosophic explanation of the real. This means that ultimately the Meyersonian science hopes to become the perfect philosophy, as no provision is made for any other type of explanation.

The explicative structure of reason as it emerges from the work of Meyerson is a blueprint for ontology. It is not geared to the discovery of ontology as a structure of the real but is made to insert ontology into the real. The Meyersonian reason is a mechanical dispenser of ontology. This is clear from this that the place at which reality recalcitrates or refuses the probe of reason is affirmed by our author to be the locus of irrationality and of ontology. It seems to us that Meyerson's defense of ontology is founded upon an inadequate metaphysics. It seems that there is not the distinction between the principles of

causality and of legality that he tells us about because in the final analysis, the ontology of causality results from the hypostasis of legality. It is this aspect of the problem which has lead us to investigate the metaphysical foundations of Meyerson's philosophy. In short, we suspect that the ontology of causality results from a substitution of the term for the process of knowledge.

To substitute the term for the process of knowledge is to take as the starting point of a critical analysis an activity of reason in place of the being of reality.²⁷ Meyerson appears to commit this fallacy as his concept results from the hypostasis of sensations. The concept in the philosophy of our author does not function in a representative capacity but is itself the quod, or term of knowledge. It is heavily weighted with interpretation. It is at the place of the idea. In short, Meyerson substitutes the idea of reality for the actual being of reality. He precludes the representative capacity of concepts. This is essentially a repetition of the cartesian way. In a sense both Descartes and Meyerson found within themselves

27 Cf. W.E. CARLO, "Idea and Concept: A Key to Epistemology", in The Quest for the Absolute, ed. F.J. Adelman S.J., The Hague, Martinus Nijhoff, (1966), pp. 47-66. Cf. also Id., Philosophy, Science and Knowledge, Milwaukee, The Bruce Publishing Co., (1967), pp. 86-93.

what they had already put there and not a conceptual similitude of reality, but for different reasons. For Descartes it could not be otherwise. Having called all things into doubt, all that was left as a starting point was an awareness of having done so. Clearly Descartes was correct in knowing himself to be a doubting thing but he was not correct in making this his starting point. Having begun with the idea rather than the concept, reality was forever inaccessible to him. Meyerson, on the other hand, does not make the methodical doubt a part of his program. Yet he also sees in the concept what he has already put there because reasoning is for him an activity which forever transmutes sense-data into perdurable identities. What is known in both cases is not the real but the idea of the real. We believe that the sine qua non character of the epistemological paradox (the divergence - convergence of reason and reality) in the philosophy of Meyerson offers a direct confirmation of our thesis. It seems that an epistemological paradox of sorts is destined to appear whenever we think of ontology in this way (that ontology results from reasoning rather than from being).

BEYOND POSITIVISTIC EPISTEMOLOGY

II. The Method: Philosophy of Mind

A. Meyerson's Philosophical Vocabulary is Imprecise.

The vocabulary which Meyerson uses to describe his method is misleading since it leads to severe misinterpretations of his work. He has been acclaimed as an epistemologist and as a philosopher of science while in fact he is neither of these.²⁸ In a passage from the Preface to his first major work Identité et réalité, Meyerson tells us that,

The present book belongs, by reason of its method, to the domain of the philosophy of science or epistemology, to use a word sufficiently appropriate and now becoming current. We have, however, in our research been guided by certain conceptions foreign to this domain.²⁹

Meyerson's last major work however, situates his method within the province of logic and psychology³⁰, while an

28 Cf. J. LA LUMIA, The Ways of Reason, New York, Humanities Press, (1966), p. 3.

29 I.R., Author's Preface to the French Edition, p. 4.

30 Cf. C.P., p. 14.

article contained in a posthumous publication leaves no doubt that it is "Philosophie de l'intellect."³¹ In spite of such variances, Meyerson maintains that his fundamental theme has remained the same throughout.³² This leads us to conclude that Meyerson's vocabulary is imprecise in matters of philosophy. Some clarifications are in order.

B. Misinterpretations of Meyerson's Work

The designation of philosopher of science appears in relation to Meyerson because the arguments which he supports in defense of an explanatory structure of reason are taken from the products or history of scientific thinking. This has led some thinkers to believe that his work is a description and an evaluation of the scientific method.

...there is ample reason to believe that Meyerson's critics and many of his readers generally misunderstood the character of his work merely because he had ideas on method in psychology that caused him to examine and discuss scientific and philosophical theories.³³

31 Cf. Essais, pp. 59-105. The article "Philosophie de l'intellect", first appeared in Revue de métaphysique, 41, (1934). It is the clearest expression of his method.

32 Cf. C.P., Preface pp. VII - VIII. Cf. also G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, p. 83.

33 J. LA LUMIA, The Ways of Reason, p. 3.

The fact that Meyerson repeatedly situates his work in the province of epistemology and the philosophy of science also explains this difficulty. But as we saw above, this is not to be interpreted literally. Meyerson's program is not philosophy of science; nor for that matter is it epistemology since his concern is not normative but factual.³⁴ The list of competent critics who misinterpret this fact is impressive. A. Blumberg, for instance, tells us that "Meyerson has constructed a distinctive philosophy of science."³⁵ H. Sée also affirms Meyerson's work to be philosophy of science.³⁶ It is significant to note that A. Metz, a close disciple of Meyerson, revised an earlier work after the publication of Meyerson's Du cheminement de la pensée, taking care to exclude the previous designation

³⁴ Cf. Essais, p. 65. Cf. also T.R. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, p. 17.

³⁵ A. BLUMBERG, "É. Meyerson's Critique of Positivism", in The Monist, 42, (1932), p. 60.

³⁶ Cf. H. SÉE, Science et philosophie d'après la doctrine de M. Émile Meyerson, Paris, F. Alcan, (1932).

of a philosophy of science from the cover.³⁷ D. Parodi³⁸, G. Mourélos³⁹, and A. Bonnard, on the other hand, affirm Meyerson's work to be epistemology.

The greatest consequence of this type of interpretation is felt in Meyerson's doctrine of the irrationals. If Meyerson's work is normative it follows that the irrationals will function as mediators in the dispute between idealism and positivism by setting down the limits beyond which reason cannot go. We will learn from the irrationals what emphasis to place on the a priori and the

37 The work in question first appeared in 1928 under the title Une nouvelle philosophie de la science: le causalisme de M. Meyerson and was revised in 1934 and reentitled Meyerson, une nouvelle philosophie de la connaissance.

38 Cf. D. PARODI, Du Positivismisme à l'idéalisme, Paris, J. Vrin, (1930), pp. 207-221 (esp. p. 220). Cf. also Id., "Le cheminement de la pensée selon M. Meyerson", in Revue de métaphysique et de morale, 39, Sept., (1932), pp. 387-415 (esp. p. 390).

39 "Nous pouvons dire que le Causalisme de Meyerson nous conduit vers une épistémologie déductive, tandis que le légalisme d'Auguste Comte nous fournit l'armature d'une épistémologie inductive. Aucun de ces deux systèmes n'exclut réellement l'autre." G. MOURÉLOS, L'épistémologie positive et la critique Meyersonienne, p. 162. I think Mourélos is right in saying that Meyerson's "causality" is ultimately reducible to Comte's "legality", but he does not develop the point. However, it does not seem that the similarity between legality and causality is reducible to an epistemological dispute.

a posteriori in order to avoid the extremes of idealism and positivism respectively. A. Bonnard sees the work of Meyerson in this way.

...la notion d'irrationnel, telle qu'elle ressort des travaux de Emile Meyerson, semble indiquer le mieux sur qu'elle voie il faut s'engager désormais si l'on veut éviter les impasses et faire progresser véritablement la pensée philosophique.⁴⁰

In a certain sense Bonnard is correct in calling attention to this aspect of the problem since reason and reality in the philosophy of Meyerson are at one time convergent and at another, divergent. But this does not mean that the irrationals are normative. To take this stand is to misinterpret Meyerson, as the antinomies of reason and reality are at once necessary and irreconciliable. Progress is dependent upon a movement of reason from one to the other.⁴¹ Meyerson never intended for the irrationals to function as mediators in philosophic disputes.⁴² His plan is not to distinguish right thinking from wrong thinking but to show that a concern for ontology is inescapable.

40 A. BONNARD, La notion d'irrationnel chez Emile Meyerson, p. 19.

41 Cf. Infra., ch. 3, 3.

42 Cf. C.P., v. 69 and Essais, pp. 59-105.

In fact our author believes that the same "cheminement" of thought holds for wrong thinking as for right thinking.⁴³ Meyerson says that instances of wrong thinking do not contradict the fundamental thesis that thought is ontological.⁴⁴

C. Meyerson's Method is "Philosophie de l'intellect."

The method of Meyerson is situated somewhere between psychology and logic "empruntant le problème à l'une et la méthode de la recherche à l'autre."⁴⁵ However, he hesitates to use the designation of a "logic" since it is usually associated with normative knowledge.⁴⁶ Meyerson is prepared to accept the term "psychology" but with one reservation - he mistrusts the method of introspection. "Our reason is competent to scrutinize everything except itself. When I reason I am really powerless to observe

⁴³ Cf. Essais, pp. 120-130.

⁴⁴ Meyerson does not generally concern himself with the analysis of wrong thinking however, since it usually contains identifications that are too brief and too few.

⁴⁵ C.P., p. 9.

⁴⁶ Cf. Ibid., p. 14 and Essais, p. 65 and p. 151.

the action of my reason."⁴⁷

The clearest formulation of a work that is at once psychology and logic is contained in Essais where it is said to be "Philosophie de l'intellect."⁴⁸ This terminology leaves no doubt that Meyerson's work is neither epistemology nor philosophy of science because a philosophy of mind is a disinterested probe of reason "...sans s'occuper de connaître ce qui se passe en dehors..."⁴⁹ Meyerson is not concerned with the structure of the real as such but with "human thought as it interprets the real."⁵⁰ If Meyerson can show that the psychology of scientific induction is ontological, his hard line critique of positivistic epistemology, that it distorts the facts, will not seem unjust.

D. The Difficulties of this Method

The program of Meyerson's investigations therefore is to use the theories of science as the inductive basis

47 I.R., Author's Preface to the French Edition, p. 6.

48 Cf. Essais, pp. 59-105.

49 Ibid., p. 66.

50 J. LOWENBERG, "Meyerson's Critique of Pure Reason", in The Philosophical Review, 41, (1932), p. 361.

from which to predicate an explanatory or ontological structure of reason. This method is not without serious difficulties. First of all the ways of reason are hidden - if they were in evidence there would be no need for Meyerson's study.

Ce n'est que dans des cas très rares que nous pouvons, au moins partiellement, pénétrer dans cette psychologie du chercheur, guidés soit par les aveus du savant lui-même, soit par la manière dont se présente l'ensemble de son oeuvre (...) le schéma qu'un savant à avantage à adopter en exposant sa découverte n'a, la plupart du temps, que des rapports lointain avec les voies que sa raison a réellement suivies au cours du travail qui y a abouti.⁵¹

Meyerson likens the process of mind to an "obscure instinct".⁵² Since the scientist is unacquainted with the process he is applying, Meyerson must assume that unconscious and conscious processes of reasoning are the same.⁵³ If these processes are dissimilar, it follows that his study of the scientific mind will not succeed in discovering the hidden assumptions which he believes accompany all forms of thinking. Since these assumptions

⁵¹ E.S., p. 627.

⁵² Ibid., p. 459. Cf. also Infra., Ch. 2, 3, D.

⁵³ Cf. C.P., p. 9, and Essais, p. 15. Cf. also, A. BONNARD, La notion d'irrationnel chez Emile Meyerson, p. 15.

are generally of a metaphysical nature, such as a belief in the intelligibility of reality and in the reference of laws to things etc., they contain what Meyerson desires to uncover most. He is confident however, that the method of research which he adopts favours his assumptions.

C'est là que l'histoire des sciences est susceptible de nous tirer d'embarras, car elle nous montre une pensée dont le progrès s'opère en général selon les principes mêmes qui dirigent la nôtre, alors que les conclusions auxquelles elle aboutit sont si différentes de celle dont nous avons l'habitude qu'aucun entraînement inconscient n'est plus à craindre. Dès lors les voies du cheminement, pour l'observateur attentif, ressortent avec infiniment plus de clarté.⁵⁴

Thus given the assumption that the ways of reason follow the same "cheminement" for unconscious as for conscious processes, Meyerson believes that the analysis of the products which scientific thinking has produced will lay bare the ontological ordination of reason. A further source of difficulty concerns the method of the philosophy of mind, as it consists in bracketting off the real from reason while continuing to defend its ontological penchant.

⁵⁴ C.P., p. 85.

C'est une tâche ardue, car il faut que la raison réussisse à dégager l'essence de ses propres formes du contenu auquel elles s'appliquent et sans lequel elles ne sauraient exister, et nous serions heureux que le lecteur jugeât que notre travail satisfait, ne fût-ce que très partiellement, à ce programme.⁵⁵

In summary, Meyerson's work investigates the psychology of scientific induction in order to denude the unconscious but irrevocable ontological tendency of reason. Also he is desirous of abstaining from any incursion into the nature of reality. This aspect of the problem does not concern him. The remarks which he addresses to Lalande are illuminating on this score.⁵⁶ His only concern is to show that the psychology of scientific induction is (unconsciously) preoccupied with ontology. It is because he believes himself to have succeeded in this that he argues to the insufficiencies of positivistic

⁵⁵ D.R., p. 385.

⁵⁶ The following remarks confirm his unwillingness to do philosophy of nature, or metaphysics for that matter, as he does not distinguish clearly between them. "M. Lalande, dans l'admirable travail qu'il a bien voulu consacrer au Cheminement, nous a hautement loué pour avoir appuyé d'un nouveau contrefort l'une des thèses fondamentales de ce qu'on pourrait appeler l'anti-évolutionisme. Nous ne pouvons, à notre grand regret, souscrire entièrement à cette appréciation. Il n'est point question d'anti-évolutionisme dans notre livre, ni d'évolutionisme non plus, du reste. Cela pour la simple raison qu'évolutionisme et anti-évolutionisme sont l'un et l'autre des conceptions appartenant à la philosophie de la nature et que, dans la mesure du possible, nous nous sommes constamment appliqué à nous abstenir de toute incursion dans ce domaine." Essais, p. 94.

epistemology. Description does not satisfy reason because we always posit the persistence of phenomena in time whenever we think. This, according to Meyerson, is what explanation is all about.⁵⁷ It results in ontology.

A significant aspect of Meyerson's work is his insistence that it lies within the province of the psychology of thinking. It is also meaningful that he should seek to connect this method with the objective set down earlier. Is Meyerson's method suited to its task? It seems dubious as psychology does not appear to enjoy a privileged status in this respect.⁵⁸ But the equating of the psychology of scientific induction with the ontological concern of science means, insofar as Meyerson is concerned, that things are not given directly

⁵⁷ The etymology of explanation suggests a bringing out from the folds; a "dévoilement" of that which is infolded or contained within them. Thus to explain phenomena is to extricate what remains of phenomena in relation to what changes. Further, what changes is explained by Meyerson in the Eleatic tradition as resulting from the spatial rearrangements of fundamentally identical and immutable matter. This is the doctrine of the unity of matter. Cf. Infra., ch. 3, 1.

⁵⁸ Cf. J. LA LUMIA, The Ways of Reason, pp. 116-120.

to us in perception as they are attained deductively.⁵⁹ It seems that induction as Meyerson conceives of it is essentially deduction. There is no pure envisagement of facts because the psychology of scientific induction is such that reason will transmute whatever it manipulates into ontological residues. In short, it seems to us that Meyerson's inability to distinguish between induction and deduction means that in effect he substitutes the term for the process of knowledge. Ontology according to this formula does not result from being but from reasoning.

⁵⁹ There is no doubt that Meyerson holds to the creation of the real by reason. The text of Essais confirms this. "LA CREATION DU RÉEL S'ACCOMPLIT A L'INTÉRIEUR MÊME DE L'ESPRIT." Ibid., p. 66. Italics added. Cf. also C.P., p. 120. Cf. also Infra., ch. 4, 4.

THE PRINCIPLES OF REASON

CHAPTER II

1. Statement of the Problem

The key to Meyerson's defense of ontology revolves about the distinction which he establishes between the two component principles of reason namely, the principle of legality¹ and the principle of causality. Meyerson affirms that both principles are in use whenever thinking takes place. He criticizes Comte for reducing the scientific inquiry to the first of these principles alone. Thus, it is imperative that we state as clearly as possible the respects in which legality and causality differ, for only in this way can we judge of Meyerson's defense of ontology.

Although the principles of reason are distinct, they are not separate. The appearance of one is always an occasion for the appearance of the other. Together they

1 The word 'legality' is intended to convey the English equivalent for Meyerson's use of 'légalité'. Kate Lowenberg however, who translated Meyerson's Identité et réalité, prefers the word 'lawfulness'. Cf. Identity and Reality, New York, Dover Publications Inc., (1932), p. 18. Lowenberg does not give a reason for this choice. We, on the other hand, prefer the term 'legality' since it lends itself to the analogical predication of scientific law in the philosophical sense while 'lawfulness' is usually employed in a univocal, narrower, juridical sense. Cf. Britannica Dictionary (1966), v. 723 (lawfulness) and p. 728 (legality).

constitute the "fabric" or reason, as they father all mental activity. Meyerson does not for a single moment change his mind about this. There is a fundamental continuity to his work in this respect. He does not depart from the central theme that the principles of legality and causality accompany all forms of scientific inductions.² But in what precisely consist their role? In short, what is reasoning according to Meyerson?

II. The Principle of Legality

A. What it is

A very real aspect of reality which cannot escape

2 "C'est, au contraire, une seule et même thèse qui est exposée dans tous, qui y est retournée sous tous ses aspects, discutée et établie patiemment avec une évidence et une généralité sans cesse accrues." D.FANODI, "Le cheminement de la pensée selon M. Meyerson", in Revue de Métaphysique et de morale, 39, juillet-sept., (1932), p. 388. The plan of Meyerson's works is as follows; I.R. takes as its data the empirical findings of scientists and is an investigation into the psychological principles which accompany induction. E.S. on the other hand, is more deductive in spirit and seeks to confirm the conclusions previously obtained in I.R., Meyerson's third work, D.R., concerns itself with the physics of Einstein and provides a modern setting in which to test his theories. C.P. does not deviate from the structure of thought that is unveiled in earlier works but provides the setting for the application of these principles to the sphere of common sense knowledge. Finally, R.D., a small special study, argues that quantum mechanics makes use of the same mental processes (although legality is seen to lose of its rigidity concerning predictions).

even the severest Idealist is the fact of change. Our world is a world of contingency. Things come into being, are measured by time and pass out of being. The element of becoming is an integral part of visible reality. But finite existents do not contain in se a sufficient reason for being. They could as well not be as be. The intuition of finitude leads Heidegger to raise the fundamental metaphysical question "Why are there essents rather than nothing"³. Ultimately, Meyerson asks the same question;

...il faut rendre raison même des choses éternelles; si l'on suppose que le monde a existé depuis l'éternité et qu'il n'y a en lui que des globules, il faut rendre raison pourquoi ce sont des globules plutôt que des cubes.⁴

But before man can begin to make himself comfortable and raise speculative questions, he must first of all survive. In order to survive man must be convinced of the regularity of nature and of his ability to predict her ways. The success of science is the guarantee of this belief "En effet, l'action est, pour tout organisme, une nécessité

3 Martin HEIDEGGER, An Introduction to Metaphysics, trans. R. Manheim, New York, Doubleday and Company, Inc., (1961), p. 18.

4 E.S., p. 180.

immédiate et de tous les instants, et le succès de cette action démontre sans cesse la parfaite légalité de la nature".⁵ Man is not free to believe or not to believe in prevision "if I want to live, I must believe in it".⁶ The control center of this imperative lies in the principle of legality. This is the first and most immediate principle of reason. It bears a relation to the animal need for self preservation.

The principle of legality is rooted in the belief that phenomena occur according to mathematical patterns and is formulated by Meyerson as stating a relation between the properties of a substance and the conditions affecting it.⁷ A determinate modification of the conditions results in a determinable modification of the properties. But because the function of laws as Comte conceives of them is to formulate relations between conditions and

5 Ibid., p. 659.

6 I.R., p. 22.

7 "La loi énonce simplement que, les conditions venant à se modifier d'une manière déterminée, les propriétés ACTUELLES (*italics are mine*) du corps doivent subir une modification également déterminée." I.R., p. 30.

property behaviour, while abstaining from any incursion into "essences," the rule of law is ultimately reducible to probability systems. The greater the number of times in which a change in the conditions affecting the properties of a substance has been observed to result in a determinate modification of these properties, the higher the probability that such will be the case in the future, given the recurrence of similar conditions. In short, we observe phenomena and translate the relations of condition and property behaviour into mathematical language.

Although the truth value of these propositions approaches mathematical certitude on the integral plane, causal necessity is never involved in fact.⁸ The truth value of

8 The effort of David Hume to treat the contents of reason as an object is treated in science also results in the denial of necessary connections. Hume argues that since all of the sciences have a greater or less relation to human nature, that we can solve the problems of science by solving the problem of human knowledge. Thus he sets out to describe all of the elements which accompany conscious experience and, through the method of analysis, reduces the complex of conscious life to sensations. But the analysis of sensations did not provide any insight into the nature of the causal relationship and Hume could not complete his program. He quite naturally became a sceptic. The lesson we learn from this thinker is that unless there is a necessary connection between properties and essences, the scientific method will discover no greater necessity than the laws of permutation and combination permit. Thus according to this scheme of things, it is mathematically possible that the sun will not "rise" tomorrow or that the "electric current" will freeze the water in the kettle rather than bring it to a boil.

mathematical propositions is a variant of verification. In essence, the rule of law as it is employed by Comte relates exclusively to the descriptive and predictive phases of knowing. He says that this is the only business of science because it satisfies reason. Meyerson, however, believes that this conception of science and of reason is Baconian.⁹ It is not acceptable as it leave no room¹⁰ for speculative knowledge.

B. The Ultimate Aim of Science is Explanation

The principle of legality as Meyerson conceives of it is not reducible to practical knowledge, as it entails a whole set of metaphysical commitments that are not reducible to the rule that the law alone suffices. The ideal

9 Meyerson mistrusts Baconian induction and accuses him of distorting the facts of reason "Sa doctrine a en réalité exercé fort peu d'influence sur la marche de la science. Le parti-pris anti déductif (...) est contraire aux véritables tendances de la science et de l'esprit humain." E.S., p. 134.

10 Cf. E.S., p. 565. G. Mourélos, on the other hand, does not agree that Comte's rule of law precludes speculative knowledge. Prevision, it seems, was never the only concern of Comte "Ce que Comte recherche avant tout dans sa classification, c'est un ordre de dépendance réelle entre les sciences qui puisse correspondre à un ordre rationnel." G. MOURÉLOS, L'épistémologie positive et la critique Meyersonienne, p. 54. The probable source of this disagreement is that Meyerson and Mourélos are thinking of two different things, the one, of positivistic epistemology, and the other, of positivism. Cf. Ibid., p. 155.

of the positivistic science to dispense from metaphysical assumptions is apparently illusory. The connexity of phenomena goes beyond what the conformity to law demands of it. There is a surplus for which the law cannot account. Because of this Meyerson says that action and prevision are not the only business of science "...là où l'expérience et l'induction nous font découvrir un ordre constant, il y a certainement une nécessité logique encoure à découvrir."¹¹ In short, Meyerson argues that scientific induction contains deductive element that provide from reason.

The mainspring of positivistic epistemology is experience. Without a sufficient number of experiences, the science of prediction loses its significance. But given a sufficient number of data, we can formulate laws that will not only ensure the ability to pass on to action, but also the economy of effort in such matters. The utility of laws, says Meyerson summing up the ideal of positivistic epistemology, "is to dispense, as much as the different phenomena will allow, with all direct observation, by permitting the deduction of the greatest

¹¹ E.S., p. 70.

possible number of results from the smallest number of immediate data."¹² But since the tendency in science is to move away from the discomforts of direct observation, through the formulation of increasingly comprehensive laws (the economy of effort), Meyerson argues that the veritable aim of science is not induction but deduction.

Nous avons, sans doute besoin d'expériences. Mais les résultats de ces expériences nous voudrions qu'ils nous servissent à préparer des raisonnements, des déductions. C'est donc bien la déduction qui constitue le véritable but vers lequel tend la science.¹³

At the moment Meyerson is concerned to show the incomplete character of positivistic induction. But Meyerson's subsequent development of the thesis that induction leads to deduction opens the door to the causal postulate and to the ultimate identification of induction and deduction. He accomplishes this feat through the doctrine that thought is identificatory.

Deduction is a process of reasoning according to which an effect is seen to follow a cause as out of necessity. In short, a deduction leads us to recognize that things

¹² I.R., p. 25.

¹³ E.S., p. 567.

do not happen by chance but that logical necessities are involved in the relations of causes and effects. It is on this ground that we distinguish anterior from posterior events and call the one cause and the other effect. This is also the meaning of explanation since a phenomenon will not be understood until we also discover the causes of its being. But what are these causes? Explanation, as Meyerson conceives of it, consists in showing the logical necessity which exists between the antecedents and the consequents of a change. No one would quarrel with this. But this is not the whole of it; the Meyersonian philosophy does not explain a thing through causes in the philosophic sense of the term, but through the identification of the thing with whatever precedes it in time. Thus he holds to explanation as being a process in which the antecedent of change is shown to contain the sufficient reason of the consequent because reason identifies the two.¹⁴ Deduction, on the other hand, is the art of showing what phenomena are related in this way.

In summary, because legal science is preoccupied with the economy of effort, that is, the formulation of

¹⁴ Cf. Ibid., pp. 66 - 92.

increasingly comprehensive condition and property relations, Meyerson argues that the veritable aim of science is not induction but deduction. Thus action and prevision are not the only business of science. But before we probe into the structure of Meyerson's causal postulate, a word more must be said about what he considers to be the insufficiencies of positivistic epistemology.

C. The Metaphysical Assumptions of Positivistic Epistemology

Not only is the tendency of science to deduce and explain its phenomena, but Meyerson also argues that the law entails metaphysical assumptions that are not themselves reducible to the rule of law. The most obvious being that things are intelligible, that reason can know the real, and that the law bears a reference to things.

The rational operation is not reducible to the sensa upon which it operates. The ability to formulate predicative propositions goes beyond the observation of phenomena. It contains elements which are not reducible to sensa and survival. Thus, Meyerson argues that without an ability to read something of itself into phenomena, reason could not formulate laws. The law is an ideal

construction of reason; it implies the ability to generalize.¹⁵

...ce qui existe véritablement, c'est non pas le général, mais le particulier (...) Il y a là entre la science et la réalité, entre notre entendement et notre sensation, une véritable lacune (...) tout ce qui est perçu par nos sens se morcelle en sensations particulières alors que tout ce qui est conçu par¹⁶ notre entendement prend la forme d'idée générale.

The formulation of laws, according to Meyerson, is a process of disengaging things from their concrete existence and of raising them to the level of universal, predicative judgments. It is a manner of introducing continuity into the discontinuous, fragmented data of sensations. Meyerson concludes from this that the bridge which unites phenomena is not spanned by the phenomena themselves but by consciousness "...les seuls rapports que nous puissions connaître sont ceux dont notre conscience forme elle même l'un des termes..."¹⁷ Each experience is atomic in character and cannot of itself be said to relate to the molecular of scientific theories. It is reason which transforms atomic sensa into molecular propositions.

¹⁵ Man's use of language also confirms the ability of reason to read something of itself in the discontinuous data of sensations. Cf. C.P., p. 285. Cf. also G. BOAS, A Critical Analysis of the Philosophy of Emile Meyerson, p.8.

¹⁶ E.S., p. 28.

¹⁷ D.R., p. 74.

There is a surplus of the signified over the signifying whenever man thinks. The surplus is due to the necessity which the principles of reason impose upon the plethora of sensations. This situation, according to Meyerson, denounces the illusory nature of positivistic epistemology.¹⁸

18 Cf. David MILLER, "Explanation Vs. Description", in Philosophical Review, 56, (1947), pp. 306-312, for an excellent treatment of the invincible metaphysical tendencies of the scientific method. Although this article does not deal explicitly with Meyerson, it does clarify his thought. The expression which Miller uses to denote the contribution of reason in establishing a continuity between the phenomena of experience is 'interphenomena.' The function of 'interphenomena' is to fill the spatiotemporal gap between phenomena. They bridge the continuity gap between the discontinuous data of sensation. They enable the intellect to read a coherent, continuous whole into the fragmented data of experience. "Our control over the order of events and of our experiences of events has not come about by recording our experiences and stating the order which Nature of herself furnishes. Rather it came about to an ever increasing extent by positing an inexperienceable order and, through theories, by working out the implications of those orders from the experienced world." Ibid., p. 306. Without 'interphenomena' science (which Miller doubts would still exist) would consist in the recording of unrelated bits of sense data. But "once the gaps between experienced phenomena are filled, phenomena are explained, and the prime assumption of science, namely that the world is intelligible is to that extent justified." Ibid., p. 398. Miller uses an application of Boyle's law (which we are here reproducing) to illustrate the point that $PV = \text{constant}$ (at constant temperature). The equation requires 'interphenomena' in order to be intelligible.

TIME	TEMP.	PRESSURE	VOL.	PRESS X VOL.
10:20 A.M.	54°	5 dynes/cm ²	20,00cm ³	100,00 ergs

In addition, the ability to translate the language of nature into conceptual form and to operate successfully on these concepts implies that something in nature corresponds to concepts. Otherwise, we would be at the mercy of

(18 Con't)

TIME	TEMP.	PRESSURE	VOL.	PRESS X VOL.
10:30 A.M.	54°	4 dynes/cm ²	25,000cm ³	100,00 ergs
10:35 A.M.	54°	2 dynes/cm ²	50,000cm ³	100,00 ergs
10:50 A.M.	54°	1 dynes/cm ²	100,000cm ³	100,00 ergs

Miller tells us that we cannot conclude in Boyle's law from this data alone "Such a conclusion presupposes a continuity and a completeness in nature neither of which can ever be proved by experience." Ibid., p. 308. Since interphenomena fuses the discontinuous into a continuous intelligible whole, Miller says that it is at once of the physical order and of the logical order. It is of the physical order inasmuch as it must exert a positive influence on real phenomena and of the logical order inasmuch as it is not experientiable. Thus the interphenomena fulfills a metaphysical function and points to the inescapable explicative character of scientific reason. "A complete system consists of one in which the relationship between the experienceable and the inexperienceable is stated, and explanation is identical with such a statement" Ibid., p. 312. The term Meyerson uses is not interphenomena but plausibility. The propositions of science according to him are plausible because they reveal a content that is at once from *sensa* and from reason. But "plausibility" and "interphenomena" differ in that Meyerson's doctrine on plausible propositions precludes the representative capacity of concepts. Cf. Infra., ch. 4.

nature. It means that the real is structured; that there is something of reality that perdures throughout change. The propositions of science imply "supports" for the "rapports" of observations.¹⁹ Further, the ability to formulate laws implies that nature is ordered. How else could we predict the recurrence of events? In short, Meyerson says that a belief in legality is also a belief in regularity and in structure.

It is just as interesting for us to know when things will take place as to know what takes place. (...) thus it is our conviction of nature's regularity which intervenes; nature lends itself to it, this is incontestable, but this conviction (...) exceeds the limits of direct observation; it is absolute and guarantees the future.²⁰

But not only is the legalist impelled to believe in the temporal recurrence of things but he is also forced to believe that space is homogeneous and that the law will hold good anywhere.²¹ The idea of the uniformity of space constitutes the basis of geometry. Meyerson argues that the homogeneity of space implies something more than the

19 Cf. C.P., pp. 519 - 521.

20 I.R., p. 35.

21 Cf., Ibid., pp. 36 - 38.

law says it does. It implies the persistence of things in space.²² Things change in time but they are not modified in space. Thus there is not complete analogy between space and time. Identity in time goes beyond what strict conformity to law demands of it. The concern with laws is not the only business of science.

...as a last subtle thrust at positivism he points out that positivism cannot carry through its program of cataloguing descriptive laws without employing the essential process of explanation, namely, identification in arriving at general ideas.²³

D. Conclusion

Although the rule of law provides the starting point of science, description is not the only business of science since it entails metaphysical commitments such as a belief

22 "The reasoning which precedes is based evidently on a distinction between objects and laws. Now, is an object anything but a group of phenomena? And since these phenomena are ruled by laws, is not what we call an object simply a group of relations conformable to law?" I.R., p. 39. But the relation of properties and conditions also implies something more, namely an identity in time "it is clear that all the properties which we attribute to substances are only faculties of this kind, all manifesting themselves only under determined conditions and apt to be modified if these conditions happen to change." Ibid., p. 41.

23 T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 17.

in the objectivity of things, in their intelligibility and regularity and in our ability to formulate propositions; none of which is reducible to the rule that the law alone suffices. This is particularly evident as concerns the homogeneity of things in space as the postulate of identity in time goes beyond the strict limits imposed by the rule of law. In short, the principle of legality implies more than Comte says it to.

In this section we sought to present the principle of legality as indispensable to the formulation of scientific theories but as incomplete in itself. It must be completed by the principle of causality. These principles are distinct but they are not separate.²⁴ In their operation they form a unity, simultaneously seizing upon the data of sensation in order to transform it into the continuous, intelligible, universal, predicative propositions of science. It is because of their interaction that we find a surplus of the signified over the signifying in the propositions of science. An investigation of the signifying will reveal that Meyerson

²⁴ Why then do we treat of them separately? "A quoi nous pouvons répondre: mais tout simplement pour comprendre quelque chose à ces opérations de l'intellect scientifique." C.P., p. 242.

attributes the surplus to the causal tendency of identification. This is the subject for our next inquiry.

III. The Principle of Causality

A. Its Importance

What constitutes the evidence of reason? When are we satisfied that logical necessity is exhibited and that what follows from a deduction could not have been otherwise? Meyerson's answer to this question is that necessity is exhibited when the identity between the events of nature is demonstrated. His fundamental postulate is that reasoning is a process of identification. The principle of causality is the a priori disposition which fathers this movement. The importance it occupies in the work of Meyerson cannot be overstated.²⁵

25 "In the pages which follow we shall study the rôle played by the postulate of causality in the physical sciences. We hope to show that this rôle is of fundamental importance, and that neither the evolution of science in the past nor its present condition can be explained if we exclude it." I.R., p. 48. Cf. also A. MEYERSON, Une nouvelle philosophie de la connaissance, p. 49. "Et le nom de CAUSALISME (italics are mine) nous paraît bien choisi pour désigner la philosophie des sciences de M. Meyerson elle-même." A second key issue in the work of Meyerson arises out of the resistance which causality meets as it seeks to reduce phenomena to identity propositions. These are the "irrationals" ...il nous faut, dès le début, centrer notre étude sur les deux notions de base qui constituent la pierre angulaire de son système; la notion d'identification

B. What it is

Meyerson distinguishes between two orders of causality: scientific causality and theological causality. The question of miracles falls under the heading of causality of the second type and since it escapes the essence of reasoning (relating more as it does to an act of will), it is not the point of Meyerson's enquiry. The subject which concerns him is the analysis of scientific causality.²⁶

The principle of causality is the second and most important co-principle of reason. It provides the theories of science with their explanatory force. It is an imperative to identify whatever reason manipulates. This is the Meyersonian formula of explanation. To reason is to relegate all differences to the background in order to retain the sameness which exists between a cause and its effect.

25 (Con't) et celle d'irrationnel. C'est autour de ces deux notions fondamentales que s'engage, chez lui, le dialogue entre l'expérience et la raison. "G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, p. 95. An equally important issue in the philosophy of Meyerson, is the epistemological paradox. Cf. Infra, ch. 3. The paradox appears to be the logical consequence of a philosophy that begins within the cogito rather than with the beings of extramental reality. Cf. Infra, ch. 4.

26 Henceforth, causality, the causal postulate, and the principle of scientific causality are used synonymously.

Causality is an imperative to identify *sensa* as well as the concepts of reason.²⁷ "Ainsi, cela est important à noter, toute véritable explication scientifique d'un phénomène dans le temps repose au fond sur la permanence de quelque chose, d'un concept quelconque."²⁸ Since explanations are explanations of reality the identity of concepts relates to an identity of things. This is the key to the distinction between the principles of reason. Whereas the principle of legality demands a belief in the regularity of nature (legality implies regularity, as we saw earlier), the postulate of causality posits identity in regularity. A cause cannot give rise to an effect that is heterogeneous to it, as something of the cause must pass into the effect. The feat of the Meyersonian reason is to equate the identity of phenomena, or whatever it is that persist from cause to effect with explanation and

27 Meyerson actually holds two doctrines concerning the origin of concepts. First he presents the concept as resulting from the hypostasis of sensations into identities. Second, he speaks of the eliminative function of causality as it probes the diverse in search of identities. "No single account of the process is maintained throughout." T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 77. This situation requires clarification because the concept is the key to Meyerson's defense of ontology. It seems to us that Meyerson's 'concept' contains more than he says it to. Cf. Infra., ch. 4.

28 E.S., p. 160.

ontology. This is the function of causality. In brief, the principle of causality brings this other dimension to the law that time also be irrelevant to the phenomena themselves. "All the conditions which lawfulness imposes upon us, in whatever concerns time and space, these also causality demands, and it adds another exigency, that of the identity of the objects in time."²⁹

Meyerson's formula of identity is a formula for ontology. The identity of objects in time, or whatever it is of the antecedent that persists through to the consequent, is the essence of the real. "Ce qui persiste, c'est toujours l'essence, et ce qui varie ne peut être que l'accident."³⁰ The ontological appetite of reason is a search for identities in time. This is the properly explicative nature of science. "La science est en outre un système de supports."³¹ Without some underlying substrate there can be no order in nature and without order there can be no legal bond. Thus the denial of causality is also the denial of legality. The rational thirst for ontologies is

29 I.R., p. 45.

30 Essais, p. 202.

31 E.S., p. 546.

proper to the whole of science. "Le point de vue le plus simple (...) consiste à considérer le processus d'identification comme faisant partie du tuf sur lequel reposent les assises les plus profondes du savoir humain."³² Meyerson's defense of ontology is unequivocal. The essence of reason is now and has always been identification. The thinking of the ancients does not differ from the thinking of the moderns on this score. Thus positivistic epistemology distorts the facts of scientific induction in seeking to reduce science to a descriptive business.

In summary, logical necessity is seen to unfold as a process of bestowing successive identifications on the plethora of sensations. The causal postulate is Meyerson's defense of ontology while identification is the "open sesame" that uncovers residual stores of identities. Meyerson argues that unless we look on reason in this way, that the stream of consciousness which Bergson spoke about is reducible to discontinuous sensa. David Hume does not look on reasoning in this way "...aussi la démonstration si probante de Hume n'a pas eu le don de convaincre tous les

³² Ibid., p. 585.

philosophes."³³ The alternative is more rewarding; a belief in causality is a belief in identity,³⁴ is a belief

33 Ibid., p. 83.

34 Meyerson has been largely criticized for equating scientific causality with identity. Mourélos is probably Meyerson's severest critic on this score, as he says of identification that it is selective and simplistic. "Bref, on n'a pas toujours à faire à des démarches purement intellectuelles, à des analyses rationnelles aussi claires que celles que suppose l'application du schéma Meyersonien de l'identification, mais à des raisonnements confus, supportés par toutes sortes de tendances, à des pensées par analogie, pénétrées d'affectivité, en deux mots, à des opérations inventives dans lesquelles tous les éléments de l'imagination créatrice entrent en jeux." G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, p. 153. I think that Mourélos is right about that because identification, although it is involved in thinking, does not appear to be the whole of it. But also I think that a fundamental aspect of Meyerson's work withstands the criticism of Mourélos. To begin with, Meyerson's work is an investigation into the psychology of scientific induction and has nothing normative about it. He does not propose a formula that will enable us to distinguish right thinking from wrong thinking, but a defense of ontology. His concern is understandably selective. This aspect of Meyerson's doctrine seems to have escaped the majority of critics, as says La Lumia. Further, because identification is a psychological tendency, it is not as clear and simple an operation as we might think it to be. "Je plains les gens qui n'ont que des idées claires." E.S., p. 299. There are two fundamental aspects of identification that must be distinguished; first that it is a tendency of reason and second that it results in identities. As a tendency, identification cannot actually be said to be anything. It can be likened to the agent intellect which although in potency to knowing is not actually active prior to the reception of species. Thus the critique of Mourélos falls short of the true nature of identification. The attainment of identities involves long, arduous, imaginative

in structure and regularity and is a belief in the law.

There can be no question of instituting the legal bond

(34 Con't) and often obscure manipulation of concepts. Nor, unfortunately, is it always free from effective elements such as desire and hope. In short, the mechanism of identification at rest and the mechanism at work are two different things. The more we think about Meyerson's doctrine of identification the more we realize that it is a complex operation. Reason does not hesitate to use whatever is promisory of identities. Analogical reasoning is abundantly in use "La théorie de M. Meyerson semble être compatible avec la notion d'analogie intrinsèque dont la philosophie scolastique fait un si grand usage." M. GILLET, "La philosophie de M. Meyerson - étude critique", in Archives de philosophie, 8, 3, (1931), p. 110. The Meyersonian reason also makes abundant use of the state of potentiality. Cf. E.S., pp. 325-330. Meyerson's analyses of the psychology of scientific induction reveal a movement of reason that is at once a dynamic, complex and imaginative divining of nature. The fact that each identification is but a rent in identity and that the goal of total identity (solipsism) is illusory confirms reality's recalcitrance to identification. An argument of a different order is proffered by O.N. Hillman who says that identity in time does not exhibit necessity. Cf. O.N. HILLMAN, "E. Meyerson on Scientific Explanation", in Philosophy of Science, 5, (1938), pp. 73-80. Cf. also Id., A Critical Study of the Philosophy of Emile Meyerson, pp. 92-114. I think that the critique of Hillman is more to the point, as identity does not evince necessity; nor is it a criterion of truth. G. Boas points out in his critical analysis of Meyerson's work that if reasoning is identification, that we would be tempted to conclude from the propositions $A > B$, $B > C$: $A > C$, that $a = b$ (i.e. a = an entity greater than B , B = an entity greater than C , A = an entity greater than C , thus $A = b$ as both are entities greater than C .) But I think that this is stretching the point as it involves circular argumentation. Also we do not turn to relational propositions to refute Meyerson on identification, but to the nature of explanation. While Meyerson agrees that some statements of identity in time are false, he concludes from this that too few

without at the same time invoking the causal connection.

C. The Origin of the Principle

Meyerson obtains the formula of causality from Leibniz' principle of sufficient reason.

Pour découvrir la ~~vaie~~ source du principe, il suffit de se rappeler le nom par lequel Leibniz et bien d'autre après lui l'ont désigné. Il est le principe de la raison déterminante ou suffisante. Là où nous le faisons prévaloir, le phénomène devient *RATIONNEL* (*italics are mine*), adéquat à

(34 Con't) identifications are used and not that the mechanism itself is in error. Cf. Essais, pp. 120-130. He does not change the equating of explanation and identification. But since there cannot be complete heterogeneity between cause and effect, Meyerson seems to be right in that some degree of identification is involved. Whether or not identification is the whole of reasoning however, seem to depend on whether or not, identity evinces necessity. It does not appear suited to this task since, as Kelly points out, identification is essentially a negative process, that is, a process of eliminating diversities. Does explanation consist in construction or destruction? "Si de son point de vue M. Meyerson a le droit de dire qu'expliquer c'est réduire, d'un autre point de vue, expliquer c'est construire" D. PARODI, Du positivisme à l'idéalisme, Paris, Vrin, (1930), p. 216. But Meyerson does not soften the rigidity of his theory. "On aperçoit clairement que le similaire ne contente d'aucune manière l'esprit, et ce que la raison cherche c'est bien l'identique parfait". Essais, p. 196. The identity between antecedent and consequent must be absolute as reason cannot fathom the diverse. Meyerson's proposed solution to these difficulties rests in his use of the epistemological paradox. Cf. Infra., 3, 3.

notre raison; Nous le comprenons et pouvons l'expliquer.³⁵

Meyerson also finds the equating of identity with reasoning in Hoffding³⁶ and Condillac.³⁷ Ultimately the principle has its historical genesis in the Eleatic conception of change. Inasmuch as the identification of antecedent and consequent is complete, we can only suppose change to have been illusory. The attainment of identities enables reason to transform empirical successions into necessary propositions. Reason has discovered identity and has understood that the event could not have been otherwise. Reason has shown the antecedent to be a sufficient reason of the consequent.

La forme essentielle de notre science nous apparaît modelée surtout par le souci de l'explication du changeant par le persistant. C'est pour obéir à cette tendance irrésistible que nous cherchons la raison suffisante du phénomène, et le principe de la raison suffisante n'est donc qu'une forme du processus d'identification. Il est par l'identification de l'antécédent et du conséquent, l'application de ce processus à la marche des phénomènes dans le temps.³⁸

35 I.R., p. 31. (Lowenberg's translation of this text is on p. 41).

36 Cf. C.P., p. 55.

37 Cf. I.R., p. 43 (Lowenberg translation).

38 E.S., p. 177.

The unity of the principles of reason is also in evidence, as there can be no question of establishing the causal connection before the legal bond is instituted.³⁹ But given the invariant successions of legality, the principle of causality spontaneously transmutes this data into necessary relations by discovering in the antecedent a sufficient reason for the consequent. The efforts of Hume, Helmholtz and Hannequin to establish the causal connection from the side of phenomena alone could not succeed.⁴⁰ The sufficient reason of things does not obtain from phenomena themselves, as they are diverse. The diverse is not a source of intelligibility. This is an important aspect of Meyerson's philosophy.

D. The Principles are Instincts of Reason

The tendency of identification is the natural law of the Meyersonian reason.⁴¹ We are no freer to disobey its behests than we are to swallow the food we eat. It is

³⁹ For Meyerson's argument that science is both legal and causal. Cf. I.R., ch. 1, and E.S., ch. 1 and 2.

⁴⁰ Cf. E.S., pp. 68-83.

⁴¹ Cf. J. LA LUMIA, The Ways of Reason, p. 56.

an a priori⁴² categorical imperative to identify whenever we think. It is an imperative because it commands strictly and it is categorical because it admits of no exception. Meyerson likens it to an instinct. "...le savant n'obéit qu'aux suggestions de son instinct scientifique lequel est obligé de composer avec l'impérieux penchant ontologique."⁴³ The principle of legality is also instinctive and equally unconditional in its application to phenomena. But the principle of legality is not to be mistaken for the principle of causality.

The principle of legality is based on the survival instinct.

Donc, je n'ai pas le choix de croire à la prévision, c'est-à-dire à la science, ou de n'y pas croire. Si je veux vivre, il faut que j'y croie; dès lors, il n'est pas étonnant que cette conviction, fondée directement sur le plus puissant des instincts de l'organisme, celui de la conservation, se manifeste avec une force singulière.⁴⁴

This is all that is required in so far as action is concerned. The causal instinct, on the other hand, has

⁴² Cf. E.S., p. 586.

⁴³ Ibid., p. 557.

⁴⁴ I.R., p. 8 (Lowenberg Translation p. 22).

nothing to do with the instinct of preservation.⁴⁵ Nor is it as clearly defined as preservation since its exigencies are not as immediate. But causality is so intimate to the life of reason as to figure primarily on the unconscious plane. We spontaneously and instinctively hypostatize all *sensa* into perdurable identities whenever we think. It is understandable that the scientist should be generally unacquainted with the process he is applying" ..en créant la science, l'esprit humain obéit a une sorte d'instinct obscur, à des tendances dont il ne peut lui-même parvenir à connaître la nature qu'à l'aide d'un travail d'analyse."⁴⁶ But this presents no great difficulty, as Meyerson advocates the same movement of reason (*cheminement*) for unconscious processes as for conscious ones. In fact this is a desirable situation since Meyerson can now argue that the search for ontology is not simply the affair of either of these taken separately, but that it concerns the whole man.⁴⁷

⁴⁵ Cf. Ibid., p. 30.

⁴⁶ E.S., p. 459.

⁴⁷ Cf., Ibid., p. 620. Further, Meyerson says that identification is not a prerogative of man alone "Si l'animal faisait attention à ce qu'il y a de particulier dans les brins d'herbes, il ne parviendrait pas à brouter. C'est, au contraire, parce que, par une erreur consentie,

E. Conclusion

Meyerson's analysis of the principle of legality reveals that the experimental method carries with it a set of metaphysical assumptions that are not reducible to the rule of law. He has shown beyond a doubt that action and survival are not the only concern of science, as science stands in need of ontological 'supports' for its data of investigations. But whether or not causality is suited to the task of ontology is quite another matter.

The principle of causality because it is founded on the postulate of identity in time, can lead in either of two directions depending on whether or not time can be spatialized. The first movement of reason corresponds to what might be termed the divergence of reason and reality. In this situation there does not appear to be anything of the real that is amenable to the Meyersonian doctrine of identification. Identity and diversity are seen to be mutually exclusive, as reason cannot fathom the real without at the same time destroying it. Reason cannot

(47 Con't) voulue, il les identifie, qu'il parvient au concept d'herbe en général (...) nous pouvons nous imaginer cette tendance à l'identification du divers naissant avec la vie animale, avec la conscience." Ibid., p. 582.

tolerate diversity and diversity is irrational. Reason cannot function without the diverse and yet, it cannot penetrate the real without destroying it. T.R. Kelly concludes from the movement of divergence that Meyerson is a postivist. "The situation he has pictured is clearly positivistic. The real is wholly unattainable by the reason. In fact the conflict between identity and reality is so sharp that we could only except, or deduce, positivism."⁴⁸

The second movement of reason corresponds to the phase of convergence between identification and diversity. The principle of causality when viewed in this light is capable of engineering the progressive dissolution of the real through the reduction of diversity to increasingly comprehensive identity propositions. The goal of reason lies in the attainment of the motionless homogeneous sphere of the Parmenidean One where all is seen to derive from necessity. It is the complete dissolution of all diversity. But having destroyed the real, reason can no longer function and rejoins solipsism; reason posits itself into non-being.

48 T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 46.

Such in brief, are the consequences of the doctrine that thought is identificatory. It ultimately leads to the epistemological paradox. This paradox is the subject of our next inquiry.

THE EPISTEMOLOGICAL PARADOX

CHAPTER III

Section I: The ways of Reason¹

I. The Explanation of Becoming

The fact of change is of prime importance to Meyerson. The most evident thing about reality is that it is changing. This is confirmed by sensations. Thus the Meyersonian reason must first of all tackle this most fundamental of all problems.² But how is it possible to conceive as identical (ontological) what the plethora of sensations reveals to be diverse? Meyerson's solution is to negate change.³ He explains change by explaining it away. The rationale of reason consists in the identification of antecedent and consequent. The antecedent is shown to contain the sufficient reason of the consequent. Explanation unveils the effect as being preformed within the

1 The "Ways of reason" refers to Meyerson's expression "La marche de l'explication."

2 Cf. D.R., p. 263.

3 Meyerson explains change scientifically, as he equates identity with scientific causality. Since the structure of identification is the essence of reason it follows that his explanations are all of this type. He leaves no room for philosophical explanation. But can change be best explained philosophically or scientifically? Cf. J. MARITAIN, The Philosophy of Nature, New York, Philosophical Library, (1951), pp. 62-70.

folds of the cause.⁴ Cause and effect are identified and all distinction in the data of sensation is negated. But where there is identification of cause and effect nothing happens for all causes have vanished. Change is shown to be unreal, as phenomena have been identified in all their parts.⁵ The explanation of change has given birth to the fully reversible world of rational mechanics.

This situation results in the elimination of time, "considérer, des lais, les phénomènes comme réversibles, c'est, du même coup, nier l'existence concrète du temps et annihiler son effet."⁶ Time no longer flows uniformly in the same direction. It is now absolutely identical in all its places. The causal postulate has posited the identity of phenomena and made time indifferent.⁷

4 Cf. E.S., p. 136.

5 Cf. Ibid., p. 183 and D.R., p. 263.

6 G. MOURÉLOS, L'épistémologie positive et la critique Meyersonienne, p. 119.

7 Cf., I.R., ch. 6. Meyerson's conception of time is unclear. In places he speaks of time as though it was a secondary element that is, as resulting from the numbering of anterior and posterior states in the Aristotelian tradition, while at others he thinks of it as being a primary datum. Cf. D.R., p. 106 and p. 213. Cf. also R.D., p. 24. In the latter sense, the flow of time modifies things while in the former, it is the modification in things which gives

Time has been redefined so as to be homogeneous like the space of Euclid.⁸ "It is the confusion of past, present, and future - a universe eternally immutable."⁹ In brief, Meyerson's explanation of change consists in the discovery of immutable and eternal identities. Ultimately, these identities are themselves reducible to the all-encompassing formula $A = A$.

A. Is Identity Tautology?

The goal of reason is to reduce the whole of reality to the proposition $A = A$. This ideal is both necessary and rigid. It is necessary because reason cannot tolerate diversity and it is rigid because reason cannot identify. Reason must act as though the whole of reality lent itself to the ideal of absolute identity. Each identification is an advance in this direction. But how is the formula $A = A$ not reducible to an immense tautology? There are two aspects of Meyerson's philosophy

(7 Con't) rise to the meaning of time. It is this latter consideration of time - the time of rational mechanics - that concerns us.

⁸ Cf., J. LA LUMIA, The Ways of reason, pp. 30-31. Cf. also G. MOURELOS, L'épistémologie positive et la critique Meyersonienne, pp. 119-120.

⁹ I.R., p. 230.

that must be distinguished before this question can be answered, namely identification and identity. The distinction between these is clearest in Du cheminement de la pensée where the goal of total identification is seen to be an ideal of reason.

The ideal of the Meyersonian reason is to transform all synthetic truths of facts into analytic truths of reason. The sphere of the Parmenidean One from which all diversity has been emptied is the attainment of this ideal, as it represents a maximum degree of intelligibility. It is the bare tautologic proposition $A = A$ out of which everything flows necessarily. But this ideal is not realizable because the a priori¹⁰ is not the source of the diverse. Diversity is not something which the Meyersonian structure of identification can produce. Thus Meyerson recognizes that the goal of reason is chimerical. In place, we must make do with partial identities. "A chaque pas on met de côté un divers en le déclarant négligeable."¹¹

10 Cf. E.S., p. 143.

11 C.P., p. 331.

The movement of reason from identification to diversity, to the production of increasingly comprehensive identity propositions is an engaging, dynamic process of divining nature. Meyerson's formula of identity does not consist in repetition but in discovery.

..Si en disant 'A est A' on désignait par le second A exactement la même chose que par le premier, on aurait une tautologie, c'est-à-dire quelque chose qui ne pourrait avoir ni sense, ni but. Or l'esprit ne raisonne pas sans but.¹²

Identity is not a ready made process but requires an effort of thought in which thinkers must be in agreement as to what is retained and what is discarded of diversity.¹³

Identity says something new. A proposition does not say something new because it is wholly a priori or wholly a posteriori but because it results from the interaction

12 A. METZ, Une nouvelle philosophie de la connaissance, p. 45.

13 Cf. C.P., pp. 297-306. The rational operation as Meyerson conceives of it consists in the elimination of differences for the sake of residual identities. He cites as an example the Pythagorean demonstration concerning the square of the hypotenuse. Unless we are prepared to accept what is set aside in tracing a path to the proof of this theorem, he argues that it will not be understood.

of a tautologic tendency with the matters of sensa.¹⁴

In summary, identity is tautology inasmuch as it relates to the a priori ideal of reason to deduce the real from logical principles alone. But this ideal is not realizable as reason cannot draw the diverse from itself. Thus what results from this are partial identities in which reason is rewarded but not totally so, as at each reduction something of the real is left behind.

B. Meyerson considers change in the Eleatic Tradition.

How is it possible to conclude at the term of an explanation that the antecedent and the consequent have been identified and that in so far as the deduction is concerned that nothing has happened? Obviously, something must happen for an explanation to be necessary. Meyerson answers, in the Eleatic tradition, that we can only suppose change to have been illusory. The homogeneous and motionless sphere of the Parmenidean One represents maximum intelligibility for Meyerson.¹⁵ It is the summit of

¹⁴ The term Meyerson reserves for these propositions is that they are plausible. That which provides from the a priori denounces positivistic epistemology, while the need for sensa warns against attempts at global deductions.

¹⁵ Cf. E.S., p. 137.

certitude from which all flows out of necessity. "L'identité universelle, qui enveloppe la négation du mouvement, de la nouveauté et du temps, la vieille conception éléatique, tel est, au fond, pour M. Meyerson, l'idéal nécessaire de la raison."¹⁶ The poem of Parmenides reveals that truth is incapable of any becoming and must always be. "There is just being, in which no distinction nor grading, no qualitative nor quantitative differences can be found."¹⁷ The Parmenidean sphere excludes all heterogeneity. The postulate of the unity of matter has always attracted the mind of man.¹⁸ The history of science bears this out. Meyerson argues that the appeal of this hypothesis lies in its explicative force.¹⁹ But we cannot conclude to the postulate of the unity of matter on the strength of the

16 D. PARODI, La Philosophie contemporaine en France, Paris, Librairie Félix Alcan, (1920), p. 209.

17 J. OWENS, A History of Ancient Western Philosophy, New York, Appleton Century Crofts Inc., (1959), p. 65.

18 Cf. A. METZ, Une nouvelle philosophie de la connaissance, pp. 127-142.

19 Meyerson is a rationalist at heart, "he seems to conceive the rational process only on the Eleatic type" J. MANTAIN, The Degrees of Knowledge, p. 43.

causal postulate alone. The identity of cause and effect does not lead to the unity of matter but to its immutability.²⁰ Further, from the import of the deduction (the explanation of the properties from the elements), it is easier if we suppose "an infinite number of principles differing from one another in quality."²¹ An important feature of the reduction needs to be explained.

C. The Atomism of Leucippus and Democritus

The most important feature of Meyersonian explanation is the concept of permanence. What it is that persists is of no interest to the philosophy of mind. But that something persists throughout the plethora of qualitatively diverse sensations is an imperative of the highest order. It ensures that the ontological appetite of reason will not be frustrated. The theoreticians of science cannot destroy reality without at the same time putting something in its place. In fact, the constructs of science are held to be more real than the sensations which they are called

²⁰ Cf. G. BOAS, A Critical Analysis of the Philosophy of Emile Meyerson, Baltimore, John Hopkins Press, (1930), pp. 37-46.

²¹ I.R., v. 243.

upon to replace.²²

Le physicien a besoin d'une réalité détachée du moi, d'une ontologie, et comme il détruit celle du sens commun, d'où il est parti, il est forcé, dans une certaine mesure, de croire aux êtres qu'il crée, aux molécules, aux atomes, aux électrons.²³

The tendency to create objects in answer to the ontological appetite is so strongly enrooted in us that there is need of a special maxim to warn of abuses in that direction. This maxim is Occam's Razor.²⁴ Among those things whose persistence has been postulated, the material corpuscule has had the greatest success, "can you offer a more solid starting - point? If not, we shall keep this one, for we must at any price have something which persists in time."²⁵

22 According to Sir Arthur Eddington, The Nature of Physical World, New York, Cambridge University Press, (1946), there are two visions of all that is; the familiar world and the world of science. The first is the common sense world of daily experiences, of sunsets, offices and books, while the second is the hidden world of atomic structures, of energy levels and space. Although rational science cannot explain how the world of space gives rise to sensations, it nonetheless affirms the hidden world to be the real one.

23 E.S., p. 517.

24 "La tendance à créer des êtres fictifs en vue d'une explication est si fortement enracinée en nous, qu'il a fallu se prémunir contre elle par un énoncé spécial. C'est le rasoir d'Occam qui interdit de créer des êtres au delà de ce qui est nécessaire." Ibid., p. 85.

25 I.R., p. 97.

The atom, in Meyerson's Philosophy, is made to function as a guarantee of ontology.

The doctrine of persistence in time, as we saw above, leads Meyerson to posit the reversibility of phenomena (the spatialization of time) and to conceive of change in the Eleatic tradition. But to affirm that change is illusory does not solve the problem since we must now explain why it is illusory. How is it possible to conceive as identical that which appears to be different?²⁶ The attempt to solve the Parmenidean dilemma gave rise to the atomic theories of Leucippus and Democritus. The atomism of these thinkers was meant to serve the dual purpose of accounting for the fact of change while retaining inasmuch as possible the Parmenidean teachings on the unity of matter. Very little has come to us of the early Greek philosophers, but from what remains, Leucippus' doctrine of the void expresses this function best. The atom was for him an indivisible extended unit which moved about in the void (Parmenide's 'what is not'). Thus the void was

26 Cf. Ibid., p. 92.

affirmed to have existence no less than the 'what is'.

Local motion had been rejected by the Eleatics because it required a void, and a void would be not-being. Leucippus said there was a void into which things could move. That meant endowing the void with real existence, and so admitting that not-being in the Eleatic sense really existed (...) To account for the observable changes there just had to be a void, and there just had to be spatially extended ATOMS (*italics are mine*) that is, spatially extended indivisibles.²⁷

The atomism of Democritus does not depart from this teaching. Both thinkers affirmed the constituents of change to be immutable and indivisible, but capable of displacement. It follows from this that "change is nothing but the union or the separation of intrinsically unchangeable atoms."²⁸ Meyerson's account of becoming owes much to his Greek heritage.²⁹ He says that extramental reality is subjected to only two influences, namely those of space and time. Having eliminated time, all that remains is space. "Ainsi ce qui a pu se modifier, c'est la disposition spatiale."³⁰ By eliminating change and retaining displacement

27 J. OWENS, A History of Ancient Western Philosophy, p. 134.

28 A. VAN MELSEN, From Atomos to Atom, New York, Harper and Row, (1960), p. 19.

29 Cf. R.D., p. 11.

30 E.S., p. 159.

in space Meyerson has found a way of eating his cake and having it too.³¹ Progressing from identification to identification the process of the world is stopped and all that remains is immutable matter. Then, supposing that it is the spatial arrangements of matter which changes, Meyerson can explain the different manifolds of sensations with the same matter, "just as with the aid of the same letters one can compose a tragedy or a comedy..."³²

In summary, rational science explains the plethora of sensations by reducing it to immutable heterogeneous matter and safeguards diversity by positing displacement in space.³³ But space is presumable homogeneous and the identification of diversity with displacement in space will accomplish the unification of matter. This is the doctrine of Eleaticism.

L'unique procédé qui rende claire à l'esprit la diversité des êtres et des faits comme leur devenir :

31 Cf., D.R., p. 364.

32 I.R., p. 92.

33 Meyerson argues in D.R. that scientific explanation follows the same 'cheminement' of reason for the heterogeneous space of Einstein as for the homogeneous space of Euclid.

C'est de les imaginer comme composés d'éléments étendus, d'atomes géométriques dont l'architecture varie incessamment, sans que rien ne change au fond. Parménide avait deviné l'invincible tendance de la raison : Nier la diversité et le devenir; car c'est bien là l'exorbitante prétention de la science.³⁴

II. The Explanation of Being

The displacement of heterogeneous matter in space explains becoming but it does not contain within its folds the sufficient reason of being. Why, supposing matter to be globular, is it thus rather than otherwise? "Nous réclamons une explication non seulement du changeant, mais encore du persistant."³⁵ The Meyersonian explanation therefore, proceeds in two orders of inquiries. First to the explanation of becoming (which we found to be rooted in being), and second, to the explanation of being itself. These orders of explanation are distinct but they are not separate since they relate to the same reality.

In order to extricate the sufficient reason of being Meyerson tells us that it is necessary to uncover

³⁴ O. HABERT, "Un nouveau conceptualism", in Revue de philosophie, 28, Nov.-Dec., (1921), p. 667.

³⁵ E.S., p. 179.

which properties of the atom more readily conform to the ways of reason. As we saw above, displacement in space contains the rationale of diversity.

...seules les propriétés spatiales se révèlent comme conformes aux exigences de notre esprit, comme réellement nécessaires. C'est donc que la matière véritablement rationnelle ne peut être au fond que de l'espace (la raison pour ceci est que l'étendu dans l'espace ne saurait nous apparaître comme réellement motivée par la raison suffisante).³⁶

Meyerson explains matter through space in the Cartesian tradition.³⁷ To be is not to be primarily hard or porous, light or heavy, but it is to be extended.³⁸ The appeal of

³⁶ Ibid., p. 184.

³⁷ Cf., E.S., pp. 170-175. This is significant as it confirms our belief that the real is for Meyerson an extension of spatial reasoning.

³⁸ This formula is not new with Descartes. The clarity and certitude of mathematics has always held the imagination of philosophers. We find that the temptation to think of the real as being wholly mathematical appears as early as the 5th century B.C. in the doctrine of the Pythagoreans. Cf., J.L. ALLARD, Le mathématisme de Descartes, Ottawa, Editions de l'Université d'Ottawa, (1963), pp. 41-42. In holding that real things were numbers, the Pythagoreans equated being with space. Cf., J. OWENS, A History of Ancient Western Philosophy, pp. 16-36. The same tendency appears in the Atomism of Leucippus and Democritus (through the mathematization of the Parmenidean One, that is, through the introduction of displacement), and has persisted in one form or another to modern atomic theories. Cf., R. JOHAN, "La raison et l'irrationnel chez M. Meyerson", in Recherches philosophiques, 1, (1931), pp. 145-146. The moderns have succeeded in relating

the quantification of matter is that such properties are additive and readily satisfy the postulate of identity in time.

A. The Dissolution of Being

The identification of matter with space accomplishes the unification of matter (which satisfies the causal postulate), but it also engenders disastrous results for matter is now indistinguishable from space.³⁹

(38 Con't) (determining) the physical and chemical properties of substances through orbital analysis (shape, size and the energy which an electron must have to occupy an orbital), but the difference among elements is still held to be quantitative. "Les modernes, sans doute, ont ajouté aux conceptions atomistiques une précision dans les mesure que les anciens ne pouvaient connaître; mais le fond est resté le même, c'est toujours l'explication du changeant par le permanent et du divers par l'uniforme, par le moyen de la fonction spatiale." E.S., p. 645.

39 Since all things are identified with space, is the difference between life and non-life purely spatial? One of the first consequences of the reduction is that Meyerson must answer in the affirmative "dans la mesure où les manifestations de la vie pourront être assimilées à celles de la matière nonvivante, elles seront évidemment justifiables des conceptions relativistes, c'est-à-dire, et si paradoxal que cela puisse nous paraître, ramenées à des concepts purement spatiaux." D.H., p. 122. But care must be taken not to interpret statements such as these literally. Meyerson's arguments do not militate in favour of preformation nor do they refute it, since such considerations relate to 'the philosophy of nature' as he puts it, and are foreign to his task. Meyerson's work is strictly an investigation into the philosophy (or psychology) of mind. Cf., Infra., ch. 2, 2. The remarks which he addresses to Lalande are a direct confirmation of this. Cf., Essais, p. 82 and p. 94.

Having been stripped of all its attributes, there is nothing left to differentiate it from empty space. The goal of reason, then, is the replacement of the infinite diversity of reason by identity in space.⁴⁰

All diversity has been reduced to space and all that remains is the sheer identity of the Parmenidean One. Space now empty of all its contents also disappears in turn. No sufficient reason can be given for its being and for the satisfaction of reason, it must be regarded as indistinguishable from non-being. Have we lost ourselves on the way?

It is not clear that explanation consists in explaining away.⁴¹ Meyerson assures us that it could not be otherwise.⁴²

Explanatory science necessarily rejoins solipsism. "La science est réaliste; mais nous savons cependant que, d'explication en explication, elle ne peut aboutir qu'à l'acosmisme, à la destruction de la réalité",⁴³ The

40 C.G. STERLING, Reason, Space and Reality in the Philosophy of Emile Meyerson, Bryn Mawr College, Microfilm D4M57Yst, (1953), p. 83.

41 Meyerson does not stop to consider the fact of dissolution as a consequence of having answered a philosophical problem scientifically.

42 Cf., I.R., pp. 252-254.

43 D.R., p. 205.

principle of identity, which is the eternal framework of the mind is ultimately an instrument of selfdestruction.

B. The Origin of the Spatial Representation

In some respects, Meyerson's concept space appears to be an a priori structure of reason, while in others it is given a posteriori along with sensations. The Meyersonian noetic harbours both contentions. The explanation of phenomena is dependent upon identification with a mixture of a priori and a posteriori spatial representations, "nous sommes embarrassés pour déterminer ce que nous devons attribuer à l'une ou l'autre source.." ⁴⁴ Inasmuch as existence and space are synonymous, or at least inseparable as in the affirmation that to be is to be extended, the a posteriori representation of space is in evidence. But our author also writes of space as though it was an a priori of reason similar in structure to the causal postulate. Some clarifications are in order.

The a prioricity of space has its roots in the homogeneous Euclidian space of Identité et réalité. Since uniform space is identical in all its places it is necessary

⁴⁴ D.R., p. 320.

and cannot be said to originate in the data of sensation. The diverse is not the source of identity.⁴⁵ The space of La déduction relativiste, on the other hand, is the heterogeneous space of Einstein. It is not identical in all its places and consequently cannot be said to originate in the principle of identity in time. The determination of where this space varies is a matter of experience and is consequently obtained a posteriori.⁴⁶ This raises an important consideration, as the explanations of science have shifted from the homogeneous space of Euclid to the heterogeneous space of Einstein, we would suspect that reason has modified its essence (or at least of being susceptible of doing so). But Meyerson is desirous of avoiding this situation. Such a modification of the essence of reasoning could, after all, unsettle what he desires most of science, namely to prove

45 "In order that spatial relations may appear the homogeneity of empty space must be destroyed, and it is matter which must destroy it." Cf., I.R., p. 251. These conceptions are contradictory and can only be explained by a causal tendency which wants identity and differentiation to be present at the same time. Reason can only understand by way of identity and yet without the diverse it cannot function. Meyerson shows the epistemological paradox to be inevitable.

46 Cf. C. G. SIENLING, Reason, Space and Reality in the Philosophy of Emile Meyerson, pp. 53-55.

that it is now and has always been ontological. The ambition of La déduction relativiste, is to show that the reasoning of the Relativists does not depart from the rational process uncovered in earlier works.⁴⁷ Reason remains identificatory after all, or so Meyerson believes himself to have shown. However, in a discussion of Hegel, Meyerson admits the possibility of such a transformation.⁴⁸ Further, the thought of the Relativists appears to evince such a modification. There is possibly more to the structure of reason than identification but Meyerson is unsure.⁴⁹ Geometrical reasoning alone seems to have undergone a transformation but not totally so. Meyerson's concept space appears to contain both a priori and a posteriori characteristics. Knowledge is certainly the result of an a priori tendency and the a posteriori data of sensation.⁵⁰ These are the plausible propositions of science. The flow of reason which transforms empirical successions into logical

47 Cf. D.R., p. 108.

48 Cf. Ibid., pp. 299-322.

49 Cf. C.P., pp. 577-579.

50 Cf. Infra., ch.3,3.

necessities is a geometric a priori of identification.⁵¹
Yet, of itself it is a psychological disposition of reason and unless the elements of change are supplied from nature, knowledge will not take place, "it is this qualitative character of space, given in sensation, that constitutes the a posteriori part of the concept space."⁵² Thus spatialization (that is, explanation) is a priori, as regards the natural inclination of reason to spatial identification and a posteriori, as to the sensations themselves which are to be explained.⁵³ The whole Meyersonian edifice is structured in this way. The efforts of explanation are consistently made possible as the product of an a priori tendency and a posteriori elements. The form is from reason while the matter is from experience. As a

51 Cf. C.P., p. 166, and O. HABERT, "Un nouveau conceptualisme", Revue de philosophie, 28, (1921), p. 667.

52 C.G. STERLING, Reason, Space and Reality in the Philosophy of Emile Meyerson, p. 161.

53 It is to be noted that the conception of a posteriori space reveals a certain irrational character which is simply given in sensation. Meyerson does not ask why this space is of one kind rather than another. Cf. G. DOAS, A Critical Analysis of the Philosophy of Emile Meyerson, p. 104.

result, what is known is neither the one nor the other but a mixture or compositive union of both. This tertium quid is a perpetual source of difficulty to Meyerson. The rational thirst for absolute identity (the Parmenidean sphere) and reality's recalcitrance (the irrationality of diversity) are a recurring source of paradoxical situations.

Meyerson's concept space is of the same character. The a priori character of space appears susceptible to modifications (as from the Euclidian conception of space to relativity space), while its a posteriori character remains fixed, as it is always given in sensation. Both notions of space fuse in the explanations of phenomena (the plausible propositions of science.) This situation seems necessary because the real, as Meyerson conceives of it, is an extension of spatial reasoning.

To confirm whether or not spatial reason has evolved it is necessary to investigate its contents (which is admittedly impossible a priori). "L'évolution de la raison consiste essentiellement en ce qu'elle élimine des éléments qui étaient, jusque là, censés en faire partie, et qui, dès lors, sont reconnus comme lui étant venus de dehors."⁵⁴

⁵⁴ D.R., p. 318.

Thus at the term of a change in spatial explanation (as from the space of Euclid to the space of Einstein), it is possible to ascertain that our comprehension of the structure of reason has evolved since what had been thought to be of the essence of reason is shown to obtain from reality. Nor can the issue of future modifications be settled a priori.

..tout ce à quoi nous pouvons, dans le cas le meilleur, aboutir dans cet ordre d'idées, ce sont des probabilités plus ou moins grandes, selon qu'elles seront fondées sur une analyse plus ou moins compréhensive et⁵⁵ exacte du comportement de la raison dans le passé.

There remains for us at this time to investigate the a posteriori character of the spatial representation. We begin with the principle of Sadi Carnot which, although an irrational, is affirmed by Meyerson to reinstate science.

⁵⁵ Ibid., p. 319. It is interesting to note Meyerson's use of the principle of legality as an instrument of prediction. This brings home the point that what he rejects of positivistic epistemology is not so much what it says as what it fails to say.

THE EPISTEMOLOGICAL PARADOX

Section II: The Ways of Reality

I. Sadi Carnot: The Hero of Science

Mechanical theories under one form or another have always been an integral part of science. To be sure, modern atomic theories differ from the atomism of Leucippus and Democritus but fundamentally they relate to the same basic need of the mind to understand reality by positing the persistence of something. The advent of physico-mathematical science in recent times has brought to bear an unprecedented degree of success. There is no doubt that the sciences are becoming preponderantly deductive (with the possible exception of experimental psychology and biology) and that the mathematization of reality works.⁵⁶ But once the new hybrid science substantialized quantity it also engineered the complete dissolution of reality and was destined to rejoin absolute Idealism. This is the

⁵⁶ The success of the hybrid sciences is triumphant to the point of having given rise to what may be called a 'copernican technocratic revolution' for not only can nature be controlled but it is man who is now the aggressor. It is no longer nature which treatens man but man who despoils nature.

Achille's heel of rational science and the greatest testimony to its failure. But have we forgotten the principle of Sadi Carnot? In a very real sense the work of Émile Meyerson comes to remind us of this principle⁵⁷ - not only of the irreversibility of change but also of the inescapable ontological character of the empiriological sciences.

A. Carnot's Principle and Lavoisier's Law

The second law of Thermodynamics was formulated as the result of Carnot's studies on the dissipation of heat. His findings were published in 1824 under the title Réflexions sur la puissance motrice du feu, and remained in relative obscurity for 30 years until Clausius discovered the principle anew. The merit of Carnot comes for having recognized the entropic and consequently irreversible nature of becoming. The starting point of his argument is the impossibility of perpetual motion.⁵⁸ In any physical combination or chemical reaction the amount of usable energy

⁵⁷ Cf. I.R., ch. 8.

⁵⁸ Cf. E.S., v. 278. Perpetual motion requires that the effect be greater than the cause. The Academy of Science announced in 1775 that it would no longer examine any mechanism announced as perpetual motion. Cf. I.R., pp. 202-204.

is always on the decrease, or, conversely, the amount unusable energy (heat lost) is always on the increase. Thus contrary to popular belief, cause and effect are not equal. Nor does this contradict the first law of thermodynamics in light of the modern definition of energy.

What the modern physicist understands by this term is no longer the capacity of producing an effect. This definition can only be applied to a world of purely mechanical phenomena. As soon as we introduce the consideration of thermal phenomena (or, if you wish, considerations of statistics) it falls to pieces.⁵⁹

The modern definition of energy is mathematical. The mechanistic definition of energy is verbal. The one is not consonant with the other. Whereas the latter conceives of energy as the capacity of producing an effect, the former also includes heat lost in its definition.⁶⁰

"Or, l'entropie n'est pas constante, mais augmente sans cesse, et cet accroissement continu constitue le véritable ressort du devenir, du changement dans le monde."⁶¹

Rational science is founded on the premise of the reversibility of phenomena. Since Carnot shows entropy to

⁵⁹ I.R., p. 280.

⁶⁰ Cf. A. METZ, Une nouvelle philosophie de la connaissance, pp. 144-154.

⁶¹ E.S., p. 83.

be an integral part of becoming, it follows that cause and effect are not interchangeable in fact and that the conception of reversible phenomena is purely ideal. Carnot's principle is not reducible to the formula of identity; science "reinstates reality in its rights."⁶² Science has shown that time could not be eliminated from its considerations, "si, en effet, une partie de l'énergie dégradée dépensée par l'antécédent ne se retrouve plus dans le conséquent, une diversité inéluctable exclura entre les deux une identité vraiment parfaite."⁶³

The first and the second law of Thermodynamics according to the verbal definition of energy, correspond to the ways of reason and to the ways of reality respectively, because while the first posits the reversibility of phenomena (which is the way we think in rational mechanics), the second says that change is not reversible, as entropy is continuously on the increase. But the mathematical "definition" of energy attenuates the apparent contradiction between these laws because it is now possible

62 I.R., p. 284.

63 R. JOHAN, "La raison et l'irrationnel chez M. Meyerson", in Recherches philosophiques, 1, (1931), p. 154.

to introduce factors to offset heat loss in our reactions and maintain thermal equality in spite of indications to the contrary. This is a significant issue in so far as Meyerson is concerned because mathematics provides him with a method for fusing the opposition between reason (identification) and reality (diversity) in plausible propositions (the identity - diversity propositions of science). We will return to this aspect of the problem after a word more has been said about Meyerson's considerations on the opposition between reason and reality.

B. Carnot's Principle is not Pleasing to
Reason

The principle of identity and the principle of Carnot are in stark opposition to one another (as concerns the verbal definition of energy), for while the one speaks of reversibility and eliminates time, the other is founded on the undirectionality of change and the entropic diffusion of heat. Carnot's principle contains nothing that pleases reason.⁶⁴ This, according to Meyerson, explains the long period of forgetfulness into which the principle lapsed

⁶⁴ Cf. Essais, pp. 84-88.

before it was rediscovered by Clausius.

Le peu de compréhension auquel s'est heurté Carnot, le long oubli dans lequel l'énoncé est tombé après lui, la difficulté avec laquelle la science l'a accueilli...prouvent clairement combien il est peu conforme à cette rationalité que notre esprit voudrait imposer à la nature.⁶⁵

The ways of reason and the ways of reality are divergent. To be rational is to be reducible to the formula of identity, while to be real is to be irreducible to identity. Reason and reality are mutually exclusive. This situation gives rise to the epistemological paradox in the philosophy of Émile Meyerson. Since reason goes one way and reality the other, it is not clear how the knowing enterprise can be safeguarded; "Knowledge is that which cannot be, yet is."⁶⁶

The principle of Carnot is an irrational, that is, it cannot be deduced from reason alone.⁶⁷ It is a principle of the nature of reality. To be real is to be subjected to the entropic diffusion of heat.⁶⁸ Change is

⁶⁵ E.S., p. 398.

⁶⁶ T.R. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, p. 69.

⁶⁷ Cf. D.R., p. 207.

⁶⁸ Kelly criticizes Meyerson for having equated reality with Carnot's principle. Cf. T.R. KELLY, Explanation

forever progressing in the same direction; nor is there a possibility of reconcentrating dissipated energy.⁶⁹ The principle of Carnot expresses nature's resistance to the ways of reason. It comes to redeem reason from solipsism and to free men from the chains of rational mechanics. This principle is, according to Meyerson, the single most important discovery to the age.⁷⁰ It reminds us that the goal of reason is unattainable. Nature yields itself to a certain extent to reason but it also resists. The place

(68 Con't) and Reality in the Philosophy of Emile Meyerson, p. 121. I think that this is a good point to make in so far as we are thinking of the mathematical application of Carnot's principle.

69 The hypothesis of 'eternal return' has always existed in some form or other. It was first formulated by Heraclitus and in recent times by Rankine who believed that energy lost could be again concentrated. However, this hypothesis neglects the axiom of Carnot. How imagine a body warming itself at the expense of a colder body, that is, reconcentration prior to thermal equilibrium? Nor can entropic diffusion proceed beyond thermal equilibrium since once again heat would be made to pass from an inferior level (the bodies of the visible world) to a superior level (the foci of interstellar space). Cf. I.R., pp. 268-270. Is there a place for Maxwell's devil here? No, since this supposition could only lead to an inverse world "in which heat vibrations will be concentrated on the wheels and axles of the locomotives, in which the smoke, formed in the distance, will re-enter the chimney with the gas of combustion to be remade into coal, or the living being will be born old to grow younger with time and to enter into the egg, or to walk backward and digest before he has eaten." Ibid., p. 272. To stand entropy on its head is to stand the world on its head.

70 Cf. E.S., p. 203.

of resistance is the place of an irrational.

II. Recalcitrant Reality : The Irrationals

A. The Irrational Appears at the Place of Unintelligibility

The dream of mechanism to deduce the whole of reality from rational principles alone, should it succeed, would dissolve the whole of reality to space and rejoin solipsism. Fortunately, Sadi Carnot has reminded us of the irreversibility of phenomena and of the impossibility of the global deduction. He has made it evident that the ways of reason and the ways of reality are not totally convergent and that there will be places of unintelligibility. The irrationals, therefore, are those a posteriori bits of data which cannot be identified and which consequently resist the deductive effort. They are at the place of divergence between reason and reality. Or, to put it differently, the irrational is at the place where the ways of reality do not conform to the ways of reason.

La science, obéissant à la tendance explicative qui est le propre de l'esprit humain, tend à tout expliquer par l'espace (...) mais, d'autre part, infiniment, soucieuse de garder le contact avec la nature, elle reconnaît ses limites..C'est le concept de l'irrationnel.⁷¹

71 E.S., p. 187.

B. An Irrational is an Ontological Residue

The above quote is interesting for the unintelligibility of the irrational in the philosophy of Meyerson plays a positive ontological role. Without the irrational there could be no ontology, no persistent residuum, for the whole of reality would dissolve before the deductive effort. "...c'est bien, en fin de compte, le non-deductible (...) qui apparait comme constituant l'essence du réel."⁷² The irrational is at the place of ontology. It completes the picture as it enables the Meyersonian science to account for what it cannot explain.⁷³ We are lead to conclude that Meyerson is a mechanist after all.⁷⁴ The ideal

72 D.R., p. 204. Cf. also E.S., p. 542. For a comparison between Meyerson's doctrine of the irrationals and Kant's noumenon Cf. Infra., pp. 143-144.

73 Cf., C.P., p. 58. Cf. also H. SÈE, Science et philosophie d'après la doctrine de M. Emile Meyerson, p. 45. for an interesting parallel between Meyerson's concern for ontology and Comte's rejection of research in which too precise a method of investigation is employed "Mais c'est que précisément ces recherches expérimentales nous révèlent des inconnaisables, des irrationnels, qui peuvent mener à des problèmes de caractère ontologique, ce que Comte redoutait fort"... It seems that the distinction between the principles of reason (cf. infra., ch. 2) is ultimately reducible to the spheres of irrationality upheld in turn by Comte and Meyerson.

74 Meyerson does not distinguish between empirical and philosophical explanation. The latter takes matters up where the former fails. Assuming the complete rationality of the real, there would be no place for

of reason is to reduce the whole of reality to its ways. To succeed in this task however, is to destroy ontology. In order to complete his metaphysical program, Meyerson must reinstate reality in its own right. The recalcitrance of reality is Meyerson's return to ontology. Meyerson remains a mechanist because he does not affirm ontology from the side of reality (namely something is), but inserts it from the side of reason at the place where something resists identification. The Meyersonian reason is a mechanical dispenser of ontology. The irrational is a mechanist's blueprint for ontology. On the one hand, reason and reality are convergent and ontology disappears while on the other, they are divergent and ontology reappears. This is a paradoxical situation, as there can be no ontology without the irrationals, and yet reason cannot tolerate the irrationals. Reason requires explanations but to succeed in this task is to dissolve the whole of diversity. Fortunately, reality is not completely intelligible and ontology reappears. But Meyerson

(74 Con't) philosophical explanation. Science would have become the perfect philosophy.

instructs us to continue to act as though reason could succeed in its task of total explanations. In effect, the same reason which is desirous of ontology also ignores it. It seems to us, because of this, that Meyerson's defense of ontology rests on an inadequate metaphysics.⁷⁵

The function of the irrationals, therefore, appears to be redemptory "sans doute, si M. Meyerson n'avait insisté comme il l'a fait sur la notion d'irrationnel, on aurait pu l'accuser d'idéalisme."⁷⁶ Unless the ways of reason meet with resistance, the deductive effort will terminate in solipsism. But the principle of Carnot assures us of the impossibility of the complete reduction since it tells us that something of reality resists reason.⁷⁷ This is the place of irrationality. It is essentially unpredictable.⁷⁸ We cannot tell in advance where the conformity

75 Cf., T.R. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, p. 71 and p. 123.

76 M. GILLET, "La philosophie de M. Meyerson, Étude critique", in Archives de philosophie, 8, 3, (1931), p. 111.

77 Cf. D.R., p. 153.

78 Cf. E.S., pp. 225-230, and p. 402.

between reason and reality will end. The safest course is to act as though the whole of reality was intelligible. "Car alors, en cherchant à tout expliquer, l'irrationnel resortiera pour ainsi dire tout seul."⁷⁹ The irrationals are wholly unintelligible. All that can be said about them is that they are simply there, as epitaphs to remind us of lost battles in the struggle of reason over nature. They have no sufficient reason for being. They appear at places of irreducibility. The scientist acts as though the whole of reality was intelligible and the irrationals appear as signposts of his failures. How science comes to accept its failures is left unexplained.

The commitment of the scientist to be rational only on the condition that empirical considerations permit it and only so far as empirical considerations permit, cannot be reduced to any principle, any instinct, or any tendency Meyerson has told us about.⁸⁰

This is a serious difficulty in the philosophy of our author. Meyerson is bent upon positing ontology at all cost. This is, after all, the task which he sets before himself in order to refute positivistic epistemology. But the consideration of identity as the eternal structure of

79 Ibid., p. 540.

80 J. LA LUMIA, The Ways of Reason, p. 87.

reason dissolves ontology. Meyerson is forced to posit the irreducibility of reality, that is, ontology, in the only way left open to him; as being at the place of non-deducibility. However, since the irrational is itself irrational, the ontological structure of reality is, in the final analysis, a Kantian noumenon.⁸¹ A knowledge of things as they are in themselves is not possible. This is an important point to remember as it means that there is not the difference between legality and causality that Meyerson says there is.

C. Diversity - Sensation - Impact

The most important irrationals discovered to date, in addition to the principle of Sadi Carnot, are diversity, sensation, impact, action at a distance and space (that is, a posteriori space). The most obvious feature of reality, as we saw in the analysis of change, is diversity. But reason can only function by way of identification. Diversity, therefore, is not something which reason produces. Since diversity does not stem from rational principles it

⁸¹ Cf., R. JOHAN, "La raison et l'irrationnel chez M. Meyerson", in Recherches philosophiques, 1, (1931), pp. 144-152.

is an irrational.⁸² Whatever is not of identification is of this nature. However, knowledge somehow takes place as the result of a convergence between reason and diversity. The propositions of science are a mixture of rationality and irrationality. They result at the imposition of an a priori form on the qualitative data of sensations. Sensations are themselves wholly unintelligible.⁸³ Mechanism has not succeeded in explaining the action of bodies on the senses.⁸⁴ It is the oldest known irrational.⁸⁵ No account of atoms and of their property of displacement can yield anything resembling the qualitative character of sensations. Not only is there a lack of identity between quantitative structures and sensations but the action of bodies upon

82 Cf. I.R., p. 399. Cf. also A. BONNARD, La doctrine de l'irrationnel chez Emile Meyerson, pp. 75-76.

83 In spite of its irrational character, sensation is a primary datum in the philosophy of Meyerson. Reality results as a hypostasis of sensations. Thus what is given first are sensations; Meyerson tells us that we may even create the real in order to fit the sensations. Cf. I.R., p. 377.

84 Meyerson does not consider the question "what is sensation" as belonging to a different order of knowledge.

85 Cf., E.S., pp. 189-199.

each other is equally inexplicable.⁸⁶ "La science a été amenée à admettre qu'il n'y avait aucun procédé possible pour expliquer, pour rendre concevable à la raison ce qui se passait à l'instant où deux masses étaient censées agir l'une sur l'autre..⁸⁷ No one saw this better than Hume and he reduced the impact of bodies to laws of frequent conjunction, "la science n'a rien ajouté à la formule de Hume, qu'elle accepte même plutôt implicitement qu'explicitement."⁸⁸

D. The Irrationals and Natural Theology

Is it possible to give a Theological meaning to Meyerson's doctrine of the irrationals? This interpretation is the key to Marcel Gillet's lengthy article on Meyerson.⁸⁹

86 Cf. I.R., pp. 300-302.

87 E.S., p. 190.

88 Ibid., p. 200.

89 Cf. M. GILLET, "La philosophie de M. Meyerson - étude critique", in Archives de philosophie, 8, 3, (1931), 116 pages (esp. pp. 90-116). This author sets down the main themes of the Meyersonian reason as follows; "L'esprit humain, dans son dynamisme vital, est emporté irrésistiblement à la recherche de l'unité par l'identification du divers et la négation du temps; - il exige dans toutes ses démarches l'existence d'un absolu ontologique; - il se heurte au contact du réel à des irrationnels, c'est-à-dire à des obstacles qui lui sont insurmontables, non seulement en fait, mais en droit.", Ibid., p. 112.

According to Gillet, the ways of the Meyersonian reason are ways to God. This is a novel interpretation of Meyerson's doctrine of the irrationals and offers several possible avenues of investigation. First of all, the consideration of irrationals in Gillet's sense holds more promise than the consideration of irrationals in Bonnard's sense. Meyerson expressly disavows any intention of settling philosophic disputes. His work, not being normative, cannot be given this interpretation. However, Meyerson does not dispute the fact that his work contains certain theological implications. He tells us in Identity and Reality,⁹⁰ that the dissolution of reality is inevitable. Reason searches for the ultimate sufficient reason of all that is. Therefore, to arrive at nothingness, says Meyerson, is to recognize that a causa sui cannot be found. This is a good insight for it can be taken as an argument against ontological proofs. It can also be seen in the light of Kant's Critique of Practical Reason, for as Kant destroyed reason in order to make room for faith, so too

90 Cf. I.R., pp. 252-253 (Lowenberg translation).

does Meyerson acknowledge the ultimate incompetence of reason to discover a causa sui deductively. The irrationals, in this sense, appear to be of divine institution. M. Grison supposes that they are not unintelligibles at all but supra-intelligibles.⁹¹

Meyerson is not explicit on the theological interpretation of irrationality, but it is worthy of further consideration for it has the advantage of enabling us to lump under one roof, as it were, the most popular interpretations of the irrationals. In addition, it enables us to study the epistemological paradox from a different point of view. The importance of the irrationals cannot be overestimated for they provide an essential insight into the Meyersonian noetic.

The structure of reason which Meyerson believes himself to have uncovered is one which is necessarily bent upon explanations and the quest for the sufficient reason

91 Cf. M. GRISON, "M.É. Meyerson et le positivisme d'Auguste Comte", in Revue Apologétique, 55, 566, Nov. (1932), pp. 528-530. Cf. also E.S., p. 217, and I.R., pp. 317-319, where Meyerson speaks of the irrationals as being of divine institution.

of things.⁹² The text in which Meyerson discusses the ascent of reason to a causa sui and the consequent dissolution of reality is highly illuminating. It leads us to a twofold consideration of the irrationals. Ultimately the key to the interpretation of the irrationals lies in the nature of man's ignorance of the irrationals. Is it primitive or nescient? If ignorance of the irrationals is primitive, as the ideal of reason would lead us to suppose, then it is simply a matter of time before the whole of reality can be deduced. In such an event, Meyerson's formula of identity is an explicit aspiration to the role of a First Cause. This interpretation is also possible in

92 The search for the sufficient reason of being appears at the dawn of Greek thought around the 6th cent. B.C. The early Greeks wondered about the movement of the heavens, of the stars etc., and as Aristotle pointed out, this was the beginnings of knowledge. From wonder there follows probable hypotheses, which in turn give rise to new questions and so on ad infinitum for as Meyerson saw admirably well, no finite cause contains within itself the sufficient reason of its being. Aristotle had already sought for the causes and principles of the state of atoms and the eternal motion of the heavens but unlike Meyerson, he did not terminate in solipsism. Meyerson's recognition of a causa sui is not new for it was already upheld 2300 years earlier in the Stoic's recognition of the priority of act over potency. But why does the one border absolute idealism and not the other? This can only be explained in terms of the incessant compulsion of the Meyersonian reason to identify whatever it manipulates.

the light of his characterization of Divine knowledge;

Toutes les vérités quelles qu'elles soient, et par conséquent aussi celles qui pour nous sont de simples vérités d'expériences, doivent être, dans l'esprit de Dieu, des vérités rationnelles et, donc réductibles à des énoncés identiques.⁹³

The reduction of diversity to the all-encompassing identity proposition $A = A$, is also the goal of the Meyersonian science. Reason, we are told, desires the complete reduction and acts as though it could succeed.⁹⁴ But the success of reason in this matter is also its failure for it leads to the dissolution of reality. This is the Achilles' heel of rational mechanics.

If, on the other hand, ignorance of the irrationals lies in the domain of nescience, then we cannot be said to seriously consider a global deduction of reality. Meyerson is explicit in this that some aspects of reality will forever escape rationalization. Such irrationals therefore are immutably situated within the kingdom of the nescient. This is Meyerson's second position concerning

93 E.S., p. 639.

94 Cf. A. METZ, Une nouvelle philosophie de la connaissance, pp. 50-52.

the irrationals. Upon close scrutiny however, the irrationals are found to contain contradictory notions since our ignorance of the irrationals is considered to be primitive and nescient at the same time and in the same respect. "Sont-ils effectivement absurdes ou paraissent-ils seulement tels à notre intelligence trop faible? L'auteur d'Identité et réalité ne précise pas (...) On ne sait comment interpréter, sur ce point, la pensée de M. Meyerson."⁹⁵ In brief, the irrationals are themselves irrational.

This situation relates once again to the epistemological paradox. Meyerson appears to be a mechanist in principle but recognizes the limitations of mechanism in fact. Reason cannot but act rationally, while somehow it knows that this is not always possible. Should it succeed it would fail and should it fail it would somehow succeed. In final analysis, the success of reason is dependent upon the nature of the irrationals. Is reality's recalcitrance

95 O. STUMPER, L'explication scientifique selon M. Emile Meyerson ou la dissolution de l'être dans le néant par l'entendement pur et le rôle conservateur de l'irrationnel, Luxembourg, Imprimerie Joseph Beffort, (1929), p. 32.

to the ways of reason primitive or nescient? It appears to contain a mixture of both and yet in a very real sense it is neither the one nor the other for recalcitrance is itself irrational. On the one hand reason seeks to reduce the whole of reality to its ways and ignorance of the irrationals is primitive, while, on the other, the global deduction is not possible and the irrationals are in the kingdom of the nescient. Is it possible to structure an argument for the existence of God from either premise? If so, is it cosmological as Gilet holds it to be? It seems dubious. First of all, Meyerson's investigations are intended primarily to shed light on the structure of reason. The nature of the real does not concern him as such. It follows, therefore, that if Meyerson's work can be given a theological interpretation that the ontological argument would be more in keeping with his views.⁹⁶ But this means that the descent of reason into nothingness cannot be interpreted as an argument against ontological proofs. In any case, the situation of the paradox is

⁹⁶ Quite possibly Meyerson would regard the cosmological interpretation of his work as critically as he regards the biological interpretation of Lalande.

ambivalent. The moment of convergence between reason and reality leads us to suppose that Meyerson aspires to the role of a First Cause while the moment of divergence forces us to question the very existence of the knowing enterprise. The desire to explain reality leads either to the dissolution of reality or to an intellectual suicide. Reason and reality are incompatibles. The victory of the one means defeat of the other. Reason requires the diverse in order to function and yet, it destroys it in the course of its operations. In brief, the Meyersonian reason is contradictory - it is chimerical. But Meyerson never denies this in fact. "Le concept de chose et le besoin d'expliquer (poussé à la limite) SONT ANTAGONISTES (*italic are mine*), car la science finit par détruire cette réalité ontologique qui d'abord lui paraissait indispensable."⁹⁷ This is an important point to remember as it means that the epistemological paradox, as far as our author is concerned, is a sine qua non condition of knowledge.

E. The Irrationality of the Irrationals

To affirm that reason meets with resistance does

⁹⁷ E.S., p. 60.

not solve the problem because we continue to act as though the whole of reality could be explained. Thus we can only conclude that the irrationals are ambivalent and necessarily so in virtue of the epistemological paradox. On the one hand, reason tacitly assumes that it can purge itself of the irrationals, while on the other, it knows that it cannot. It is the latter consideration of irrationality which reinstates reality. But reality's recalcitrance in this sense is not simply beyond the grasp of reason but contrary to it.⁹⁸ Reality resists identification because its ways are diametrically opposed to the ways of reason. The irrational is at the place where nature viloates the sanctuary of reason. It is not merely supra-rational but wholly opposed to reason. But such a conception of reality mullifies the knowing enterprise. Where reason and reality had been totally convergent they are now wholly divergent. The principle of Sadi Carnot cannot rightfully be said to reinstate reality for the ways

98 Cf. O. HALBERT, "Une nouveau conceptualisme," in Revue de philosophie, 28, (1921), p. 680. Cf. also A. BONNARD, La Notion d'irrationnel chez Emile Meyerson, pp. 106-131.

of reason and the ways of reality are now mutually exclusive. Convergence and solipsism have been replaced by divergence and positivism.

F. Conclusion

It is becoming increasingly clear that Meyerson has taken too narrow a view of explanation. Admittedly, identification is involved in explanation but it is not the whole of it. There is no possible way, for example, that spatial displacement and sensation can be identified, but this does not mean that sensation cannot be explained. It depends on another order of knowledge; one which does not revolve about identifications or empirical verifications for its truth value. Nor for that matter is diversity unexplainable unless we eliminate beforehand the place of philosophic explanations. Meyerson is guilty of discrediting philosophy. Were the global deductions of science to succeed there would be no room for philosophy; science would become the perfect philosophy. This of course assumes that our ignorance of the irrationals is primitive; which is not necessarily the case. But it is significant that Meyerson's doctrine of irrationality should alternate between primitive and nescient ignorance of the irrationals. It is an indication that the extremes of the epistemological paradox are at once irreconcilable

and necessary.

The ultimate root of the paradox which we have examined in the light of the irrationals appears to be an improper metaphysics. Meyerson is caught up within a metaphysico-epistemological problem. The Meyersonian science is allegedly explanatory in virtue of a referent ontological ordination within reason, but upon analysis the ways of reason and the ways of reality result in a paradox. This is an indication that Meyerson's premise is false. What he takes to be the starting point of knowledge, namely identification, is not a conceptual similitude of reality but contains the structured datum of reality as persistent. Identification contains more than Meyerson says it does. It seems to us that a philosophy which begins with a structured datum rather than with the being of extramental reality cannot bridge the mind-reality relation and cannot avoid an epistemological paradox of sorts. But this is precisely the stand which Meyerson takes on the matter, as he says of the paradox that it is inevitable. This means that the knowing activity is now destined to remain forever estranged from its object. It seems to us, however, contrary to the view of Meyerson, that ontology is not inserted on the side of reason, as being at the place of unintelligibility, but that it is at the place of maximum

intelligibility. The fact that Meyerson considers ontology as the graveyard of scientific failures is a strange situation for it means that philosophy will operate on remains. Further, the more the Meyersonian science is successful, the less there will be for philosophy to do. This is an indication that Meyerson holds a curious view of scientific explanation. In anycase, before we probe deeper into the metaphysical foundations of the epistemological paradox, it is only fitting that we should examine, first of all, Meyerson's use of the paradox.

Section III: Meyerson's Use of the Paradox

I. Identification is a Tendency: Dualism
within Reason

The dualism of reason and reality in the philosophy of Meyerson is intensified by a further dualism within reason itself, namely, the distinction between identification and identity. It is clearest in Du cheminement de la pensée, for it is here that Meyerson affirms with greatest vigour that the goal of total identification is chimerical.⁹⁹ To consider total identification as attained supposes that the causal postulate has reduced reality to barren identity. But the Parmenidean formula $A = A$ is not an explanation of diversity, as it expresses nothing of it.¹⁰⁰ "Cependant, - et c'est là une des idées maîtresses du Cheminement de la pensée, - il n'y a jamais complete identité, car celle-ci équivaudrait à une tautologie."¹⁰¹ Thus while reason is

⁹⁹ Cf. also, "La notion de l'identique," in essais, pp. 187-208.

¹⁰⁰ Cf. C.F., p. 662.

¹⁰¹ H. GÉL, Science et philosophie d'après la doctrine de M. Emile Meyerson, p. 132.

desirous of total identification, it know its ideal to be illusory. "Donc, si l'on a l'audace de formuler l'énoncé, c'est parce que l'on sait d'avance que celui qui lira la formule ne nous prendra pas au mot, qu'il n'y verra jamais que l'affirmation d'une identité partielle."¹⁰²

This point is important. It means that the Meyersonian reason is twofold; an "abstract" reason which is desirous of total identification and a "concrete" reason which learns to accept partial identities. The crux of Meyerson's argument is that reason cannot give rise to diversity. But reason cannot function without diversity. Thus something, foreign to reason, must come to it from the outside. "La pensée doit s'appliquer à un devenir étranger à la propre nature. Elle ne peut progresser par elle seule, mais seulement par un apport du réel."¹⁰³ The function of "abstract" reason is to seek to eliminate as much of this diversity as possible. Explanations will result from the compromise between the desire for total identification and the recognition that this ideal is

¹⁰² C.P., p. 83.

¹⁰³ A. FOREST, "Du cheminement de la pensée par E. Meyerson," in Revue thomiste, 15, (1932), p. 433, Cf. also E.S., p. 188.

illusory, as diversity (the real) does not provide from reason. But it is paradoxical that reason should seek to eliminate that without which it cannot operate. For this reason, Meyerson says of total identification that it is a chimerical goal.¹⁰⁴ In addition, the process of identification being essentially eliminative (of diversity), each reduction or explanation yields a modicum of identity, but it also leaves something of diversity behind "each reduction is a rent in identity."¹⁰⁵ The dialectical movement of reason between total identification and diversity results in the identity-diversity propositions of science. "La vérité est qu'il y a A LA FOIS (*italics are mine*) diversité et identité, par le fait qu'il y a IDENTIFICATION (*italics are mine*), c'est-à-dire un cheminement qui part du divers pour aboutir à l'identique."¹⁰⁶

A. The Antinomies of Knowledge

Meyerson explains the situation of divergence between

104 Cf. C.P., p. 180.

105 I.R., p. 400.

106 C.P., p. 543.

total identification and diversity as a prerequisite to knowledge.¹⁰⁷ On the one hand we aspire to the complete identification of diversity, while on the other we know that this is not possible. The opposition between identification and diversity is at once irreconcilable and necessary. Together they constitute an indispensable situation. "Que, pour expliquer, nous tendons à nier les phénomènes alors que, pour nous guider à travers le dédale qu'ils forment, nous devons au contraire, maintenir leur réalité.." ¹⁰⁸ They are inseparable because reason cannot function without diversity and they are irreconcilable because the attainment of total identity dissolves diversity

¹⁰⁷ This is an important point to keep in mind. It means that reason could not function without the opposites of total identification and diversity. Meyerson also looks upon the state of potentiality as following within the class of contradictory suppositions as it enables us to affirm the existence of something which is not yet actual. Reason cannot grasp what it cannot identify. Thus what cannot be identified in act is identified in potency. The ether theory is a further instance of antinomies since ether must be a void and a medium at the same time. Cf. I.R., p. 360 and p. 407.

¹⁰⁸ E.S., p. 670.

and terminates the knowing enterprise. The consideration of identification as a tendency is what preserves the Meyersonian method from dissolution; explanatory science does not rejoin solipsism because identification is but a tendency of reason. "C'est aussi en se dirigeant vers cet inaccessible qu'elle célèbre ses triomphes les plus magnifiques."¹⁰⁹

B. Their Importance

Above all, the antinomies of identity - diversity are necessary in order for the knowing enterprise to take place. This is an important feature of Meyerson's philosophy. The propositions of science according to him, result from the interaction between an a priori desire for total identification and the a posteriori matter of *sensa*. Thus knowledge arises out of a fusion of rational and empirical elements. Reason is partly rewarded as it succeeds in extricating partial identities from the diverse but its program of total identification cannot succeed, as is evident from the diversity side of the identity-diversity dialectic. The movement of reason on its antinomies is an

109 C.P., p. 672.

eternal process.¹¹⁰ The real cannot be deduced from rational principles alone. Meyerson says of Descartes that he is right to attempt the global deduction but wrong to think it possible. Each identification is accompanied by a certain psychological satisfaction but it can never be total. To remove the opposition between reason and reality is to terminate the knowing enterprise, as reason will either posit itself into non-being (solipsism) or remain hopelessly entranced from its object (positivism). The progress of science is contingent upon the dynamism that is engendered by the opposition between identification and diversity. Meyerson's expression to denote this process is "le flottement de la raison."¹¹¹ It is particularly well chosen since it readily conveys the movement of reason from a priori to a posteriori etc., to the mathematical limit of identity. "Ce flottement, qui maintient l'identique et le divers en connexion étroite sans les concilier, explique comment notre pensée peut demeurer nécessairement intelligible sans devenir pour autant

110 Cf. Ibid., p. 262 and p. 654.

111 Cf. Ibid., pp. 289-293.

tautologie pure."¹¹² In final analysis the flight of reason from partial identities to further identifications enables us to conclude that the goal of the Meyersonian reason is the attainment of discernible identities, that is, of identities which admit of increasingly comprehensive degrees of identifications.

In closing and for the sake of illustration let us make the following analogy. Let us suppose that we could compare the ideal of identification to the task of a man who set out to empty an ocean with a pitcher; identification being the pitcher and diversity being the ocean. Although the man knows full well that he will never succeed in emptying the ocean in this way, he is nonetheless convinced that each dip of the pitcher brings him that much closer to his goal. Each identification is a step towards the mathematical limit of total identity and yet each dip leaves behind as much ocean. The movement of the pitcher (the float of reason) to and from salt water enables us to aspire to increasingly penetrating identities while retaining

112 R. JOHAN, "La raison et l'irrationnel chez H. Meyerson," in Recherches philosophiques, 1, (1931), p. 162.

as much of the diverse as possible. We have here all the necessary ingredients required by Meyerson's formula; the antinomies of identification and diversity which are the essential constituents of scientific propositions, the float of reason from one to the other, the knowledge of the goal as ideal but the conviction that progress is being made.

II. The Nature of Meyerson's a priori

Unless we are convinced beforehand that reason and reality are related in some way, it seems a platitude to set out to prove that science is ontological. The affirmation of the inescapable ontological character of science is in fact the affirmation of a reference within reason to the real. However, the ways of reason and the ways of reality are not wholly convergent, as the failure of global deductions have shown, but nor are they totally divergent. Explanations are necessarily explanations of reality. The real is intelligible or at least, partly so. Such is the situation as Meyerson sees it. Reason and reality are not wholly convergent, as evinced by the nescient character of our ignorance of the irrationals and by the consideration of identification as a tendency, but nor are they totally divergent, as is obvious from the transient reference within explanation, from the consideration

of total identification as an ideal of reason, and from the consequent primitive character of our ignorance of the irrationals. In the relationship of reason and reality there remains for us to examine what comes from reason and what is supplied by experience. We begin first of all with reason and concern ourselves with the nature and function of the a priori in the Meyersonian noetic.

Meyerson describes the a priori in various ways. For instance, he writes that it is a natural disposition of reason, that it fathers all mental acts, that it is a directive principle; in other words, that it is something proper to the intellectus ipse that Leibniz talked about.¹¹³ In brief, it is an instinct of the mind.¹¹⁴ Meyerson's a priori is an inherent compulsion of reason to posit identity as the natural response to the stimulus of sense

¹¹³ The intellectus ipse is the tendency to reduce reality to identity. Cf. C.P., p. 574.

¹¹⁴ J. LA LONIA, The Ways of Reason, pp. 13-14. says that Meyerson defines the a priori expressly only once. This occurs in the course of an analysis of the principle of inertia where he says of it that it is an instinctive notion of the mind. Cf. I.R., p. 148. Cf. also

data.¹¹⁵ "Le monde de notre perception n'est autre chose qu'un résultat de l'intervention de ce facteur avec nos sensations pour point de départ."¹¹⁶ The prime function of Meyerson's a priori is to evince the insufficiencies of positivistic epistemology. It is no doubt evident that nature conforms, in part at least, to the ways of reason, otherwise we could not survive. But the causal postulate goes beyond action and prevision for it postulates persistence. That of reality which corresponds to persistence is obviously not subject to change and the economy of effort. The fact that Meyerson says that the tendency of identification exists prior to experience is a further confirmation of this, as it means that what reason brings to phenomena is not a thirst for laws alone but above all

(114 Con't) O. NADLET, "Un nouveau conceptualisme," in Revue de philosophie, 28, (1921), p. 675.

115 The tendency to identify is operative whenever reason is made to function. It is the manner in which the mind directs itself to the real. To use a vocabulary which is not Meyerson's but which is nonetheless helpful, the tendency to identification corresponds to the agent intellect for it specifies the passive intellect to search out identities whenever *sempa* occur.

116 E.S., p. 586.

a thirst for persistence or ontology. Science is necessarily ontological because the a priori is primarily an imperative of identification.

At the heart of Meyerson's philosophy is a deep felt conviction that reality will conform to the ways of reason. Unless concepts relate to reality, knowledge will not take place. To what extent are concepts and reality convergent? As we saw earlier, the conformity between them cannot be complete.¹¹⁷ But whatever happens, we are told to act as though the whole of reality lent itself to the formula of identification.

Ainsi tout raisonnement - du moins en tant qu'il essaie de pénétrer dans la nature - constitue nécessairement une rationalisation de celle-ci, en ce sens qu'il tend à montrer que, par un côté, sa marche est conforme à celle de notre raison. En formulant un *POURQUOI* (*italics are mine*), en recherchant la cause d'un phénomène, ce que nous voudrions en réalité, c'est que l'on nous prouvât

117 Cf. Infra., ch. 3. To be rational means to be reducible to principles which obtain from reason alone. Cf. E.S., p. 99. This being the case, a reality that was wholly intelligible could be constructed entirely a priori. But such attempts at global deductions have failed; to wit, the effort of Descartes "il est impossible de réduire la science de la nature à une conception cohérente et rationnelle: C'est pourquoi nous sommes forcés de constater que Descartes s'est abusé" Ibid., p. 594. The existence of diversity and of a plurality of distinct sciences are further proofs of the irreducibility of phenomena to logical principles alone. Cf. C.P., pp. 494-501 and Essais, p. 85.

que les choses se sont passées comme notre raison
l'eût exigé.¹¹⁸

In this way the places of unintelligibility will arise of themselves but they cannot be determined a priori for we ignore the cause of the conformity between reason and reality.¹¹⁹ "...c'est pourquoi au fond la tâche unique du savant consiste à fixer les limites et les modalités de l'accord entre la nature et la raison."¹²⁰

As a result of his analyses of the theories of science, Meyerson uncovers the a priori of identification to be the mainspring of all mental acts. But precisely because it cannot be determined in advance where the conformity between reason and reality ends, (the propositions of science being a mixture of a priori and a posteriori elements), it is admittedly difficult to affirm with certitude what belongs to reason and what belongs to experience.¹²¹ Identification as a psychological tendency

118 C.P., p. 52.

119 Cf., D.R., p. 306 and C.P., pp. 710-713.

120 C.P., p. 274. Cf. also E.S., p. 594.

121 It may be said of positivistic epistemology however, that it is neglectful of the a priori, while of rational mechanics that it exaggerates the role of reason. But this remark is not to be interpreted in any normative sense. Cf. D.R., pp. 291-292.

alone seems to be the content of Meyerson's a priori for he says concerning every statement of identity in time that "it finds our minds prepared, it seduces them, and is immediately adopted, unless contradicted by evident facts."¹²² The principles of conservation have all originated in this way according to Meyerson, since they cannot be proven empirically.¹²³ They are psychologically rewarding and are affirmed on the strength of this alone. "C'est proprement l'élément que l'esprit ajoute aux choses et, par conséquent, son élément a priori, tel que le concevait Kant."¹²⁴ But it is not clear that psychology holds any privileged status in this regard,¹²⁵ nor is it clear that Kant was writing psychology.¹²⁶ Or else, Meyerson's a priori is epistemological

¹²² I.R., p. 147. Cf. also, I.R., pp. 161-162, p. 403, p. 464, and E.S., p. 568, and C.P., p. 618.

¹²³ Cf., Infra, ch. 5.

¹²⁴ Essais, p. 80.

¹²⁵ Meyerson's argument is dubious. That a theory be psychologically rewarding does not constitute proof of its truth value. Cf. J. LA LUMIA, The Ways of Reason, p. 71.

¹²⁶ Or for that matter that the intellectus ipse of Leibniz is psychological.

in Kant's sense, but this does not seem to be the case since to think for Meyerson is to identify while for Kant it is to judge.¹²⁷

A. Meyerson and Kant

We have indicated two points of dissimilarity between Meyerson and Kant (psychology vs epistemology, identification vs judgment) but Meyerson nonetheless often writes of his a priori as though it was Kantian. For example, he says in Du cheminement de la pensée, "c'est tout à fait dans le sens kantien que la tendance à l'identification nous apparaît comme précédant toute connaissance et toute expérience, comme apriorique par essence."¹²⁸ But according to La Lumia it would be a mistake to take this type of statement literally.¹²⁹ Meyerson's work is, after all, within the province of a philosophy of mind and has nothing to do with the structure of the real as such. Meyerson's a priori is not a Kantian category but a psychological tendency to posit

¹²⁷ Cf. J. LOWENBERG, "Meyerson's Critique of Pure Reason," in The Philosophical Review, 41, (1932), pp. 356-357.

¹²⁸ C.P., p. 611. Cf. also Essais, pp. 73-80.

¹²⁹ Cf. J. LA LUMIA, The Ways of Reason, p. 11.

identity in time whenever we think.¹³⁰ Meyerson believes himself to have uncovered this a priori tendency through his analyses into the psychology of scientific induction. But although Meyerson's object is psychology, he does not favour introspection.¹³¹ Kant, on the other hand, does not hesitate to make full use of introspection. "I have to deal with nothing save reason itself and its pure thinking, and to obtain complete knowledge of these, there is no need to go far afield since I come upon them in my own self."¹³²

Both thinkers are equally explicit in their desire to write prolegomena for metaphysics (Kant by removing metaphysics from the corroding influence of science, Meyerson by discovering an ontology within scientific explanation), as they are of securing the explanatory force of scientific propositions from the side of reason,

130 The clearest formulation of this distinction is contained in an article by J. LOWENBERG, Op. cit., pp. 351-367. Meyerson acknowledges the merits of this article in Essais, p. 105 footnote.

131 Cf. Infra, ch. 1.

132 E. KANT, The Critique of Pure Reason, Trans. N.K. SMITH, Toronto, Macmillan, (1965), Preface 1, p. 10.

but whereas Kant holds to the synthetic a priori judgments, Meyerson does not. Meyerson's a priori is not synthetic since it is not epistemological; it is a psychological tendency. What Meyerson understands by a synthetic proposition is one which is in effect a mixture of an a priori tendency and a posteriori elements. Thus he replaces Kant's synthetic a priori by a synthetic - a priori - a posteriori proposition - the plausible propositions of science.

Pour M. Meyerson, il y a bien des JUGEMENTS SYNTHÉTIQUES A PRIORI, (*italics are mine*) mais ce qui est A PRIORI (*italics are mine*) n'y est pas SYNTHÉTIQUE, (*italics are mine*) et ce qui est synthétique n'y est pas A PRIORI (*italics are mine*).¹³³

A further point of comparison is suggested by Kant's noumenon and Meyerson's irrational. First of all certain distinctions must be brought to mind. The noumenon is for Kant the thing-in-itself while the irrational is for Meyerson at the place of non-deducibility. The first is an objective characteristic of reality while the other is an immanence within reason itself.¹³⁴ We saw

133 A. REYZ, Une nouvelle philosophie de la connaissance, p. 218.

134 Cf. M. GILSON, "M. F. Meyerson et le positivisme d'Auguste Comte," in Revue Apologétique, 55, (1932), p. 524, footnote 3.

earlier that the epistemological paradox stems from a twofold consideration of the irrationals; the "primitive irrational" from the aspect of the global deduction and the "nescient irrational" from the side of reality's recalcitrance, namely, from the aspect of non-deducibility. Thus, depending on which movement of the Meyersonian reason we are considering, we will think differently about the relation. In other words, the relation between Meyerson's irrational and Kant's noumenon is analogical. It is not univocal since one relates to reality and the other to the philosophy of mind. It is not equivocal since the irrational from the aspect of the second movement of the Meyersonian reason is unknowable. Finally, the relation is analogical because it is in some respects partly the same¹³⁵ and in others partly different.¹³⁶

135 R. COHEN says of the Meyersonian science "qu'elle a pour véritable objet le noumène, et que c'est sur le noumène qu'elle fonde, par lui qu'elle justifie les rapports qu'elle énonce." Cf. ID., "La raison et l'irrationnel chez A. Meyerson," in *Recherches philosophiques*, I, (1931), p. 144.

136 Cf. A. MEYERSON "La science et la raison dans la philosophie de M. Meyerson", in Mercur de France, 186, (1926), p. 302. Metz says that "Meyerson's critique of pure reason is more hopeful than was Kant's, since the irrational, unlike the noumenon, can be approached." Further, it might be said of Comte's refusal to penetrate beyond phenomena that it bears certain analogies to the rejection of Kant for both thinkers denounced the possibility of gaining such

In conclusion, Meyerson's a priori is much narrower than Kant's since it does not lay claims to epistemology. It is a primal psychological tendency which initiates the explanatory process and directs the rational machine towards the goal of rational mechanics. It somehow avoids solipsism through a curious application of the second law of thermodynamics. Meyerson's fusion of the antinomies of the paradox in plausible propositions confirms this. The plausibility of propositions is the subject of our next inquiry.

III. The Plausible Propositions of Science

Émile Meyerson's investigations into the psychology of scientific induction reveal that the propositions of science are the result of an interaction between rational and empirical elements. This mixture of a priori and a posteriori forms unity statements of conservation. The proof of this according to Meyerson is that the explanations

(136 Con't) knowledge from the side of the object. Of the two, however, Kant seems to be the more courageous since he turns to reason while Comte does not. This is perhaps indicative of a still a more important point, namely, of a fundamental similarity between Comte's principle of legality and Meyerson's causal postulate for in final analysis the Meyersonian postulate appears to be a method for giving courage to legality.

of science, (including those of non-mechanical theories), command assent in spite of the fact that they cannot be deduced from rational principles alone and that they cannot be proven experimentally. The principles of conservation are good examples of this type, as they cannot be proven empirically and yet, no one doubts their truth. "Perhaps it would be wise to apply statements of this category, intermediary between the a priori and the a posteriroi, a special term. We should propose, for lack of a better one, the term *PLAUSIBLE* (italics are mine)."¹³⁷

A plausible proposition stipulates conservation in time. It finds our minds predisposed to assent since whatever posits persistence, according to Meyerson, gratifies reason.¹³⁸ The principles of conservation draw their authority from this that certain concepts (speed, mass,

¹³⁷ I.R., p. 147. Cf. also C.P., v. 623. "Il restait donc qu'il y eût là de l'a priori et de l'expérimental mêlés l'un à l'autre et c'est ce que nous avons désigné de ce terme de *PLAUSIBLE* (italics are mine)".

¹³⁸ If the truth value of a proposition depends on the satisfaction of a psychological need it is difficult to see how science can be objective. "This makes science an interpretation of the world and neither a description nor an explanation of it in the ordinary sense of those words." G. BOAS, A Critical Analysis of the philosophy of Émile Meyerson, p. 37.

force) persist throughout change. But such statements can never be more than probable. The goal of reason is to transform synthetic truths of facts into analytic truths of reason. But since reality is not entirely rational (deducible from logical principles alone), all truths of reason (statements of identity in time), must be verified empirically. Identification and confirmation are inseparable. The greater the convergence between identification as the ideal of reason and identity as the consequent of empirical verification, the more acceptable a proposition is to reason. "The nearer a statement comes to being a tautology the more *PLAUSIBLE* (italics are mine) it is."¹³⁹ But a plausible proposition can never become more than probable because the goal of total identification is chimerical (and thus acosmism is avoided). The propositions of science are a mixture of a prioricity and diversity. They are agreeable to reason inasmuch as they stipulate conservation but what it is that is conserved (to what extent there is conformity between reason and reality), can only be determined empirically. The conformity is never

139 O.N. HILLMAN, "Émile Meyerson on Scientific Explanation," in Philosophy of Science, 5, (1938), p. 78.

complete - Descartes and Kant abused themselves in this respect. But nor is science reducible to the tabulation of empirical data as required of positivistic epistemology - Comte abused himself in this respect.¹⁴⁰ What Meyerson proposes in place is a sort of Descartes - Comte approach to phenomena; Descartes because of his insistence on mathematics and Comte because of his insistence on phenomena.

The a priori of reason and the a posteriori of diversity form a unit. They are so intimately related that it is often difficult to determine what comes from reason and what is given by sensation.¹⁴¹ The matter of sensation comes to reason from without, while the form of identification impresses itself on sensations from within. Thus knowledge results from the convergence of reason and sense; of rational identifications and irrational diversities. The propositions of science are all of this type.

Ainsi, sans doute, la distinction entre l'a priori et l'a posteriori ne disparaît point; mais elle ne subsiste plus que comme une distinction de degré. Et il est clair que le plausible d'un énoncé, son emprise sur notre esprit, sont précisément en raison de cet

140 Cf. E.S., pp. 581-582.

141 Cf. C.P., p. 328 and p. 508.

accord entre l'intellect et le réel, qui est, nous le savons, à la fois le postula intime et le but dernier de la recherche du savoir.¹⁴²

Thus, says Meyerson, we can see how wrong it would have been to suppose the complete reduction possible. The causal postulate is a creator of illusions. It is the causal illusion which leads us to suppose that the bridge from identification to diversity can be readily crossed. This is a constant source of error. The agreement between reason and reality is partial. It is a mistake to suppose that permanence is more real than change. Sadi Carnot convinces us to this.

¹⁴² Ibid., p. 664.

Section IV - Meyerson's Proposal is not Acceptable

I. The Movements of Reason

The equating of thought and identification renders the epistemological paradox inevitable. There is no place for diversity in the thesis of identification and no place for identity in the antithesis of diversity. In this respect reason and reality appear to be mutually exclusive, as reason cannot know the real without destroying it, and should it succeed it would ultimately posit itself into non-being.

It is significant that Meyerson does not change the equating of thought and identification. It is because he believes that ontology results from successive identifications that he does not soften the rigidity of this theory. He does not leave room for any other consideration of ontology. The affirmation that the goal of reason is chimerical does not solve the issue as we continue to act as though this goal was possible. Thus there are in effect two movements within the Meyersonian reason. The first gives rise to what may be termed the dualism of the Parmenidean reason and the Heraclitean reality. Reason goes one way and reality the other. That the two should converge at some

point does not seem possible.¹⁴³ The second movement, on the other hand, corresponds to the attempt at convergence by the consideration of identification as a tendency.¹⁴⁴

Explanation and reality are not mutually exclusive because the complete success of reason is chimerical.¹⁴⁵ To explain is not to explain away because reason and reality are inseparable. It is from this aspect of the problem that Meyerson concludes to the plausibility of scientific propositions. Explanation according to this is a

143 The divergence of reason and reality is most obvious in Meyerson's earlier works, namely, I.h., A.S. and D.R.. This is evident from some of the criticisms levelled against Meyerson prior to the publication of C.P.. Cf. JEAN DE LA HAUTE, "L'oeuvre philosophique d'Émile Meyerson; la marche vers l'identité", in Revue de théologie et de philosophie, 13, (1925), p. 281. "C'est ainsi qu'il aboutit à un gigantesque paradoxe épistémologique qui domine toute son oeuvre et devant lequel il s'arrête." Cf. also O. HADAMANT, "Un nouveau conceptualisme", in Revue de philosophie, 28, (1921), p. 667 (written before D.R.) "...M. Meyerson accumule les antinomies entre la Raison créatrice de concepts et la Réalité. Celle-ci rest-t-elle définitivement l'inconnaissable, l'abîme insondable qui dérobe sa face toujours inexorable? Rien dans l'ouvrage ne marque vers quelle conception dogmatique il tend."

144 Cf. T.R. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, for an exacting study of the two movements under discussion.

145 Cf. L. DUBOIS-CHVILG, "La philosophie d'Émile Meyerson", in Revue de métaphysique et de morale, 33, Jan. - arch., (1926), no. 39-40.

"flottement de la raison" from the a priori form of total identification to the a posteriori elements of sensation. Thus the second movement of reason is an attempt to bridge the identification-diversity gap while avoiding the extreme of dissolution. It is the consideration of identification as a tendency. But Meyerson's treatment of the way in which the two incompatible movements of reason are successfully carried out is obscure.¹⁴⁶ He does not seem to solve the issue. Reason and reality are mutually exclusive and yet, the explanations of reason refer to things. Unless Meyerson shows how reason and reality are convergent, the ontological character of explanation will not be in evidence.¹⁴⁷ But how the compromise between divergence and convergence

146 Cf. T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 116, and ID., "Meyerson and the Epistemological Paradox," in The Monist, 44, July, (1934), pp. 296-305.

147 This is, after all, what Meyerson is intent upon proving. The refutation of positivistic epistemology is contingent upon "la satisfaction de L'INTELLECTUS IPSE (*italics are mine*), par l'identification poussée aussi loin que faire se pourra". C.P., p. 672.

is effectuated, or the refutation of positivistic epistemology is attained seems to be founded on a psychological desire for this convergence. There does not seem to be any other ground. Consequently the critics of Meyerson, although largely in agreement that he does not solve the epistemological paradox,¹⁴⁸ are at odds as to what to make

148 There are very few critics, to my knowledge, who have not acknowledged the impasse created by the epistemological paradox. Bonnard is the exception as he says that Meyerson's "irrational" intended to mediate the dispute between idealism and realism. Cf. A. BONNARD, La notion de l'irrationnel chez Émile Meyerson. But it seems to me that this is incorrect as we have Meyerson's word for it that his work is not normative. "De bons esprits ont été d'avis concernant le débat entre le réalisme et l'idéalisme que si, dans nos ouvrages antérieurs, nous nous étions appliqués à tenir la balance à peu près égale entre ces deux opinions, nous avions, au contraire, dans le Cheminement de la pensée, fait pencher le fléau, de manière décisive vers la première. En affirmant que la pensée doit avoir recours, sous peine de stérilité, au comportement du réel, nous aurions enfreint la neutralité entre le réalisme et l'idéalisme que nous prétendions observer. En d'autres termes, nous aurions fourni un argument contre l'idéalisme. Nous croyons qu'il y a là un malentendu fondamental (...) ce que nous avons voulu montrer, c'est précisément et uniquement ce fait que tout progrès de raisonnement nécessite une mise en oeuvre du divers provenant en dernier terme, de la sensation (...) la question de savoir si ce réel qu'il met en oeuvre plus ou moins consciemment est ou n'est pas indépendant du moi, transcendant, l'intéresse en vérité fort peu. Car ce qu'il emprunte à ce réel, c'est uniquement son comportement, lequel demeure évidemment ce qu'il était même si le réel change d'essence." Essais, pp. 176-178. It is the consideration of his work as being in the province of the philosophy of mind which led Meyerson to look unfavorably on the interpretations of Lalande and

of it.

A. The Movement of Divergence: Positivism

The first movement of reason bespeaks a hopeless divergence between reason and reality. There does not seem to be any way in which reason can penetrate its object. Reason goes the way of the intellectus ipse while diversity is irrational to identification. How knowledge is possible is a mystery; it ought not be attained and yet, somehow it is. That knowledge is possible seems to result from the psychological desire of reason for ontology. But psychology is not privileged in this respect. In the final analysis the movement of divergence means that reason cannot know the real and that Meyerson is a positivist.¹⁴⁹ It is interesting to note that Meyerson

(148 Con't) the German epistemologists Schlick and Reichenbach. It must be said in favour of Bonnard however, that he has in a sense caught the spirit of the epistemological paradox for as he rightly points out too much emphasis on the a priori leads to idealism while too much on diversity leads to positivism. Bonnard is incorrect though inasmuch as he looks on the irrationals as mediating the dispute between these two extremes. Meyerson never intended to write epistemology. Further, the irrationals being wholly unintelligible could never be made to function in this way. In addition the irrationals are not destined to remain forever unknowable. That this is the position of Meyerson is confirmed by Metz. Cf. A. METZ, Une nouvelle philosophie de la connaissance, pp. 50-52.

149 T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 47.

is not totally unaware of the influence which positivism has had upon him.

Si en philosophie, voyez-vous, on veut savoir de qui un penseur descend, à qui de ses prédécesseurs il doit le plus, regardez qui il combat: Bacon, Descartes combattent les scolastiques et ils plongent eux-mêmes jusqu'à mi-corps dans la scolastique. Leibniz combat Descartes constamment..., c'est qu'il est cartésien. Kant passe sa vie à combattre Hume, c'est qu'il est son disciple. Mais, je combat Comte, c'est donc qu'au fond je descends de lui.¹⁵⁰

B. The Movement of Convergence: Rationalism

The second movement of reason is an attempt to bridge the divergence gap without going to the opposite extreme of solipsism. The ways of reason and reality are convergent but not totally so. Meyerson arrives at the realization of this because of the principle of Sadi Carnot. The principle of Carnot warns that the elimination of time implies the reversibility of phenomena. But phenomena are not reversible because there is not the identity between cause and effect that rational mechanics supposes. On the contrary, work is being done and entropy is on the increase.

150 F. LEFÈVRE, "Une heure avec M. Émile Meyerson", in Les nouvelles littéraires, Nov. 6th (1926), Cf. also G. BOAS, A Critical Analysis of the Philosophy of Emile Meyerson, p. 117.

Thus identification and diversity are not divergent since the thesis of total identification (which implies the fully reversible phenomena of nature) is chimerical. This is Meyerson's doctrine of partial identifications. Thus the propositions of science are affirmed by him to result from the movement of reason or the opposites of total identification and no possible identification. Although Meyerson's description of the dialectical movement of reason is imaginative it is not philosophical, as it rests its case on the psychological satisfaction which results from being able to posit identity in time. But psychology is not the door to metaphysics.¹⁵¹ The consideration of causality as a tendency that is psychologically rewarding gives it no special privilege with respect to the attainment of reality. "When we ask for the explanation of a natural law, we are asking not for the psychological causes which leads us to believe the law, but for evidence which can assure us that the law is, and must be, true."¹⁵² Thus whereas the divergence of explanatory reason and reality leads to positivism, Meyerson's fusion of the antinomies

151 Cf. LA LONIA, The Ways of Reason, p. 119.

152 O.N. HILLMAN, Philosophy of Science, 5, (1938), p. 79.

of reason and reality in plausible propositions ultimately leads to the total dissolution of the real and solipsism. This is also borne out by the primitive aspect which characterizes our ignorance of the irrational "diversity" if identification and diversity are to converge at all.

II. Restatement of the Paradox

Meyerson is grappling with the fundamental problem of epistemology and metaphysics. His work is a reminder of the importance of reason and of empirical elements in coming to know. The exaggeration of the first leads to absolute idealism while the exaggeration of the other is the cornerstone of positivistic epistemology. Meyerson fuses both extremes in the plausible propositions of science. Thus statements of identity in time obtain their form from reason and their matter from experience. Plausible propositions enunciate truths of reason inasmuch as they postulate persistence in time, and truths of facts inasmuch as the matters of persistence are obtained empirically. This analysis of things convinces Meyerson of the insufficiency of positivistic epistemology. Knowledge of the law is not the only business of science because the propositions of science contain an element that is not reducible to empirical data namely, the a priori tendency to

posit persistence in time. Thus while the search for the law is included in the search for the cause, the affirmation that the rule of law suffices of itself is synecdoche.

The structure of identification which Meyerson takes to be essence of reason necessarily leads to the epistemological paradox. For as long as the ideal of reason is Parmenidean, the ways of reason and the ways of reality will hopelessly diverge. Meyerson has been seriously criticized for having equated scientific causality with identification. It is the single most rejected issue in the whole of his philosophy.¹⁵³ In the face of so much opposition we would expect Meyerson to modify his

¹⁵³ Cf. L.H. KELLY, Reason and Explanation in the Philosophy of Émile Meyerson, p. 300. Cf. also O.I. EILLMAN, "Émile Meyerson on Scientific Explanation", in Philosophy of Science, 5, (1938), p. 79. Cf. also G. LOAS, A Critical Analysis of the Philosophy of Émile Meyerson, pp. 115-117. Cf. also D. PARODI, "De l'explication dans les sciences par Émile Meyerson", in Revue de métaphysique et de morale, 31, Sept.-Oct., (1924), p. 594. Cf. also A. SPÄER, "Sur la notion d'irrationnel", in Recherches philosophiques, (1931), pp. 166-177. Cf. also O. HABERT, "Un nouveau conceptualisme", in Revue de philosophie, 28, (1921), p. 677. Cf. also C.G. STERLING, Reason, Space and Reality in the Philosophy of Émile Meyerson, p. 185. Cf. also Infra, ch. 2, footnote 34. The consensus of opinion in this matter is that identification is not the whole of thought, as it does not exhibit necessity. It appears to be a remnant of Eleaticism. However, we have not set out to refute Meyerson on this score. On the contrary, the rule of identity figures prominently in the reversible phenomena of rational mechanics. Our concern

premise of reasoning by identification but he does not. This is a puzzling affair because Meyerson does not persist in this belief without reason. On the contrary, his long and exacting efforts uncover that the process of identification is in force whenever thinking takes place. In order to refute him on this score it is necessary to show that the physicist thinks differently than the manner demanded by his formula. Considering that Meyerson researched 19 years before publishing his first work alone, and that he enjoyed a long and productive life, it is evident that the equating of scientific causality with identification is not to be taken lightly. What then are we to conclude?

It seems to us that Meyerson's fusion of identification and diversity in plausible propositions is due to his fundamental indecision concerning the ontological status of scientific theories. In short, he confounds

(153 Con't) is with the metaphysics presupposed by the metamorphosis of quantity (or identity relations) into ontology. It seems to us that an epistemological paradox is destined to appear whenever we look on ontology in this way.

empirio-metric and philosophical explanation. The ambivalent nature which he ascribes to the irrationals confirms our interpretation. On the one hand, ignorance of the irrationals is ignorant and science is ontological. But this affirmation rests its case on the supposition that reason and reality will diverge in some respect. The movement of divergence however, results in positivism. The ideal of total identification, on the other hand, leads to the supposition that there are no irrationals. This means that identification and diversity are wholly convergent. But the movement of convergence leads to solipsism. Meyerson's decision to fuse both extremes in plausible propositions entails the contradictory supposition of a real that is intelligible and irrational at the same time and in the same respect. Thus the epistemological paradox is ultimately due to Meyerson's fundamental indecision concerning the nature of empirio-metric explanation. In one sense ontology is at the place of unintelligibility and positivism results, while in another sense, reason dissolves its object, and ontology, and posits itself into non-being.

A. The Epistemological Paradox Results from
an Inadequate Metaphysics.

Meyerson says of plausible propositions that they

result from the interaction between rational and empirical elements. But it is not possible to discover through the analysis of a proposition what comes from reason and what derives from *sensa*. Meyerson's inability to distinguish between philosophical and empiriometric explanation confirms this. Assuming, however, that the mechanical theories of science are plausible propositions, it would mean that the atomic theories of matter, the principles of conservation, relativity physics and quantum mechanics, have each arisen at the term of a compositive union of reason and reality. In effect, the Meyersonian formula of explanation is such that statements of identity in time, as in the conservation of inertia, mass and energy, for example, are neither wholly a priori nor wholly a posteriori but result from the mutual tampering of reason and *sensa*. If this is the case, however, it means that when we speak of the conservation of energy, for example, we are not speaking of real beings but of a mixture of rational cum irrational principles which have nothing to do with the operational plane of being at all. The proof of this, as far as Meyerson is concerned, is that no one doubts the truth of these principles although they cannot be proven empirically. But this is a confession to a positivism. Meyerson has taken a stand on the unknowability

of reality. Reality cannot be known in itself since it is always attained at the term of a construct which combines identification and sensations.¹⁵⁴ These are the plausible propositions of science. That reason should

¹⁵⁴ A. Dandieu is the only author, to our knowledge, who would object to this interpretation of plausible proposition as he does not believe that the fusion of reason and sense generates a tertium quid. Cf. ID., "La philosophie d'Émile Meyerson et l'avenir du rationalisme", in Europe, 29, (1932), pp. 640-641. While we agree with Dandieu that the opposites are not resolved in the sense of terminating the activity - as this would be the death of reason, we cannot but think that the dialectic generates a tertium quid of reason and reality. That this is possible does not imply that equilibrium has been attained. The opposites are not resolved by being dissolved but their mutual interaction results in the production of something new. That is, as Meyerson makes abundantly clear, the movement of reason proceeds from the thesis of total identification to the antithesis of no possible identification (the hopeless irrationality of diversity) to the generation of partial identities. This is a tertium quid because there is no diversity in the thesis of identification and no identity in the antithesis of diversity. The life of reason goes on this in this way forever augmenting its stock of identities to the mathematical limit of the Parmenidean ideal. The consideration of identification as a tendency, however, means that this goal is not realizable in fact as the life of reason is contingent upon the synthesis of identities from the opposites of identification and diversity. This is clear from the a priori - a posteriori nature of spatial explanation, from the primitive - nescient ignorance of the irrationals, from the ontological - noumenal aspect of reality, to list but a few examples of tertium quid requirements in the philosophy of Meyerson.

lay claims to ontology while being unable to know things as they are in themselves is not only paradoxical but it is also indicative that Meyerson's doctrine of explanation rests on an inadequate metaphysics.

It seems to us that Meyerson is caught up within the dilemma of the cogito. Having secured his defense of ontology from the side of reason rather than from the side of things, that is, because he confuses the term for the process of knowledge, the epistemological paradox was destined to appear. Once enclosed within the cogito, reason could only conceive of the real as either an extension of spatial reasoning, in which case solipsism was inevitable, or confess to a fundamental inability to penetrate it, which is positivism and the place where Meyerson ultimately comes to rest. His decision to fuse both extremes in plausible propositions is not acceptable, as the permanence-change aspect of plausible propositions means that the real is a compound of rationality and irrationality. In short, the real will be amenable to the Meyersonian concept inasmuch as it is hypostatic as to its existence and noumenal as to its essence. The study of the origin, nature and function of the Meyersonian concept along with the analysis of the nature which the real must

possess in order to be amenable to this concept will confirm this. It is the subject of our next inquiry.

HYPOSTATIC-HYBRID REALITY

CHAPTER IV

Praenota

The concept in the philosophy of Meyerson results from a fusion of the causal form with sensations. The action of causality on sensations is immediate and involuntary. Reason will spontaneously hypostatize whatever is presented to it. This primordial activity along with the manipulations of reason which are consequent to it constitute what Meyerson considers to be an indubitable proof that reason is ontological. The concept plays the key role in this affirmation. Its importance cannot be overplayed as it ultimately leads Meyerson to the epistemological paradox. Thus it is fitting to devote the whole of this chapter to it.

This chapter is subdivided into 5 sections. The first section is a study of the origin of concepts in the philosophy of Meyerson. Sections 2 and 3 probe into the nature and function which our author ascribes to concepts, while section 4 studies the character which reality must possess in order to be amenable to it. The last division of the chapter is a critical evaluation of the origin, nature and function of concepts as related to the concept matter. Our objective here is to determine

the degree of reference, if any, between the concept and the real. It seems to us that Meyerson continues in the rationalist tradition of substituting the term for the process of knowledge.

It is not always preferable to treat separately what in the philosophy of Meyerson forms a unit such as the origin and function of concepts, or the relation of concepts to the concept matter; nor is it always possible to reserve criticisms for the last but inasmuch as possible we have sought to do so. The advantage of this approach, it seems to us, is that it makes for greater clarity in a subject where Meyerson is unfortunately obscure.

I. The Origin of Concepts

A. Meyerson's Doctrine of Concept Formation is Obscure

Meyerson gives us no clear understanding of how concepts are formed.¹ This is lamentable since the Meyersonian concept nonetheless plays the central role in

1 Cf. E.S., p. 155. Cf. also T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 76. Cf. also G. BOAS, A Critical Analysis of the Philosophy of Emile Meyerson, p. 2, footnote, 3.

the refutation of positivistic epistemology for it is made to evince the untiring concern of science for ontology. What Meyerson takes to be the concept is a result of the interaction between the causal postulate and sense. The concept is thus the offspring of rigidity and fleetingness. It is rigid inasmuch as it represents our sheer inability to tolerate the subjectivity of sensations and fleeting inasmuch as it arises out of sensations. The union of the two is a prerequisite to the formation of concepts for on the one hand, without the stimulus of sense data the knowing activity would not take place, while without the rational imperative of identification there could be no ontology. The process is neither wholly active nor wholly passive but the concept results as a marriage of activity - passivity, of the identity-diversity relation which is characteristic of the Meyersonian enterprise. Depending on which moment of the relation we emphasize, Meyerson's doctrine of concept formation either bespeaks an empiricism or an idealism. Further, Meyerson appears to hold 2 doctrines on the origin of concepts, the one on the hypostasis of sensations and the other on the negative activities of reason. In the first case, reason actively transforms passive data into permanent things while in the other,

reason probes reality in search of identities and discards all that is dissimilar. These accounts of abstraction are at odds with one another because whereas the hypostasis of sensations is unconscious and spontaneous, the negative activity of consciousness is selective and time consuming.

Meyerson's theory of abstraction is further obscured by the role which memory and the state of potentiality are made to play in it. Memory is important since without it, the stream of consciousness which Bergson speaks about, is reducible to discontinuous sense data and science is no longer ontological. The state of potentiality is equally important to concept formation since without it, the very existence of reality is called into doubt. In fact, Meyerson holds reality to be but an occasion for sensation; it is an explanation for the existence of sensations in the absence of sensations. It is not clear that concepts arise from a hypostasis of sensations and a weeding out of differences; nor that reality is but an occasion for sensing and remembering. Some clarifications are in order.

B. The Hypostasis of Sensations

Sensations provide a primitive datum of first rate importance for the positivist school of thought. The ideal of legality is to accumulate as much sense information as required by the economy of effort in passing to immediate

action and prevision. Sensations are equally important to Meyerson but he does not consider them to be so primitive and simple as to require no explanation. On the contrary, the unceasing variation of sensations is an irrational which stimulates the explicative effort.

C'est parce que nous ne pouvons concevoir comment elles font pour changer que nous supposons qu'elles dépendent d'une cause plus constante qu'elles, cause que nous sommes dès lors obligés de placer en dehors de notre conscience. Cet objet est donc tout d'abord un ensemble de sensations projetées en dehors du moi, hypostasiées.²

The occurrence of a sensation is an exercise in ontology for it immediately triggers a structure of mind which instinctively searches for the cause of the sensation. It is supposed that the fleetingness and subjectivity of sensations stimulates reason to search for something more constant, that is, for a cause which does not depend on consciousness. The response of reason to the stimulus of sense data is involuntary, as the rational organ or receptor of sense stimuli is explicative by nature. Reason cannot not identify.³

2 D.R., p. 17.

3. Cf. Infra., ch. 2.

The procedure of unconscious reasoning which we here suppose would then be the following. I have had a mixture of sensations (...) I know that these sensations may come back; consequently, to satisfy my causal tendency, I suppose that these sensations exist during the interval. Now since, by hypothesis, they do not exist within me, they must exist somewhere else; there must be, therefore, a "somewhere else," a non-ego, a world exterior to my consciousness.⁴

The leap of reason from multiplicity to identity at this time is spontaneous. The concept of a non-ego originates at the instant of the hypostatizing activity of reason. Its inception can be likened to the product of a reflex act. Reason cannot tolerate diversity. The hypostasis of sensations corresponds to a natural, unconscious activity of reason to posit identities wherever it discovers diversities. Reality is not affirmed at the result of a spontaneous judgment but is arrived at reflexively, that is, at the term of an activity of reason.⁵ Admittedly the hypostasis of sensations is unconscious but this does not

4 I.R., p. 360.

5 It is something totally different to affirm along with Paritain that the operations of simple apprehension and judgment follow simultaneously than it is to affirm with Meyerson that the concept object arises spontaneously, for while the latter precludes an intentional union, the former is founded upon it. The intentionality of knowledge is a prerequisite to the knowing activity--immateriality is at the root of knowledge. The operation of concept formation implies first of all a literal stretching out of oneself

change anything since Meyerson holds identification to be the essence of the rational operation. To reason is for him to identify. Thus what he takes to be the concept object results at the term of a discursive activity of reason. There is no primitive, precognitive intentional union of knower and object here but the conceptual similitude is spontaneously made the object of a mental act. What Meyerson affirms to be the origin of empirical concepts is the idea, since it results at the

(5 Con't) in order to become the other - not as matter has form, but immaterially. Simultaneously with becoming the other, the mind pronounces its existential judgment on the be-ing of the other. What Meyerson takes to be the concept object, on the other hand, occludes the representative capacity of species for it makes of the intelligible union a spontaneous quod. The world of familiar objects which Meyerson would have us see upon awakening each morning is heavily weighted with interpretation. The principal source of difficulty in this philosophy is that it does not distinguish between the process of knowledge and its term. Our author, however, would disagree with our interpretation for he holds that the hypostasis of sensations (wherefrom empirical concepts are formed) is not the fruit of an activity of reason. "Qu'elle n'est pas (...) l'effet de l'argumentation et du raisonnement". C.P., p. 124. Elsewhere however, he admits of a certain analogy between both processes. Cf. Ibid., p. 356 and E.S., pp. 572-573 but his distinctions are unclear. Admittedly the hypostasis of sensations is wholly unconscious but we fail to see how it can be otherwise distinguished from the term of knowledge, that is, from the production of a metaphysical concept since both are the product of the same identifying tendency of reason.

term (quod) of an activity. In short, whatever is transmuted through a hypostasis is already a quod because reason is geared a priori to look upon the real in a way other than it appears to the senses.

L'objet (the empirical concept) n'est véritablement qu'un groupe de sensations, que nous avons liées de manière plus ou moins opportune et que nous avons ensuite projetées au dehors dans le non-moi. Mais là encore nous avons ajouté la permanence.⁶

The term which Meyerson reserves for this activity is common sense.⁷

C. Common Sense is an Ontology

Common sense is the process of hypostatizing sensations as much as possible as they are and of making them undergo "the minimum of transformation."⁸ It occupies a central role in Meyerson's refutation of positivistic epistemology for it constitutes the starting point of science.⁹ The distinguishing marks of common sense is that it is ontological and that it is homogeneous. As an

6 A.D., p. 15.

7 Meyerson also uses the term perception to denote common sense. Cf., Essais, p. 170.

8 I.R., p. 363.

9 Cf. D.R., p. 302. Cf. also C.P., p. 356 and Essais, pp. 170-186.

ontology, common sense transforms the fleetingness of sensations into permanence. In short what we see upon awakening each morning are not colors but colored objects, what we hear are not sounds but sounding things. Given a sensation we immediately transform it into an empirical concept which becomes the cause of the sensation.

Ce retour est manifestement instantané, et il est aisé de comprendre pourquoi il faut qu'il en soit ainsi. L'ontologie entière du sens commun, une fois constituée et nous savons tous qu'elle se trouve dans cet état, entièrement achevée, dès qu'en ouvrant les yeux ou en étendant la main nous commençons à percevoir - facilite manifestement de manière merveilleuse nos rapports avec les choses.¹⁰

The concepts of common sense are empirical because they arise out of sensations and ontological because the a priori transplants permanence into them. Thus, Meyerson can argue that the attempt to limit the study of phenomena to their relations is illusory, as the appearance of a sensation spontaneously triggers an investigation into its cause.

Le positivisme prétend qu'un objet, pour la science, n'est qu'un ensemble de rapports. C'est à tort, car la science, d'accord, avec le sens commun, suppose bien que ces rapports se rattachent à un

10 Essais, p. 183.

support, elle affirme l'existence du substrat."¹¹

The homogeneity of common sense, on the other hand, means that men will generally recognize the same reality as being the cause of their sensations.¹² Meyerson assumes that the process of hypostasis is the same for all.¹³

Common sense is not only a belief in the existence of an object at the actual time of a sensation but also during the intervals when no corresponding sensations occur. Thus I can recall for example the town of Port Cartier and although I am not there at the moment I am nonetheless convinced that it exists. The existence of objects in the absence of sensations says Meyerson, can only be explained by having recourse to memory, to imagination, and to some surrogate of identity such as the

11 Ibid., p. 191.

12 Cf. I.A., p. 380.

13 Meyerson also supposes the animal capable of forming concepts by an application of the same process of hypostasis. Cf. Essais, pp. 8-9. The intellects of man and the animal are similar in this respect but differ in that while qualitative knowledge satisfies the "intellect" of animals, it does not satisfy the intellect of man. In short, both man and the animals form empirical concepts while man alone enjoys metaphysical concepts.

state of potentiality. Memory, first of all, plays a very important role in the formation of concepts.¹⁴ Our author is of the opinion that the hypostasis of sensations stripped from all that memory brings to it would in effect reduce the flow of sensations (Bergson's stream of consciousness) to discontinuous states. Thus the ontology of common sense does not consist merely in the hypostasis of an actual sensation but of all that is stored in memory and the imagination and that is related to the stimulus. This means in effect that we are convinced of the existence of all that can be recalled or imagined not only at the moment of a sensation but also in the absence of the sensation.¹⁵

Un objet n'est pas l'hypothèse de la sensation, tactile, olfactive etc. momentanée, il est celle de l'ensemble des sensations de toutes sortes que je me rappelle avoir éprouvées (...) ou que j'imagine avoir éprouvées.¹⁶

14 Cf. I.R., pp. 354-360.

15 To my knowledge Bergson provides no criterion of truth whereby we could distinguish a being of reason from a real being. Strictly speaking his philosophy is not concerned with this distinction, excepting what appears to be a pragmatic criterion of truth, namely that we have reasoned correctly if nature behaves in conformity with the manner demanded by the relation of concepts.

16 D.R., p. 17.

This is an interesting affirmation. It adds additional support to our belief that Meyerson substitutes the term for the process of knowledge. Our reasoning in this instance is as follows: The function which Meyerson ascribes to memory does not only figure in the production of empirical concepts but also in the formation of necessary relations. The proof of this lies in Meyerson's affirmation that the delineation of memory results in the destruction of the logical relation, that is, in the reduction of the stream of consciousness to discontinuous data. In other terms, the outcome of Meyerson's doctrine of concept formation is that it pertains to concepts qua metaphysical to transform empirical successions into logical relations while the omission of memory will negate this effect of abstractive reason. Not only does Meyerson fail to distinguish between sense memory and intellectual memory but his fusion of both into elements which are at once rational and empirical, renders any clear cut distinction between the term and the process of knowledge dubious. What parades before reason from the moment of concept formation to the moment of concept insertion into the real is a hybrid of data which is perpetually (dialectically) empirico-rational.

The supposition that the memory of sensations is hypostatized as well as the actual sensation leads Meyerson to recognize that reality must be in some respect nothing more than a possibility of sensations. In fact, since the actual sensation is but little in comparison to the stock of sensations which we experience in a life time, reality is seen to be primarily a conglomeration of possible sensations. Further, how else, Meyerson asks, can we explain the appearance and disappearance of sensations? Since sensations do not exist in us during their absence, the postulate of identity in time demands that they exist elsewhere. "Il est, en effet, manifeste qu'aucune hypotase n'est concevable, si nous n'admettons la possibilité d'une existence en puissance."¹⁷ The state of potentiality enables Meyerson to affirm the existence of a sensation in the absence of a sensation. The most logical and the most complete formula of the hypostasis of sensations would be to suppose that things themselves¹⁸ experience sensations.

Or ceci, exprimé dans le langage de tout le monde, implique évidemment la croyance que nos sensations,

¹⁷ E.S., p. 332.

¹⁸ Cf. I.R., p. 361.

en tant que telles, peuvent se promener (si l'on ose dire) au dehors. C'est bien là ce que suppose le sens commun.¹⁹

The affirmation that reality exists in the absence of a sensation, that is, as a possibility of sensation, leads us to affirm the existence of a sensation in the absence of a sensation. Yet it is necessary to so conceive of reality. Nor is the contradiction appalling to explanatory reason for, on the contrary, the state of potentiality is an artifice which reason is relieved to find because it is promissory of identities. It is used wherever identity is manifestly lacking and is required most.

"Là où la tâche d'égaliser l'antécédent et le conséquent apparaît comme trop ardue, l'intellect humain a forgé un concept spécial pour suppléer - celui de l'état de puissance."²⁰ The state of potentiality enables reason to function where it would otherwise meet an irrational "si l'on n'avait recours au concept de puissance on ferait

19 R.D., p. 16.

20 E.S., p. 321.

oeuvre fort ennuyeuse."²¹ The contradiction of actuality and potentiality is in effect an instance of the antinomies which reason requires in order to operate. The Meyersonian reason is not only paradoxical but the flow of reason requires contradictories in order to operate. Thus the distinction between the states of actuality and potentiality is at once irreconciliable and necessary. It is irreconciliable because it is absurd to postulate the existence of that which does not manifest itself, while it is necessary because reason must attain identities at all costs "le concept de puissance (...) n'est que le bouch-trou de celui d'identité."²²

Surprisingly enough, Meyerson believes that he is defending the view of naive realism.²³ He is firmly convinced that objects exist independently of sensations and that knowledge begins in experience.²⁴ In effect the rational apparatus is to be regarded as a defense mechanism

21 Ibid., p. 329.

22 Ibid., p. 327.

23 Cf. R.D., p. 17. Cf. also C.P., p. 362, and p. 471.

24 Cf. C.P., p. 580.

of sorts against fugitive sensations. Without the stimulus of the senses, the knowing activity could not take place.²⁵ Given a sense datum however, the intellect spontaneously transforms it into a permanent concept. What we experience upon awakening each morning are objects.²⁶ But what is the relation between sensations, perceptions and reality? The existence of reality must obviously precede the perceptions to which it gives rise. However, since the origin of empirical concepts is entirely unconscious, the awareness of sensations, as of the reality which gives rise to a sensation, is the result of a deduction.

Par quelle voie le concept d'un réel indépendant du moi se crée-t-il en nous? Il naît, cela est évident, instantanément et intégralement, dans le sens commun. Dès que j'ouvre les yeux le matin, dès que je remue la main, je PERÇOIS (*italics are mine*), et ce terme même explique que mes organes de sens m'apparaissent comme ne jouant qu'un rôle purement passif, comme recevant des impressions venant du dehors, d'un réel préexistant à la sensation. Ce n'est que par une analyse ardue que j'arrive à comprendre que la sensation primitive, la DONNÉE IMMÉDIATE (*italics are mine*) de la conscience, avait un caractère tout autre, et que le monde des objets constitue une élaboration postérieure.²⁷

25 Cf. Ibid., p. 104. Cf. also D.R., p. 142.

26 Cf. Essais, p. 14.

27 R.D., p. 12.

This is a clear admission to a rationalism. Meyerson does not affirm reality to be presented directly to consciousness in perception but to be attained at the term of a deduction.²⁸ Sensation constitutes a data of first rate importance. It enables Meyerson to deduce the existence of the real. Further, "we perhaps even create the outside wherein to lodge them."²⁹ It also follows that reality cannot be known as it is in itself.

D. The Elimination of Diversity

The second phase of the Meyersonian doctrine of concept formation consists in the identification of concepts which the hypostasis of sensations has produced. The two differ in this that whereas the first results from a spontaneous and unconscious reaction of reason to the fugitiveness of sensations, the second is a voluntary manipulation of concepts. Since the operations of the Meyersonian reason all make use of identification, the distinction can be put more simply as that of passivity in the first movement and activity in the second. Yet

²⁸ Cf. I.R., pp. 306, pp. 361-362, p. 387 and E.S., pp. 573-576.

²⁹ I.R., p. 377.

this distinction is itself in need of clarification less misinterpretations should occur. The Meyersonian structure of identification is never passive in se but is passive with respect to the primacy of sensations. Without the stimulus of sense data, knowledge could not take place but given the action of bodies on the senses, the mechanism of reason is spontaneously put into action. The second movement of reason however is not simply that of a response to stimulus but is itself an active reading into concepts in order to further impose the mold of identity on them.³⁰ Thus whereas the hypostasis of sensations gives rise to the empirical concepts of common sense, the heart of the rational operation consists in the active identification of these concepts. The empirical concept is made the object of intensive investigation as reason probes it in order to discover within its folds the sufficient reason of a consequent "nous rattachons l'antécédent et le conséquent par un lien rationnel, en démontrant que le conséquent est la conséquence nécessaire de l'antécédent."³¹ In other words,

30 Cf. E.S., pp. 153-155.

31 Ibid., p. 155.

while the first operation of reason grasps empirical concepts, the second operation compares these concepts in order to establish metaphysical concepts or logical relations of identity that will transform the empirical succession into a necessary relation. The first is determined by sensations while the comparison of essences is directed by reason. We are at the heart of "la déduction mathématique" and of the movement of reason from identities to diversities and to increasingly penetrating identities. Also, since deductive reasoning operates on concepts that obtain from the hypostasis of sensations, the a priori - a posteriori character of knowledge is in evidence. The error of rational mechanics is to overlook the fact of reality's recalcitrance, namely that certain data (the known irrationals) do not lend themselves to hypostasis. The error of systems of global deductions, on the other hand, (such as with Descartes and Hegel) is to believe that the a posteriori can be deduced from rational principles alone. Thus the Meyersonian noetic affixes a primordial role to the hypostasis of sensations, not only in the sense of providing reason with concepts on which to operate, but also in that it cannot be neglected, as is proposed by the

systems of global deductions. Further, it affixes equal importance to the active manipulations of reason and since these identifications are necessarily consequent to the formation of empirical concepts, it warns against the abuses of rational mechanics. On the whole however, Meyerson's observations are not meant in a normative sense but as an illustration of the interdependence and mutual tempering of sensa and rationality in the origin of concepts. The propositions of science are all said to be plausible in this way. This aspect of it is important. The character of plausibility marks the point of transition from the situation of the cogito to the epistemological paradox in the philosophy of Meyerson.

The first movement of reason gives rise to a concept which Meyerson affirms to be ontological that is, as real as the reality which it explains namely, the cause of the sensations. Because the second movement of reason operates on concepts according to a schema of conscious identifications, it follows that the identities which reason discerns therein are homogeneous to empirical concepts. Reason cannot replace a concept by one that is heterogeneous to it. The selective products of comparative reason according to Meyerson, are as ontological as those they are called on to displace. Thus there is a fundamental

continuity between common sense and science. The constructs of science (electrons, atoms, etc..) are as real as the ontology of common sense. In other words, the fruits of discriminative reason bear a reference to real things. But extramental reality is diverse. On what basis do we predicate unity from such multiplicity? The most successful forte of reason is the method of analogy. It enables the intellect to retain identities while abstracting from differences.³² "C'est par cette voie uniquement que nous cherchons à saisir véritablement, c'est à dire, à nous expliquer le réel."³³ The movement of reason utilizes analogy of a particular sort. "Car elle n'est point saisie par l'intellect, mais tout au contraire IMPOSÉE par lui à des concepts qui, à première vue, paraissent entièrement rebelles à un tel traitement."³⁴ To wit, the use of imaginary numbers. The fundamental

32 Cf. E.S., pp. 615-620. Analogical reasoning is regarded by Meyerson as being a successful method for obtaining identities where they are manifestly lacking.

33 Ibid., p. 618.

34 C.P., p. 406. Italics Added.

interaction³⁵ and continuity between the data of common sense and the conscious constructs of reason forces us to look on imaginary numbers as though they were real. "Si l'on introduit des imaginaires, c'est pour les faire évoluer, sous certains rapports, comme des grandeurs réelles."³⁶ The process of identifications whereby Meyerson uses of analogy is negative. It consists in the ignoring of differences for the sake of residual identities.³⁷

...le schéma fondamental lui-même est caractérisé précisément par un summum de simplicité. Ce QU'IL POSTULE, EN EFFET, CE N'EST MÊME PAS UN CONTENU AFFIRMATIF, (*italics are mine*) mais plutôt quelque chose de purement négatif: Il proclame l'incapacité de la raison à comprendre le divers..³⁸

³⁵ The float of reason from sensations to the comparison of concepts is one of rapid and continuous deductions and inductions. Meyerson quite naturally assumes the activity of unconscious reasoning (hypostasis) to be similar to the activity of discriminative reason (the comparison of concepts) Cf. E.S., p. 620.

³⁶ C.P., p. 409.

³⁷ Cf. Ibid., p. 56 and T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, p. 23.

³⁸ Essais, p. 9.

The most striking feature of this doctrine is Meyerson's insistence that identities result from the imposition of the a priori mold of identification on diversity; first through a hypostasis of sensations and second through the eliminative (analogical) schema of conscious identifications. The same process is maintained throughout. It is this aspect of the problem that leads us to believe that Meyerson confuses the term for the process of knowledge, as there is no distinction between the origin of empirical concepts and the origin of metaphysical concepts in this respect.

II. The Nature of Concepts

Our investigation into the origin of concepts has revealed a twofold operation of reason on the data of sensation; the first (unconscious) transforms sense data into concrete concepts and the second, being the nucleus of the rational activity, manipulates concepts in order to discover in them relations of logical necessity.

Il reste donc que l'opération logique soit la traduction, dans la pensée, d'une opération, d'un acte réel, ayant pour points de départ, pour substrats, ³⁹NON PAS DES OBJETS RÉELS, MAIS DES CONCEPTS, DES IDÉES.

39 C.P., p. 349. Italics Added.

That Meyerson should take the idea to provide the starting point of the knowing activity is a direct consequence of the plausible character which he ascribes to propositions. Knowledge is the result of a mixture of a priori and a posteriori. Thus reality remains in itself forever inaccessible. What is first known is the product of the interaction between the causal postulate and the data of sensations namely, the term of a spontaneous and unconscious hypostasis of sensations. Meyerson can provide no other starting point for having set before himself the task of fusing the identity-diversity couplet, reality remains forever estranged from the grasp of abstractive reason. The concept in the philosophy of our author represents the idea of reality as a persistent residuum along-with-differences. What Meyerson takes to be the concept is in effect a structured datum, an idea.

A. The Ontological Status of the Concept

The quote which we cited above is illuminating, as Meyerson is seen to use the terms concept and idea synonymously. At a first glance this seems to result from his desire to remain neutral in matters of epistemology.⁴⁰ As

⁴⁰ The remarks which our author addresses to I. Meyerson offer further confirmation of this disinterest. Cf. C.P., p. 122, footnote 27, C.P., p. 793. Cf. also Ibid., p. 36.

we saw earlier, his work is an investigation of the psychology of scientific reasoning. He is not concerned with the epistemology which underlies philosophic discussions but with the ontological preoccupation of scientific thought. Further, the words concept and idea as they are commonly used by him are also understood to be neutral in respect to metaphysical systems.⁴¹ "Incapable de fixer son choix entre les systèmes, la science tout en ne pouvant se passer de métaphysique, se trouve cependant au fond...comme dans un état d'indifférence."⁴² Meyerson's work is not intended to justify a metaphysical system. Yet his concern with positivistic epistemology means that he must pronounce himself on the ontological status of concepts. This is a difficult matter for Meyerson to do. The epistemological paradox means that on the one hand the concept must represent the perdurability of something external to the cogito. While on the other hand, the concept results because reality

⁴¹ Cf. C. SPERLING, Reason, Space and Reality in the Philosophy of Emile Meyerson, p. 37 footnote 2. "Thus it is left open whether the concept of external reality represents an idea of reason or a concrete reality existing independently of reason" Cf. also E.S., p. 12 and C.P., p. 716.

⁴² E.S., p. 556.

is not in se perdurable (the irrationality of diversity). Meyerson is caught up within this dilemma because he confuses the idea of perdurability for the being of reality. He consequently makes the claim of knowledge dubious, as what parades before reason is not the being of extramental reality out the mental contents of perdurability-along-with-differences. Unless a concept functions in a representative capacity reason will not be ontological. There will be no reference within the concept to the real since nothing in the nature of concepts will correspond to the nature of the real. Thus Meyerson's inability to decide the issue of the ontological status of sensations and of concepts in particular, is more than the expression of a desire for neutrality in these matters. It evinces the fundamental incapacity of science to solve metaphysical problems. Although science is metaphysically neutral, that is, it cannot pronounce itself on a data which is not its own, it does not follow that it can dispense with all philosophy, or for that matter that it should hope to become the perfect philosophy - which is the same thing.

...en un sens général toute philosophie et, en particulier, toute métaphysique sont nécessairement philosophie de la nature. Car philosophie veut, nous semble-t-il, dire essentiellement accord, et ce que cherche le philosophe, c'est donc à établir un accord entre ses pensées d'abord et entre ses pensées et ses

sensations ensuite: Ce que faisant, il ne peut suppléer à son savoir insuffisant que par des suppositions, des hypothèses sur l'essence du réel, c'est-à-dire entre dans le domaine de la philosophie de la nature. *LE PHYSICIN LE PETIT, DE SON CÔTÉ, NE PROCÈDER DE L'ÊTRE.*⁴³

Heyerson's failure to distinguish between empiriometric and philosophical explanation means that he conceives of explanation in one way only, namely, in terms of mathematical beings of reason. But to eliminate the philosophy of nature is to invalidate the metaphysical enterprise because metaphysics is in contact with reality through the philosophy of nature.

Without a philosophy of nature which is subordinate to the natural sciences and subordinate to metaphysics and which preserves the contact between philosophical thought and the universe of the sciences, metaphysics has no contact with things and can only fall futilely back upon the knowing or willing mind itself.⁴⁴

The objects of mathematics exist only in the mind. Heyerson is bound up within this coqito and he cannot pronounce himself on the transient nature of concepts. Admittedly,

⁴³ Essais, n. 60. Italics added.

⁴⁴ J. HEYERSON, The Philosophy of Nature, n. 122.

the Meyersonian concept is desirous of ontology, that is, since it arises from the hypostasis of *sensa* it is a search for the cause of sensations but having taken the quod of identification to be the quo of reality it is unable to fulfill this ambition. Thus having confused the idea and the concept Meyerson has unwittingly taken a stand on the unknowability of reality. The character of plausibility of which all scientific propositions are imbued offers a direct confirmation of this. Meyerson's inability to decide the issue of the ontological status of concepts leads directly to it. Thus the epistemological paradox is a sign of something far more serious, namely of an inadequate metaphysics. Meyerson requires that the concept function ontologically, that is, that it be realistic but does so by making the real of the idea. Thus the concept is at once of the real and of the idea. The contradictory nature of a concept which is at once the real and not the real is a perpetual source of difficulty in this philosophy. The investigation of plausibility from the side of the a priori underlies the movement of convergence and reason dissolves its object into non-being, while the consideration of plausibility with the emphasis placed on empirical data means that reason cannot penetrate its object. Meyerson's position involves the contradictory supposition of a concept

that is at once a quo and a quod; a compositive mixture of a priori and a posteriori elements. In other terms, the concept must be a quo in order to evince the ontological structure of reason - the refutation of positivistic epistemology depends on it, but when all is said and done there is no reference within explanation to the real because the representative function of concepts is denied as it is the idea of perdurability which creates the real. Thus the real is not attained by way of an intentional union but by turning within the self and making of the quo a direct object of intellectual examination. Since the nature of concepts which Meyerson envisages is partly empirical and partly rational it is overloaded. The Meyersonian concept could never represent the real because tertium quid unions always render knowledge of the component parts impossible. The real can never be attained as it is in itself.

III. The Function of Concepts

A. La coh rence des attributs

The coherence of attributes refers to the intrinsic structure "la structure fioreuse"⁴⁵ of reality, that is,

⁴⁵ Meyerson borrows the expression from Lord Balfour. Cf., C.P., p. 138.

to the ciment which unites subject and predicate or bonds attributes into a subject. The coherence of attributes in an essence expresses the view that the properties of a substance are determined by the structure and thus that they can be identified with the essence. In short, Meyerson holds that there is identity between the inner nature of bodies and the ultimate arrangement of the particles; a view which quantitative analysis readily promotes. Thus the concept (*le genre*) results from the elimination of those attributes of bodies which are not coherent that is, which do not appear to go together.⁴⁶ "La raison suppose qu'un attribut, tout en ne cessant pas d'être essentiel, est pourtant moins essentiel qu'un autre."⁴⁷ Whatever remains is absolutely essential and is identified with the general concept. All members of the same class will exhibit the same essential properties

⁴⁶ The elimination of secondary characteristics in the formation of concepts and scientific laws is also used by Meyerson to defend the view that science is not geared exclusively to prevision for inasmuch as action is concerned, it is secondary characteristics which import the most. Cf. C.P., pp. 416-418.

⁴⁷ Ibid., p. 291.

and all other differences can be called accidental.⁴⁸ Actual thinking always progresses according to comprehension, as it is a natural disposition of reason to seek to reveal the subject as contained in the predicate. But in exposition the form of extension is used.⁴⁹

Since reason is incorrigibly metaphysical, genres are in turn hypostasized and treated as substances, that is, as carriers of attributes. "A *GENRE* (italics are mine) accordingly stands for Meyerson for a concept that is perfectly general yet, so far as the psychology of scientific thinking is concerned, regarded always in a realistic way."⁵⁰ The extrication of concepts by the identificatory structure of reason and their reintroduction into the real enables Meyerson to convert the flow of sensations into necessary relations.⁵¹ Concepts are manipulated by selective reason

48 What scientists take to be the essence of sodium, for example, consists in the description of the distribution of electrons about the sodium atom. This arrangement explains the properties of sodium. At first the shape of sodium might also have been thought to be an essential characteristic but after having examined a sufficient number of pieces, each with differing shapes, we come to the realization that shape is an accidental property and it is discarded.

49 Cf. Infra., ch. 5.

50 J. LA LUMIA, The Ways of Reason, p. 50.

51 Recalling for a moment that the structure of identification is made to attain the essence of things by

as though they were real things. Thus the concept functions above all as a TRANSMUTER of fugitive sensations into logical sequences. In other words all propositions formulating relations of experience are necessary inasmuch as they express the existence of a genre and of the coherence of attributes in it. "C'est l'idée qui constitue l'élément fourni par l'esprit qui doit être combiné avec la sensation pour produire la connaissance, et, s'il n'y avait pas de genre, tout savoir serait impossible."⁵²

B. The Convergence of Concepts and Reality

The identification of the concepts of perception presupposes in order to be fruitful, (not only of explanations but also of predictions), that the structure of reality and the structure of identified concepts are the same, or at least partially so.

L'esprit raisonnant sur le réel est obligé de le supposer rationnel et que, dès lors, l'aspect sous lequel il considère de préférence une proposition est au fond celui de la cohérence des attributs et par conséquent celui de la compréhension.⁵³

(51 Con't) converting change into steadfastness, Cf. C.P., p. 614, it is not surprising to hear Meyerson say that the explanation of becoming is rooted in the insertion of permanence. Further, reason does not seek to reconcile the paradox (that permanence should be used to explain becoming) but floats from one to the other, taking its data from flow and its necessity from permanence.

52 C.P., p. 37.

53 Ibid., p. 231.

Unless we suppose that reality conforms, in some measure at least, to the ways of reason, the knowing enterprise will not take place. The assumption "que les lois formelles de la pensée ont une valeur non seulement subjective, mais encore objective,"⁵⁴ leads Meyerson to two considerations; first, that the real is created by reason⁵⁵ and second, that whatever reason creates is ontological. The structure of reason is such that whatever it manipulates immediately assumes an ontological character.⁵⁶

La foi en l'accord entre la raison et la nature constituant ainsi la présupposition d'où l'on part, il n'est que naturel que l'on traduise immédiatement toute observation relative à l'essence de la pensée en affirmation concernant la nature des choses.⁵⁷

Thus the most pressing task of philosophy (science)⁵⁸ is to

⁵⁴ Ibid., p. 51.

⁵⁵ The concept of an objective real results from the hypostasis of sensations. Thus what is first given as subjective is instantaneously made objective that is, made to be real as a result of the activity of reason

⁵⁶ Cf. Essais, pp. 67-69.

⁵⁷ Ibid., p. 69.

⁵⁸ The function of philosophy (including the philosophy of nature and metaphysics which Meyerson does not distinguish) is generally understood by him to consist in the analysis of the adequatio between reason and reality "la propension vers ce que nous avons qualifié de philosophie de la nature en son sens large n'est autre chose que la

delineate the degree of conformity between reason and reality. The convergence of reason and reality is not a

(58 Con't) manifestation tangible de la tendance générale qui domine l'esprit humain en ses rapports avec le réel, à savoir la tendance à croire à la rationalité de ce réel" Essais, p. 61. The scientist is generally unacquainted with the process he is applying and consequently ill equipped to fix the limits of reasoning. Thus there is need of a special discipline which will delineate the philosophy of nature from the philosophy of mind (Meyerson's terminology, Cf. Ibid., pp. 59-105), that is, distinguish the a priori from the a posteriori and determine what in knowledge is owing to the one and what obtains from the other. However, Meyerson also attributes this task to the scientist, as we saw in our study of the irrationals. Cf. also C.P., p. 697. Further, the domain which is supposedly ascribed to philosophy is seen to recede each time progress is made in the physical sciences. In other words new scientific discoveries lead us to the recognition of what had been ascribed to reason as belonging to reality. Cf. H. SÉE, Science et philosophie d'après la doctrine de M. Emile Meyerson, pp. 89-96. Sée is of the opinion that the Meyersonian science will not succeed in absorbing philosophy because of the residues which science is forced to leave behind at each reduction. Thus he proposes a defense of Meyerson's distinction but he nonetheless concludes, as does our author, that the domain of philosophy (being the residues of science) is constantly receding. The relativity space of Einstein provides one such instance for we are now aware that the concept space is not a pure a priori form of reason. Cf. Infra., 3, 1, 2, B. Thus what Meyerson had set as a task of philosophy has in effect been accomplished by science. Not only does Meyerson fail to distinguish between the orders of speculative knowing but also he leaves no room for philosophy of any sort. The only way in which we could uphold the coexistence of philosophy and science would be to maintain as does G. Bachelard that the "residues" of science are not on the decrease but on the increase. Cf. G. BACHELARD, Le rationalisme appliqué, Paris, P.U.F., (1949), p. 171. In other words, that each new discovery of science confronts

reciprocity of the two in Hegel's sense since reason (identification) cannot draw the diverse from itself. It is rather a matter of determining where the intelligibility of reality stops. In other words, we must determine to what extent the order and connection of concepts (idees) is the same as the order and connection of things "nous avons raisonné juste si les événements suivent le cours que notre raison avait prévu."⁵⁹ In short, Meyerson believes that the determination of conceptual connexities explains the real.⁶⁰

C. Concepts Function as Real Objects

The metaphysical neutrality of positivistic epistemology inspires the central part of Meyerson's doctrine of concepts. Science is realistic because its point of departure is common sense. Further, the concepts of science, according to Meyerson, **are** not only empirical

(58 Con't) us with an increasing multiplicity of diversities; a view which Meyerson himself never maintained.achelard's comments are not intended as a defense of Meyerson but rather as a critique of his epistemology.

⁵⁹ C.P., p. 13.

⁶⁰ Cf. A. OREST, "Du cheminement de la pensée par H. Meyerson," in Revue thomiste, 15, (1932), pp. 426-438. Cf. also C.G. STEHLING, Reason, Space and Reality in the Philosophy of Emile Meyerson, pp. 44-45.

but also metaphysical. In short, science does not only describe sensations (a metaphysics of laws) but is realistic (ontological). "It is for the sake of explanation that science seeks things. It can have its laws without them but when it asks, as it inevitably does, why the law is so and so, it must have things."⁶¹ All explanations are explanations of reality. The scientist treats conceptual constructs as though they were real things. In brief, the atom and the electron, the concept of mass and of force are each treated as a category of the real,⁶² "telle est aussi l'essence de tout ce dont nous peuplons ce réel."⁶³ Thus the concept in the philosophy of our author is made to function as the direct object of an intellectual operation and becomes the very thing known. What is known is not reality as it is in itself but as it is the object of a mental act.

61 G. SOAS, A Critical Analysis of the Philosophy of Emile Meyerson, p. 80.

62 Cf. E.S., p. 115. Cf. also R.D., pp. 13-15.

63 C.P., p. 585.

Nous avons, en somme, après avoir abstrait le concept, après avoir transformé étrangement pour en faire une chose ce qui n'est que de notre esprit, hypostasié ce concept, replacé l'abstrait dans le réel, feint si l'on veut, qu'il était réel, afin de pouvoir agir sur lui de manière réelle, observer comment il se comportait dans le réel (...) l'objet proper de notre savoir scientifique n'est et ne peut être qu'un genre...⁶⁴

The concepts of common sense are transformed into objects and reinserted into the real as explanations of the real, that is, uniting under one roof as it does the antecedents and consequents of change, the concept according to Meyerson, contains within its folds the sufficient reason of becoming.

In summary, the Meyersonian noetic is seen to develop as follows; 1. The spontaneous and unconscious hypostasis of sensations into empirical concepts. 2. The formation of metaphysical concepts through the identification of empirical concepts. 3. The reinsertion of metaphysical concepts into the real. In short, Meyerson explains phenomena through the formation of empirical and metaphysical concepts and the transformation of the latter into concrete realities. Necessity is exhibited from the side

⁶⁴ Ibid., p. 353.

of reason. Diversity is not the source of intelligibility. Further, we could not suppose permanence to derive from the object rather than from causality, as both common sense and the tendency of reason to push its identifications to the limit would be unexplained. "La supposition d'un facteur ressortissant à l'intellectus in se leibnizien, d'un a priori pur dans le sens de Kant, est de beaucoup la mieux adoptée à la véritable marche de l'intellect."⁶⁵

D. The Insufficiency of Common Sense

From the above analysis it is clear that although common sense provides the necessary ontology from which all knowledge begins, that it is nonetheless insufficient. However, since both common sense and the theories of science are engendered by the same explanatory structure of reason it also follows that the one will continue the other.⁶⁶ The continuity from the conceptual objects of common sense to the figurative theories of science is a maxim of reason. Science is but a prolongation of common sense.⁶⁷ Reason cannot replace a concept by one that is heterogeneous to it.

⁶⁵ Essais, p. 82.

⁶⁶ Cf. D.R., p. 347.

⁶⁷ Cf. I.R., p. 354.

Ainsi, non seulement le point de départ de la science est ontologique, puisque c'est le monde des objets du sens commun, mais quand elle abandonne ces conceptions ou quand elle les transforme, ce qu'elle adopte ainsi est aussi ontologique que ce qu'elle abandonne.⁶⁸

Both scientific theories and common sense contain empirical elements. But while common sense is a preliminary introduction to ontology, the task of science is a more arduous probe into ontology. The scientist replaces the ontology of common sense by a scientific ontology of greater perdurability and intelligibility. Thus science not only continues common sense, but what it proposes is more realistic than the objects of perception. It is reason which straightens the stick that appears bent in water, reason which colours the tree that appears dark in the distance, reason which enlarges the aircraft that looks minute in flight etc. In short, Meyerson says that reason remedies the insufficiencies of common sense.

La raison, dès qu'elle commence son oeuvre de recherche scientifique, se voit obligée de constater l'inconsistance de l'image que la simple perception lui présente (...) et elle ne peut faire autrement que de lui substituer une image différente, celle des théories.⁶⁹

68 E.S., p. 39.

69 Ibid., p. 511.

The considerations adduced in support of this transformation center on the insufficiencies of the qualitative representation of things. "Qualitative theories stop at the explanation of becoming and do not aspire to give that of being."⁷⁰ The advantage of quantitative analysis is that it more readily admits of identifications.⁷¹ The veritable aim of science is to transform empirical concepts into quantitative concepts which themselves metaphysical. Thus our author holds to quantity as being substantialistic, that is, he treats quantity as it was a category of the real. "C'est un monde idéale, un monde de concepts mathématiques qui se substitue au monde des réalités sensibles du sens commun."⁷² The atom, the electron, mass, force, energy, etc., are not only real things but are themselves more real than the concepts of common sense because being the result of quantitative considerations, they are more perdurable (ontological) than the qualitative concepts of common sense. This, according to Meyerson, is evident from the fact that

70 I.R., p. 344.

71 Cf. D.R., p. 11.

72 E.S., p. 523.

these concepts arise at the term of a number of identifications, whereas the concepts of common sense require but one, unconscious, identification.

E. Mathematics: The Queen of Reason

The consideration of quantity as a structure of the real is the product of a double transposition of reason from sensa to empirical concepts and from general concepts to qualitative structures. Three considerations follow from this. First, the operation is not entirely a priori, second, it entails a reversal and third, quantity is looked at ontologically.

a. The Operation is not Entirely A PRIORI

The ideal of reason is to deduce the real from rational principles alone. The failure of global deductions however, means that this ideal is not realizable. First, reason should it succeed, would posit itself into non existence (or rejoin solipsis which is the same thing.) Second, the irrationals evince some measure of divergence between reason and reality. Third, the causal postulate cannot draw the diverse from itself. Thus there is need to recognize a reality which is at once external to reason and partially recalcitrant.

Le qualificatif de rationnelle ne semble-t-il pas indiquer, en effet, que nous prétendons tirer cette science uniquement de notre raison? Il est cependant

facile de reconnaître que ce n'est, en l'espèce, qu'un trompe-l'œil... nous ne concevons plus cette rationalité comme absolue, mais simplement comme relative.⁷³

b. The Reversal

All rational operations make use of the same process of identification⁷⁴ but the advantage of mathematics is that having derived its elements from experience it can then abstract from these elements and concern itself exclusively with pure deductions without fear of contradiction. In physics, on the other hand, we are dealing with real beings, that is, with concepts, the objective existence of which we readily suppose. Although the mathematician also treats of concepts as though they were real things, he does not have to affirm their existence as such in nature.

Un concept mathématique n'est qu'une idée, et le mathématicien a eu beau le manier et le remanier, le réintégrer en apparence dans le réel pour l'y faire évoluer à l'instar d'un réel, tant que tout cela est resté dans le domaine des mathématiques pures, on concevait que cet irréel se trouverait éliminé dans les conclusions auxquelles on aboutirait.⁷⁵

In short, the concepts of physics are more restrictive than

73 Ibid., p. 567.

74 Cf. C.P., pp. 686-687.

75 Ibid., p. 466.

the concepts of mathematics. The concept quantity is a being of reason which we transform into a real being.⁷⁶

In other words, the existence of numbers is not qualitative but we treat of them as though they were real beings because quantity presupposes quality.

En vérité, il n'y avait de réel concret que les cailloux que nous avons comptés. Mais nous avons affirmé que le nombre, être abstrait, se comporterait exactement comme ces ~~concrets~~ concrets que nous pouvions manier de façon appropriée.⁷⁷

The treatment of abstract numbers as though they were real means that it is no longer general concepts which represent the real but the concrete which verifies the abstract. "Le réel particulier dont, par l'image, nous avons l'air de suivre le comportement ne fait que représenter le concept général, qui est le seul dont l'évolu-

⁷⁶ Cf. Ibid., pp. 391-393. The emphasis in science has shifted from a consideration of the primacy of reality over measurement to a primacy of quantitative relations as they engender substantialistic considerations. This entails a reversal because the abstract manipulation of numbers, such as imaginary numbers for example, requires that verification takes place in the concrete order "...ce que nous sommes appliqués à faire ressortir, c'est le rôle que joue ce réel (quelle que soit d'ailleurs son essence) en mathématiques." Ibid., p. 405. Thus whereas in physics the abstract represents the real, in mathematics it is the real which must be used to verify the abstract.

⁷⁷ C.P., p. 393.

tion intéresse véritablement la pensée."⁷⁸ Meyerson's reasoning on the reversal is as follows. First of all, quantity expresses the ideal of reason because it enables us to unite the essential attributes of the real namely, persistence and change into the same formula. Numbers figure as the essence of the real. The equality between $7 + 5$ and 12 means that without qualitative differences there could be no identities. It also means that the identity of numbers is obtained through a process of eliminating differences while retaining sameness. "C'est ce qui fait que persistance et changement se trouvant ainsi réunis, le mathématique s'offre, en quelque sorte, comme prédestiné à figurer l'essence du réel, comme constituant peut-être à lui seul cette essence même."⁷⁹ The 2 heaps of 7 and 5 stones which I have before me, for example, give rise to the general concept 12 . This concept readily figures as the essence of the real since it exhibits diversities as well as identities. Further, because the equation $7 + 5 = 12$ is empirical as to the hypostasis of *sensa* and a priori as

78 Ibid., p. 583.

79 Ibid., p. 392.

to the identity between *sensa*, it is evident that Meyerson finds in mathematics, confirmation of the plausible character of scientific propositions. He is of the opinion that the manipulation of such concepts represents the comportment of the real; that it relates to the coherence of attributes in an essence of real things.⁸⁰ If then we say that $7 + 5$ are, or better, make 12, we are dealing with abstractions from real objects. We are also convinced that there is identity between $7 + 5$ and 12 because all that has been changed is combining the two heaps of 5 and 7 stones are spatial dispositions which do not modify the essence of a thing. In short, the advantage of mathematical reasoning is that it enables us to attain identities while accounting for differences. However, since the constructs of science stray progressively further away from the world of common sense objects - and even to the extreme of abandoning it, as in differential equations, the real must be observed carefully. In general Meyerson would say that the results

80 It is also evident from this that Meyerson obtains the equating of scientific causality with identification from the consideration of a physico-mathematical science.

of the deduction are correct if they work. In short, mathematical reasoning is correct if the real evolves in the manner demanded by the substantialization of abstract concepts. Although negative numbers, for example, do not actually represent anything in reality, they are nonetheless made to evolve as real things as this procedure works. Thus the consideration of quantity as the essence of the real engenders a reversal in which empirical concepts function as verifiers of abstract manipulations. The reversal is necessary because the psychology of mathematics demands that abstract numbers be looked on as though they were real. Meyerson turns within, namely to the development of general concepts in order to explain the real and observes the comportment of empirical concepts in order to verify a particular cascade of mathematical deductions.

c. Quantity is Ontology

Is it legitimate to substantialize quantity in defense of ontology? Meyerson seems to think so "ce que l'interprétation ajoute aux données mathématiques c'est proprement de l'ontologie."⁸¹ In other words, Meyerson

81 U.S., p. 537.

believes that the transformation of quantitative relations such as those of mass and acceleration, caloric energy and temperature into force and entropy respectively etc., are ontological because such relations are persistent, quantitative and objective. The physicist, he argues, treats of these relations as though they were real things. The theories of science "ont précisément pour but de scruter l'être des choses, leur essence, afin d'expliquer par cette essence (...) le comportement des objects."⁸² Meyerson believes that the tendency to substantialize quantitative relations is in evidence throughout the history of scientific thinking. Reason cannot grasp what it cannot identify. Thus in order to identify, we must posit the persistence of something from antecedent to consequent which in effect is a substantialization of quantitative relations. This satisfies reason because the consideration of substance as objective and perduring throughout the flow of sensations constitutes an explanation of phenomena. Meyerson argues that the transformation of quantitative relations into

82 C.F., p. 125.

objective qualitative and persistent relations is proof of the invincible ontological tendency of reason. Now else, for example, can we explain the belief in the existence of immutable and indestructible atoms when sensations are themselves subjective and transitory, if not by having recourse to an explanatory tendency of reason which transposes qualitative sensations into quantitative relations and quantitative relations into objective and qualitative natures?⁸³

The transposition is never complete because mathematical reasoning is not wholly deductive. It results rather from a mixture of empirical elements and deduction.⁸⁴ Thus although there is a profound analogy between mathematical reasoning and the ways of reality,⁸⁵ there is always some aspect of the real which escapes mathematization and some aspect of mathematics which is beyond the real.⁸⁶ It is understandable that Meyerson should arrive at this conclusion

83 Cf. H.D., pp. 13-17.

84 Cf. Essais, n. 153, and nn. 163-167.

85 Cf. H.S., p. 496.

86 Cf. C.P., n. 709. Cf. also H.S., n. 568.

because haveing taken pure mathematics (that is, the global deduction of reality) to be the ideal of reason - the queen of reason - and plausible propositions to be the implementation of this ideal, the knowing activity is forever destined to be a compromise between empirical elements and pure deduction. "Tant que nous nous y tenons, les mathématiques nous apparaissent comme l'élément CONCILIATEUR ENTRE LA RAISON ET LES CHOSES. C'est ce que Platon semble déjà avoir reconnu.." ⁸⁷

IV. The Concept Matter ⁸⁸

The very first contact which we have with reality is sensation which, as we saw, Meyerson says gives rise to

87 C.P., p. 710. Italics Added.

88 The concept matter is used by our author in relation to reality, "one might speak of the MATERIAL (italics are mine) world, and this would be a synonym." I.R., p. 361. The 'concept Matter' is a well chosen designation for the material world, particularly in light of the fact that Meyerson holds to the creation of reality by reason "il (the object) aura été reconstitué à la manière dont le récepteur du téléphone redonne à la parole sa forme primitive, alors qu'elle a cependant cheminé, le long du fil, sous une forme très différente. (...) par rapport au moi, l'objet ne peut être, comme le dit Erdmann, qu'un postulat de la pensée." C.P., p. 362. The aspect which concerns us now is to discover the nature which objects must possess in order to be amenable to reason. The reconstruction of the external world is difficult since we are made to reason on what is attained unconsciously but Meyerson believes that it is possible. Cf. Essais, pp. 180-181.

the objects of common sense. The theories of science, on the other hand, result from quantitative (and therefore qualitative) transpositions. Thus reality must be a mixture of quantitative and qualitative elements.⁸⁹ The qualitative aspect of the real is of prime importance in so far as the ability to act is concerned (survival) while the quantitative aspect of the real pertains to the less pressing but equally important (instinctive) need of reason to explain phenomena. "...des que nous prenons à réfléchir à la véritable nature du réel, il est certain que le quantitatif est apte au contraire à nous apparaître comme primant la qualité."⁹⁰

Perception and explanation are complicated operations which our author does not distinguish clearly. Admittedly the one arises unconsciously, spontaneously and is qualitative, while the other is the product of a number of identifications and is quantitative, but Meyerson does not provide us with more information than this. Actually, perception and explanation arise together from the same tendency of identification as evinced by the fundamental continuity from one to the other. This aspect of the

89 *Id.*, D.h., p. 3.

90 Ibid., p. 5.

problem has led us to believe that Meyerson mistakes the quod for the quo of knowledge. The origin of the concept matter is equally ambiguous for we are told that the concept quality results from the hypostasis of sensations, while the concept quantity is the fruit of explanatory reason, and that both reside in the same reality, we are not informed as to where we derive the idea of a non-ego in order to place these concepts in it. Meyerson admits to not knowing the solution to this problem.

...the problem is to know how I was able to take the first step, to conceive even the possibility that something can exist outside of me, outside of my consciousness; how, supposing even that the concept of "an outside" comes to me from another source, I had the paradoxical idea of placing in it what is my own sensation, what belongs incontestably to me.⁹¹

The deduction of an objective real from subjective sensations does not come easily, as the work of Hume has amply demonstrated, but it is an indication that something is seriously wrong when reality must be deduced in this way.⁹²

91 I.R., p. 358.

92 Meyerson is critical of rationalist philosophers as they attribute too great a role to deduction. He criticizes Hegel for abusing logical deduction that is, for thinking that the real derives from reason. Cf. E.S., op. 352-355, and p. 391. He criticizes Descartes for abusing mathematical deduction, that is, for thinking that the real is wholly mathematical - or in other words for

The concept matter appears to contain a mixture of a posteriori and a priori elements.

We have no intention of attempting a complete deduction of this concept with the help of sensation alone; this perhaps is not possible, for it is not quite certain whether, the concept of matter being closely allied to that of space, there are not purely a priori elements involved depending on the very constitution of our reason.⁹³

Reality appears to be a mixture of qualitative attributes which inhere in a quantitative essence. The two are inseparable as evinced by "la coh rence des attributs dans l'essence" of which mathematical reasoning is the affirmation.⁹⁴ The evolution of science is marked by a transition from qualitative to quantitative analysis.⁹⁵

(92 Con't) neglecting the irrational. Cf. C.P., p. 515. That which he proposes in place is a fusion of reason and reality in a Kantian - Humean type of approach to knowledge. This gives rise to the plausible propositions of science which, as we have sought to show, is a perpetual source of difficulty. Like Kant, Meyerson believes that logical necessity does not derive from nature and must be read into it but is plagued with the justification of an a priori. Like Hume he exaggerates the primacy of sensations but is overcome by an a posteriori which is foreign to reason (the irrational).

93 I.R., p. 362.

94 Cf., C.P., pp. 436-437.

95 Cf. Essais, p. 25.

The quantification of quality offers the added advantage of enabling reason to impose identities while explaining diversities. "And thus it is that for the quality is substituted a magnitude capable of being added."⁹⁶ This substitution insures that scientific theories will be precise and rigid.⁹⁷ All that changes are spatial dispositions. The various groupings of spatial arrangements explain qualitative differences while safeguarding the fundamental identities of reason. Science has translated qualitative sensations into quantitative arrangements and explained phenomena. To be is to be extended. Reality is entirely spatial and the appearance of diversity is explained through various quantitative arrangements. It is not known how quantity gives rise to quality. Sensations are irrational. It is enough to recognize that we have substituted "a quantitative cause for a qualitative sensation."⁹⁸ The external world is totally unlike sensations

96 I.R., p. 342.

97 Cf. C.P., p. 249.

98 I.R., p. 362. Cf. also E.S., pp. 537-538.

and entirely reconstructed by spatial reasoning. Reality is unknowable in itself.⁹⁹ "A travers son oeuvre destructive de la réalité la science maintient les notions de temps et d'espace. C'est donc qu'en fin de compte elle conclut à un noumène soumis aux conditions du temps et de l'espace..."¹⁰⁰ When all is said and done, reality is an extension of spatial reasoning.

...pour que la science ait pu tenter d'expliquer les phénomènes par l'espace, il faut bien que, non seulement il y ait accord complet entre la géométrie et la réalité, mais qu'en outre les figures géométriques gardent dans notre imagination quelque chose de mystérieusement substantiel, une certaine corporéité...¹⁰¹

Meyerson has presented us with an image of reality which is wholly constructed on the patterns of spatial reasoning. The essence of reality must now remain forever estranged from the grasp of reason. Yet somehow the real exists. No one, says Meyerson, saw this distinction of essence and existence better than Kant. "Il nous apprend en effet, que nous pouvons être amenés à conclure à l'existence de ce dont l'essence nous demeure cachée."¹⁰²

99 Cf. D.R., p. 354 and p. 382.

100 H.S., v. 520,

101 Ibid., p. 530.

102 R.D., p. 22.

V. Criticisms

The criticisms which eminent thinkers have levelled against the philosophy of Meyerson are as wide as they are varied for they range from accusations of empiricism to accusations of idealism. We will treat of these as they arise concerning the origin, nature and function which concepts are made to play in this philosophy. That which concerns us in particular is the metaphysical foundation of the epistemological paradox. It seems to us that the plausible proposition is a direct consequence of the epistemological paradox. The paradox, in turn, is Meyerson's emergency exit from the cogito. It could not be otherwise for having posited an activity of reason prior to the rational operation itself, Meyerson attains reality in the only way left open to him namely, as an extension of spatial reasoning. This is abundantly clear from the nature of hypostatic reality, for when all is said and done, to be is to be extended. The divergence - convergence aspect of the epistemological paradox belies a hermetically sealed cogito. The real is now either totally like spatial reasoning, in which case solipsism is inevitable, or it is not amenable to it, which is positivism. The epistemological paradox is proof that Meyerson is bound up within the cogito in this way. His decision to fuse both extremes in plausible

propositions is not acceptable. The proof of this is that it results in a hybrid noumenal and hypostatic tertium quid.

A. On the Origin of concepts

Meyerson's doctrine of concept formation depends on a movement of reason from diversities to identities. Since the path which reason takes in order to form identities cannot be determined in advance "il ne s'agit que d'une direction grosso modo,"¹⁰³ Meyerson's doctrine is understandably obscure. We are certain at least that the concept results from the fusion of empirical elements with the causal postulate. This being the case it is difficult to delineate what in the concept is of an empirical origin and what comes from reason. In effect the concept originates at the term of a compositive union of reason and reality and all that can be said with certainty is that it represents neither the one nor the other. What Meyerson takes to be the moment of concept formation is not founded on a theory of direct perception and for this reason, is not acceptable.¹⁰⁴

¹⁰³ Essais, p. 202.

¹⁰⁴ Cf. The comment of O.N. HILLMAN, A Critical Study of the Philosophy of Emile Meyerson, Crown University, Dissertation, (1934), p. 120.

The existence of objects according to our author is due to an activity of reason which cannot tolerate the subjectivity of sensations. The permanence and externality of objects appear to have no real ontological status of their own. Sensations are first transmuted into the empirical concepts of common sense and then into a metaphysics of greater perdurability with no other motive than a rational imperative for objectivity. Further, the distinction between perceptual concepts and metaphysical concepts is itself unwarranted since both result of the same intolerance of reason toward fleetingness. Meyerson does not explain why the tendency to identification gives rise to empirical concepts at one time and to metaphysical concepts at another, other than to affirm that the perdurability of common sense objects is insufficient. How this double transposition results in greater objectivity is a mystery since it eventually dissolves its object into space. Indeed, there is no great difference between the hypostasis of sensations and the eliminative activity of reason as to the origin of concepts.¹⁰⁵ In short, the

¹⁰⁵ The dual origin of concepts differs however as to what can be concluded from each. The first leads to idealism, that is, to the supposition that the real is created by reason. The second leads to empiricism since

perceptual objects of common sense owe as much to an activity of reason as do the metaphysical concepts of science. Thus Meyerson holds to reasoning (identification) not only at the actual time of a rational operation (negative reasoning), but also prior to reasoning itself.¹⁰⁶ This is a serious situation for it means that the intellect is active when it should be passive; that it is in act before it is in potency. There is no actual moment of envisaging the real, followed by hesitation and verification but what takes place is a spontaneous and merciless activity of reason which perpetually transforms its objects into concrete categories whenever *sensa* occur.

The key to Meyerson's philosophy is undoubtedly the distinction which he institutes between the principles of legality and causality. It seems to us however, that this distinction disappears when viewed in the light of his rationalism. What Comte had objected to was the search

(105 Con't) the concept is seen to result from noting persistent recurrences in *sensa* and not from an abstraction of reason. For an argument on the empiricism of negative reason. Cf. T.R. KELLY, Explanation and Reality in the Philosophy of Emile Meyerson, pp. 71-80.

106 Cf. S. NEELING, "Philosophy in France; the Doctrine of Mr. Emile Meyerson," in Journal of Philosophical Studies, 1, (1926), p. 97.

for causes. He was convinced that the economy of effort was the whole business of science. Meyerson, on the other hand, while agreeing with Comte on the primacy of action, was equally convinced that this was not the only business of science since it left the ontological character of reason out of consideration. In order to defend this view, Meyerson says that the principle of causality is the necessary continuant of the principle of legality¹⁰⁷ whereby discontinuous sensa are transmuted into necessary ontological connexions. In short, it seems that the legal bond is rendered inoperative without the principle of causality.

It seems to us that while Meyerson is correct about the invincible ontological tendency of reason, that he is wrong about causality and the hypostasis of sensations. What he takes to be common sense is a very uncommon metamorphosis of sensations. What he considers to be the ontology of scientific theories is equally unacceptable as it is a

¹⁰⁷ In the sense that the principles of legality and causality are inseparable. Cf. E.S., p. 669 and Essais, p. 125. To negate the one is to dissolve the other. Cf. I.R., p. 440.

continuation of the same process, namely an unwarranted extropolation (the substantialization of abstract relations) of a psychological desire for persistence into something perdurable. In short, Meyerson's distinction between the principles of legality and causality is unfounded. We are led to suppose that causality is nothing but the hypostasis of legality. The plausibility of scientific truths is evidence of this since all propositions are said to arise out of a mixture of sensations and their hypostasis.

Meyerson's causal postulate expresses a "metalegality"; a psychological dissatisfaction with positivistic epistemology but with nothing, unfortunately, to put in its place. In short, the causal postulate is a psychological surrogate that does not excuse the precautions nature of positivistic epistemology.¹⁰⁸ Meyerson's defense of ontology is not acceptable because it is founded on an inadequate metaphysics. His inability to delineate the convergence of the concept and the real is proof of this. There is not

108 Cf. E.S., p. 552.

the analogy between the ways of reason and the ways of reality that he has told us about. Having begun with a structured datum rather than with a theory of direct perception, the real was destined to remain forever unattainable. The metamorphosis of abstract relations into concrete, perdurable substances (the plausible propositions of science), yields equally paradoxical results because it supposes that mathematics and philosophy treat of essences in the same manner.

B. On the Nature of Concepts

There does not appear to be anything in the nature of the Meyersonian concept that corresponds to the nature of the real.¹⁰⁹ Reality is diverse and ever flowing while the concept results from the exclusion of diversity and becoming. How explanation can be said to relate to real beings is a mystery. What Meyerson takes to be the nature of metaphysical concepts is the expression of a psychological

¹⁰⁹ Cf. T.H. KELLY, Explanation and Reality in the Philosophy of Émile Meyerson, pp. 80-84. This situation according to Kelly gives rise to a metaphysical paradox "for flow has been converted into steadfastness, diversity into identity, and from such identity and steadfastness no significant deduction of the flow and novelty of the datum which occasioned it can be obtained because of their utterly alien character." Ibid., p. 71.

desire for permanence, because the emotional concepts from which they obtain are themselves reactions of reason against subjective sense. Further, the relation of similarities which Meyerson institutes between empirical concepts is without any objective basis in the real and cannot of itself be said to relate to anything.¹¹⁰ Having derived the concept of its literal object, Meyerson is forced to find some other ways of interpreting its objectivity if explanation is to be taken seriously. Thus the similarities which reason notes among empirical concepts are hypostatized in turn, that is, concretized and made to function ontologically. But the substantialization of metaphysical concepts does not present an adequate picture of real beings (of the coherence of attributes in an essence), as it results from the mathematical extrapolation of the identity - diversity hybrid. It tends towards the real but never attains it. It could not be otherwise because that which Meyerson proffers in defense of ontology is the concretization of

¹¹⁰ Cf. L. MOOD, "Concepts and Objects," in Philosophical Review, 45, (1936), pp. 370-374. Although this article does not discuss the thought of Meyerson as such, it provides a good insight into the objective nature of concepts.

a tertium quid relation. The eliminative and compositive nature which Meyerson ascribes to concepts is not acceptable since it does not safeguard the objectivity of things. It consequently cannot account for the possibility of knowledge. Not only does the nature of the concept contain nothing of the nature of the real but the function which Meyerson ascribes to concepts is also questionable.

C. On the Function of Concepts

The primary function of concepts in the philosophy of our author is to evince the necessary ontological character of scientific explanation. Science, he argues, cannot free itself from metaphysical presuppositions because there is no distinction between reality and thought about reality.¹¹¹ Reason acts as though the whole of reality conformed to its ways. Meyerson is convinced that there is probably not a single scientist who does not confuse the reality of what he manipulates with the idea he has of it. The objectivity of scientific theories consists in the automatic transformation of all concepts into concrete

¹¹¹ Admittedly there is not complete convergence between the two (the irrationals) but we nonetheless act as though there was. The ideal of science is to reduce the real to the formula $A = A$ from which all derives out of necessity.

objects.¹¹² Reason is instinctively ontological; to perceive is to translate sense into persistence, while to think is to manipulate concepts as though they were categories of the real. Such concepts as atoms, electrons and energy levels are not only real but are themselves more real than the perceptual objects of common sense because they are more perdurable. The ways of reason are ways of ontology "Kant avait parfaitement pénétré la vraie essence du savoir scientifique."¹¹³ The universe of Meyerson is one which is completely intelligible in terms of rational principles.

Meyerson is guilty of substituting the abstract for the concrete. He is committing the fallacy of misplaced concreteness.¹¹⁴

112 It is important to remember that this transformation is what Meyerson takes to constitute the natural habit of naive realists. Cf. Infra., ch. 4, footnote 23.

113 C.P., p. 355.

114 The term was first used by Whitehead and is meant as a critique of the discordance between the abstract constructs of science and the world which we perceive. The fallacy consists in foresaking concreteness for the sake of abstraction, or as D. Emmet, puts it, to expect the concrete to derive from the abstract is "analogous to an appeal to an imaginary terrier to kill a real rat." Id., Whitehead's philosophy of Organism, Toronto, Macmillan, (1966), p. 74. In essence the fallacy of misplaced concreteness is the problem of mistaking the universal for

The realities he constantly puts forward are not the data of immediate experience but the highly elaborated constructions of science, molecules, electrons, plants, heat, dissipation of energy. What he calls 'reality' is already heavily weighted with interpretation.¹¹⁵

What Meyerson takes to be concrete qualities is a world of abstract concepts where all qualities have been taken out of things and pushed back into the mind. There they have met with further identifications and have suddenly given rise to a world that is completely different from theirs. What is even more alarming is that these constructs are meant to be more realistic than anything else. Quantity is indeed a real accident of bodies but when it is made to function ontologically the results are devastating since reason then sets course for a mechanistic reduction.¹¹⁶ This is the mistake of idealism.¹¹⁷ The refutation of

(114 Con't) the spatiotemporal concrete existent. Cf. also, RAYMOND SMITH, Whitehead's Concept of Logic, Westminster, The Newman Press, (1953), pp. 89-96.

115 T.R. KELLY, "Meyerson and the Epistemological Paradox," in The Monist, 44, (1934), p. 302.

116 Cf. J. MARITAIN, The Degrees of Knowledge, pp. 140-146.

117 Cf. W.E. CARLOS critique of Descartes and the origin of the critical problem, in Philosophy, Science and Knowledge, pp. 86-87.

positivistic epistemology does not consist in the substantialization of quantity.

D. On Hypostatic Reality

It seems possible to conclude from the foregoing analysis that the epistemological paradox in Meyerson's philosophy is founded on an inadequate metaphysics. Although Meyerson's investigations deal with the nature of reason and not with the nature of the real as such, he is nonetheless obliged to suppose that the two are convergent, less he sets out to invalidate the knowing enterprise.¹¹⁸

Upon analysis of the concept however, it is found that knowledge will not take place because the concept is not an intentional union of knower and object known. The concept in the philosophy of our author does not enable the knower to become the thing known. There is no immaterial becoming of the other. There is no likeness of the object in the subject. In actual fact the concept in Meyerson's philosophy arises at the term of a fusion of matter and mind and is a compositively structure datum. But this situation precludes a knowledge of reason and reality as they are in themselves. Meyerson makes of the concept an

¹¹⁸ Cf. C.P., p. 652.

object of direct intellectual examination from the first moment of sensation and it spontaneously becomes more real than that which gives rise to it. It does not fulfill a representative function but is itself said to be more real than anything else. The nature of that which is anterior to sensations is the product of a later deduction, as it is found to be qualitative in order to explain sensations, and quantitative in order to account for identity in time. In short, the "real" as Meyerson conceives of it, is not attained in an intentional union but is disclosed deductively as being the place where we lodge sensations in their absence. This according to Meyerson, satisfies the tendency for persistence in time while explaining diversity. The concept in the philosophy of Meyerson is an idea of reality as perdurable-along-with-differences. Reality is the extension of this hybrid.

If the starting point is not the being of the external world then the intentionality of knowledge is only a distinction within consciousness of subject and object, and thus never reaches the being of the external world in a metaphysical realism...¹¹⁹

119 W.E. CARLO, "Idea and Concept : A Key to Thomistic Epistemology," Boston College Studies, Philosophical Series, 1, ed. F.J. Adelman, The Hague, Martinus Nijhoff, (1967), p. 66.

The structure of reality which unfolds from our study of the Meyersonian concept is not that of a coherence of attributes in an essence but of a hypostatic and hybrid reality. By the term "hypostatic" we mean that the real, as Meyerson conceives of it, is an extension of spatial reasoning. Diversity is itself explained through displacement in space in the Eleatic tradition. By the term "hybrid" we mean that the Meyersonian concept is a compositively structured datum of permanence along with change. If explanation is to mean anything at all, we must suppose the real to be structured in this same way. But the hybrid, compositive nature of the Meyersonian concept means that the real is now a Kantian noumenon as it cannot be known in itself. The ontological function which Meyerson ascribes to concepts is chimerical. He does not succeed in refuting positivistic epistemology. Reality is one thing and the explanations of science a second and different thing.

Having failed to adopt a theory of direct perception from the onset it was inevitable that the ontological structure of reason which Meyerson defends should remain

hopelessly estranged from its object.¹²⁰ Meyerson was forced to incorporate the real in the only way left open to him namely, as an extension of reason. Spatial explanation is the single most important feature of this science. The coherence of attributes in an essence is nothing but the equating of existence with spatiality. The perceptual objects of common sense result from the hypostasis of spatial arrangements. The explanations of science, on the other hand, consist in the concretization of spatial arrangements into an essence. The a priori and the a posteriori structure of explanation recoil from and rebound into a space which is paradoxically at once heterogeneous and homogeneous. Meyerson's concept matter is Einsteinian as to the being of attributes since it relates to concrete space and Euclidian as to their explanation, relating as it does to the abstract space of geometry. In short, explanation is geometrical as to the

120 Cf. M. GRISON "H. É. Meyerson et le positivisme d'Auguste Comte," in Revue apologétique, 55, (1932), p. 521.

causal postulate and concrete as to sensations.¹²¹ Both aspects of explanation are equally important and appear hand in hand whenever science formulates its theories. Paradoxically the Meyerson noetic harbours both doctrines side by side in an unending dialectic of rationality and irrationality. It could not be otherwise for having taken a structured datum that is, the hypostasis of sensations, to be the process of knowledge, Meyerson was forced to look on the concept in the only way left open to him namely, as something partly rational and partly empirical. The trump card for this play was the plausible proposition of science. But the plausibility of concepts did not solve the problem as it gave rise to the divorce of essence and existence and a noumenal view of the real.

If we argue that the object of human knowledge is the concept (...) there are two fundamental errors

¹²¹ For a distinction between both types of space, cf. O. HABERT, "Un nouveau conceptualisme", in Revue de philosophie, 28, (1921), p. 675. On the divorce of abstract space from concrete space, that is, of essence and existence in Meyerson's philosophy. Cf. C.G. STÄHLING, Reason, Space and Reality in the Philosophy of Émile Meyerson, pp. 161-162, who equates existence with the irrationals and essence with the rationalizations of reason. It follows from this, as from the analysis attempted by us, that space in Meyerson's philosophy is irrational as to the existence of qualitative attributes and rational as to quantity and its substantialization. The one provides from reason while the other derives from reality.

inherent in such a view - first a divorce of sensation and intellection and second a divorce of essence and existence, for knowledge has become the systematizing of abstract essences which have little if any relation to things.¹²²

Meyerson is undoubtedly correct in saying that the rule of law implies that nature is regulated and structured, but the compositive structure of plausible propositions means that he cannot pronounce himself on the structure of things, as it results from this that the real is a Kantian noumenon at bottom. Further, the hypostatic nature of the real means that either the real is like spatial reasoning, in which case solipsism is inevitable, or that reason cannot pronounce itself on the existence of things.¹²³ Thus Meyerson's defense of ontology is ultimately reducible to the rule that the law alone suffices because when all is said and done, both end up doing the same thing. The

122 W.E. CANLO, Philosophy, Science and Knowledge, p. 91.

123 The latter of these possibilities is the more probable as Meyerson does not think that reality is totally intelligible. This means that in the final analysis Meyerson cannot pronounce himself on the existence of things. This is an interesting situation because Meyerson has already pleaded guilty to the noumenal character of essence. This means that the divorce of essence and existence, in the case of Meyerson at least, leads to the ultimate unknowability of existence as well as of essence. This seems to lend support to the thesis that essence is ultimately reducible to existence.

die had already been cast when Meyerson said of the real that it resulted from a deduction. Once bound up within the cogito the epistemological paradox was destined to appear; too much emphasis on the deductive spirit of reason would lead to solipsism, while too little would mean the defeat of reason and lead to positivism which is where he ultimately comes to rest, as is necessary given his interpretation of the plausible propositions of science.

VERIFICATION: THE HISTORICAL SETTING

C AFTER V

In retrospect, Meyerson's defense of ontology is not founded on a theory of direct perception. It relies in place on an a priori of reason which forever transmutes its data into ontological residues. The metamorphosis of relations, out of which ontology is said to arise, is affirmed by Meyerson to result from the dual need of reason for identity and for diversity. Without the diverse there could be no identities, as without the causal postulate there could be no identifications. Thus the life of reason proceeds according to an inner dialectic which is forever in the making and forever mindful of avoiding either extreme of the epistemological bifurcation. Too much emphasis on identification would be as devastating as too much on diversity. Somehow reason is equipped with a built-in alarm and knows just where to stop. The bastion which so safeguards the knowing enterprise is the plausibility of scientific propositions. In short, the antinomies of reason and reality are necessary because the Meyersonian noetic is contingent upon a movement of reason from the one to the other. Meyerson is satisfied that this doctrine denounces the insufficiencies of positivistic epistemology but as we have sought to show, this situation is metaphysically unsound. Knowledge cannot be said to arise out of a fusion

of an a priori of identification with the data of sensation, as the tertium quid character of this situation precludes a knowledge of reality as it is in itself.

Whatever else Meyerson saw in the theories of science, there does not appear to be anything to confirm his belief that the psychology of induction contains a priori elements. Thus his theory of plausibility is not confirmed by science. But this is not to say that Meyerson is wrong for holding that the theories of science are explicative, but only that the ontological penchant of reason draws its impetus from a source other than the causal postulate. If the causal postulate is indeed the motive force of explanations, was the reversal of 16th century science in the name of ontology? Does the quantification of the real mean that the Post Keplerians are more Aristotelian than St. Thomas? We think not.

I. Meyerson's Theory of Induction

The most illuminating argument which Meyerson proffers in defense of preconceived ideas appears in a critique of Baconian induction.¹ In these texts we learn that the

1 The texts in question appear in E.S. where Meyerson is discussing with approval the logic of Claude Bernard in relation to Baconian induction. "Bacon, déclare-t-il, n'était point un savant et il n'a point compris le mécanisme

experimental method as Meyerson sees it, is not primarily intended as a source of new ideas but as a testground for preconceived beliefs. This means that convictions of perdurability and the like are anterior to experimentation. Man, it seems, is psychologically prepared in advance of observation and experimentation to accent whatever bespeaks conservation. The psychology of induction, in short, means to Meyerson a mental disposition according to which we

(1 Con't) de la méthode expérimentale (...) En effet, la méthode expérimentale, considérée en elle-même, n'est rien autre chose qu'un raisonnement à l'aide duquel nous soumettons méthodiquement nos idées à l'expérience des faits. Elle n'est en définitive, que la logique appliquée à la coordination des phénomènes de la nature, pour en décourvrir les lois (...) elle a pour but de faire servir de vérification à une idée préconçue.." Ibid., p. 598.

"C'est l'idée qui constitue le point de départ de tout raisonnement scientifique (...) l'idée est le principe de tout raisonnement et de toute invention, c'est à elle que revient toute espèce d'initiative (...) un fait n'est rien par lui-même, il ne vaut que par l'idée qui s'y rattache ou par la preuve qu'il fournit..." Ibid., p. 599.

"Il s'agit donc véritablement de deviner ce que nous mettons en rapport et c'est pourquoi il est indispensable que l'imagination scientifique intervienne et formule une supposition, qui ne peut être autre chose qu'une prévision, une idée préconçue." Ibid., p. 603.

A similar critique of Baconian induction is reiterated by Meyerson's closest disciple A. MEYERSON. Cf. Id., Une nouvelle philosophie de la connaissance, pp. 205-212. Meyerson's theory of induction has far reaching implications since it leads him to a belief in the plausible character of scientific propositions. The principles of conservation for example, are affirmed by him to result from the union of an a priori desire for persistence with phenomena.

spontaneously accept all statements of identity in time. Bacon, on the other hand, has never thought of induction in this way. In fact he goes the other extreme and is critical of the ancients for having underestimated the value of observation and experiment. It seems that these thinkers assigned too small a part to observation. Bacon is critical of Aristotle in particular for relying too heavily upon personal feelings and for affixing too large a role to deduction. Bacon appears to be right on that score. What he suggests in place is that induction be prescribed according to rigorous rules. This had not occurred to Aristotle as a feasible ideal. On the contrary, the Stagirite held that there could be no rigorous rules governing induction as he thought that we arrive at a knowledge of basic premises through intuition.² However, what Aristotle understands by intuition is not preconceived ideas but a natural capacity of reason to grasp basic truths without proof. Although such premises provide the foundation

2 Cf. ARISTOTLE, Posterior Analytics, Book 2, ch. 19.

from which other truths can be deduced, they are not primary in any a priori sense of the term. The Stagirite never maintained a doctrine of a priori ideas.

Meyerson, on the other hand, expresses dissatisfaction with both of the above forms since they do not distinguish sufficiently between a logic of intension and a logic of extension. Aristotle, first of all, underestimates the value of observation and experiment, while Bacon is according to Meyerson, guilty of neglecting the part played by deduction (reason) in scientific theories. The relation between both types of logic, that is, between comprehensive reasoning or a logic of intension and a logic of extension is that the first refers to a truth of reason while the second is a truth of fact. The natural tendency of reason according to Meyerson is to transform empirical data, which is the truth of facts or synthetic judgments, into necessary relations namely, truths of reason or analytic judgments (all that saves identity from tautology is that total identification is not attainable). It follows from Meyerson's interpretation that a logic of intension is one in which the attribute is shown to inhere in a subject as out of logical necessity, while a logic of extension simply means that a property is seen to be in the class of things indicated by the predicate (as in legalism). In short,

Meyerson is of the opinion that all induction is comprehensive since it proceeds from the tendency to posit identity in time. To preclude the a priori of identification, or that which transforms a proposition from a class of exclusion to a class of inclusion is to render the syllogism sterile. That synthetic judgments naturally lead to analytical truths of reason seems to be what Meyerson accuses Bacon of forgetting.

In reviewing Meyerson's case for induction it is apparent that he affixes a servile role to experience³ and that he misunderstands the logic of inquiry.⁴ Unless things are necessarily related in se, it is not known how we can avoid either the extreme of a Humean scepticism or a Kantian doctrine of logical impositions. But the claim to a priority in induction is according to W. Kneale without foundation. "We have no a priori knowledge, whether intuitive or demonstrative, of laws or probability rules that will

³ Cf. D.R., p. 290. Cf. also C.P., n. 110, p. 280, and p. 669.

⁴ Cf. J. LA LUMIA, The Ways of Reason, pp. 111-112.

help us in making inferences from the observed to the unobserved (...) We cannot as reflective beings take anything for granted."⁵ Meyerson arrives at the a priori of identification in induction from the fact that it is essentially an incomplete process. Thus, since it is not possible to examine all of the cases which fall under the particular, Meyerson concludes that the knowledge of a coherence of attributes in an essence cannot derive from experience but obtains from reason.⁶ The proposition "ruminants are even-toed ungulates" for example, commands assent because reason perceives that there is a necessary connection between the subject and the predicate (a logic of intension), and not because the case of each sheep, cow, goat, antelope, moose or deer has been examined. In short, the coherence of attributes in a subject is affirmed by Meyerson to be a causal connection as it derives its necessity from logical principles. But this means that induction can only be justified deductively. Meyerson

5 WILLIAM REEVE, Probability and Induction, Oxford University Press, (1966), p. 234.

6 Cf. C.P., pp. 146-153.

wrongly assumes that all induction is concerned with causes. It follows that if the rational principle which reason brings to a major premise is removed, that the syllogism becomes sterile. Thus in order to exclaim that all men are mortal and that Socrates, being a man, is also mortal, we would need to investigate beforehand each individual case including Socrates!⁷ But given the a priori of identification Meyerson will argue that the syllogism is not sterile.⁸ Speaking with approval of the logic of Claude Bernard he writes,

Quand nous croyons aller d'un cas particulier à un principe, c'es-à-dire induire, écrit-il, nous déduisons réellement; seulement l'expérimentateur se dirige d'après un principe supposé provisoire qu'il modifie à chaque instant, parce qu'il cherche dans une obscurité plus ou moins complète.⁹

The causal postulate precludes the possibility of a strictly inductive examination of facts because as reason lays hold of *sensa* it spontaneously identifies antecedent and consequent and thereby transforms discontinuous matter

7 Cf. C.P., pp. 30-31.

8 Cf. G. BOAS, "Meyerson's Le cheminement de la pensée," - Book Review, in Journal of Philosophy, 29, (1932), pp. 554-556.

9 C.P., p. 111.

into universal and necessary relations. There can be no moment of pure inductive examination of facts here since the a priori of reason does not permit it. There is no essential connection on the side of phenomena between a thing and its characteristic property because Meyerson holds necessity to derive from reason. Thus induction is necessarily deduction.¹⁰ That Meyerson should hold induction to be so, confirms our belief that he confuses the term for the process of knowledge. His method of identification proves it. But the problem of induction is such that unless we suppose that things and their properties are objectively and essentially related, as in the existential reducibility of attributes to an essence, we are forced to either reduce science to a system of probabilities in the empirical

10 This also involves a problem of circular argumentation as Kelly points out. Cf. Id., Explanation and Reality in the Philosophy of Emile Meyerson, pp. 74-75, namely that in order to know what to select of attributes in order to form a concept, Meyerson's doctrine of pre-conceived ideas leads to the supposition that we already know the concept before it is formed. This criticism however bears on the origin of concepts and not on their exposition. It must be kept in mind that our author distinguishes between the method of discovery (which is a logic of intension) and the method of exposition (which is a logic of extension). The distinction between both is what Bacon seems to forget in reducing the whole of science to a logic of extension. Cf. E.S., p. 628.

tradition, or to adopt a doctrine of logical impositions in the manner of Kant.¹¹ Meyerson, of course, is anxious to avoid both extremes but as is evident from the character of plausibility which he ascribes to scientific truths, he does not succeed.

II. The Explanations of Science

A. Mechanical and Non-Mechanical Theories

Throughout the ages man has employed two fundamental types of explanation: Mechanical theories and theories of quality. Mechanism, which is the predominant trend, consists in the reduction of phenomena to spatial modifications.¹² Meyerson groups under this division the first atomic theories as well as the atomism of Post Keplerian science. In addition, the principles of conservation, relativity physics and quantum mechanics are further explanations of this type. This group of thinkers

¹¹ Cf. W.E. CARLO, Philosophy, Science, and Knowledge, pp. 39-48. Unless essences are looked on in this way, the problem of induction will present insurmountable difficulties.

¹² Meyerson defines mechanism as follows; "On peut considérer le mécanisme, dans un sens strict, comme l'hypothèse selon laquelle le monde physique serait composé uniquement de masses matérielles agissant les unes sur les autres en tant que telles. Le mécanisme se définit dès lors comme l'explication du réel par la masse et le mouvement." D.R., p. 229.

is generally inclined to look upon the world as though it was through and through mathematical and consequently attempts at a global deduction of the real ~~are~~ not uncommon.

The principal feature of qualitative theories, on the other hand, is the explanation of the appearance and disappearance of fundamental properties through their metamorphosis into substance-qualities. The ancients had thought the properties of bodies to be reducible to 4 basic elements: Fire, air, water and earth. Toward the middle of the 18th century however, it was observed that many substances evinced a likeness of properties and there arose the hypothetical element phlogiston to replace these elements. Although the theory of phlogiston has since been disproved, Meyerson nonetheless makes frequent references to it for it proves that reason is explanatory. He reunites as explanations of this type, the qualitative science of Aristotle, as well as the theories which issue from it, from phlogiston to Ostwald's theory of energy. Non-mechanical theories are generally looked upon by Meyerson as being of a lesser importance than mechanical theories. The reason for this is that qualitative theories (the hypostasis of sensations) have a limited application since they provide no way in which phenomena can be identified or otherwise compared.

They naturally tend to quantitative considerations as to their term. Mechanical theories are more promisory of identities as magnitudes can be added.

The advantage resulting from this, from the point of view of science, even when science is concerned merely with laws rather than causes, is enormous. Indeed, this conception permits the application of mathematics; in all languages of the world, to calculate and to foresee are synonyms.¹³

The principal feature of both forms of explanation lies in their insistence that something need persist in time whether it be atoms or qualities. Thus although the nature of what persists has varied from substance - atoms, in mechanical theories to substance - qualities, in non-mechanical theories, Meyerson insists that the fundamental ontological penchant of reason has remained everywhere in evidence. But as concerns the psychology of induction there is one fundamental difference between both types of explanation which remains to be discussed namely, that mechanical theories are affirmed by Meyerson to result from the hypostasis of a relation between a cause and its effect. It is this aspect of the problem which has led our author

13 I.R., p. 342.

to believe that logical necessity should be read into nature as proceeding from an a priori of identification. But we disagree with Heyerson on this score as logical necessity cannot be read into nature; nor does the metamorphosis of a relation into a substance have anything to do with substance in the sense of an enduring substratum. The principles of conservation offer a direct confirmation of this, as of our interpretation of Heyerson.

2. A Digression; the Atomic Theory

Mechanical theories under one form or another have always been an integral part of science. They owe their popularity to their explicative force. Lord Kelvin writes that the test for determining whether or not a particular subject in physics is understood is "can we make a mechanical model of it?"¹⁴ The atomism of Leucippus and Democritus represents man's first attempt at procuring a mechanical explanation of phenomena. Although modern atomic theories differ greatly from that of the early atomists, Heyerson argues that they result from the same explicative force, that is, from the need of reason to posit persistence in

¹⁴ Cited from I.R., p. 92.

time. I think that Meyerson is correct in calling attention to this feature of atomic theories but that he is wrong in attributing it to the causal postulate.

The atomism of Leucippus and Democritus was developed as we saw earlier in order to explain multiplicity while retaining the idea of the Parmenidean One. The early atomists accomplished this feat through a doctrine of spatial displacement. Thus while the atom remained an indivisible unit it would account for multiplicity by moving about in the void. What is most striking about this, is that persistence in time is made to explain the changing plethora of sensations, as Meyerson rightly points out, but persistence for Greek thinkers derives from the nature of motion, and it seems Procrustean to read more than this into it. To do so is to abuse of Occam's razor, which Meyerson himself quotes with confidence whenever it is convenient. The eternity of motion in Greek philosophy is very definitely related to the character of motion and not to the causal postulate. "The basis of the argument is that movement cannot come into being THROUGH MOVEMENT (*italics are mine*) unless there is a prior movement."¹⁵

15 J. OWENS, The Doctrine of Being in the Aristotelian Metaphysics, p. 438, footnote 10.

C. Post Keplerian Science

The most evident and significant fact about our world is motion. It is this which strikes us first as we look about us and is most urgently in need of explanation. Since theories of motion are basic to the whole of science, the analysis of these theories provides an ideal setting within which to view the historical evolution of science. Throughout the ages there have been various attempts at explaining motion but none has been so far reaching as the revival which 16th century science brought to light. Kepler is most properly the father of this movement as he was the first to explain secondary qualities in terms of cosmic arrangements or mathematical harmonies. Once again, spatial modalities were promulgated as explanations of the diverse. The revival of atomism however is a Post Keplerian phenomena.

While contemporary atomic theories have persisted in the same trend of spatialization as the ideal of explanation, they have added to this the doctrine of orbital analysis and the uncertainty principle. Heisenberg's principle has delivered a crushing blow not only to the 19th century determinism of Dalton but also to the positive spirit of Comte on which it is founded. As it is not possible to measure simultaneously the speed and the .

position of an electron, legalism has lost of its rigidity.¹⁶ But Meyerson argues that the principle of causality remains unaffected. "Le physicien des quanta, en tant que physicien pense très certainement en réaliste, ne peut penser qu'en réaliste."¹⁷ Thus although the uncertainty principle makes previsions more difficult, the ontological appetite of reason is unimpeached. However, such considerations as are adduced by Meyerson to defend the causal argument are founded on a divorce of essence and existence. "La physique des quanta n'est pas en mesure de prêter au réel une forme définie et se résigne à en ignorer l'essence, tout en continuant à croire fermement à son existence."¹⁸ That reason should manifest an ontological proclivity while remaining unable to know things as they are in themselves is a remnant of Kantian philosophy.

L'idée d'un réel nécessairement postulé et cependant essentiellement inconnaissable est évidemment apparentée à celle de la CHOSE-EN-SOI (*italics are mine*) kantienne, et quelles que soient les objections que l'on ait pu formuler (...) personne

16 Cf. JEAN ABELÉ, "Réel et déterminisme dans la physique quantique - étude critique," in Archives de philosophie, 10, (1934), pp. 100-105.

17 R.D., n. 48.

18 C.P., p. 73.

n'osera, certes, affirmer qu'il faille la considérer
comme périmé.¹⁹

Thus Kant is to Meyerson an ontological hero of sorts as he enables us to affirm existence while turning tail on essence. The divorce of essence and existence seems to be the most significant trademark of rationalist philosophies and, as we have sought to show in the course of this effort, the Achilles' heel of Meyerson's philosophy.

D. The Principles of Conservation

a. The Discovery of Analytical Geometry

The appeal of mechanical theories, as we have seen, is due, according to Meyerson, to the satisfaction which results from positing persistence in time. In short the "cheminement" of scientific thinking owes its success to substantialistic considerations. But it was not until the discovery of analytical geometry that reason fell upon the perfect method for the formulation of abstract relations. The success of modern science is due largely to the genius of Descartes who discovered that spatial dispositions could

19 R.D., p. 21.

be expressed algebraically (and vice versa). The equating of spatial arrangements and algebraic symbols enables us to solve complex problems with relative ease. The pythagoreans were the first to identify the properties of bodies with spatial dispositions, but little progress could be made until a suitable way was found to express the mathematical equivalence of physical and chemical reactions. The discovery of analytical geometry, however, meant that symbols could stand for numbers which in turn described a particular spatial arrangement or property. Thus through a manipulation of symbols prescribed according to rigorous rules we could now foresee the behaviour of phenomena under determined conditions. This is the principle that phenomena transpire according to laws and that it is possible to effectuate changes in the conditions affecting a substance and expect the properties of the substance to undergo an equally determinate modification.. But as Meyerson argues, the principle of legality presupposes the conservation of quantitative determinants from the antecedent to the consequent of physical and chemical reactions. A determinate modification of the conditions affecting the properties of a substance will not only force the properties to undergo an equally deter-

minable modification, but there will also be an identity between the initial and the terminal state of the reaction. This is the meaning of the principles of conservation. Given the precision and determinacy of quantitative considerations, along with the new algebraic vocabulary with which to manipulate both sides of an equation, we can now set down in rigid mathematical form why the inertia, mass or energy of a thing should be conserved. In short, Meyerson holds that the algebraic verbalization of quantitative substantializations makes it possible to formulate precise ontological statements of identity.

b. The Conservation of Mass

The principle of the conservation of mass is according to H. Spencer an a priori verity of the highest order.²⁰ It expresses the natural desire of reason for conservation in time. This tendency to posit persistence is according to Meyerson indisputably the source of the 3 great principles of conservation. But if these principles do not obtain

²⁰ Spencer says of the conservation of matter "Our inability to conceive matter becoming nonexistent is immediately consequent on the very nature of thought (...) (matter) thus becomes an a priori cognition of the highest order, not one that results from a long-continued registry of experiences.." Cited from I.R., n. 177. Cf. also E.S., p. 653.

empirically why then were they not formulated until recently?²¹ Reason has not modified its essence and we would expect these principles to have always been in evidence. But this is not the case as these principles were not known to the ancients. The principle of the conservation of mass for example, although it is implicit to the atomism of Leucippus, Democritus and Lucretius, was not formulated until 1773.²²

Meyerson's answer to this difficulty is that the principles of conservation obtain from the union of an a priori form and a posteriori matter. Such is the plausible structure of all scientific propositions. But the character of plausibility is such that these principles are neither wholly a priori, that is, they cannot be deduced from rational principles alone, nor are they entirely a posteriori, that is, they cannot be proven empirically. It is correct then to affirm that these principles were not entirely

21 The principle of inertia was formulated in the 17th century while the conservation of mass and of energy appeared in the 18th and 19th century respectively.

22 The definite establishment of the principle, according to Meyerson, is contained in Lavoisier's Change-ment de l'eau en terre, which was published in 1773. Lavoisier says here that the quality and quantity of substances remain the same before or after an operation. In short it is the law that matter can neither be created nor destroyed.

unknown to antiquity, but it is also understandable that they could not be formulated until the advent of modern techniques. In short, Meyerson affirms the principles of conservation to be a priori as to the rational imperative to postulate persistence and a posteriori as to what it is that persists.²³ The fusion of a preconceived belief of persistence with the discovery of an accurate balance, in the case of the indestructibility of matter, enabled Lavoisier to formulate the principle of the conservation of mass in spite of slight discrepancies in the recording of weights. He readily ascribe these variances to instrumental imprecisions, loss of particles etc., because matter as eternal, says Meyerson, is just as it has to be to conform to the ways of reason. Mass figures as a property of bodies which causality has transformed into a substance and made perdurable (ontological).

c. The Law of Inertia

The most important conservation principle is inertia. It is the foundation of mechanics. Meyerson defines it as "an indefinite motion in a straight line by

²³ Cf. I.R., p. 206.

virtue of an impetus received and without the continued action of a force."²⁴ As other principles of conservation, he affirms it to be plausible in origin. "Etait anriorique en ce qui concerne sa forme générale, qui stimule la conservation de quelque chose, et a posteriori en ce qui concerne la spécification de ce qui se conserve."²⁵ The principle results from the metamorphosis of motion - a relation, into a substance. It stimulates the continuance of rectilinear velocity. The hypostasizing of motion into a state, says Heyerson, appeases the hunger for permanence. Thus when a body in motion comes to rest it is not because this motion is actually lost (which to the moderns would mean the annihilation of matter) but because the body has suffered an equal and opposite reaction (Newton's third law).²⁶

²⁴ Ibid., p. 113.

²⁵ I.S., p. 568.

²⁶ The principle of inertia is implicitly contained in Newton's first and second law of motion. "Every body continues in its state of rest or of uniform motion in a right line, unless it is compelled to change that state by forces impressed upon it." The second law states that "the change of motion is proportional to the motive force impressed; and is made in the direction of the right line in which that force is impressed." These laws were unknown to the **ancients**. In fact, Aristotle speaks of the impossibility of continuous motion in a straight line.

Meissonnier says of inertia "Ce concept est, en l'espèce, celui de vitesse: C'est la vitesse considérée comme une substance, dans le sens philosophique du terme."²⁷

(26 Con't) He founds his argument on the natural circular motion of the heavens. Cf. I.R., pp. 113-121. Cf. also P. GASSENDI, Philosophy of Science, pp. 91-96. Gassendi was probably the first to publish an explicit statement on the rectilinear movement of bodies. His word had been anticipated a few years earlier by Descartes. Cf. Id., "First Law of Motion." The turning point in science seems to have taken place in the 16th century when Kepler and Galileo (esp.) bridged the gap between celestial and terrestrial phenomena. As concerns the problem of the a prioricity of inertia (which figures in Kepler, Galileo and Descartes who believed in mathematicism), E.A. Burtt is of the opinion that Newton's criterion of truth was more empirical than mathematical. "At those times when the theological basis of Newton's science was uppermost in his mind, it is probable that he would have answered substantially as Galileo and Descartes did. But in his strictly scientific paragraphs the emphasis is overwhelmingly in favour of their tentative, positivistic character, hence the fourth rule of reasoning in philosophy. (In experimental philosophy we are to look upon propositions inferred by general induction from phenomena as accurately or very nearly true, notwithstanding any contrary hypotheses that may be imagined, till such time as other phenomena occur, by which they may either be made more accurate, or liable to exceptions), must be regarded as imposing definite limits on all of the other three." E.A. BURTT, The Metaphysical Foundations of Modern Physical Science, London, Routledge and Kegan Paul Ltd., (1964), p. 215. It is possible that the apparent apriorism of Newton's first and second law is more probably due to religious considerations than to the action of a causal postulate.

27 D.R., p. 44.

d. The Conservation of Energy

The explanatory force of the principle of the conservation of energy is likewise affirmed by Meyerson to derive from the substantialization of a relation between cause and effect. The motive force which impells him to so conceive of energy is once again the rational imperative of identification. Further, as was said of inertia and of the conservation of mass, the conservation of energy is a plausible proposition since it can neither be proven empirically nor deduced a priori.²⁸

Strictly speaking, no accurate verbal definition can be given of this principle as what it stipulates is the mathematical equivalence of cause and effect in terms of work.²⁹ The state of potentiality plays an important part in it since it enables us to identify potential and kinetic energy.³⁰

28 "Ainsi la conservation de l'énergie, tout comme l'inertie, comme la conservation de la matière, n'est ni empirique ni a priorique; elle est plausible." I.R., p. 190.

29 Meyerson gives the verbal definition of energy as being "a capacity of producing an effect and of accomplishing work." I.R., p. 189. However, he is not satisfied with this definition since it does not take entropy into consideration. There is no acceptable mathematical definition of the principle. Cf. E.S., p. 583, and C.P., p. 530.

30 The doctrine of potential energy would be meaningless without the existence of a state of potentiality.

The historical development of the principle generally coincides with the revival of the mathematical conception of the world in Post Keplerian science.³¹ The return to the notion of atoms as containing the explanation of phenomena was to inspire Huyghens to add to this the concept of work performed and the stage was set according to Meyerson, for the concretization of a relation into a substance. It was Leibnitz who in applying the principle of identity went straight to the goal when he saw that the cause was mathematically equivalent to the effect in terms of work. This means that cause and effect are interchangeable, as the product of the mass by the square of the velocity (force), remains constant. Causality demands the persistence of something in time. Thus the total energy of a system is regarded as being a property of sorts of a system and is said to be conserved. Causality has transformed

(30 Con't) Cf. E.S., pp. 322-338. In such event, energy would be either kinetic or non-existent which is absurd; and yet it is equally absurd to suppose the existence of that which does not manifest itself, but reason does not hesitate to affirm its existence, says Meyerson, since it is promissory of identities.

31 Cf. I.R., pp. 189-214.

a relation into a substance. This *metamorphosis*, according to Meyerson, evinces the ontological preoccupation of science.

e. Critique of Substantiation.

While we agree with Meyerson on the ontological appetite of reason we do not think that the physico-mathematical sciences are ontological in the manner demanded by his formula. Meyerson's argument that the concretization of abstract quantities give rise to ontology is unsound because it has nothing to do with the consideration of substance as an enduring substratum.³² The physical sciences do not attain essences in this way. This error, as we have seen is due to Meyerson's inability to account for two distinct orders of inquiry (the scientific and the philosophic) with the same process of explanation. Auguste Comte had also objected to the hypostatizing of scientific theories³³ (but for different reasons). We think

³² Cf. A. BLUMBERG, "Émile Meyerson's Critique of Positivism," in The Monist, 42, (1932), pp. 68-69.

³³ Cf. G. COHEN, L'épistémologie positive et la critique Meyersonienne, pp. 76-77.

however that he is right about that. The essences which Meyerson speaks of are fictive after all for he attains them by pushing all qualities back into the mind. What he substantializes in this way has little if any resemblance left to real things. The suppression of time is itself a warning that we are dealing with an abstract construct and not with real things. The most evident proof of this is that reality as Meyerson conceives it, is at bottom noumenal. This, of course, is a restatement of the metaphysical paradox. But it is significant that Meyerson should fail to connect his doctrine of explanation with the unknowability of reality. We would normally expect him to re-examine his position on this score. But if he does not it is because he cannot. The movement of reason from identification to diversity was never intended to reconcile its antinomies. In fact, the structure of intelligibility which Meyerson affixes to scientific propositions would be illfounded without the epistemological paradox.

f. A Digression: God and Conservation

It is possible that religious considerations played a role in the formulation of Newton's first and second laws. This also seems to have been the case for Boyle whose doctrine of motion rests upon the immutability of God. "God

was somehow needed constantly, to keep the universe from going to pieces."³⁴ Undoubtedly this is also true of Joules, Colding, Descartes and Leibnitz since God as these thinkers conceive of Him is a functional being who not only ensures the permanence of mass, inertia and energy but is a symbol of the essential immutability of things.³⁵ God plays a particularly important function in Descartes' mechanics as He is made to be the guarantor of truth. The whole of Descartes' system collapses if God is removed from it. The God of these thinkers is a cosmic mechanic. This is an important feature of Post Keplerian science.

It seems that Meverson does not distort the facts when he says that the principles of conservation cannot be proven empirically. But does this prove the presence of a causal postulate? For one thing, the fact that the principles

³⁴ E. BURTT, The Metaphysical Foundations of Modern Physical Science, p. 191.

³⁵ Cf. I.A., p. 201 and E.S., pp. 651-652. The tendency to look upon God as a function is a result of the reversal in 16th century science and the move away from final causality. The dehumanization of science meant that God was no longer considered to be the Supreme Good but the creator of atoms; the guarantor of permanence and truth.

of conservation were not formulated until recently certainly proves that they are not self-evident as we would expect of anything a priori. For another, what Weyerson attributes to the causal postulate presents fewer metaphysical difficulties if it is ascribed in place to religious preoccupations down through the ages with the conservation of motion. This aspect of the problem is shared in common by Aristotle and Newton. Although it has not been our plan to discuss the historical foundation of the causal postulate but only to investigate its metaphysical implications, it nonetheless seems possible to suggest that Weyerson's defense of identity in time would encounter fewer difficulties if viewed in this light.

III. The Divorce of Mind and Matter

The single most important feature of modern science is the new emphasis which it places upon the laws of nature. For the first time in the history of science the universe was recognized to have its own laws and man moved away from the anthromorphic considerations characteristic of Aristotelian science. In short, the explanations of 16th century science left the realm of final causality for a

dehumanized spatialization of matter.³⁶ The genius of such revolutionary thinkers as Galileo, Descartes and Newton was to quantify the whole of the Aristotelian categories. That by which things are now primarily said to be is extendedness (mass). Thus spatial relations have lost their accidental setting and have come to figure as the essence of the real. The metamorphosis of abstract relations into substantialistic considerations, as we have seen, is Meyerson's argument for the invincible ontological character of science. Whether or not we attain essences in the way prescribed by Meyerson, the fact remains that pragmatically at least, these thinkers saw rightly because never have so many been so comfortable.

But the Cartesian scheme of things has also had disastrous results for it has engendered the divorce of mind and matter. The relation of primary and secondary characteristics cannot be explained quantitatively because sensations cannot be dissolved in a solvent, subjected to spectral analysis, centrifuged or otherwise precipitated in

³⁶ "Toute conception finaliste en science n'est que tolérée en attendant qu'elle puisse être remplacée par une déduction causale." E.S., p. 264.

any intelligible manner. To-day we are flanked by the two irrational limits of a cold, silent, empty and mysterious world of geometrics on the one hand, and a world of sensations on the other. Thus a solid philosophy of mind is needed in order to determine how the mutually exclusive attributes of thought and extension interact.³⁷ Meyerson is right in calling sensation an irrational because spatialization does not explain knowing. But is the plausible character of propositions an acceptable solution to the dualism? Are the explanations of science of this type?

Time appears to be an indispensable condition of things. If the whole of science is founded on the premise of reversibility, the principle of Sadi Carnot and Clausius could not have arisen. Not only is time indispensable to becoming but "duration" appears to be an essential character of flow, as Bergson's criticisms of Spencer's science have amply demonstrated. Paradoxically, Meyerson does not wish to eliminate temporality from things. The high esteem in

37 For a probing and stimulating analysis of this problem. Cf. E.A. BURTT, The Metaphysical Foundation of Modern Physical Science, 324 pages.

which he views Carnot "the hero of science" confirms this. Einstein recognizes this when he praises Meyerson for insisting with reason on the error of spatializing time "CAR DISTANCE SPATIALE ET DURÉE RESTENT DISTINCTS LES UNS DES AUTRES."³⁸ But there is a serious difficulty here for what scientists say when they reason and do when they live seem to be two different things.

The principal feature of relativity physics for example, is the explanation of a free falling body through gravitational fields. The closer a body is to a gravitational field, the greater is the intensity of acceleration, and conversely, the intensity of a gravitational effect grows less and less as we move further and further away from the field. Thus gravitational mass and space turn out to be interchangeable properties. Mass and motion are identified. But since acceleration requires less time on one occasion to reach the earth than on another, depending on depth, motion can be described through a time factor.

38 A. EINSTEIN, "A propos de la Dédution relativiste de M. Meyerson," in Revue philosophique, 105, mars-avril, (1928), p. 165. *Italics added.*

Thus time is spatialized.³⁹ Meyerson argues from this that although the reduction to space is far more complete and complex here than anywhere else, that the relativists evince the same need of reason for ontology.

Il est impossible, en effet, de parcourir un exposé de physique relativiste, sans constater que l'univers dont on postule l'existence est bien conçu comme réel; chaque page, chaque ligne en témoigne éloquemment, et les démonstrations perdraient tout sens si nous essayions de rattacher ne fût-ce qu'un moment, l'existence de cet univers au moi.⁴⁰

In short, Meyerson argues that Einstein also falls into the same class of thinkers who from the time of the Eleatics have sought to explain phenomena by converting flow into steadfastness and reducing it in turn to space.⁴¹ But as

39 Meyerson's D.R., is largely devoted to the task of pointing out how a realistic ontology is implied by relativity. An excellent treatment of it is found in G. BOAS "A Critical Analysis of the Philosophy of Émile Meyerson," pp. 118-146.

40 D.R., p. 193.

41 It is interesting to note that Einstein is in complete agreement with Meyerson's interpretation. "Hé quoi, disait-il, ce DU OÙ (*italics are mine*) de l'explication, que j'avais remarqué chez Descartes et chez tant d'autres et qui m'avait paru si étrange, ce démon J'EN SUIS DONC POSSÉDÉ MOI-MÊME? (*italics are mine*). Voilà quelque chose dont j'étais à cent lieues de me douter. Eh bien j'ai lu votre livre, et je l'avoue, je suis convaincu", cited from A. Metz, Une nouvelle philosophie de la connaissance, p. 180. Einstein considers Meyerson's D.R. to be one of the most

we saw above, Einstein also objects to the elimination of duration. He feels that time is not like other dimensions in that it is not reversible. But how then do we explain the effort to spatialize time? Are there two types of science, the one rational and the other temporal? Do we use of rational mechanics in order to think and of Carnot's principle in order to live? If so, how could the principle of Carnot have arisen? To put it differently, if the ontological tendency as Meyerson describes it, consists in spatializations of the real, how can a science which negates reversibility arise from the same tendency? The impossibility of this situation confirms our belief in the irrationality of the irrationals.

Meyerson's decision to fuse the dilemma of reason and action in plausible propositions is an indication that something is seriously wrong somewhere. The paradox is even more striking in the historical sciences where "historicity" is an indispensable theme.⁴² But Meyerson believes

(41 Con't) penetrating and exacting studies written on the theory of relativity from the point of view of epistemology. Cf. A. EINSTEIN, "A propos de La déduction relativiste de M. Emile Meyerson," in Revue philosophique, 105, (1928), p. 166.

42 Cf. A. DONDEYNE, Contemporary European Thought and Christian Faith, Duquesne University, Louvain, Editions E. Nauwels, (1958), ch. 2.

that the paradox of reason and action is at once irremediable and necessary. The development of science, according to our author, is a history of antinomies. The success of reason seems to be contingent on a "cheminement" from opposite to opposite. What Meyerson believes himself to have uncovered is a dialectics according to which reason executes an identity-diversity movement whenever thinking takes place. This it is said, enables us to detach increasingly comprehensive identities. Unlike Hegel, however, the Meyersonian noetic does not seek to reconcile its antinomies. To do so would be suicidal. But what results from the identity-diversity dialectic is nonetheless a fusion of the a priori and the a posteriori in tertium quid (plausible) propositions. The nature of plausibility which Meyerson reads in scientific propositions confirms our belief. Why else would he affirm the task of philosophy to consist in the analysis of such propositions in order to delineate the a priori from the a posteriori? But the plausibility of propositions is not an acceptable presentation of the antinomies engendered by the Cartesian bifurcation as it does not rest on an adequate metaphysics. If the principles of conservation, for example, were plausible, they would be principles in name only and have nothing to do with real beings as is evident from the fiction noumenal

view which Meyerson holds of reality. But the principles of conservation are meaningless without an operational definition.⁴³ When we speak of inertia for example, we are referring to the actual motion of a body which has suffered a real force, which has undergone an effective acceleration in time, and which is maintaining a fixed velocity and which will continue to do so until it is impeded by an equally real and opposite force. The substantialization of relations which Meyerson proffers in defense of ontology is not on the operational plane of being at all but is situated in a distant abstract zone of mathematical identifications and reversible reactions. In short, it does not deal with real beings but with mathematical beings of reason. In reality there is no total identity of phenomena as Carnot's entropy makes abundantly clear. Even if we were to suppose the legitimacy of a 1 : 1 concretization of abstract relations, the tertium quid structure of this conversion precludes ontology. It turns out that Meyerson's defense of ontology does not mean that the Post

43 Cf. PHILIP FRANK, Philosophy of Science, Englewood Cliffs, N.J., Prentice-Hall, Inc. (1957), 394 pages.

Keplerians are the greatest Aristotelians after all because science does not explain its phenomena in the manner demanded by Meyerson's formula. Total identification not only leads to acosmism but it also violates the second law of thermodynamics. Nor is Meyerson's doctrine of partial identifications an acceptable proposal as man's ignorance of the irrationals is ultimately primitive. In actual fact there is no real distinction between Meyerson's doctrine of total identification and his espousal of partial identifications. Eventually, the Meyersonian science will have become the perfect philosophy.⁴⁴

⁴⁴ This is an important point to keep in mind because Meyerson tells us that it is the irrational which distinguishes the scientific effort from the philosophic enterprise. The former accepts the irrational whereas the latter does not. Cf. E.S., p. 676. Also n. SEE, Science et philosophie d'après la doctrine de M. Emile Meyerson, pp. 89-96. What Meyerson desires most of this doctrine is to show the fundamental unity of science and philosophy, as both make use of the same process of identification. Cf. E.S., p. 674. Cf. also C.P., p. 574. Thus, science and philosophy according to this are equally preoccupied with ontology. The distinction between both types of deduction is that mathematical deduction (science) is not as "aggressive" as logical deduction (philosophy) as the former considers its ontologies to be provisional given the day it succeeds in becoming the perfect philosophy, that is, in deducing the real from logical principles. This ideal is not attainable but it is nonetheless the mainspring which drives the whole of the Meyersonian machinery. It seems to us however, that Meyerson misunderstands the nature of explanation. Science is wrong to suppose that the real lies

In closing, it seems to us that Meyerson is right in calling attention to the insufficiencies of positivistic epistemology. The ability to formulate laws supposes in

(44 Con't) naked before it - this is the error of mechanism - and philosophy is equally incapable of explaining a data which is not its own. Cf. J. MARITAIN, The Degrees of Knowledge, pp. 30-32, and pp. 59-64. The psychology of induction as it unfolds from the works of our author reveals two fundamental facts. First that there is a fundamental unity between the principles of legality and of causality and second that there is a continuity in knowledge from ancient to modern physics. This is intended by our author to prove that legalism and causalism cannot be separated (and thus that positivistic epistemology is in error), and that science is now as always concerned with ontologies. The thinking of primitive men and the thinking of the moderns is the same on this score. Cf. D.R., Preface p. XI and p. 341. Cf. also E.S., p. 703. Marcel Gillet takes the theme of the unity of reason to be an abiding contribution of Meyerson. Cf. Id., "La philosophie de M. Meyerson - étude critique", in Archives de philosophie, 8, (1931), (esp.) p. 88, 93 and 98. Bonnard is of the same opinion. Cf. Id., La notion d'irrationnel chez Émile Meyerson, p. 17. Cf. also F. SEE, Science et philosophie d'après la doctrine de M. Émile Meyerson, pp. 193-197. While we agree that there is a fundamental unity between the principles of the Meyersonian reason, we think that a unity which is not mindful of distinctions is suspect. First of all we have shown that there is not the distinction between legality and causality which Meyerson supposes, and second, he does not distinguish between scientific and philosophic explanation. "La science, sortie de la philosophie, n'est encore, à l'heure actuelle, qu'un genre particulier de philosophie. Tout comme le savoir que nous décorons formellement de ce nom, elle cherche à connaître l'être." D.R., p. 379. Meyerson's doctrine of the irrationals confirms our interpretation. Cf. Infra., ch. 3, 2.

the first place that nature is regulated, which in turn means that the real is structured in some way. These metaphysical commitments on the nature of things and on the ability of reason to know things, as well as the reference which a law bears to things, are not reducible to the rule that the law alone suffices. In addition, Meyerson seems to be right in calling attention to the dualism of mind and matter in science; this is particularly evident since the time of Descartes.⁴⁵ But does this mean that the psychology of scientific induction reveals a plausible character of knowledge? We think not. It seems to us that this view of science necessarily leads to an epistemological paradox because the plausibility of a proposition means that we cannot know the real other than as a structured datum. This view of things forces us to either look upon the real as an extension of spatial reasoning, in which case solipsism is the outcome, or we must confess that the real cannot be known by reason, which is positivism and the place

⁴⁵ Cf. P. LAFVUE, "Une heure avec M. Émile Meyerson," in Les nouvelles littéraires, Saturday, Nov. 6, (1926).

where Meyerson ultimately comes to rest. In short, our study of the epistemological paradox and of the Meyersonian concept reveals that the real must be hypostatic as to its existence, namely dubious, and noumenal as to its essence in order to be amenable to reason. It seems to us, therefore, that the philosophy of Meyerson rests on an inadequate metaphysical basis. Unless there are two types of science, the one Parmenidean and ideal, the other Heraclitean and actual, and unless the life of reason consists in a dialectical movement from one to the other, Meyerson is mistaken. It seems to me that one of the challenges to philosophers to-day is to formulate a clear philosophico-scientific approach to the real which will bridge the gap between consciousness and the spatial representation of things. Meyerson's merit comes from having sought to do so.

CONCLUSION

It seems possible to conclude from the foregoing study that the epistemological paradox in the philosophy of Meyerson results from an inadequate metaphysics. There are three leading considerations that have brought us to this conclusion. First, that he substitutes the term for the process of knowledge. Second, that the structure of plausibility which he ascribes to the propositions of science generates a tertium quid. Third, that the principle of causality resembles the principle of legality. This, in turn, obtains from our study of the epistemological paradox and from the triple consideration we have given the Meyersonian concept: first, from its hypostatic origin, second, from its hybrid nature, and third, from the substantialistic function which it is made to play in his philosophy.

1. Meyerson's doctrine on the origin of concepts is what leads us to believe that he substitutes the term for the process of knowledge.

This substitution is evident in his doctrine on the ontology of common sense, as in the ontology of scientific theories which is said to continue common sense. First, Meyerson's defense of the ontology of common sense does not rest its case on a theory of direct perception, as it arises out of the hypostasis of sensations. This situation

precludes the representative capacity of concepts for it makes of the intelligible union between knower and object known a spontaneous quod. Meyerson explains the hypostasis of sensa as a consequence of causality. The causal postulate demands that things conserve an identity in time but since sensations do not exist in us during their absence, causality constructs a non-ego in which they can exist. Thus the external world is a place where sensations exist during their absence. It is evident from this that the real is not given directly to consciousness, as it results at the term of a deductive effort. What we see upon awakening each morning is a world that is heavily weighted with interpretation. It is created by the rational tendency to posit identity in time. This is what Meyerson calls the ontology of common sense.

The ontology of scientific theories, on the other hand, continues the ontology of common sense because the postulate of identity in time can never replace a concept by one that is heterogeneous to it. In a sense, the ontology of scientific theories is "more real" than anything else because these concepts are more verifiable than the concepts of common sense. Meyerson says that there probably isn't a single scientist who doesn't confuse the reality of what

he manipulates with the conception he has of it. But this is an admission to a rationalism.

In summary, Meyerson holds two doctrines on the origin of concepts; the one from the homeostasis of sensations and the other from the equating of such concepts through the eliminative function of identification. Neither has anything to do with real beings. What remains of the real after it has been stripped of all qualities and pushed back into the mind bears no relation to the ontology which results from a theory of direct perception.

The most significant consequence of Meyerson's doctrine on the origin of concepts is the epistemological paradox. Having taken a structured datum to constitute the starting point of knowledge rather than the being of extramental reality, Meyerson was destined to remain enclosed within a hermetically sealed cogito. This being the case, he could only attain the real as either an extension of spatial reasoning, in which case solipsism was inevitable, or admit to a fundamental inability of reason to know the real, which is positivism, and the place where he ultimately comes to rest.

The epistemological paradox is an indication that something is seriously wrong somewhere; the theories of science are seen to go one way while common sense goes a

different and opposite way. It makes abundantly clear that the ontology of scientific theories does not continue the ontology of common sense as Meyerson says it does. On the contrary, the concretization of abstract relations which Meyerson proffers in defense of the ontology of scientific theories, results in the elimination of time. This is necessary because the postulate of identity in time identifies cause and effect, and where there is no distinction between cause and effect it is because nothing happens. The causal postulate leads to the fully reversible phenomena of rational mechanics. As to diversity, it is explained by Meyerson in the Eleatic tradition as resulting from the displacement in space of fundamentally identical and immutable matter. To be is to be extended (this confirms our view that the real is an extension of spatial reasoning). Meyerson's defense of ontology stops the march of time. It attains the motionless and homogeneous sphere of the Parmenidean One. Further, since all bodies are reduced to space, space is now empty and disappears in turn. Nothing is left. Such is the first consequence of a defense of ontology which rests its case on an activity of reason rather than on the being of extramental reality.

Meyerson does not review his case for ontology but

modifies his premise of total identification so as to admit of inequalities. He comes to the realization that this is necessary because of the principle of Sadi Carnot. The principle of Carnot warns that the elimination of time implies the reversibility of phenomena. But phenomena are not reversible because there is not the identity between cause and effect which rational mechanics supposes. On the contrary, work is being done and entropy is on the increase. Thermal equilibrium seems to be inevitable. But how can a structure of reason which knows only identities come to know a real that is growing progressively more diversified and complex? The most logical answer is that it cannot and positivism is the only issue. This appears to be the second consequence of Meyerson's defense of ontology.

Meyerson does not stop to consider the extremes of the epistemological paradox as a consequence of having sought to explain a philosophical problem scientifically. His ambivalent doctrine on the nature of irrationality confirms this view. In one sense the irrationals are the result of primitive ignorance and dissolution appears inevitable, while in another, they are in the kingdom of the nescient and the knowing enterprise will not take place. His fusion of both in a doctrine of rationality - irrationality evinces his fundamental indecision with respect to

the ontological status of scientific theories.

In final analysis, the extremes of solipsism and positivism result because the Meyersonian real is hypostatic as to its existence and noumenal as to its essence. It is the divorce of mind and matter, as we posit the reversibility of phenomena when we reason and the unidirectionality of change when we live. But are what we do when we think and when we live two different things? If ontology results from reasoning rather than from being, it seems that our answer must be yes and that we are all contradictory at bottom.

2. Meyerson's doctrine on the hybrid nature of concepts is what leads us to believe that the plausible structure which he ascribes to the propositions of science generates a tertium quid.

Meyerson does not seek to solve the epistemological paradox but uses it in place as a sine qua non condition of knowledge. This is clearest in Du cheminement de la pensée. The key terms he uses to accomplish this feat are plausibility and "flottement" or movement of reason. Together they constitute his doctrine of partial identifications. To be "plausible" means for Meyerson to contain something that flows from reason, as well as elements that obtain from sensa. Thus the propositions of science are

plausible because they result from the interaction between a structure of reason which seeks identity in time and a real that is growing progressively more elusive and diverse. What results are partial identities in which reason is rewarded but not totally so. The principles of conservation are affirmed by Meyerson to obtain in this way, as the conservation of mass, force and inertia cannot be proven empirically; yet no one doubts the truth of these principles.

This situation reflects the status of concepts that are the product of rigidity and fleetingness; of identification and diversity. The life of reason consists in pouring its mold of identity in time into whatever it manipulates. Thus the concept does not represent the real as it is given in direct perception, but is a hybrid of identities along-with - differences. What Meyerson considers to be the familiar world of perception results from a compositive structure of concepts. Thus when the intellect turns within itself in order to make of the concept a direct object of intellectual examination (the eliminative phase of identification), what results is a dialectical movement of reason on the opposition between identification and diversity (this situation also leads to the epistemological paradox whenever reason exaggerates either of the opposites).

The end result of this operation is a plausible proposition in which what derives from the a priori of identification and what obtains a posteriori from sensa, is no longer discernible. It is the total immersion of opposites into unity (identity) propositions. The a priori - a posteriori character of spatial explanation in the philosophy of Meyerson confirms this. Contrary to the view of Meyerson however, the movement of reason on its antinomies does not result in ontology but in a tertium quid in which the opposites of a world where time does not matter and yet everyone somehow grows older, are made to rest side by side. This vision of ontology is not on the operational plane of being but in some distant mathematical world view of antinomies. In short, Meyerson mistakes mathematical beings of reason for real beings.

3. Meyerson's doctrine on the substantialization of tertium quid relations is what leads us to believe that the principle of causality resembles the principle of legality.

No one would dispute the claim that the explanations of reason are explanations of reality. Otherwise the claim to knowledge would be an empty absurdity. But given a reference of the Meyersonian concept to the real what results is a world in which the same thing is at once and in

the same respect immutable and changing, becoming and being, one and many, Parmenidean and Heraclitean. It is this aspect of the problem that has lead us to believe that the concretization of conceptual relations which Meyerson advances in defense of ontology raises the fallacy of misplaced concreteness. The suppression of the temporal reference is itself an indication that we are not dealing with real beings but with a being of reason. Nothing of the real corresponds to the Meyersonian concept. Meyerson is undoubtedly correct for calling attention to the fact that the rule of law implies the regularity of nature, which in turn means that nature must be structured in some way and consequently that something of the real persists throughout change, but the equation of residual identities and ontology has nothing to do with substance in the sense of an enduring substratum. In fact each successful identification of the Meyersonian reason brings testimony to a reality that is progressively less and less ontological. Contrary to the view of Meyerson, ontology does not appear at the place of unintelligibility but at the place of maximum intelligibility.

Supposing however, through some philosophic intervention of Maxwell's devil, that the real was amenable to

Meyerson's concept, it would also follow that it could not be known as it is in itself, as such knowledge is always precluded from a tertium quid structure. It would mean that the real is hypostatic as to its existence and noumenal as to its essence. It is also ironic that the unknowability of things as they are in themselves should be Meyerson's last words on the subject, as he tells us in Réel et déterminisme dans la physique quantique, that the divorce of essence and existence of which Kant spoke is not to be considered outdated. This undoubtedly delivers a crushing blow to the science of predictions **but** it deals as severe a blow to the science of causalism, as we can now do no more than describe phenomena since what things are in themselves rests on the side of the Kantian noumenon. But more than this, the fact that the Meyersonian real is hypostatic as to its existence means that reason cannot even pronounce itself on the existence of things (unless the real is an extension of reason, in which case solipsism is inevitable). It seems to us, therefore, that there is no great difference between Meyerson's causal postulate and Comte's affirmation that the rule of law alone suffices because when all is said and done they both end up doing the same thing.

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THESIS ABSTRACT

The point that Émile Meyerson has so strongly made against Auguste Comte and Positivistic epistemology is that a concern for ontology cannot remain foreign to science as the scientific law implies metaphysical commitments, such as a belief in the intelligibility of things, in the reference of laws to things, in the regularity of nature etc., which are not reducible to the rule that the law alone suffices. A belief in the validity of law as an instrument of prediction, according to Meyerson, implies that the relations which obtain between the conditions affecting the properties of a substance and the behaviour of these properties is constant. In short, the principle of legality implies the regularity of nature. This also leads Meyerson to suppose that things are structured and that they conserve an identity in time. But the feat of the Meyersonian reason is to equate the rule of identity in time with the principle of scientific causality. To think is for Meyerson to identify. No other process is involved. Explanation arises as a process of laying bare the identity which exists between a cause and its effect; of discovering that the sufficient reason of a consequent lies within the folds of an antecedent. Thus, the appearance of a relation in nature (legality) is always an occasion for identification (causality). These principles are distinct but they are not separate.

Meyerson's analysis of the psychology of scientific induction is destined to prove that science has always explained its phenomena in this manner. Thus, the positivistic dream of limiting the study of phenomena to the first of these principles alone, that is, of freeing science from ontological considerations, is chimerical.

Meyerson's defense of the ontological preoccupation of science is not acceptable as it rests on an inadequate metaphysics. Inasmuch as the tendency to posit identity in time corresponds to a natural law of the mind, it means that what we see upon awakening each morning is heavily weighted with interpretation. Meyerson says of the external world that we may even create it in order to lodge our sensations in it. Reason requires that things conserve an identity in time, but since sensations do not exist in us during their absence, Meyerson argues that there must be a non-ego, a world external to consciousness in which they can exist. He terms the hypostasis of sensations "common sense". Science, on the other hand, continues the ontology of common sense as reason cannot replace a concept by one that is heterogeneous to it. This situation however, ultimately leads him to an epistemological paradox; to idealism on the one hand, and to positivism on the other.

The epistemological paradox is an indication that

Meyerson begins his philosophy with a structured datum rather than with the being of extramental reality. Meyerson is bound up within a hermetically sealed cogito. Two possibilities follow from this situation. First, that Meyerson looks upon the real as an extension of spatial reasoning. To be is to be extended. This is the consideration of change in the Eleatic tradition. It ultimately leads to solipsism and acosmism. This situation corresponds to the convergent phase of reason and reality. Second, that reason cannot penetrate its object or even pronounce itself on the existence of things. This case corresponds to the divergent phase of reason and reality. In spite of these difficulties, Meyerson does not change the equating of reasoning and identification. In place, he fuses the opposites of idealism and positivism in the a priori - a posteriori, identification - diversity, conservation - dissipation etc., plausible propositions of science. He comes to the realization that this is necessary because of the principle of Sadi Carnot. The principle of Carnot warns that the elimination of time implies the reversibility of phenomena. But phenomena are not reversible because there is not the identity between cause and effect which the postulate of identity in time supposes. On the

contrary, work is being done and entropy is on the increase. Thus, the plausibility of a proposition results from the fusion of the antinomies of a reason which postulates the reversibility of phenomena, with a real in which change is seen to be unidirectional. In short, these propositions arise because of an interaction between an a priori structure of reason which seeks identity in time and a real that is growing progressively more elusive and diverse. Our analysis of the ambivalent nature of the irrationals confirms this.

Meyerson's decision to fuse the opposites of reason and reality in plausible propositions does not solve the metaphysical problem of the structured datum, but gives rise to the further difficulty of a tertium quid situation in which what provides from reason and what obtains from the senses is no longer discernible. Our investigation into the origin, nature and function which he ascribes to the concept bears this out. In essence, the Meyersonian concept contains a mixture of rationality and irrationality; of a priori and a posteriori elements. If explanation is to refer to things, the Meyersonian real must be hypostatic as to its existence and noumenal as to its essence. In short, the real is not only unknowable as to its essence, but reason cannot even pronounce itself on the existence of things. Our author does not succeed in refuting positivistic epistemology.