

Materialism and Empirio-Criticism

Critical Comments on a Reactionary Philosophy

V. I. Lenin
1908

PUBLISHER'S NOTE

The present edition of V. I. Lenin's *Materialism and Empirio-Criticism*, is a reprint of the text given in the book under the same title by the Foreign Languages Publishing House, Moscow. It contains "ten Questions for a Lecturer," a reprint from the text given in *Collected Works of V. I. Lenin*, English edition, Vol. 14. The notes at the end of the book are based on those given in the Chinese edition published by the People's Publishing House, Peking, April 1971.

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TEN QUESTIONS TO A LECTURER[1]

1. Does the lecturer acknowledge that the philosophy of Marxism is dialectical materialism ?

If he does not, why has he never analysed Engels' countless statements on this subject?

If he does, why do the Machists call their "revision" of dialectical materialism "the philosophy of Marxism"?

2. Does the lecturer acknowledge Engels' fundamental division of philosophical systems into idealism and materialism, Engels regarding those intermediate between these two, wavering between them, as the line of Hume in modern philosophy, calling this line "agnosticism" and declaring Kantianism to be a variety of agnosticism?

3. Does the lecturer acknowledge that recognition of the external world and its reflection in the human mind form the basis of the theory of knowledge of dialectical materialism?

4. Does the lecturer acknowledge as correct Engels' argument concerning the conversion of "things-in-themselves" into "things-for-us" ?

5. Does the lecturer acknowledge as correct Engels' assertion that the "real unity of the world consists in its materiality"? (*Anti-Duhring*, 2nd ed., 1886, p. 28, section I, part IV on world schematism.) [2]

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6. Does the lecturer acknowledge as correct Engels' assertion that "matter with-
Written in May-June 1908

out motion is as inconceivable as motion without matter"? (*Anti-Duhring*, 1886, 2nd ed., p. 45, in part 6 on natural philosophy, cosmogony, physics and chemistry.)[3]

7. Does the lecturer acknowledge that the ideas of causality, necessity, law, etc., are a reflection in the human mind of laws of nature, of the real world? Or was Engels wrong in saying so? (*Anti-Duhring*, S. 20-21, in part III on apriorism, and S. 103-04, in part XI on freedom and necessity.)[4]

8. Does the lecturer know that Mach expressed his agreement with the head of the immanentist school, Schuppe, and even dedicated his last and chief philosophical work to him? How does the lecturer explain this adherence of Mach to the obviously idealist philosophy of Schuppe, a defender of clericalism and in general a downright reactionary in philosophy?

9. Why did the lecturer keep silent about "adventure" with his comrade of yesterday (according to the *Studies* [5]), the Menshevik Yushkevich, who has today declared Bogdanov[6] (following in the wake of Rakhmetov[7]) an idealist ? Is the lecturer aware that Petzoldt in his latest book has classed a number of Mach's disciples among the idealists ?

10. Does the lecturer confirm the fact that Machism has nothing in common with Bolshevism? And that Lenin has repeatedly protested against Machism? [8] And that the Mensheviks Yushkevich and Valentinov [9] are "pure" empirio-criticists?

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MATERIALISM AND EMPIRIO-CRITICISM **Critical Comments on a Reactionary Philosophy [10]**

PREFACE TO THE FIRST EDITION

A number of writers, would-be Marxists, have this year undertaken a veritable campaign against the philosophy of Marxism. In the course of less than half a year four books devoted mainly and almost exclusively to attacks on dialectical materialism have made their appearance. These include first and foremost Studies in [? -- it would have been more proper to say "against"] [11] the Philosophy of Marxism (St. Petersburg, 1908), a symposium by Bazarov, Bogdanov, Lunacharsky, Berman, Helfond, Yushkevich and Suvorov; Yushkevich's Materialism and Critical Realism; Berman's Dialectics in the Light of the Modern Theory of Knowledge and Valentinov's The Philosophical Constructions of Marxism.

All these people could not have been ignorant of the fact that Marx and Engels scores of times termed their philosophical views dialectical materialism. Yet all these people, who, despite the sharp divergence of their political views, are united in their hostility towards dialectical materialism, at the same time claim to be Marxists in philosophy! Engels' dialectics is "mysticism," says Berman. Engels' views have become "antiquated," remarks Bazarov casually, as though

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it were a self-evident fact. Materialism thus appears to be refuted by our bold warriors, who proudly allude to the "modern theory of knowledge," "recent philosophy" (or "recent positivism"), the "philosophy of modern natural science," or even the "philosophy of natural science of the twentieth century." Supported by all these supposedly recent doctrines, our destroyers of dialectical materialism proceed fearlessly to down-

right fideism¹ [12] (in the case of Lunacharsky it is most evident, but by no means in his case alone! [13]). Yet when it comes to an explicit definition of their attitude towards Marx and Engels, all their courage and all their respect for their own convictions at once disappear. In deed -- a complete renunciation of dialectical materialism, i.e., of Marxism; in word -- endless subterfuges, attempts to evade the essence of the question, to cover their retreat, to put some materialist or other in place of materialism in general, and a determined refusal to make a direct analysis of the innumerable materialist declarations of Marx and Engels. This is truly "mutiny on one's knees," as it was justly characterised by one Marxist. This is typical philosophical revisionism, for it was only the revisionists who gained a sad notoriety for themselves by their departure from the fundamental views of Marxism and by their fear, or inability, to "settle accounts" openly, explicitly, resolutely and clearly with the views they had abandoned. When orthodox Marxists had occasion to pronounce against some antiquated views of Marx (for instance, Mehring when he opposed certain historical propositions), it was always done with such precision

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and thoroughness that no one has ever found anything ambiguous in such literary utterances.

For the rest, there is in the Studies "in" the Philosophy of Marxism one phrase which resembles the truth. This is Lunacharsky's phrase: "Perhaps we [i.e., all the collaborators of the Studies evi-

¹ Fideism is a doctrine which substitutes faith for knowledge, or which generally attaches significance to faith.

dently] have gone astray, but we are seeking" (p. 161). That the first half of this phrase contains an absolute and the second a relative truth, I shall endeavour to demonstrate circumstantially in the present book. At the moment I would only remark that if our philosophers had spoken not in the name of Marxism but in the name of a few "seeking" Marxists, they would have shown more respect for themselves and for Marxism.

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PREFACE TO THE SECOND EDITION

With the exception of a few corrections in the text, the present edition does not differ from the previous one. I hope that, irrespective of the dispute with the Russian "Machians," it will prove useful as an aid to an acquaintance with the philosophy of Marxism, dialectical materialism, as well as with the philosophical conclusions from the recent discoveries in natural science. As for A. A. Bogdanov's latest works, which I have had no opportunity to examine, the appended article by Comrade V. I. Nevsky

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IN LIEU OF INTRODUCTION HOW CERTAIN "MARXISTS" IN 1908 AND CERTAIN IDEALISTS IN 1710 REFUTED MATERIALISM

Anyone in the least acquainted with philosophical literature must know that scarcely a single contemporary professor of philosophy (or of theology) can be found who is not directly or indirectly engaged in refuting materialism. They have declared materialism refuted a thousand times, yet are continuing to refute it for the thousand and first time. All our revisionists are engaged in refuting materialism, pretending, however, that actually they are only refuting the materialist Plekhanov, and not the materialist Engels, nor the materialist

As for myself, I too am a "seeker" in philosophy. Namely, the task I have set myself in these comments is to find out what was the stumbling block to these people who under the guise of Marxism are offering something incredibly muddled, confused and reactionary.

The Author
September 1908

gives the necessary information. [14] Comrade V.I. Nevsky, not only in his work as a propagandist in general, but also as an active worker in the Party school in particular, has had ample opportunity to convince himself that under the guise of "proletarian culture" A. A. Bogdanov is imparting bourgeois and reactionary views.

N. Lenin
September 2, 1920

Feuerbach, nor the materialist views of J. Dietzgen -- and, moreover, that they are refuting materialism from the standpoint of "recent" and "modern" positivism, natural science, and so forth. Without citing quotations, which anyone desiring to do so could cull by the hundred from the books above mentioned, I shall refer to those arguments by which materialism is being combated by Bazarov, Bogdanov, Yushkevich,

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Valentinov, Chernov² and other Machians. I shall use this latter term throughout as a synonym for "empirio-criticist" because it is shorter and simpler and has already acquired rights of citizenship in Russian literature. That Ernst Mach is the most popular representative of empirio-criticism today is universally acknowledged in philosophical literature³, while Bogdanov's and Yushkevich's departures from "pure" Machism are of absolutely secondary importance, as will be shown later.

The materialists, we are told, recognise something unthinkable and unknowable -- "things-in-themselves" -- matter "outside of experience" and outside of our knowledge. They lapse into genuine mysticism by admitting the existence of something beyond, something transcending the bounds of "experience" and knowledge. When they say that matter, by acting upon our sense-organs, produces sensations, the materialists take as their basis the "unknown," nothingness; for do they not themselves declare our sensations to be the only source of knowledge? The materialists lapse into "Kantianism" (Plekhanov, by recognising the existence of "things-in-themselves," i.e., things outside of our consciousness); they "double" the world and preach "dualism," for the materialists hold that beyond the appearance there is the thing-in-itself; beyond the immediate sense data there is something else, some fetish, an "idol," an absolute, a source

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of "metaphysics," a double of religion ("holy matter," as Bazarov says).

Such are the arguments levelled by the Machians against materialism, as repeated

² V. Chernov, *Philosophical and Sociological Studies*, Moscow, 1907. The author is as ardent an adherent of Avenarius and an enemy of dialectical materialism as Bazarov and Co.

³ See, for instance, Dr. Richard Honigswald, *Ueber die Lehre Humes von der Realitat der Aussendinge* [Hume's Doctrine of the Reality of the External World], Berlin, 1904, S. 26.

and retold in varying keys by the aforementioned writers.

In order to test whether these arguments are new, and whether they are really directed against only one Russian materialist who "lapsed into Kantianism," we shall give some detailed quotations from the works of an old idealist, George Berkeley. This historical inquiry is all the more necessary in the introduction to our comments since we shall have frequent occasion to refer to Berkeley and his trend in philosophy, for the Machians misrepresent both the relation of Mach to Berkeley and the essence of Berkeley's philosophical line.

The work of Bishop George Berkeley, published in 1710 under the title *Treatise Concerning the Principles of Human Knowledge*⁴ begins with the following argument: "It is evident to anyone who takes a survey of the objects of human knowledge, that they are either ideas actually imprinted on the senses; or else such as are perceived by attending to the passions and operations of the mind; or lastly, ideas formed by help of memory and imagination.... By sight I have the ideas of light and colours, with their several degrees and variations. By touch I perceive hard and soft, heat and cold, motion and resistance.... Smelling furnishes me with odours; the palate with tastes; and hearing conveys sounds.... And as several of these are observed to accompany each other,

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they come to be marked by one name, and so to be reputed as one thing. Thus, for example, a certain colour, taste, smell, figure and consistence having been observed to go together, are accounted one distinct thing, signified by the name apple; other collections of ideas constitute a stone, a

⁴ George Berkeley: "Treatise Concerning the Principles of Human Knowledge", Vol. I of *Works of George Berkeley*, edited by A. Fraser, Oxford, 1871. There is a Russian translation.

tree, a book, and the like sensible things..." (§ 1).

Such is the content of the first section of Berkeley's work. We must remember that Berkeley takes as the basis of his philosophy "hard, soft, heat, cold, colours, tastes, odours," etc. For Berkeley, things are "collections of ideas," this expression designating the aforesaid, let us say, qualities or sensations, and not abstract thoughts.

Berkeley goes on to say that besides these "ideas or objects of knowledge" there exists something that perceives them -- "mind, spirit, soul or myself" (§ 2). It is self-evident, the philosopher concludes, that "ideas" cannot exist outside of the mind that perceives them. In order to convince ourselves of this it is enough to consider the meaning of the word "exist." "The table I write on I say exists, that is, I see and feel it; and if I were out of my study I should say it existed; meaning thereby that if I was in my study I might perceive it..." That is what Berkeley says in § 3 of his work and thereupon he begins a polemic against the people whom he calls materialists (§§ 18, 19, etc.). "For as to what is said of the absolute existence of unthinking things, without any relation to their being perceived," he says, "that is to me perfectly unintelligible." To exist means to be perceived ("Their esse is percipi," § 3 -- a dictum of Berkeley's frequently quoted in textbooks on the history of philosophy). "It is indeed an opinion strangely prevailing amongst men, that houses, mountains, rivers, and in a word all sensible objects have an existence, natural or real, distinct from their being

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perceived by the understanding" (§ 4). This opinion is a "manifest contradiction," says Berkeley. "For, what are the aforementioned objects but the things we perceive by sense? and what do we perceive besides our own ideas or sensations? and is it not plainly repugnant that any one of

these, or any combination of them, should exist unperceived?" (§ 4).

The expression "collection of ideas" Berkeley now replaces by what to him is an equivalent expression, combination of sensations, and accuses the materialists of a "repugnant" tendency to go still further, of seeking some source of this complex -- that is, of this combination of sensations. In § 5 the materialists are accused of trifling with an abstraction, for to divorce the sensation from the object, according to Berkeley, is an empty abstraction. "In truth," he says at the end of § 5, omitted in the second edition, "the object and the sensation are the same thing, and cannot therefore be abstracted from each other." Berkeley goes on: "But, say you, though the ideas themselves do not exist without the mind, yet there may be things like them, whereof they are copies or resemblances; which things exist without the mind, in an unthinking substance. I answer, an idea can be like nothing but an idea; a colour or figure can be like nothing but another colour or figure.... I ask whether those supposed originals, or external things, of which our ideas are the pictures or representations, be themselves perceivable or not? If they are, then they are ideas and we have gained our point; but if you say they are not, I appeal to anyone whether it be sense to assert a colour is like something which is invisible; hard or soft, like something which is intangible; and so of the rest" (§ 8).

As the reader sees, Bazarov's "arguments" against Plekhanov concerning the problem of whether things can exist

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outside of us apart from their action on us do not differ in the least from Berkeley's arguments against the materialists whom he does not mention by name. Berkeley considers the notion of the existence of "matter or corporeal substance" (§ 9) such a "contradiction," such an "absurdity" that it is really not worth wasting time exposing it. He says: "But because the tenet of the ex-

istence of Matter seems to have taken so deep a root in the minds of philosophers, and draws after it so many ill consequences, I choose rather to be thought prolix and tedious than omit anything that might conduce to the full discovery and extirpation of that prejudice" (§ 9).

We shall presently see to what ill consequences Berkeley is referring. Let us first finish with his theoretical arguments against the materialists. Denying the "absolute" existence of objects, that is, the existence of things outside human knowledge, Berkeley bluntly defines the viewpoint of his opponents as being that they recognise the "thing-in-itself." In § 24 Berkeley writes in italics that the opinion which he is refuting recognises "the absolute existence of sensible objects in themselves, or without the mind" (op. cit., pp. 167-68). The two fundamental lines of philosophical outlook are here depicted with the straightforwardness, clarity and precision that distinguish the classical philosophers from the inventors of "new" systems in our day. Materialism is the recognition of "objects in themselves," or outside the mind; ideas and sensations are copies or images of those objects. The opposite doctrine (idealism) claims that objects do not exist "without the mind"; objects are "combinations of sensations."

This was written in 1710, fourteen years before the birth of Immanuel Kant, yet our Machians, supposedly on the basis of "recent" philosophy, have made the discovery that the recognition of "things-in-themselves" is a result of the

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infection or distortion of materialism by Kantianism! The "new" discoveries of the Machians are the product of an astounding ignorance of the history of the basic philosophical trends.

Their next "new" thought consists in this: that the concepts "matter" or "substance" are remnants of old uncritical views. Mach and Avenarius, you see, have advanced

philosophical thought, deepened analysis and eliminated these "absolutes," "unchangeable entities," etc. If you wish to check such assertions with the original sources, go to Berkeley and you will see that they are pretentious fictions. Berkeley says quite definitely that matter is "nonentity" (§ 68), that matter is nothing (§ 80). "You may," thus Berkeley ridicules the materialists, "if so it shall seem good, use the word 'matter' in the same sense as other men use 'nothing'" (op. cit., pp. 196-97). At the beginning, says Berkeley, it was believed that colours, odours, etc., "really exist," but subsequently such views were renounced, and it was seen that they only exist in dependence on our sensations. But this elimination of old erroneous concepts was not completed; a remnant is the concept "substance" (§ 73), which is also a "prejudice" (p. 195), and which was finally exposed by Bishop Berkeley in 1710! In 1908 there are still wags who seriously believe Avenarius, Petzoldt, Mach and the rest, when they maintain that it is only "recent positivism" and "recent natural science" which have at last succeeded in eliminating these "metaphysical" conceptions.

These same wags (Bogdanov among them) assure their readers that it was the new philosophy that explained the error of the "duplication of the world" in the doctrine of the eternally refuted materialists, who speak of some sort of a "reflection" by the human consciousness of things existing

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outside the consciousness. A mass of sentimental verbiage has been written by the above-named authors about this "duplication." Owing to forgetfulness or ignorance, they failed to add that these new discoveries had already been discovered in 1710. Berkeley says:

"Our knowledge of these [i.e., ideas or things] has been very much obscured and confounded, and we have been led into very dangerous errors by supposing a two-

fold existence of the objects of sense -- the one intelligible or in the mind, the other real and without the mind" (i.e., outside consciousness). And Berkeley ridicules this "absurd" notion, which admits the possibility of thinking the unthinkable! The source of the "absurdity," of course, follows from our supposing a difference between "things" and "ideas" (§ 87), "the supposition of external objects." This same source -- as discovered by Berkeley in 1710 and rediscovered by Bogdanov in 1908 -- engenders faith in fetishes and idols. "The existence of Matter," says Berkeley, "or bodies unperceived, has not only been the main support of Atheists and Fatalists, but on the same principle doth Idolatry likewise in all its various forms depend" (§ 94).

Here we arrive at those "ill consequences" derived from the "absurd" doctrine of the existence of an external world which compelled Bishop Berkeley not only to refute this doctrine theoretically, but passionately to persecute its adherents as enemies. "For as we have shown the doctrine of Matter or corporeal Substance to have been the main pillar and support of Scepticism, so likewise upon the same foundation have been raised all the impious schemes of Atheism and Irreligion.... How great a friend material substance has been to Atheists in all ages were needless to relate. All their monstrous systems have so visible and necessary a

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dependence on it, that when this cornerstone is once removed, the whole fabric cannot choose but fall to the ground, inso much that it is no longer worth while to bestow a particular consideration on the absurdities of every wretched sect of Athcists" (§ 92, op. cit., pp. 203-04).

"Matter being once expelled out of nature drags with it so many sceptical and impious notions, such an incredible number of disputes and puzzling questions ["the principle of economy of thought," discovered by Mach in the 'seventies, "phi-

losophy as a conception of the world according to the principle of minimum expenditure of effort" -- Avenarius in 1876!] which have been thorns in the sides of divines as well as philosophers, and made so much fruitless work for mankind, that if the arguments we have produced against it are not found equal to demonstration (as to me they evidently seem), yet I am sure all friends to knowledge, peace, and religion have reason to wish they were" (§ 96).

Frankly and bluntly did Bishop Berkeley argue! In our time these very same thoughts on the "economical" elimination of "matter" from philosophy are enveloped in a much more artful form, and confused by the use of a "new" terminology, so that these thoughts may be taken by naive people for "recent" philosophy!

But Berkeley was not only candid as to the tendencies of his philosophy, he also endeavoured to cover its idealistic nakedness, to represent it as being free from absurdities and acceptable to "common sense." Instinctively defending himself against the accusation of what would nowadays be called subjective idealism and solipsism, he says that by our philosophy "we are not deprived of any one thing in nature" (§ 34). Nature remains, and the distinction between realities and chimeras remains, only "they both equally exist in the mind."

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"I do not argue against the existence of any one thing that we can apprehend, either by sense or reflection. That the things I see with my eyes and touch with my hands do exist, really exist, I make not the least question. The only thing whose existence we deny is that which philosophers [Berkeley's italics] call Matter or corporeal substance. And in doing this there is no damage done to the rest of mankind, who, I dare say, will never miss it.... The Atheist indeed will want the colour of an empty name to support his impiety...."

This thought is made still clearer in § 37, where Berkeley replies to the charge that his philosophy destroys corporeal substance: "... if the word substance be taken in the vulgar sense, for a combination of sensible qualities, such as extension, solidity, weight, and the like -- this we cannot be accused of taking away; but if it be taken in a philosophic sense, for the support of accidents or qualities without the mind -- then indeed I acknowledge that we take it away, if one may be said to take away that which never had any existence, not even in the imagination."

Not without good cause did the English philosopher, Fraser, an idealist and adherent of Berkeleianism, who published Berkeley's works and supplied them with his own annotations designate Berkeley's doctrine by the term "natural realism" (op. cit., p. x). This amusing terminology must by all means be noted, for it in fact expresses Berkeley's intention to counterfeit realism. In our further exposition we shall frequently find "recent" "positivists" repeating the same stratagem or counterfeit in a different form and in a different verbal wrapping. Berkeley does not deny the existence of real things! Berkeley does not go counter to the opinion of all humanity! Berkeley denies "only" the teaching of the philosophers, viz., the theory of knowledge, which seriously and resolutely takes

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as the foundation of all its reasoning the recognition of the external world and the reflection thereof in the minds of men. Berkeley does not deny natural science, which has always adhered (mostly unconsciously) to this, i.e., the materialist, theory of knowledge. We read in § 59: "We may, from the experience [Berkeley -- a philosophy of 'pure experience']⁵ we have had of

⁵ In his preface Fraser insists that both Berkeley and Locke "appeal exclusively to experience" (p. 117).

the train and succession of ideas in our minds ... make ... well-grounded predictions concerning the ideas we shall be affected with pursuant to a great train of actions, and be enabled to pass a right judgment of what would have appeared to us, in case we were placed in circumstances very different from those we are in at present. Herein consists the knowledge of nature, which [listen to this!] may preserve its use and certainty very consistently with what hath been said."

Let us regard the external world, nature, as "a combination of sensations" evoked in our mind by a deity. Acknowledge this and give up searching for the "ground" of these sensations outside the mind, outside man, and I will acknowledge within the framework of my idealist theory of knowledge all natural science and all the use and certainty of its deductions. It is precisely this framework, and only this framework, that I need for my deductions in favour of "peace and religion." Such is Berkeley's train of thought. It correctly expresses the essence of idealist philosophy and its social significance, and we shall encounter it later when we come to speak of the relation of Machism to natural science.

Let us now consider another recent discovery that was borrowed from Bishop Berkeley in the twentieth century by

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the recent positivist and critical realist, P. Yushkevich. This discovery is "empirio-symbolism." "Berkeley," says Fraser "thus reverts to his favourite theory of a Universal Natural Symbolism" (op. cit., p. 190). Did these words not occur in an edition of 1871, one might have suspected the English fideist philosopher Fraser of plagiarising both the modern mathematician and physicist Poincare and the Russian "Marxist" Yushkevich!

This theory of Berkeley's, which threw Fraser into raptures, is set forth by the Bishop as follows:

"The connexion of ideas [do not forget that for Berkeley ideas and things are identical] does not imply the relation of cause and effect, but only of a mark or sign with the thing signified " (§ 65). "Hence, it is evident that those things, which under the notion of a cause co-operating or concurring to the production of effects, are altogether inexplicable, and run us into great absurdities, may be very naturally explained ... when they are considered only as marks or signs for our information" (§ 66). Of course, in the opinion of Berkeley and Fraser, it is no other than the deity who informs us by means of these "empirio-symbols." The epistemological significance of symbolism in Berkeley's theory, however, consists in this, that it is to replace "the doctrine" which "pretends to explain things by corporeal causes" (§ 66).

We have before us two philosophical trends in the question of causality. One "pretends to explain things by corporeal causes." It is clear that it is connected with the "doctrine of matter" refuted as an "absurdity" by Bishop Berkeley. The other reduces the "notion of cause" to the notion of a "mark or sign" which serves for "our information" (supplied by God). We shall meet these two trends in a twentieth-

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century garb when we analyse the attitudes of Machism and dialectical materialism to this question.

Further, as regards the question of reality, it ought also to be remarked that Berkeley, refusing as he does to recognise the existence of things outside the mind, tries to find a criterion for distinguishing between the real and the fictitious. In § 36 he says that those "ideas" which the minds of men evoke at pleasure "are faint, weak, and unsteady in respect to others they perceive by sense; which, being impressed upon them according to certain rules or laws of nature, speak themselves about the effects of a Mind more powerful and wise than human spirits. These latter are

said to have more reality in them than the former; by which is meant that they are more affecting, orderly and distinct, and that they are not fictions of the mind perceiving them...." Elsewhere (§ 84) Berkeley tries to connect the notion of reality with the simultaneous perception of the same sensations by many people. For instance, how shall we resolve the question as to whether the transformation of water into wine, of which we are being told, is real? "If at table all who were present should see, and smell, and taste, and drink wine, and find the effects of it, with me there could be no doubt of its reality." And Fraser explains: "Simultaneous perception of the 'same'... sense-ideas, by different persons, as distinguished from purely individual consciousness of feelings and fancies, is here taken as a test of the ... reality of the former."

From this it is evident that Berkeley's subjective idealism is not to be interpreted as though it ignored the distinction between individual and collective perception. On the contrary, he attempts on the basis of this distinction to construct a criterion of reality. Deriving "ideas" from the action

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of a deity upon the human mind, Berkeley thus approaches objective idealism: the world proves to be not my idea but the product of a single supreme spiritual cause that creates both the "laws of nature" and the laws distinguishing "more real" ideas from less real, and so forth.

In another work, *The Three Dialogues Between Hylas and Philonous* (1713), where he endeavours to present his views in an especially popular form, Berkeley sets forth the opposition between his doctrine and the materialist doctrine in the following way:

"I assert as well as you [materialists] that, since we are affected from without, we must allow Powers to be without, in a Being distinct from ourselves.... But then we differ as to the kind of this powerful be-

ing. I will have it to be Spirit, you Matter, or I know not what (I may add too, you know not what) third nature..." (op. cit., p. 335).

This is the gist of the whole question; Fraser comments: according to the materialists, sensible phenomena are due to material substance, or to some unknown "third nature"; according to Berkeley, to rational Will; according to Hume and the Positivists, their origin is absolutely unknown, and we can only generalise them inductively, through custom, as facts.

Here the English Berkeleian, Fraser, approaches from his consistent idealist standpoint the same fundamental "lines" in philosophy which were so clearly characterised by the materialist Engels. In his work *Ludwig Feuerbach* Engels divides philosophers into "two great camps" -- materialists and idealists. Engels -- dealing with theories of the two trends much more developed, varied and rich in content than Fraser dealt with -- sees the fundamental distinction between them in the fact that while for the materialists nature is

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primary and spirit secondary, for the idealists the reverse is the case. In between these two camps Engels places the adherents of Hume and Kant, who deny the possibility of knowing the world, or at least of knowing it fully, and calls them agnostics[15]. In his *Ludwig Feuerbach* Engels applies this term only to the adherents of Hume (those people whom Fraser calls, and who like to call themselves, "positivists"). But in his article "On Historical Materialism," Engels explicitly speaks of the standpoint of "the Neo-Kantian agnostic,"[16] regarding Neo-Kantianism as a variety of agnosticism.⁶

⁶ Fr. Engels, "Ueber historischen Materialismus," *Neue Zeit*, [17] XI. Jg., Bd. I (1892-93), Nr. 1, S. 18. Translated from the English by Engels himself. The Russian translation in *Historical Materialism* (St. Petersburg, 1908, p. 167) is inaccurate.

We cannot dwell here on this remarkably correct and profound judgment of Engels' (a judgment which is shamelessly ignored by the Machians). We shall discuss it in detail later on. For the present we shall confine ourselves to pointing to this Marxist terminology and to this meeting of extremes: the views of a consistent materialist and of a consistent idealist on the fundamental philosophical trends. In order to illustrate these trends (with which we shall constantly have to deal in our further exposition) let us briefly note the views of outstanding philosophers of the eighteenth century who pursued a different path from Berkeley.

Here are Hume's arguments. In his *An Enquiry Concerning Human Understanding*, in the chapter (XII) on sceptical philosophy, he says: "It seems evident, that men are carried, by a natural instinct or prepossession, to repose faith in their senses; and that, without any reasoning, or even almost before the use of reason, we always suppose an external universe, which depends not on our perception, but would

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exist though we and every sensible creature were absent or annihilated. Even the animal creations are governed by a like opinion, and preserve this belief of external objects, in all their thoughts, designs, and actions.... But this universal and primary opinion of all men is soon destroyed by the slightest philosophy, which teaches us, that nothing can ever be present to the mind but an image or perception, and that the senses are only the inlets, through which these images are conveyed, without being able to produce any immediate intercourse between the mind and the object. The table, which we see, seems to diminish, as we remove farther from it: But the real table, which exists independent of us, suffers no alteration: It was, therefore, nothing but its image, which was present to the mind. These are the obvious dictates of reason;

and no man, who reflects, ever doubted, that the existences, which we consider, when we say, 'this house,' and 'that tree' are nothing but perceptions in the mind.... By what argument can it be proved, that the perceptions of the mind must be caused by external objects, entirely different from them, though resembling them (if that be possible), and could not arise either from the energy of the mind itself, or from the suggestion of some invisible and unknown spirit, or from some other cause still more unknown to us? ... How shall the question be determined? By experience surely; as all other questions of a like nature. But here experience is, and must be entirely silent. The mind has never anything present to it but the perceptions, and cannot possibly reach any experience of their connection with objects. This supposition of such a connection is, therefore, without any foundation in reasoning. To have recourse to the veracity of the Supreme Being, in order to prove the veracity of our senses, is surely making a very unexpected circuit ... if the external

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world be once called in question, we shall be at a loss to find arguments, by which we may prove the existence of that Being, or any of his attributes."⁷

He says the same thing in his *Treatise of Human Nature* (Part IV, Sec. II, "On Scepticism Towards Sensations"): "Our perceptions are our only objects." (P. 281 of the French translation by Renouvier and Pillon, 1878.) By scepticism Hume means refusal to explain sensations as the effects of objects, spirit, etc., refusal to reduce perceptions to the external world, on the one hand, and to a deity or to an unknown spirit, on the other. And the author of the introduction to the French translation of Hume, F. Pillon -- a philosopher of a trend

⁷ David Hume, *An Enquiry Concerning Human Understanding*. Essays and Treatises, London, 1882, Vol. II, pp. 124-26.

akin to Mach (as we shall see below) -- justly remarks that for Hume subject and object are reduced to "groups of various perceptions," to "elements of consciousness, to impressions, ideas, etc."; that the only concern should be with the "groupings and combinations of these elements."⁸ The English Humean, Huxley, who coined the apt and correct term "agnosticism," in his book on Hume also emphasises the fact that the latter, regarding "sensations" as the "primary and irreducible states of consciousness," is not entirely consistent on the question how the origin of sensations is to be explained, whether by the effect of objects on man or by the creative power of the mind. "Realism and idealism are equally probable hypotheses" (i.e., for Hume).⁹ Hume does not go

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beyond sensations. "Thus the colours red and blue, and the odour of a rose, are simple impressions.... A red rose gives us a complex impression, capable of resolution into the simple impressions of red colour, rose-scent, and numerous others" (op. cit., pp. 64-65). Hume admits both the "materialist position" and the "idealist position" (p. 82); the "collection of perceptions" may be generated by the Fichtean "ego" or may be a "signification" and even a "symbol" of a "real something." This is how Huxley interprets Hume.

As for the materialists, here is an opinion of Berkeley given by Diderot, the leader of the Encyclopaedists: "Those philosophers are called idealists who, being conscious only of their existence and of the sensations which succeed each other within themselves, do not admit anything else. An extravagant system which, to my thinking,

⁸ *Psychologie de Hume. Traité de la nature humaine, etc.* Trad. par Ch. Renouvier et F. Pillon [Hume's Psychology. A Treatise of Human Nature, translated by Ch. Renouvier and F. Pillon], Paris, 1878. Introduction, p. x.

⁹ Th. Huxley, *Hume*, London, 1879, p. 74.

only the blind could have originated; a system which, to the shame of human intelligence and philosophy, is the most difficult to combat, although the most absurd of all."¹⁰ And Diderot, who came very close to the standpoint of contemporary materialism (that arguments and syllogisms alone do not suffice to refute idealism, and that here it is not a question for theoretical argument), notes the similarity of the premises both of the idealist Berkeley, and the sensationalist Condillac. In his opinion, Condillac should have undertaken a refutation of Berkeley in order to avoid such absurd conclusions being drawn from the treatment of sensations as the only source of our knowledge.

In the "Conversation Between d'Alembert and Diderot," Diderot states his philosophical position thus: "... Suppose

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a piano to be endowed with the faculty of sensation and memory, tell me, would it not of its own accord repeat those airs which you have played on its keys? We are instruments endowed with sensation and memory. Our senses are so many keys upon which surrounding nature strikes and which often strike upon themselves. And this is all, in my opinion, that occurs in a piano organised like you and me." D'Alembert retorts that such an instrument would have to possess the faculty of finding food for itself and of reproducing little pianos. Undoubtedly, contends Diderot. -- But take an egg. "This is what refutes all the schools of theology and all the temples on earth. What is this egg? A mass that is insensible until the embryo is introduced thither, and when this embryo is introduced, what is it then? An insensible mass, for in its turn, this embryo is only an inert and crude liquid. How does this mass arrive at a different organisation, arrive at sensibility and

life? By means of heat. And what produces heat? Motion...." The animal that is hatched from the egg is endowed with all your sensations; it performs all your actions. "Would you maintain with Descartes that this is a simple imitating machine? Little children will laugh at you, and the philosophers will reply that if this be a machine then you too are a machine. If you admit that the difference between these animals and you is only one of organisation, you will prove your common sense and sagacity, you will be right. But from this will follow the conclusion that refutes you; namely, that from inert matter organised in a certain way, impregnated with another bit of inert matter, by heat and motion -- sensibility, life, memory, consciousness, emotion, and thought are generated." One of the two, continues Diderot, either admit some "hidden element" in the egg, that penetrates to it in an unknown way at a certain stage

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of development, an element about which it is unknown whether it occupies space, whether it is material or whether it is created for the purpose -- which is contradictory to common sense, and leads to inconsistencies and absurdities; or we must make "a simple supposition which explains everything, namely, that the faculty of sensation is a general property of matter, or a product of its organisation." To d'Alembert's objection that such a supposition implies a quality which in its essence is incompatible with matter, Diderot retorts: "And how do you know that the faculty of sensation is essentially incompatible with matter, since you do not know the essence of any thing at all, either of matter, or of sensation? Do you understand the nature of motion any better, its existence in a body, its communication from one body to another?" D'Alembert: "Without knowing the nature of sensation, or that of matter, I see, however, that the faculty of sensation is a simple quality, single, indivisible, and

¹⁰ *Oeuvres completes de Diderot*, ed. par J. Assezat [Diderot, Complete Works, edited by Assezat], Paris, 1875, Vol. I, p. 304.

incompatible with a divisible subject or substratum (support)."

Diderot:

"Metaphysico-theological nonsense! What, do you not see that all qualities of matter, that all its forms accessible to our senses are in their essence indivisible? There cannot be a larger or a smaller degree of impenetrability. There may be half of a round body, but there is no half of roundness.... Be a physicist and admit the derivative character of the given effect when you see how it is derived, though you may be unable to explain the relation between the cause and the effect. Be logical and do not replace a cause that exists and explains everything by some other cause which it is impossible to conceive, and the connection of which with the effect is even more difficult to conceive, and which engenders an infinite number of difficulties without solving a single one of them."

D'Alembert:

"And what if I abandon

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this cause?"

Diderot:

"There is only one substance in the universe, in men and in animals. A hand-organ is of wood, man of flesh. A finch is of flesh, and a musician is of flesh, but differently organised; but both are of the same origin, of the same formation, have the same functions and the same purpose."

D'Alembert:

"And what establishes the similarity of sounds between your two pianos?" Diderot: "... The instrument endowed with the faculty of sensation, or the animal, has learned by experience that after a certain sound certain consequences follow outside of it; that other sentient instruments, like itself, or similar animals, approach, recede, demand, offer, wound, caress; -- and all these consequences are associated in its memory and in the memory of other animals with the formation of sounds. Mark, in intercourse between people there is nothing beside sounds and actions. And to appreciate all the power of my system, mark again that it is faced with that same insurmountable difficulty which Berkeley adduced against the existence of bodies. There was a

moment of insanity when the sentient piano imagined that it was the only piano in the world, and that the whole harmony of the universe resided within it."¹¹

This was written in 1769. And with this we shall conclude our brief historical enquiry. We shall have more than one occasion to meet "the insane piano" and the harmony of the universe residing within man when we come to analyse "recent positivism."

For the present we shall confine ourselves to one conclusion: the "recent" Machians have not adduced a single argument against the materialists that had not been adduced by Bishop Berkeley.

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Let us mention as a curiosity that one of these Machians, Valentinov, vaguely sensing the falsity of his position, has tried to "cover up the traces" of his kinship with Berkeley and has done so in a rather amusing manner. On page 150 of his book we read: "... When those who, speaking of Mach, point to Berkeley, we ask, which Berkeley do they mean? Do they mean the Berkeley who traditionally regards himself [Valentinov wishes to say who is regarded] as a solipsist; the Berkeley who defends the immediate presence and providence of the deity? Generally speaking [?], do they mean Berkeley, the philosophising bishop, the destroyer of atheism, or Berkeley, the thoughtful analyser? With Berkeley the solipsist and preacher of religious metaphysics Mach indeed has nothing in common." Valentinov is muddled; he was unable to make clear to himself why he was obliged to defend Berkeley the "thoughtful analyser" and idealist against the materialist Diderot. Diderot drew a clear distinction between the fundamental philosophical trends. Valentinov confuses them, and while doing so very amusingly tries to console us: "We would not consider the 'kin-

¹¹ *Ibid.*, Vol. II, pp. 114-18.

ship' of Mach to the idealist views of Berkeley a philosophical crime," he says, "even if this actually were the case" (p. 149). To confound two irreconcilable fundamental trends in philosophy -- really,

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CHAPTER ONE THE THEORY OF KNOWLEDGE OF EMPIRO- CRITICISM AND OF DIALECTICAL MATERIALISM. I

1. SENSATIONS AND COMPLEXES OF SENSATIONS

The fundamental premises of the theory of knowledge of Mach and Avenarius are frankly, simply and clearly expounded by them in their early philosophical works. To these works we shall now turn, postponing for later treatment an examination of the corrections and emendations subsequently made by these writers.

"The task of science," Mach wrote in 1872, "can only be: 1. To determine the laws of connection of ideas (Psychology). 2. To discover the laws of connection of sensations (Physics). 3. To explain the laws of connection between sensations and ideas (Psycho-physics)."¹² This is quite clear.

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The subject matter of physics is the connection between sensations and not between things or bodies, of which our sensations are the image. And in 1883, in his *Mechanik*, Mach repeats the same thought: "Sensations are not 'symbols of things.' The 'thing' is rather a mental symbol for a complex of sensations of relative stability. Not the things (bodies) but col-

¹² E. Mach, *Die Geschichte und die Wurzel des Satzes von der Erhaltung der Arbeit*. Vortrag, gehalten in der k. Bohm. Gesellschaft der Wissenschaften am 15. Nov. 1871 [History and Roots of the Principle of the Conservation of Work. A Lecture Delivered at the Bohemian Royal Scientific Society on November 15, 1871], Prag, 1872, S. 57-58.

what "crime" is that? But that is what the whole wisdom of Mach and Avenarius amounts to. We shall now proceed to an examination of this wisdom.

ours, sounds, pressures, spaces, times (what we usually call sensations) are the real elements of the world."¹³

About this word "elements," the fruit of twelve years of "reflection," we shall speak later. At present let us note that Mach explicitly states here that things or bodies are complexes of sensations, and that he quite clearly sets up his own philosophical point of view against the opposite theory which holds that sensations are "symbols" of things (it would be more correct to say images or reflections of things). The latter theory is philosophical materialism. For instance, the materialist Frederick Engels -- the not unknown collaborator of Marx and a founder of Marxism -- constantly and without exception speaks in his works of things and their mental pictures or images (*Gedanken-Abbilder*), and it is obvious that these mental images arise exclusively from sensations. It would seem that this fundamental standpoint of the "philosophy of Marxism" ought to be known to everyone who speaks of it, and especially to anyone who comes out in print in the name of this philosophy. But because of the extraordinary confusion which our Machians have introduced, it becomes necessary to repeat what is generally known. We

¹³ E. Mach, *Die Mechanik in ihrer Entwicklung historisch-kritisch dargestellt* [Mechanics, a Historical and Critical Account of Its Development], 3. Auflage, Leipzig, 1897, S. 473.

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turn to the first section of *Anti-Duhring* and read: "... things and their mental images ...";¹⁴ or to the first section of the philosophical part, which reads: "But whence does thought obtain these principles [i.e., the fundamental principles of all knowledge]? From itself? No ... these forms can never be created and derived by thought out of itself, but only from the external world ... the principles are not the starting point of the investigation [as Duhring who would be a materialist, but cannot consistently adhere to materialism, holds], but its final result; they are not applied to nature and human history, but abstracted from them; it is not nature and the realm of humanity which conform to these principles, but the principles are only valid in so far as they are in conformity with nature and history. That is the only materialistic conception of the matter, and Herr Duhring's contrary conception is idealistic, makes things stand completely on their heads, and fashions the real world out of ideas" (*ibid.*, p. 21). [18] Engels, we repeat, applies this "only materialistic conception" everywhere and without exception, relentlessly attacking Duhring for the least deviation from materialism to idealism. Anybody who reads *Anti-Duhring* and *Ludwig Feuerbach* with the slightest care will find scores of instances when Engels speaks of things and their reflections in the human brain, in our consciousness, thought, etc. Engels does not say that sensations or ideas are "symbols" of things, for consistent materialism must here use "image," picture, or reflection instead of "symbol," as we shall show in detail in the proper place. But the question here is not of this or

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that formulation of materialism, but of the opposition of materialism to idealism, of the

¹⁴ Fr. Engels, *Herrn Eugen Duhrings Umwälzung der Wissenschaft* [Herr Eugen Durhring's Revolution in Science], 3, Auflage, Stuttgart, 1904, S. 6.

difference between the two fundamental lines in philosophy. Are we to proceed from things to sensation and thought? Or are we to proceed from thought and sensation to things? The first line, i.e., the materialist line, is adopted by Engels. The second line, i.e., the idealist line, is adopted by Mach. No evasions, no sophisms (a multitude of which we shall yet encounter) can remove the clear and indisputable fact that Ernst Mach's doctrine that things are complexes of sensations is subjective idealism and a simple rehash of Berkeleianism. If bodies are "complexes of sensations," as Mach says, or "combinations of sensations," as Berkeley said, it inevitably follows that the whole world is but my idea. Starting from such a premise it is impossible to arrive at the existence of other people besides oneself: it is the purest solipsism. Much as Mach, Avenarius, Petzoldt and the others may abjure solipsism, they cannot in fact escape solipsism without falling into howling logical absurdities. To make this fundamental element of the philosophy of Machism still clearer, we shall give a few additional quotations from Mach's works. Here is a sample from the *Analyse der Empfindungen* (*Analysis of Sensations*; I quote from Kotlyar's Russian translation, published by Skirmunt, Moscow, 1907):

"We see a body with a point S. If we touch S, that is, bring it into contact with our body, we receive a prick. We can see S without feeling the prick. But as soon as we feel the prick we find S on the skin. Thus, the visible point is a permanent nucleus, to which, according to circumstances, the prick is attached as something accidental. By frequent repetitions of analogous occurrences we finally habituate ourselves to regard all properties of bodies as 'effects' which

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proceed from permanent nuclei and are conveyed to the self through the medium of the body; which effects we call sensations ..." (p. 20).

In other words, people "habituate" themselves to adopt the standpoint of materialism, to regard sensations as the result of the action of bodies, things, nature on our sense organs. This "habit," so noxious to the philosophical idealists (a habit acquired by all mankind and all natural science!), is not at all to the liking of Mach, and he proceeds to destroy it:

" ... Thereby, however, these nuclei are deprived of their entire sensible content and are converted into naked abstract symbols "

An old song, most worthy Professor! This is a literal repetition of Berkeley who said that matter is a naked abstract symbol. But it is Ernst Mach, in fact, who goes naked, for if he does not admit that the "sensible content" is an objective reality, existing independently of us, there remains only a "naked abstract" I, an I infallibly written with a capital letter and italicised, equal to "the insane piano, which imagined that it was the sole existing thing in this world." If the "sensible content" of our sensations is not the external world then nothing exists save this naked I engaged in empty "philosophical" acrobatics. A stupid and fruitless occupation!

" ... It is then correct that the world consists only of our sensations. In which case we have knowledge only of sensations, and the assumption of those nuclei, and of their interaction, from which alone sensations proceed, turns out to be quite idle and superfluous. Such a view can only appeal to half-hearted realism or half-hearted criticism."

We have quoted the sixth paragraph of Mach's "anti-metaphysical observations" in full. It is a sheer plagiarism

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on Berkeley. Not a single idea, not a glimmer of thought, except that "we sense only our sensations." From which there is only one possible inference, namely, that the "world consists only of my sensations." The word "our" employed by Mach instead of

"my" is employed illegitimately. By this word alone Mach betrays that "half-heartedness" of which he accuses others. For if the "assumption" of the existence of the external world is "idle," if the assumption that the needle exists independently of me and that an interaction takes place between my body and the point of the needle is really "idle and superfluous," then primarily the "assumption" of the existence of other people is idle and superfluous. Only I exist, and all other people, as well as the external world, come under the category of idle "nuclei." Holding this point of view one cannot speak of "our " sensations; and when Mach does speak of them, it is only a betrayal of his own amazing half-heartedness. It only proves that his philosophy is a jumble of idle and empty words in which their author himself does not believe.

Here is a particularly graphic example of Mach's half heartedness and confusion. In § 6 of Chapter XI of the *Analysis of Sensations* we read: "If I imagine that while I am experiencing sensations, I or someone else could observe my brain with all possible physical and chemical appliances, it would be possible to ascertain with what processes of the organism particular sensations are connected ... " (p. 197).

Very well! This means, then, that our sensations are connected with definite processes, which take place in the organism in general, and in our brain in particular? Yes, Mach very definitely makes this "assumption" -- it would be quite a task not to make it from the standpoint of natural science! But is not this the very "assumption" of those very

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same "nuclei and their interaction" which our philosopher declared to be idle and superfluous? We are told that bodies are complexes of sensations; to go beyond that, Mach assures us, to regard sensations as a product of the action of bodies upon our sense-organs, is metaphysics, an

idle and superfluous assumption, etc., à la Berkeley. But the brain is a body. Consequently, the brain also is no more than a complex of sensations. It follows, then, that with the help of a complex of sensations I (and I also am nothing but a complex of sensations) sense complexes of sensations. A delightful philosophy! First sensations are declared to be "the real elements of the world"; on this an "original" Berkeleianism is erected -- and then the very opposite view is smuggled in, viz., that sensations are connected with definite processes in the organism. Are not these "processes" connected with an exchange of matter between the "organism" and the external world? Could this exchange of matter take place if the sensations of the particular organism did not give it an objectively correct idea of this external world?

Mach does not ask himself such embarrassing questions when he mechanically jumbles fragments of Berkeleianism with the views of natural science, which instinctively adheres to the materialist theory of knowledge.... In the same paragraph Mach writes: "It is sometimes also asked whether (inorganic) 'matter' experiences sensation.... " Does this mean that there is no doubt that organic matter experiences sensation? Does this mean that sensation is not something primary but that it is one of the properties of matter? Mach skips over all the absurdities of Berkeleianism! ... "The question," he avers, "is natural enough, if we proceed from the current widespread physical notions, according to which matter is the immediate and indisputably given reality, out of

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which everything, inorganic and organic, is constructed.... " Let us bear in mind this truly valuable admission of Mach's that the current widespread physical notions regard matter as the immediate reality, and that only one variety of this reality (organic matter) possesses the well-defined property of sensation.... Mach continues: "Then, in-

deed, sensation must suddenly arise somewhere in this structure consisting of matter, or else have previously been present in the foundation. From our standpoint the question is a false one. For us matter is not what is primarily given. Rather, what is primarily given are the elements (which in a certain familiar relation are designated as sensations).... "

What is primarily given, then, are sensations, although they are "connected" only with definite processes in organic matter! And while uttering such absurdities Mach wants to blame materialism ("the current widespread physical notion") for leaving unanswered the question whence sensation "arises." This is a sample of the "refutation" of materialism by the fideists and their hangers-on. Does any other philosophical standpoint "solve" a problem before enough data for its solution has been collected? Does not Mach himself say in the very same paragraph: "So long as this problem (how far sensation extends in the organic world) has not been solved even in a single special case, no answer to the question is possible."

The difference between materialism and "Machism" in this particular question thus consists in the following. Materialism, in full agreement with natural science, takes matter as primary and regards consciousness, thought, sensation as secondary, because in its well-defined form sensation is associated only with the higher forms of matter (organic matter), while "in the foundation of the structure of matter" one can

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only surmise the existence of a faculty akin to sensation. Such, for example, is the supposition of the well-known German scientist Ernst Haeckel, the English biologist Lloyd Morgan and others, not to speak of Diderot's conjecture mentioned above. Machism holds to the opposite, the idealist point of view, and at once lands into an absurdity: since, in the first place, sensation is taken as primary, in spite of the fact that

it is associated only with definite processes in matter organised in a definite way; and since, in the second place, the basic premise that bodies are complexes of sensations is violated by the assumption of the existence of other living beings and, in general, of other "complexes" besides the given great I.

The word "element," which many naive people (as we shall see) take to be some sort of a new discovery, in reality only obscures the question, for it is a meaningless term which creates the false impression that a solution or a step forward has been achieved. This impression is a false one, because there still remains to be investigated and reinvestigated how matter, apparently entirely devoid of sensation, is related to matter which, though composed of the same atoms (or electrons), is yet endowed with a well-defined faculty of sensation. Materialism clearly formulates the as yet unsolved problem and thereby stimulates the attempt to solve it, to undertake further experimental investigation. Machism, which is a species of muddled idealism, befogs the issue and side tracks it by means of the futile verbal trick, "element."

Here is a passage from Mach's latest, comprehensive and conclusive philosophical work that clearly betrays the falsity of this idealist trick. In his *Knowledge and Error* we read: "While there is no difficulty in constructing (aufzubauen) every physical experience out of sensations, i.e., psychical

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elements, it is impossible to imagine (ist keine Möglichkeit abzusehen) how any psychical experience can be composed (darstellen) of the elements employed in modern physics, i.e., mass and motion (in their rigidity -- Starrheit -- which is serviceable only for this special science)."¹⁵

¹⁵ E. Mach, *Erkenntnis und Irrtum*, 2. Auflage, 1906, S. 12, Anm.

Of the rigidity of the conceptions of many modern scientists and of their meta-physical (in the Marxist sense of the term, i.e., anti-dialectical) views, Engels speaks repeatedly and very precisely. We shall see later that it was just on this point that Mach went astray, because he did not understand or did not know the relation between relativism and dialectics. But this is not what concerns us here. It is important for us here to note how glaringly Mach's idealism emerges, in spite of the confused -- ostensibly new -- terminology. There is no difficulty, you see, in constructing any physical element out of sensations, i.e., psychical elements! Oh yes, such constructions, of course, are not difficult, for they are purely verbal constructions, shallow scholasticism, serving as a loophole for fideism. It is not surprising after this that Mach dedicates his works to the immanentists; it is not surprising that the immanentists, who profess the most reactionary kind of philosophical idealism, welcome Mach with open arms. The "recent positivism" of Ernst Mach was only about two hundred years too late. Berkeley had already sufficiently shown that "out of sensations, i.e., psychical elements," nothing can be "built" except solipsism. As regards materialism, against which Mach here, too, sets up his own views, without frankly and explicitly naming the "enemy," we have already seen in the case of Diderot what the real views of the materialists are. These views do not consist in deriving sensation

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from the movement of matter or in reducing sensation to the movement of matter, but in recognising sensation as one of the properties of matter in motion. On this question Engels shared the standpoint of Diderot. Engels dissociated himself from the "vulgar" materialists, Vogt, Buchner and Moleschott, for the very reason, among others, that they erred in believing that the brain secretes thought in the same way as the liver secretes bile. But Mach,

who constantly sets up his views in opposition to materialism, ignores, of course, all the great materialists -- Diderot, Feuerbach, Marx and Engels -- just as all other official professors of official philosophy do.

In order to characterise Avenarius' earliest and basic view, let us take his first independent philosophical work, *Philosophy as a Conception of the World According to the Principle of the Minimum Expenditure of Effort. Prolegomena to a Critique of Pure Experience*, which appeared in 1876. Bogdanov in his *Empirio-Monism* (Bk. I, 2nd ed., 1905, p. 9, note) says that "in the development of Mach's views, the starting point was philosophical idealism, while a realistic tinge was characteristic of Avenarius from the very beginning." Bogdanov said so because he believed what Mach said (see *Analysis of Sensations*, Russian translation, p. 288). Bogdanov should not have believed Mach, and his assertion is diametrically opposed to the truth. On the contrary, Avenarius' idealism emerges so clearly in his work of 1876 that Avenarius himself in 1891 was obliged to admit it. In the introduction to *The Human Concept of the World* Avenarius says: "He who has read my first systematic work, *Philosophie*, etc., will at once have presumed that I would have attempted to treat the problems of a criticism of pure experience from the 'idealist' standpoint" (*Der menschliche Welt-*

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begriff, 1891, Vorwort, S. ix [The Human Concept of the World, 1891, Foreword, p. ix]), but "the sterility of philosophical idealism compelled me to doubt the correctness of my previous path" (p. x). This idealist starting point of Avenarius' is universally acknowledged in philosophical literature. Of the French writers I shall refer to Cauwelaert, who says that Avenarius' philosophical standpoint in the *Prolegomena* [19]

is "monistic idealism."¹⁶ Of the German writers, I shall name Rudolf Willy, Avenarius' disciple, who says that "Avenarius in his youth -- and particularly in his work of 1876 -- was totally under the spell (ganz im Banne) of so-called epistemological idealism."¹⁷

And, indeed, it would be ridiculous to deny the idealism in Avenarius' *Prolegomena*, where he explicitly states that "only sensation can be thought of as the existing" (pp. 10 and 65 of the second German edition; all italics in quotations are ours). This is how Avenarius himself presents the contents of § 116 of his work. Here is the paragraph in full: "We have recognised that the existing (das Seiende) is substance endowed with sensation; the substance falls away [it is "more economical," don't you see, there is "a lesser expenditure of effort" in thinking that there is no "substance" and that no external world exists!], sensation remains; we must then regard the existing as sensation, at the basis of which there is nothing which does not possess sensation (nichts Empfindungsloses)."

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Sensation, then, exists without "substance," i.e., thought exists without brain! Are there really philosophers capable of defending this brainless philosophy? There are! Professor Richard Avenarius is one of them. And we must pause for a while to consider this defence, difficult though it be for a normal person to take it seriously. Here, in §§ 89 and 90 of this same work, is Avenarius' argument:

"... The proposition that motion produces sensation is based on apparent experience only. This experience, which includes the

¹⁶ F. Van Cauwelaert, "L'empiriocriticisme" ["Empirio-Criticism"], in *Revue neo-scholastique*, [20] 1907, Feb., p. 51.

¹⁷ Rudolf Willy, *Gegen die Schulweisheit. Eine Kritik der Philosophie* [Against School Wisdom. A Critique of Philosophy], Munchen. 1905. S. 170.

act of perception, consists, presumably, in the fact that sensation is generated in a certain kind of substance (brain) as a result of transmitted motion (excitation) and with the help of other material conditions (e.g., blood). However -- apart from the fact that such generation has never itself (selbst) been observed -- in order to construct the supposed experience, as an experience which is real in all its component parts, empirical proof, at least, is required to show that sensation, which assumedly is caused in a certain substance by transmitted motion, did not already exist in that substance in one way or another; so that the appearance of sensation cannot be conceived of in any other way than as a creative act on the part of the transmitted motion. Thus only by proving that where a sensation now appears there was none previously, not even a minimal one, would it be possible to establish a fact which, denoting as it does some act of creation, contradicts all the rest of experience and radically changes all the rest of our conception of nature (Naturanschauung). But such proof is not furnished by any experience, and cannot be furnished by any experience; on the contrary, the notion of a state of a substance totally devoid of sensation which subsequently begins to experience sensation is only a hypothesis. But this hypothesis merely complicates and

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obscures our understanding instead of simplifying and clarifying it.

"Should the so-called experience, viz., that the sensation is caused by a transmitted motion in a substance that begins to perceive from this moment, prove upon closer examination to be only apparent, there still remains sufficient material in the content of the experience to ascertain at least the relative origin of sensation from conditions of motion, namely, to ascertain that the sensation which is present, although latent or minimal, or for some other reason not manifest to the consciousness,

becomes, owing to transmitted motion, released or enhanced or made manifest to the consciousness. However, even this bit of the remaining content of experience is only an appearance. Were we even by an ideal observation to trace the motion proceeding from the moving substance A, transmitted through a series of intermediate centres and reaching the substance B, which is endowed with sensation, we should at best find that sensation in substance B is developed or becomes enhanced simultaneously with the reception of the incoming motion -- but we should not find that this occurred as a consequence of the motion...."

We have purposely quoted this refutation of materialism by Avenarius in full, in order that the reader may see to what truly pitiful sophistries "recent" empirio-critical philosophy resorts. We shall compare with the argument of the idealist Avenarius the materialist argument of -- Bogdanov, if only to punish Bogdanov for his betrayal of materialism!

In long bygone days, fully nine years ago, when Bogdanov was half "a natural-historical materialist" (that is, an adherent of the materialist theory of knowledge, to which the overwhelming majority of contemporary scientists instinctively hold), when he was only half led astray by the

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muddled Ostwald, he wrote: "From ancient times to the present day, descriptive psychology has adhered to the classification of the facts of consciousness into three categories: the domain of sensations and ideas, the domain of emotions and the domain of impulses.... To the first category belong the images of phenomena of the outer or inner world, as taken by themselves in consciousness.... Such an image is called a 'sensation' if it is directly produced through the sense-organs by its cor-

responding external phenomenon."¹⁸ And a little farther on he says: "Sensation ... arises in consciousness as a result of a certain impulse from the external environment transmitted by the external sense-organs" (p. 222). And further: "Sensation is the foundation of mental life; it is its immediate connection with the external world" (p. 240). "At each step in the process of sensation a transformation of the energy of external excitation into a state of consciousness takes place" (p. 133). And even in 1905 when with the gracious assistance of Ostwald and Mach Bogdanov had already abandoned the materialist standpoint in philosophy for the idealist standpoint, he wrote (from forgetfulness!) in his *Empirio-Monism*: "As is known, the energy of external excitation, transformed at the nerve-ends into a 'telegraphic' form of nerve current (still insufficiently investigated but devoid of all mysticism), first reaches the neurons that are located in the so-called 'lower' centres -- ganglial, cerebro-spinal, subcortical, etc." (Bk. I, 2nd ed., 1905, p. 118.)

For every scientist who has not been led astray by professorial philosophy, as well as for every materialist, sensa-

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tion is indeed the direct connection between consciousness and the external world; it is the transformation of the energy of external excitation into a state of consciousness. This transformation has been, and is, observed by each of us a million times on every hand. The sophism of idealist philosophy consists in the fact that it regards sensation as being not the connection between consciousness and the external world, but a fence, a wall, separating consciousness from the external world -- not an image of the external phenomenon corresponding to the sensation, but as the "sole entity." Avenarius gave but a slightly

¹⁸ A. Bogdanov, *The Fundamental Elements of the Historical Outlook on Nature*, St. Petersburg, 1899, p. 216.

changed form to this old sophism, which had been already worn threadbare by Bishop Berkeley. Since we do not yet know all the conditions of the connection we are constantly observing between sensation and matter organised in a definite way, let us therefore acknowledge the existence of sensation alone -- that is what the sophism of Avenarius reduces itself to.

To conclude our description of the fundamental idealist premises of empirio-criticism, we shall briefly refer to the English and French representatives of this philosophical trend. Mach explicitly says of Karl Pearson, the Englishman, that he (Mach) is "in agreement with his epistemological (erkenntniskritischen) views on all essential points" (*Mechanik*, ed. previously cited, p. ix). Pearson in turn agrees with Mach.¹⁹ For Pearson "real things" are "sense-impressions." He declares the recognition of things outside the boundaries of sense impressions to be metaphysics. Pearson fights materialism with great determination (although he does not know Feuerbach, or Marx and Engels); his arguments do not differ from

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those analysed above. However, the desire to masquerade as a materialist is so foreign to Pearson (that is a specialty of the Russian Machians), Pearson is so -- incautious, that he invents no "new" names for his philosophy and simply declares that his views and those of Mach are "idealist" (ibid., p. 326)! He traces his genealogy directly to Berkeley and Hume. The philosophy of Pearson, as we shall repeatedly find, is distinguished from that of Mach by its far greater integrity and consistency.

Mach explicitly declares his solidarity with the French physicists, Pierre Duhem and Henri Poincaré.²⁰ We shall have occa-

¹⁹ Karl Pearson, *The Grammar of Science*, 2nd ed., London, 1900, p. 326.

²⁰ *Analysis of Sensations*, p. 4. Cf. Preface to *Erkenntnis und Irrtum*, 2nd ed.

sion to deal with the particularly confused and inconsistent philosophical views of these writers in the chapter on the new physics. Here we shall content ourselves with noting that for Poincaré things are "groups of sensations"²¹ and that a similar view is casually expressed by Duhem.²²

We shall now proceed to examine how Mach and Avenarius, having admitted the idealist character of their original views, corrected them in their subsequent works.

²¹ Henri Poincaré, *La valeur de la science* [The Value of Science], Paris, 1905 (There is a Russian translation), passim.

²² P. Duhem, *La theorie physique, son objet et sa structure* [The Physical Theory, Its Object and Structure], Paris, 1906. Cf. pp. 6 and 10.

2. "THE DISCOVERY OF THE WORLD-ELEMENTS"

Such is the title under which Friedrich Adler, lecturer at the University of Zurrich, probably the only German author also anxious to supplement Marx with Machism, writes of

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Mach.²³ And this naive university lecturer must be given his due: in his simplicity of heart he does Machism more harm than good. At least, he puts the question point-blank -- did Mach really "discover the world-elements"? If so, then, only very backward and ignorant people, of course, can still remain materialists. Or is this discovery a return on the part of Mach to the old philosophical errors?

We saw that Mach in 1872 and Avenarius in 1876 held a purely idealist view; for them the world is our sensation. In 1883 Mach's *Mechanik* appeared, and in the preface to the first edition Mach refers to Avenarius' Prolegomena, and greets his ideas as being "very close" (sehr verwandte) to his own philosophy. Here are the arguments in the *Mechanik* concerning the elements: "All natural science can only picture and represent (nachbilden und vorbilden) complexes of those elements which we ordinarily call sensations. It is a matter of the connection of these elements.... The connection of A (heat) with B (flame) is a problem of physics, that of A and N (nerves) a problem of physiology. Neither exists separately; both exist in conjunction. Only temporarily can we neglect either. Even processes that are apparently purely mechanical, are thus always physiological" (op. cit., German ed., p. 498). We

²³ Friedrich W. Adler, "Die Entdeckung der Weltelemente (zu E. Machs 70. Geburtstag)" [The Discovery of the World-Elements (On the Occasion of E. Mach's 70th Birthday)], *Der Kampf*, [21] 1908, Nr. 5 (Februar). Translated in *The International Socialist Review*, [22] 1908, No. 10 (April). One of Adler's articles has been translated into Russian in the symposium Historical Materialism.

find the same in the *Analysis of Sensations*: "Wherever ... the terms 'sensation,' 'complex of sensations,' are used alongside of or in place of the terms 'element,' 'complex of elements,' it must be borne in mind

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that it is only in this connection [namely, in the connection of A, B, C with K, L, M, that is, in the connection of "complexes which we ordinarily call bodies" with "the complex which we call our body"] and relation, only in this functional dependence that the elements are sensations. In another functional dependence they are at the same time physical objects" (Russian translation, pp. 23 and 17). "A colour is a physical object when we consider its dependence, for instance, upon the source of illumination (other colours, temperatures, spaces and so forth). When we, however, consider its dependence upon the retina (the elements K, L, M), it is a psychological object, a sensation" (ibid., p. 24).

Thus the discovery of the world-elements amounts to this:

- 1) all that exists is declared to be sensation,
- 2) sensations are called elements,
- 3) elements are divided into the physical and the psychical; the latter is that which depends on the human nerves and the human organism generally; the former does not depend on them;
- 4) the connection of physical elements and the connection of psychical elements, it is declared, do not exist separately from each other; they exist only in conjunction;
- 5) it is possible only temporarily to leave one or the other connection out of account;
- 6) the "new" theory is declared to be free from "one sidedness."²⁴

²⁴ Mach says in the *Analysis of Sensations*: "These elements are usually called sensations. But as that term already implies a one-sided theory, we prefer to speak simply of elements" (pp. 27-28).

Indeed, it is not one-sidedness we have here, but an incoherent jumble of antithetical philosophical points of view.

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Since you base yourself only on sensations you do not correct the "one-sidedness" of your idealism by the term "element," but only confuse the issue and cravenly hide from your own theory. In a word, you eliminate the antithesis between the physical and psychical,²⁵ between materialism (which regards nature, matter, as primary) and idealism (which regards spirit, mind, sensation as primary); indeed, you promptly restore this antithesis; you restore it surreptitiously, retreating from your own fundamental premise! For, if elements are sensations, you have no right even for a moment to accept the existence of "elements" independently of my nerves and my mind. But if you do admit physical objects that are independent of my nerves and my sensations and that cause sensation only by acting upon my retina -- you are disgracefully abandoning your "one-sided" idealism and adopting the standpoint of "one-sided" materialism! If colour is a sensation only depending upon the retina (as natural science compels you to admit), then light rays, falling upon the retina, produce the sensation of colour. This means that outside us, independently of us and of our minds, there exists a movement of matter, let us say of ether waves of a definite length and of a definite velocity, which, acting upon the retina, produce in man the sensation of a particular colour. This is precisely how natural science regards it. It explains the sensations of various colours by the various lengths of light-waves existing outside the human retina, outside man and independently of him. This is

²⁵ "The antithesis between the self and the world, sensation or appearance and the thing, then vanishes, and it all reduces itself to a complex or elements" (ibid., p. 21).

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materialism: matter acting upon our sense-organs produces sensation. Sensation depends on the brain, nerves, retina, etc., i.e., on matter organised in a definite way. The existence of matter does not depend on sensation. Matter is primary. Sensation, thought, consciousness are the supreme product of matter organised in a particular way. Such are the views of materialism in general, and of Marx and Engels in particular. Mach and Avenarius secretly smuggle in materialism by means of the word "element," which supposedly frees their theory of the "one-sidedness" of subjective idealism, supposedly permits the assumption that the mental is dependent on the retina, nerves and so forth, and the assumption that the physical is independent of the human organism. In fact, of course, the trick with the word "element" is a wretched sophistry, for a materialist who reads Mach and Avenarius will immediately ask: what are the "elements"? It would, indeed, be childish to think that one can dispose of the fundamental philosophical trends by inventing a new word. Either the "element" is a sensation, as all empirio-criticists, Mach, Avenarius, Petzoldt,²⁶ etc., maintain -- in which case your philosophy, gentlemen, is idealism vainly seeking to hide the nakedness of its solipsism under the cloak of a more "objective" terminology; or the "element" is not a sensation -- in which case absolutely no thought whatever is attached to the "new" term; it is merely an empty bauble.

Take Petzoldt, for instance, the last word in empirio-criticism, as V. Lesseovich, the first and most outstanding Russian

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²⁶ Joseph Petzoldt, *Einführung in die Philosophie der reinen Erfahrung* [Introduction to the Philosophy of Pure Experience], Bd. I, Leipzig, 1900, S. 113: "Elements are sensations in the ordinary sense of simple, irreducible perceptions (Wahrnehmungen)."

empirio-criticist describes him.²⁷ Having defined elements as sensations, he says in the second volume of the work mentioned: "In the statement that 'sensations are the elements of the world' one must guard against taking the term 'sensation' as denoting something only subjective and therefore ethereal, transforming the ordinary picture of the world into an illusion (Verfluchtigendes)."²⁸

One speaks of what hurts one most! Petzoldt feels that the world "evaporates" (verfluchtigt sich), or becomes transformed into an illusion, when sensations are regarded as world-elements. And the good Petzoldt imagines that he helps matters by the reservation that sensation must not be taken as something only subjective! Is this not a ridiculous sophistry? Does it make any difference whether we "take" sensation as sensation or whether we try to stretch the meaning of the term? Does this do away with the fact that sensations in man are connected with normally functioning nerves, retina, brain, etc., that the external world exists independently of our sensations? If you are not trying to evade the issue by a subterfuge, if you are really in earnest in wanting to "guard" against subjectivism and solipsism, you must above all guard against the fundamental idealist premises of your philosophy; you must replace the idealist line of your philosophy (from sensations to the external world) by the materialist line (from the external world to sensations); you must abandon that empty and muddled verbal embellishment, "element," and simply say that colour is the result of the action of a physical object on the retina, which is the same

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as saying that sensation is a result of the action of matter on our sense-organs.

²⁷ V. Lesseovich, *What Is Scientific* [read: fashionable, professorial, eclectic] *Philosophy?*, St. Petersburg, 1891, pp. 229, 247.

²⁸ Petzoldt, Bd. II, Leipzig, 1904, S. 329.

Let us take Avenarius. The most valuable material on the question of the "elements" is to be found in his last work (and, it might be said, the most important for the comprehension of his philosophy), *Notes on the Concept of the Subject of Psychology*.²⁹ The author, by the way, here gives a very "graphic" table (Vol. XVIII, p. 410), the main part of which we reproduce here:

I. Things, or the substantial	Elements, complexes of elements: Corporeal things
II. Thoughts, or the mental (Gedankenhaftes)	Incorporeal things, recollections and fantasies

Compare this with what Mach says after all his elucidation of the "elements" (*Analysis of Sensations*, p. 33): "It is not bodies that produce sensations, but complexes of elements (complexes of sensations) that make up bodies." Here you have the "discovery of the world-elements" that overcomes the one-sidedness of idealism and materialism! At first we are assured that the "elements" are something new, both physical and psychical at the same time; then a little correction is surreptitiously inserted: instead of the crude, materialist differentiation of matter (bodies, things) and the psychical (sensations, recollections, fantasies) we are presented with the doctrine of "recent positivism" regarding elements substantial and elements mental. Adler (Fritz) did not gain very much from "the discovery of the world-elements"!

Bogdanov, arguing against Plekhanov in 1906, wrote: "... I cannot own myself a Machian in philosophy. In the

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general philosophical conception there is only one thing I borrowed from Mach -- the idea of the neutrality of the elements of ex-

²⁹ R. Avenarius, "Bemerkungen zum Begriff des Gegenstandes der Psychologie," *Vierteljahrsschrift für wissenschaftliche Philosophie*, [23] Bd. XVIII (1894) und Bd. XIX (1895).

perience in relation to the 'physical' and 'psychical,' and the dependence of these characteristics solely on the connection of experience." (*Empirio-Monism*, Bk. III, St. Petersburg, 1906, p. xli.) This is as though a religious man were to say -- I cannot own myself a believer in religion, for there is "only one thing" I have borrowed from the believers -- the belief in God. This "only one thing" which Bogdanov borrowed from Mach is the basic error of Machism, the basic falsity of its entire philosophy. Those deviations of Bogdanov's from empirio-criticism to which he himself attaches great significance are in fact of entirely secondary importance and amount to nothing more than inconsiderable private and individual differences between the various empirio-critics who are approved by Mach and who approve Mach (we shall speak of this in greater detail later). Hence when Bogdanov was annoyed at being confused with the Machians he only revealed his failure to understand what radically distinguishes materialism from what is common to Bogdanov and to all other Machians. How Bogdanov developed, improved or worsened Machism is not important. What is important is that he has abandoned the materialist standpoint and has thereby inevitably condemned himself to confusion and idealist aberrations.

In 1899, as we saw, Bogdanov had the correct standpoint when he wrote: "The image of the man before me, directly given to me by vision, is a sensation."³⁰ Bogdanov did not trouble to give a criticism of this earlier position of his. He

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blindly believed Mach and began to repeat after him that the "elements" of experience are neutral in relation to the physical and psychical. "As has been established by recent positivist philosophy," wrote Bogdanov in Book I of *Empirio-Monism* (2nd ed.,

³⁰ *The Fundamental Elements*, etc., p. 216; cf. the quotations cited above.

p. 90), "the elements of psychical experience are identical with the elements of experience in general, as they are identical with the elements of physical experience." Or in 1906 (Bk. III, p. xx): "as to 'idealism,' can it be called idealism merely on the grounds that the elements of 'physical experience' are regarded as identical with the elements of 'psychical experience,' or with elementary sensations -- when this is simply an indubitable fact?"

Here we have the true source of all Bogdanov's philosophical misadventures, a source which he shares with the rest of the Machians. We can and must call it idealism when "the elements of physical experience" (i.e., the physical, the external world, matter) are regarded as identical with sensations, for this is sheer Berkeleianism. There is not a trace here of recent philosophy, or positivist philosophy, or of indubitable fact. It is merely an old, old idealist sophism. And were one to ask Bogdanov how he would prove the "indubitable fact" that the physical is identical with sensations, one would get no other argument save the eternal refrain of the idealists: I am aware only of my sensations; the "testimony of self-consciousness" (die Aussage des Selbstbewusstseins) of Avenarius in his *Prolegomena* (2nd German ed., § 93, p. 56); or: "in our experience [which testifies that "we are sentient substance"] sensation is given us with more certainty than is substantiality" (ibid., § 91, p. 55), and so on and so forth. Bogdanov (trusting Mach) accepted a reactionary philosophical trick as an "indubitable fact." For, indeed, not a single fact was or could be cited which would refute the

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view that sensation is an image of the external world -- a view which was shared by Bogdanov in 1899 and which is shared by natural science to this day. In his philosophical wanderings the physicist Mach has completely strayed from the path of "modern science." Regarding this important cir-

cumstance, which Bogdanov overlooked, we shall have much to say later.

One of the circumstances which helped Bogdanov to jump so quickly from the materialism of the natural scientists to the muddled idealism of Mach was (apart from the influence of Ostwald) Avenarius' doctrine of the dependent and independent series of experience. Bogdanov himself expounds the matter in Book I of his *Empirio-Monism* thus: "In so far as the data of experience appear in dependence upon the state of the particular nervous system, they form the psychical world of the particular person, in so far as the data of experience are taken outside of such a dependence, we have before us the physical world. Avenarius therefore characterises these two realms of experience respectively as the dependent series and the independent series of experience" (p. 18).

That is just the whole trouble, the doctrine of the independent (i.e., independent of human sensation) "series" is a surreptitious importation of materialism, which, from the standpoint of a philosophy that maintains that bodies are complexes of sensations, that sensations are "identical" with physical "elements," is illegitimate, arbitrary, and eclectic. For once you have recognised that the source of light and light-waves exists independently of man and the human consciousness, that colour is dependent on the action of these waves upon the retina, you have in fact adopted the materialist standpoint and have completely destroyed all the "indubitable facts" of idealism, together with all "the complexes of

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sensations," the elements discovered by recent positivism, and similar nonsense.

That is just the whole trouble. Bogdanov (like the rest of the Russian Machians) has never looked into the idealist views originally held by Mach and Avenarius, has never understood their fundamental idealist premises, and has therefore failed to dis-

cover the illegitimacy and eclecticism of their subsequent attempts to smuggle in materialism surreptitiously. Yet, just as the initial idealism of Mach and Avenarius is generally acknowledged in philosophical literature, so is it generally acknowledged that subsequently empirio-criticism endeavoured to swing towards materialism. Cauwelaert, the French writer quoted above, asserts that Avenarius' *Prolegomena* is "monistic idealism," the *Critique of Pure Experience* (1888-90) is "absolute realism," while *The Human Concept of the World* (1891) is an attempt "to explain" the change. Let us note that the term realism is here employed as the antithesis of idealism. Following Engels, I use only the term materialism in this sense, and consider it the sole correct terminology, especially since the term "realism" has been bedraggled by the positivists and the other muddleheads who oscillate between materialism and idealism. For the present it will suffice to note that Cauwelaert had the indisputable fact in mind that in the *Prolegomena* (1876) sensation, according to Avenarius, is the only entity, while "substance" -- in accordance with the principle of "the economy of thought"! -- is eliminated, and that in the *Critique of Pure Experience* the physical is taken as the independent series, while the psychical and, consequently, sensations, are taken as the dependent series.

Avenarius' disciple Rudolf Willy likewise admits that Avenarius was a "complete" idealist in 1876, but subsequently

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"reconciled" (Ausgleich) "naive realism" (i.e., the instinctive, unconscious materialist standpoint adopted by humanity, which regards the external world as existing independently of our minds) with this teaching (loc. cit.).

Oskar Ewald, the author of the book *Avenarius as the Founder of Empirio-Criticism*, says that this philosophy combines contradictory idealist and "realist" (he

should have said materialist) elements (not in Mach's sense, but in the human sense of the term element). For example, "the absolute [method of consideration] would perpetuate naive realism, the relative would declare exclusive idealism as permanent."³¹ Avenarius calls the absolute method of consideration that which corresponds to Mach's connection of "elements" outside our body, and the relative that which corresponds to Mach's connection of "elements" dependent on our body.

But of particular interest to us in this respect is the opinion of Wundt, who himself, like the majority of the above mentioned writers, adheres to the confused idealist standpoint, but who has analysed empirio-criticism perhaps more attentively than all the others. P. Yushkevich has the following to say in this connection: "It is interesting to note that Wundt regards empirio-criticism as the most scientific form of the latest type of materialism,"³² i.e., the type of those materialists who regard the spiritual as a function of corporeal processes (and whom -- we would add -- Wundt de-

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finies as standing midway between Spinozism and absolute materialism).³³

True, this opinion of Wundt's is extremely interesting. But what is even more "interesting" is Mr. Yushkevich's attitude towards the books and articles on philosophy of which he treats. This is a typical example of the attitude of our Machians to such matters. Gogol's Petrushka [25] used to read and find it interesting that letters always combined to make words. Mr. Yushkevich read Wundt and found it "in-

³¹ Oskar Ewald, *Richard Avenarius als Begründer des Empirio-kritizismus* [Richard Avenarius as the Founder of Empirio-Criticism], Berlin, S. 66.

³² P. Yushkevich, *Materialism and Critical Realism*, St. Petersburg, 1908, p. 15.

³³ W. Wundt, "Ueber naiven und kritischen Realismus " [On Naive and Critical Realism], in *Philosophische Studien*, [24] Bd. XIII, 1897, S. 334.

teresting" that Wundt accused Avenarius of materialism. If Wundt is wrong, why not refute him? If he is right, why not explain the antithesis between materialism and empirio-criticism? Mr. Yushkevich finds what the idealist Wundt says "interesting," but this Machian regards it as a waste of effort to endeavour to go to the root of the matter (probably on the principle of "the economy of thought")....

The point is that by informing the reader that Wundt accuses Avenarius of materialism, and by not informing him that Wundt regards some aspects of empirio-criticism as materialism and others as idealism and holds that the connection between the two is artificial, Yushkevich entirely distorted the matter. Either this gentleman absolutely does not understand what he reads, or he was prompted by a desire to indulge in false self-praise with the help of Wundt, as if to say: you see, the official professors regard us, too, as materialists, and not as muddleheads.

The above-mentioned article by Wundt constitutes a large book (more than 300 pages), devoted to a detailed analysis first of the immanentist school, and then of the empirio-

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criticists. Why did Wundt connect these two schools? Because he considers them closely akin ; and this opinion, which is shared by Mach, Avenarius, Petzoldt and the immanentists is, as we shall see later, entirely correct. Wundt shows in the first part of this article that the immanentists are idealists, subjectivists and adherents of fideism. This, too, as we shall see later, is a perfectly correct opinion, although Wundt expounds it with a superfluous ballast of professorial erudition, with superfluous niceties and reservations, which is to be explained by the fact that Wundt himself is an idealist and fideist. He reproaches the immanentists not because they are idealists and adherents of fideism, but because, in his opinion, they arrive at these great prin-

ciples by incorrect methods. Further, the second and third parts of Wundt's article are devoted to empirio-criticism. There he quite definitely points out that very important theoretical propositions of empirio-criticism (e.g., the interpretation of "experience" and the "principal co-ordination," of which we shall speak later) are identical with those held by the immanentists (die empiriokritische in Uebereinstimmung mit der immanenten Philosophie annimmt, [26] S. 382). Other of Avenarius' theoretical propositions are borrowed from materialism, and in general empirio-criticism is a "motley" (bunte Mischung, *ibid.*, S. 57), in which the "various component elements are entirely heterogeneous" (an sich einander vollig heterogen sind, S. 56).

Wundt regards Avenarius' doctrine of the "independent vital series," in particular, as one of the materialist morsels of the Avenarius-Mach hotchpotch. If you start from the "system C" (that is how Avenarius -- who was very fond of making erudite play of new terms -- designates the human brain or the nervous system in general), and if the mental is for you a function of the brain, then this "system C" is a

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"metaphysical substance" -- says Wundt (*ibid.*, p. 64), and your doctrine is materialism. It should be said that many idealists and all agnostics (Kantians and Humeans included) call the materialists metaphysicians, because it seems to them that to recognise the existence of an external world independent of the human mind is to transcend the bounds of experience. Of this terminology and its utter incorrectness from the point of view of Marxism, we shall speak in its proper place. Here it is important to note that the recognition of the "independent" series by Avenarius (and also by Mach, who expresses the same idea in different words) is, according to the general opinion of philosophers of various parties, i.e., of various trends in philosophy, an appropriation from materialism. If you assume

that everything that exists is sensation, or that bodies are complexes of sensations, you cannot, without violating all your fundamental premises, all "your" philosophy, arrive at the conclusion that the physical exists independently of our minds, and that sensation is a function of matter organised in a definite way. Mach and Avenarius, in their philosophy, combine fundamental idealist premises with individual materialist deductions for the very reason that their theory is an example of that "pauper's broth of eclecticism"[27] of which Engels speaks with just contempt.³⁴

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This eclecticism is particularly marked in Mach's latest philosophical work, *Knowledge and Error*, 2nd edition, 1906. We have already seen that Mach there declared that "there is no difficulty in constructing every physical element out of sensation, i.e., out of psychical elements," and in the same book we read: "Dependencies outside the boundary U [= Umgrenzung, i.e., "the spatial boundary of our body," S. 8] are physics in the broadest sense" (S. 323, § 4). "To obtain those dependencies in a pure state (rein erhalten) it is necessary as much as possible to eliminate the influence of the observer, that is, of those elements that lie within U" (*loc. cit.*). Well, well, the titmouse first promised to set the sea on fire[28]... i.e., to construct physical elements from psychical ele-

³⁴ The foreword to Ludwig Feuerbach, dated February 1888. These words of Engels' refer to German professorial philosophy in general. The Machians who would like to be Marxists, being unable to grasp the significance and meaning of this thought of Engels', sometimes take refuge in a wretched evasion: "Engels did not yet know Mach" (Fritz Adler in *Hist. Mat.*, p. 370). On what is this opinion based? On the fact that Engels does not cite Mach and Avenarius? There are no other grounds, and these grounds are worthless, for Engels does not mention any of the eclectics by name, and it is hardly likely that Engels did not know Avenarius, who had been editing a quarterly of "scientific" philosophy ever since 1876.

ments, and then it turns out that physical elements lie beyond the boundary of psychological elements, "which lie within our body"! A remarkable philosophy!

Another example: "A perfect (vollkommenes) gas, a perfect liquid, a perfect elastic body, does not exist; the physicist knows that his fictions only approximate to the facts and arbitrarily simplify them; he is aware of the divergence, which cannot be eliminated" (S. 418, § 30).

What divergence (Abweichung) is meant here? The divergence of what from what? Of thought (physical theory) from the facts. And what are thoughts, ideas? Ideas are the "tracks of sensations" (S. 9). And what are facts? Facts are "complexes of sensations." And so, the divergence of the tracks of sensations from complexes of sensations cannot be eliminated.

What does this mean? It means that Mach forgets his own theory and, when treating of various problems of physics, speaks plainly, without idealist twists, i.e., materialistically. All the "complexes of sensations" and the entire stock of

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Berkeleyan wisdom vanish. The physicists' theory proves to be a reflection of bodies, liquids, gases existing outside us and independently of us, a reflection which is, of course, approximate; but to call this approximation or simplification "arbitrary" is wrong. In fact, sensation is here regarded by Mach just as it is regarded by all science which has not been "purified" by the disciples of Berkeley and Hume, viz., as an image of the external world. Mach's own theory is subjective idealism; but when the factor of objectivity is required, Mach unceremoniously inserts into his arguments the premises of the contrary, i.e., the materialist, theory of knowledge. Eduard von Hartmann, a consistent idealist and consistent reactionary in philosophy, who sympathizes with the Machians' fight against materialism, comes very close to the truth when he says that Mach's philosophical

position is a "mixture (Nichtunterscheidung) of naive realism and absolute illusionism."³⁵ That is true. The doctrine that bodies are complexes of sensations, etc., is absolute illusionism, i.e., solipsism; for from this standpoint the world is nothing but my illusion. On the other hand, Mach's afore-mentioned argument, as well as many other of his fragmentary arguments, is what is known as "naive realism," i.e., the materialist theory of knowledge unconsciously and instinctively taken over from the scientists.

Avenarius and the professors who follow in his footsteps attempt to disguise this mixture by the theory of the "principal co-ordination." We shall proceed to examine this theory presently, but let us first finish with the charge that Avenarius is a materialist. Mr. Yushkevich, to whom Wundt's opinion which he failed to understand seemed so interesting, was

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either himself not enough interested to learn, or else did not condescend to inform the reader, how Avenarius' nearest disciples and successors reacted to this charge. Yet this is necessary to clarify the matter if we are interested in the relation of Marx's philosophy, i.e., materialism, to the philosophy of empirio-criticism. Moreover, if Machism is a muddle, a mixture of materialism and idealism, it is important to know whither this current turned -- if we may so express it -- after the official idealists began to disown it because of its concessions to materialism.

Wundt was answered, among others, by two of Avenarius' purest and most orthodox disciples, J. Petzoldt and Fr. Carstanjen. Petzoldt, with haughty resentment, repudiated the charge of materialism, which is so degrading to a German professor, and in support referred to -- what do you

³⁵ Eduard von Hartmann, *Die Weltanschauung der modernen Physik* [The World Outlook of Modern Physics], Leipzig, 1902, S. 219.

think? -- Avenarius' Prolegomena, where, forsooth, the concept of substance has been annihilated! A convenient theory, indeed, that can be made to embrace both purely idealist works and arbitrarily assumed materialist premises! Avenarius' Critique of Pure Experience, of course, does not contradict this teaching, i.e., materialism, writes Petzoldt, but neither does it contradict the directly opposite spiritualist doctrine.³⁶ An excellent defence! This is exactly what Engels called "a pauper's broth of eclecticism." Bogdanov, who refuses to own himself a Machian and who wants to be considered a Marxist (in philosophy), follows Petzoldt. He asserts that "empirio-criticism is not ... concerned with materialism, or with spiritualism, or with metaphysics in general,"³⁷ that

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"truth ... does not lie in the 'golden mean' between the conflicting trends [materialism and spiritualism], but lies out side of both."³⁸ What appeared to Bogdanov to be truth is, as a matter of fact, confusion, a wavering between materialism and idealism.

Carstanjen, rebutting Wundt, said that he absolutely repudiated this "importation (Unterschiebung) of a materialist element" which is utterly foreign to the critique of pure experience."³⁹ "Empirio-criticism is scepticism [followed by the word written in Greek. -- DJR] (pre-eminently) in relation to the content of the concepts." There is a grain of truth in this insistent emphasis on the neutrality of Machism; the amendment made by Mach and Avenarius to their

original idealism amounts to partial concessions to materialism. Instead of the consistent standpoint of Berkeley -- the external world is my sensation -- we some times get the Humean standpoint -- I exclude the question whether or not there is anything beyond my sensations. And this agnostic standpoint inevitably condemns one to vacillate between materialism and idealism.

³⁶ J. Petzoldt, *Einführung in die Philosophie der reinen Erfahrung*, Bd. I, S. 351, 352.

³⁷ *Empirio-Monism*, Bk. I, 2nd ed., p. 21.

³⁸ *Ibid.*, p. 93.

³⁹ Fr. Carstanjen, "Der Empirio-kritizismus, zugleich eine Erwiderung auf W. Wundts Aufsätze " [Empirio-Criticism, with a Reply to W. Wundt's Articles], *Vierteljahrsschrift für wissenschaftliche Philosophie*, Jahrg. 22 (1898), S. 73 und 213.

3. THE PRINCIPAL CO-ORDINATION AND "NAIVE REALISM"

Avenarius' doctrine of the principal co-ordination is expounded in *The Human Concept of the World* and in the

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Notes. The second was written later, and in it Avenarius emphasises that he is expounding, it is true in a somewhat altered form, something that is not different from the *Critique of Pure Experience* and *The Human Concept of the World*, but exactly the same (Notes, 1894, S. 137 in the journal quoted above). The essence of this doctrine is the thesis of "the indissoluble (unauflösliche) co-ordination [i.e., the correlative connection] of the self and the environment" (p. 146). "Expressed philosophically," Avenarius says here, one can say the "self and not-self." We "always find together" (immer ein Zusammenvorgefundenes) the one and the other, the self and the environment. "No full description of what we find (des Vorgefundenen) can contain an 'environment' without some self (ohne ein Ich) whose environment it is, even though it be only the self that is describing what is found (das Vorgefundene)" (p. 146). The self is called the central term of the co-ordination, the environment the counter-term (Gegenglied). (Cf. *Der menschliche Weltbegriff*, 2. Auflage, 1905, S. 83-84, § 148 ff.)

Avenarius claims that by this doctrine he recognises the full value of what is known as naive realism, that is, the ordinary, non-philosophical, naive view which is entertained by all people who do not trouble themselves as to whether they themselves exist and whether the environment, the external world, exists. Expressing his solidarity with Avenarius, Mach also tries to represent himself as a defender of "naive realism" (*Analysis of Sensations*, p. 39). The Russian Machians, without exception, believed Mach's and Avenarius' claim that this was indeed a defence of "naive real-

ism": the self is acknowledged, the environment is acknowledged -- what more do you want?

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In order to decide who actually possesses the greatest degree of naiveté, let us proceed from a somewhat remote starting point. Here is a popular dialogue between a certain philosopher and his reader:

"Reader: The existence of a system of things [according to ordinary philosophy] is required and from them only is consciousness to be derived.

"Author: Now you are speaking in the spirit of a professional philosopher ... and not according to human common sense and actual consciousness....

"Tell me, and reflect well before you answer: Does a thing appear in you and become present in you and for you otherwise than simultaneously with and through your consciousness of the thing? ...

"Reader: Upon sufficient reflection, I must grant you this.

"Author: Now you are speaking from yourself, from your heart. Take care, therefore, not to jump out of yourself and to apprehend anything otherwise than you are able to apprehend it, as consciousness and [the italics are the philosopher's] the thing, the thing and consciousness; or, more precisely, neither the one nor the other, but that which only subsequently becomes resolved into the two, that which is the absolute subjective-objective and objective-subjective."

Here you have the whole essence of the empirio-critical principal co-ordination, the latest defence of "naive realism" by the latest positivism! The idea of "indissoluble" co-ordination is here stated very clearly and as though it were a genuine defence of the point of view of the common man, uncorrupted by the subtleties of "the professional philosophers." But, as a matter of fact, this dialogue is taken from

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the work of a classical representative of subjective idealism, Johann Gottlieb Fichte, published in 1801.⁴⁰

There is nothing but a paraphrase of subjective idealism in the teachings of Mach and Avenarius we are examining. The claim that they have risen above materialism and idealism, that they have eliminated the opposition between the point of view that proceeds from the thing to consciousness and the contrary point of view - - is but the empty claim of a renovated Fichteanism. Fichte too imagined that he had "indissolubly" connected the "self" and the "environment," the consciousness and the thing; that he had "solved" the problem by the assertion that a man cannot jump out of himself. In other words, the Berkeleyian argument is repeated: I perceive only my sensations, I have no right to assume "objects in themselves" outside of my sensation. The different methods of expression used by Berkeley in 1710, by Fichte in 1801, and by Avenarius in 1891-94 do not in the least change the essence of the matter, viz., the fundamental philosophical line of subjective idealism. The world is my sensation; the non-self is "postulated" (is created, produced) by the self; the thing is indissolubly connected with the consciousness; the indissoluble co-ordination of the self and the environment is the empirio-critical principal co-ordination; -- this is all one and the same proposition, the same old trash with a slightly refurbished, or repainted, signboard.

The reference to "naive realism," supposedly defended by this philosophy, is sophistry of the cheapest kind. The "naive

⁴⁰ Johann Gottlieb Fichte, *Sonnenklarer Bericht an das grossere Publikum über das eigentliche Wesen der neuesten Philosophie. Ein Versuch, die Leser zum Verstehen zu zwingen* [A Clear Account to the Broad Public of the True Nature of Recent Philosophy. An Attempt to Get the Reader to Understand], Berlin, 1801, S. 178-80.

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realism" of any healthy person who has not been an inmate of a lunatic asylum or a pupil of the idealist philosophers consists in the view that things, the environment, the world, exist independently of our sensation, of our consciousness, of our self and of man in general. The same experience (not in the Machian sense, but in the human sense of the term) that has produced in us the firm conviction that independently of us there exist other people, and not mere complexes of my sensations of high, short, yellow, hard, etc. -- this same experience produces in us the conviction that things, the world, the environment exist independently of us. Our sensation, our consciousness is only an image of the external world, and it is obvious that an image cannot exist without the thing imaged, and that the latter exists independently of that which images it. Materialism deliberately makes the "naive" belief of mankind the foundation of its theory of knowledge.

Is not the foregoing evaluation of the "principal co-ordination" a product of the materialist prejudice against Machism? Not at all. Specialists in philosophy who cannot be accused of partiality towards materialism, who even detest it and who accept one or other of the idealist systems, agree that the principal co-ordination of Avenarius and Co. is subjective idealism. Wundt, for instance, whose interesting opinion was not understood by Mr. Yushkevich, explicitly states that Avenarius' theory, according to which a full description of the given or the found is impossible without some self, an observer or describer, is "a false confusion of the content of real experience with reflections about it." Natural science, says Wundt, completely abstracts from every observer. "Such abstraction is possible only because the attribution (Hinzudenken) of an experiencing individual to every content of experience, which the empirio-critical philosophy, in agree-

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ment with the immanentist philosophy, assumes, is in general an empirically unfounded assumption arising from a false confusion of the content of real experience with reflections about it" (loc. cit., p. 382). For the immanentists (Schuppe, Rehmke, Leclair, Schubert-Soldern), who themselves voice -- as we shall see later -- their hearty sympathy with Avenarius, proceed from this very idea of the "indissoluble" connection between subject and object. And W. Wundt, before analysing Avenarius, demonstrated in detail that the immanentist philosophy is only a "modification" of Berkeleianism that however much the immanentists may deny their kinship with Berkeley we should not allow verbal differences to conceal from us the "deeper content of these philosophical doctrines," viz., Berkeleianism or Fichteanism.⁴¹

The English writer Norman Smith, analysing Avenarius' *Philosophy of Pure Experience*, puts this criticism in an even more straightforward and emphatic form:

"Most readers of Avenarius' *The Human Concept of the World* will probably agree that, however convincing as criticism [of idealism], it is tantalisingly illusive in its positive teaching. So long as we seek to interpret his theory of experience in the form in which it is avowedly presented, namely, as genuinely realistic, it eludes all clear comprehension: its whole meaning seems to be exhausted in negation of the subjectivism which it overthrows. It is only when we translate Avenarius' technical terms into more familiar language that we discover where the real source of the mystification lies. Avenarius has diverted attention from the defects of his posi-

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⁴¹ Loc. cit., § C: "The Immanentist Philosophy and Berkeleian Idealism," pp. 373 and 375; cf. pp. 386 and 407. "The Unavoidability of Solipsism from This Standpoint," p. 381.

tion by directing his main attack against the very weakness [i.e., of the idealist position] which is fatal to his own theory."⁴²

"Throughout the whole discussion the vagueness of the term experience stands him in good stead. Sometimes it means experiencing and at other times the experienced, the latter meaning being emphasised when the nature of the self is in question. These two meanings of the term experience practically coincide with his important distinction between the absolute and the relative standpoints [I have examined above what significance this distinction has for Avenarius]; and these two points of view are not in his philosophy really reconciled. For when he allows as legitimate the demand that experience be ideally completed in thought [the full description of the environment is ideally completed by thinking of an observing self], he makes an admission which he cannot successfully combine with his assertion that nothing exists save in relation to the self. The ideal completion of given reality which results from the analysis of material bodies into elements which no human senses can apprehend [here are meant the material elements discovered by natural science, the atoms, electrons, etc., and not the fictitious elements invented by Mach and Avenarius], or from following the earth back to a time when no human being existed upon it, is, strictly, not a completion of experience but only of what is experienced. It completes only one of the two aspects which Avenarius has asserted to be inseparable. It leads us not only to what has not been experienced but to what can never by any possibility be experienced by beings like ourselves. But here again the ambiguities of the term experi-

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ence come to Avenarius' rescue. He argues that thought is as genuine a form of

⁴² Norman Smith, "Avenarius' *Philosophy of Pure Experience*," *Mind*, [29] Vol. XV, 1906, pp. 27-28.

experience as sense-perception, and so in the end falls back on the time-worn argument of subjective idealism, that thought and reality are inseparable, because reality can only be conceived in thought, and thought involves the presence of the thinker. Not, therefore, any original and profound re-establishment of realism, but only the restatement in its crudest form of the familiar position of subjective idealism is the final outcome of Avenarius' positive speculations" (p. 29).

The mystification wrought by Avenarius, who completely duplicates Fichte's error, is here excellently exposed. The much-vaunted elimination of the antithesis between materialism (Norman Smith should not have used the term realism) and idealism by means of the term "experience" instantly proves to be a myth as soon as we proceed to definite and concrete problems. Such, for instance, is the problem of the existence of the earth prior to man, prior to any sentient being. We shall presently speak of this point in detail. Here we will note that not only Norman Smith, an opponent of his theory, but also W. Schuppe, the immanentist, who warmly greeted the appearance of *The Human Concept of the World as a confirmation of naive realism*⁴³ unmasks Avenarius and his fictitious "realism." The fact of the matter is that Schuppe fully agrees with such "realism," i.e., the mystification of materialism dished out by Avenarius. Such "realism," he wrote to Avenarius, I, the immanentist philosopher, who have been slandered as a subjective idealist, have always claimed with as much right as yourself, hochverehrter Herr Kollege.

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"My conception of thought ... excellently harmonises (verträgt sich vortrefflich) with your 'Theory of pure experience'" (p. 384).

⁴³ See W. Schuppe's open letter to R. Avenarius in *Vierteljahrsschrift für wissenschaftliche Philosophie*, Bd. XVII, 1893, S. 364-88.

"The connection and inseparability of the two terms of the co-ordination" are in fact provided only by the self (das Ich, the abstract, Fichte's self-consciousness, thought divorced from the brain). "That which you desired to eliminate you have tacitly assumed" -- so Schuppe wrote to Avenarius (p. 388). And it is difficult to say who more rudely unmasks Avenarius the mystifier -- Smith by his straightforward and clear refutation, or Schuppe by his enthusiastic opinion of Avenarius' crowning work. The kiss of Wilhelm Schuppe in philosophy is no better than the kiss of Peter Struve or Menshikov [30] in politics.

O. Ewald, who praises Mach for not succumbing to materialism, speaks of the principal co-ordination in a similar manner: "If one declares the correlation of central term and counter-term to be an epistemological necessity which cannot be avoided, then, even though the word 'empirio-criticism' be inscribed on the signboard in shrieking letters, one is adopting a standpoint that differs in no way from absolute idealism. [The term is incorrect; he should have said subjective idealism, for Hegel's absolute idealism is reconcilable with the existence of the earth, nature, and the physical universe without man, since nature is regarded as the "otherness" of the absolute idea.] On the other hand, if we do not hold fast to this co-ordination and grant the counter-terms their independence, then the way is at once opened for every metaphysical possibility, especially in the direction of transcendental realism" (*op. cit.*, pp. 56-57).

By metaphysics and transcendental realism, Herr Friedlander, who is disguised under the pseudonym Ewald, means materialism. Himself professing one of the varieties of

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idealism, he fully agrees with the Machians and the Kantians that materialism is metaphysics -- "from beginning to end the wildest metaphysics" (p. 134). On the question

of the "transcendence" and the metaphysical character of materialism he is in agreement with Bazarov and all our Machians, and of this we shall have occasion to say more later. Here again it is important to note how in fact the shallow and pedantic claim to have transcended idealism and materialism vanishes, and how the question arises inexorably and irreconcilably. "To grant the counter-terms their independence" means (if one translates the pretentious language of the affected Avenarius into common parlance) to regard nature and the external world as independent of human consciousness and sensation. And that is materialism. To build a theory of knowledge on the hypothesis of the indissoluble connection between the object and human sensation ("complexes of sensations" as identical with bodies; "world-elements" that are identical both psychically and physically; Avenarius' co-ordination, and so forth) is to land inevitably into idealism. Such is the simple and unavoidable truth that with a little attention may be easily detected beneath the piles of affected quasi-erudite terminology of Avenarius, Schuppe, Ewald and the others, which deliberately obscures matters and frightens the general public away from philosophy.

The "reconciliation" of Avenarius' theory with "naive realism" in the end aroused misgivings even among his own disciples. For instance, R. Willy says that the common assertion that Avenarius came to adopt "naive realism" should be taken *cum grano salis*. [31] "As a dogma, naive realism would be nothing but the belief in things-in-themselves existing

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outside man (ausserpersonliche) in their perceptible form."⁴⁴ In other words, the only theory of knowledge that is really created by an actual and not fictitious agreement with "naive realism" is, according to Willy,

materialism! And Willy, of course, rejects materialism. But he is compelled to admit that Avenarius in *The Human Concept of the World* restores the unity of "experience," the unity of the "self" and the environment "by means of a series of complicated and extremely artificial subsidiary and intermediary conceptions" (p. 171). *The Human Concept of the World*, being a reaction against the original idealism of Avenarius, "entirely bears the character of a reconciliation (eines Ausgleiches) between the naive realism of common sense and the epistemological idealism of school philosophy. But that such a reconciliation could restore the unity and integrity of experience [Willy calls it *Grunderfahrung*, that is, basic experience -- another new world!], I would not assert" (p. 170).

A valuable admission! Avenarius' "experience" failed to reconcile idealism and materialism. Willy, it seems, repudiates the school philosophy of experience in order to replace it by a philosophy of "basic" experience, which is confusion thrice confounded....

⁴⁴ R. Willy, *Gegen die Schulweisheit*, S. 170.

4. DID NATURE EXIST PRIOR TO MAN?

We have already seen that this question is particularly repugnant to the philosophy of Mach and Avenarius. Natural science positively asserts that the earth once existed in such a state that no man or any other creature existed or could

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have existed on it. Organic matter is a later phenomenon, the fruit of a long evolution. It follows that there was no sentient matter, no "complexes of sensations," no self that was supposedly "indissolubly" connected with the environment in accordance with Avenarius' doctrine. Matter is primary, and thought, consciousness, sensation are products of a very high development. Such is the materialist theory of knowledge, to which natural science instinctively subscribes.

The question arises, have the eminent representatives of empirio-criticism observed this contradiction between their theory and natural science? They have observed it, and they have definitely asked themselves by what arguments this contradiction can be removed. Three attitudes to this question are of particular interest from the point of view of materialism, that of Avenarius himself and those of his disciples J. Petzoldt and R. Willy.

Avenarius tries to eliminate the contradiction to natural science by means of the theory of the "potential" central term in the co-ordination. As we know, co-ordination is the "indissoluble" connection between self and environment. In order to eliminate the obvious absurdity of this theory the concept of the "potential" central term is introduced. For instance, what about man's development from the embryo? Does the environment (the "counter-term") exist if the "central term" is represented by an embryo? The embryonic system C -- Avenarius replies -- is the "potential central term in relation to the future individual environment" (Notes,[32] p. 140). The potential

central term is never equal to zero, even when there are as yet no parents (elterliche Bestandteile), but only the "integral parts of the environment" capable of becoming parents (p. 141).

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The co-ordination then is indissoluble. It is essential for the empirio-critic to assert this in order to save the fundamentals of his philosophy -- sensations and their complexes. Man is the central term of this co-ordination. But when there is no man, when he has not yet been born, the central term is nevertheless not equal to zero; it has only become a potential central term! It is astonishing that there are people who can take seriously a philosopher who advances such arguments! Even Wundt, who stipulates that he is not an enemy of every form of metaphysics (i.e., of fideism), was compelled to admit "the mystical obscuration of the concept experience" by the word "potential," which destroys coordination entirely (*op. cit.*, p. 379).

And, indeed, how can one seriously speak of a co-ordination the indissolubility of which consists in one of its terms being potential?

Is this not mysticism, the very ante-chamber of fideism? If it is possible to think of the potential central term in relation to a future environment, why not think of it in relation to a past environment, that is, after man's death? You will say that Avenarius did not draw this conclusion from his theory? Granted, but that absurd and reactionary theory became the more cowardly but not any the better for that. Avenarius, in 1894, did not carry this theory to its logical conclusion, or perhaps feared to do so. But R. Schubert Soldern, as we shall see, resorted in 1896 to this very theory to arrive at theological conclusions, which in 1906 earned the approval of Mach, who said that Schubert-Soldern was following "very close paths" (to Machism). (*Analysis of Sensa-*

tions, p. 4.) Engels was quite right in attacking Dühring, an avowed atheist, for inconsistently leaving loopholes for fideism in his philosophy. Engels several times. and justly,

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brought this accusation against the materialist Dühring, although the latter had not drawn any theological conclusions, in the 'seventies at least. But we have among us people who would have us regard them as Marxists, yet who bring to the masses a philosophy which comes very close to fideism.

"... It would seem," Avenarius wrote in the *Bemerkungen* "that from the empirio-critical standpoint natural science is not entitled to enquire about periods of our present environment which in time preceded the existence of man" (S. 144). Avenarius answers: "The enquirer cannot avoid mentally projecting himself" (*sich hinzuzudenken*, i.e., imagining one self to be present). "For" -- Avenarius continues -- "what the scientist wants (although he may not be clearly aware of it) is essentially only this: how is the earth to be defined prior to the appearance of living beings or man if I were mentally to project myself in the role of a spectator -- in much the same way as though it were thinkable that we could from our earth follow the history of another star or of another solar system with the help of perfected instruments."

An object cannot exist independently of our consciousness. "We always mentally project ourselves as the intelligence endeavouring to apprehend the object."

This theory of the necessity of "mentally projecting" the human mind to every object and to nature prior to man is given by me in the first paragraph in the words of the "recent positivist," R. Avenarius, and in the second, in the words of the subjective ide-

alist, J. G. Fichte.⁴⁵ The sophistry of this theory is so manifest that it is embarrassing to analyse it. If we "mentally project" ourselves, our presence will be imag-

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inary -- but the existence of the earth prior to man is real. Man could not in practice be an observer, for instance, of the earth in an incandescent state, and to "imagine" his being present at the time is obscurantism, exactly as though I were to endeavour to prove the existence of hell by the argument that if I "mentally projected" myself thither as an observer I could observe hell. The "reconciliation" of empirio-criticism and natural science amounts to this, that Avenarius graciously consents to "mentally project" something the possibility of admitting which is excluded by natural science. No man at all educated or sound-minded doubts that the earth existed at a time when there could not have been any life on it, any sensation or any "central term," and consequently the whole theory of Mach and Avenarius, from which it follows that the earth is a complex of sensations ("bodies are complexes of sensations") or "complexes of elements in which the psychical and physical are identical," or "a counter-term of which the central term can never be equal to zero," is philosophical obscurantism, the carrying of subjective idealism to absurdity.

J. Petzoldt perceived the absurdity of the position into which Avenarius had fallen and felt ashamed. In his Introduction to the *Philosophy of Pure Experience* (Vol. II) he devotes a whole paragraph (§ 65) "to the question of the reality of earlier (frühere) periods of the earth."

"In the teaching of Avenarius," says Petzoldt, "the self (*das Ich*) plays a role different from that which it plays with Schuppe [let us note that Petzoldt openly and re-

⁴⁵ J. G. Fichte, *Rezension des Aenesidemus* [Review of Aenesidemus], 1794, *Samtliche Werke*, Bd. I, S. 19.

peatedly declares: our philosophy was founded by three men -- Avenarius, Mach and Schuppe], yet it is a role which, perhaps, possesses too much importance for his theory." (Petzoldt was evidently influenced by the fact that Schuppe had unmasked Avenarius by showing that with him too everything rests

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entirely on the self ; and Petzoldt wishes to make a correction.) "Avenarius said on one occasion," Petzoldt continues, "that we can think of a 'region' where no human foot has yet trodden, but to be able *to think* (italicised by Avenarius) of such an environment there is required what we designate by the term *self* (*Ich-Bezeichnetes*), whose (italicised by Avenarius) thought the thinking is (*V. f. wiss. Ph.*, 18. Bd., 1894, S. 146, Anm.)."

Petzoldt replies:

"The epistemologically important question, however, is not whether we can think of such a region at all, but whether we are entitled to think of it as existing, or as having existed, independently of any individual mind."

Right is right! People can think and "mentally project" for themselves any kind of hell and any kind of hobgoblin. Lunacharsky even "mentally projected" for himself -- well, to use a mild expression -- religious conceptions. [33] But it is precisely the purpose of the theory of knowledge to show the unreal, fantastic and reactionary character of such projections.

" ... For, that the system C [i.e., the brain] is necessary for thought is obvious both for Avenarius and for the philosophy which is here presented...."

That is not true. Avenarius' theory of 1876 is a theory of thought without brain. And in his theory of 1891-94, as we shall presently see, there is a similar element of idealist nonsense.

" ... But is this system C a *condition of existence* [italicised by Petzoldt] of, say, the Mesozoic period (*Sekundarzeit*) of the

earth?" And Petzoldt, presenting the argument of Avenarius I have already cited on the subject of what science

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actually wants and how we can "mentally project" the spectator, objects:

"No, we wish to know whether I have the right to think that the earth at that remote epoch existed in the same way as I think of it as having existed yesterday or a minute ago. Or must the existence of the earth be really made conditional, as Willy claimed, on our right at least to assume that at the given period there co-existed some system C, even though at the lowest stage of its development?" Of this idea of Willy's we shall speak presently.

"Avenarius evades Willy's strange conclusion by the argument that the person who puts the question cannot mentally remove himself (*sich wegdenken*, i.e., think himself as absent), nor can he avoid mentally projecting himself (*sich hinzuzudenken*, see Avenarius, *The Human Concept of the World*, 1st Germ. ed., p. 130). But then Avenarius makes the individual self of the person who puts the question, or the thought of such a self, the condition not only of the act of thought regarding the uninhabitable earth, but also of the justification for believing in the existence of the earth at that time.

"These false paths are easily avoided if we do not ascribe so much theoretical importance to the self. The only thing the theory of knowledge should demand of the various conceptions of that which is remote in space or time is that it be conceivable and uniquely (*eindeutig*) determined, the rest is the affair of the special sciences" (Vol. II, p. 325).

Petzoldt rechristened the law of causality the law of unique determination and imported into his theory, as we shall see later, the apriority of this law. This means that Petzoldt saves himself from Avenarius' subjective idealism and solipsism ("he attributes an exaggerated importance to

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the self," as the professorial jargon has it) with the help of Kantian ideas. The absence of the objective factor in Avenarius' doctrine, the impossibility of reconciling it with the demands of natural science, which declares the earth (object) to have existed long before the appearance of living beings (subject), compelled Petzoldt to resort to causality (unique determination). The earth existed, for its existence prior to man is causally connected with the present existence of the earth. Firstly, where does causality come from? A priori, [34] says Petzoldt. Secondly, are not the ideas of hell, devils, and Lunacharsky's "mental projections" also connected by causality? Thirdly, the theory of the "complexes of sensations" in any case turns out to be destroyed by Petzoldt. Petzoldt failed to resolve the contradiction he observed in Avenarius, and only entangled himself still more, for only one solution is possible, viz., the recognition that the external world reflected by our mind exists independently of our mind. This materialist solution alone is really compatible with natural science, and it alone eliminates both Petzoldt's and Mach's idealist solution of the question of causality, which we shall speak of separately.

The third empirio-critic, R. Willy, first raised the question of this difficulty in Avenarius' philosophy in 1896, in an article entitled "Der Empiriokritizismus als einzig wissenschaftlicher Standpunkt" ("Empirio-Criticism as the Only Scientific Standpoint"). What about the world prior to man? -- Willy asks here,⁴⁶ and at first answers according to Avenarius: "we project ourselves mentally into the past." But then he goes on to say that we are not necessarily obliged

⁴⁶ *Vierteljahrsschrift für wissenschaftliche Philosophie*. Band XX. 1896.

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to regard experience as human experience. "For we must simply regard the animal kingdom -- be it the most insignificant worm -- as primitive fellow-men (Mitmenschen) if we regard animal life in connection with general experience" (pp. 73-74). Thus, prior to man the earth was the "experience" of a worm, which discharged the functions of the "central term" in order to save Avenarius' "co-ordination" and Avenarius' philosophy! No wonder Petzoldt tried to dissociate himself from an argument which is not only the height of absurdity (ideas of the earth corresponding to the theories of the geologists attributed to a worm), but which does not in any way help our philosopher, for the earth existed not only before man but before any living being generally.

Willy returned to the question in 1905. The worm was now removed.⁴⁷ But Petzoldt's "law of unique determination" could not, of course, satisfy Willy, who regarded it merely as "logical formalism." The author says -- will not the question of the world prior to man, as Petzoldt puts it, lead us "back again to the things-in-themselves of common sense"? (i.e., to materialism! How terrible indeed!). What does millions of years without life mean? "Is time perhaps a thing-in-itself? Of course not!"⁴⁸ And that means that things outside men are only impressions, bits of fantasy fabricated by men with the help of a few fragments we find about us. And why not? Need the philosopher fear the stream of life? ... And so I say to myself: abandon all this love of systems and grasp the moment (ergreife den Augenblick), the mo-

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ment you are living in, the moment which alone brings happiness" (pp. 177-78).

⁴⁷ R. Willy, *Gegen die Schulkweisheit* [Against School Wisdom], 1905, S. 173-78.

⁴⁸ We shall discuss this point with the Machians later.

Well, well! Either materialism or solipsism -- this, in spite of his vociferous phrases, is what Willy arrives at when he analyses the question of the existence of nature before man.

To summarise. Three augurs of empirio-criticism have appeared before us and have laboured in the sweat of their brow to reconcile their philosophy with natural science, to patch up the holes of solipsism. Avenarius repeated Fichte's argument and substituted an imaginary world for the real world. Petzoldt withdrew from Fichtean idealism and moved towards Kantian idealism. Willy, having suffered a fiasco with the "worm," threw up the sponge and inadvertently blurted out the truth: either materialism or solipsism, or even the recognition of nothing but the present moment.

It only remains for us to show the reader how this problem was understood and treated by our own native Machians. Here is Bazarov in the *Studies "in" the Philosophy of Marxism* (p. 11):

"It remains for us now, under the guidance of our faithful vademecum [35] [i.e., Plekhanov], to descend into the last and most horrible circle of the solipsist inferno, into that circle where, as Plekhanov assures us, every subjective idealism is menaced with the necessity of conceiving the world as it was contemplated by the ichthyosauruses and archaeopteryxes. 'Let us mentally transport ourselves,' writes Plekhanov, 'to that epoch when only very remote ancestors of man existed on the earth, for instance, to the Mesozoic period. The question arises, what was the status of space, time and causality then? Whose subjective forms were they then? Were they the subjective forms of the ichthyosauruses? And whose intelligence at that time dictated

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its laws to nature? The intelligence of the archaeopteryx? To these queries the Kantian philosophy can give no answer. And it must be rejected as absolutely incompati-

ble with modern science' (*L. Feuerbach*, p. 117)."

Here Bazarov breaks the quotation from Plekhanov just before a very important passage -- as we shall soon see -- namely: "Idealism says that without subject there is no object. The history of the earth shows that the object existed long before the subject appeared, i.e., long before the appearance of organisms possessing a perceptible degree of consciousness.... The history of development reveals the truth of materialism."

We continue the quotation from Bazarov:

"... But does Plekhanov's thing-in-itself provide the desired solution? Let us remember that even according to Plekhanov we can have no idea of things as they are in themselves; we know only their manifestations, only the results of their action on our sense-organs. 'Apart from this action they possess no aspect' (*L. Feuerbach*, p. 112). What sense-organs existed in the period of the ichthyosauruses? Evidently, only the sense-organs of the ichthyosauruses and their like. Only the ideas of the ichthyosauruses were then the actual, the real manifestations of things-in-themselves. Hence, according to Plekhanov also, if the paleontologist desires to remain on 'real' ground he must write the story of the Mesozoic period in the light of the contemplations of the ichthyosaurus. And, consequently, not a single step forward is made in comparison with solipsism."

Such is the complete argument (the reader must pardon the lengthy quotation - - we could not avoid it) of a Machian, an argument worthy of perpetuation as a first-class example of muddleheadedness.

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Bazarov imagines that Plekhanov gave himself away. If things-in-themselves, apart from their action on our sense organs, have no aspect of their own, then in the Mesozoic period they did not exist except

as the "aspect" of the sense organs of the ichthyosaurus. And this is the argument of a materialist! If an "aspect" is the result of the action of "things-in-themselves" on sense-organs -- does it follow that things do not exist independently of sense-organs of one kind or another??

Let us assume for a moment that Bazarov indeed "misunderstood" Plekhanov's words (improbable as such an assumption may seem), that they did appear obscure to him. Be it so. We ask: is Bazarov engaged in a fencing bout with Plekhanov (whom the Machians exalt to the position of the only representative of materialism!), or is he endeavouring to clear up the problem of materialism? If Plekhanov seemed obscure to you, or contradictory, and so forth, why did you not turn to other materialists? Is it because you do not know them? But ignorance is no argument.

If Bazarov indeed does not know that the fundamental premise of materialism is the recognition of the external world, of the existence of things outside and independent of our mind, this is truly a striking case of crass ignorance. We would remind the reader of Berkeley, who in 1710 rebuked the materialists for their recognition of "objects in themselves" existing independently of our mind and reflected by our mind. Of course, everybody is free to side with Berkeley or anyone else against the materialists; that is unquestionable. But it is equally unquestionable that to speak of the materialists and distort or ignore the fundamental premise of all materialism is to import preposterous confusion into the problem.

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Was Plekhanov right when he said that for idealism there is no object without a subject, while for materialism the object exists independently of the subject and is reflected more or less adequately in the subject's mind? If this is wrong, then any man who has the slightest respect for Marxism should have pointed out this error

of Plekhanov's, and should have dealt not with him, but with someone else, with Marx, Engels, or Feuerbach, on the question of materialism and the existence of nature prior to man. But if this is right, or, at least, if you are unable to find an error here, then your attempt to shuffle the cards and to confuse in the reader's mind the most elementary conception of materialism, as distinguished from idealism, is a literary indecency.

As for the Marxists who are interested in the question apart from every little word uttered by Plekhanov, we shall quote the opinion of L. Feuerbach, who, as is known (perhaps not to Bazarov?), was a materialist, and through whom Marx and Engels, as is well known, came from the idealism of Hegel to their materialist philosophy. In his rejoinder to R. Haym, Feuerbach wrote:

"Nature, which is not an object of man or mind, is for speculative philosophy, or at least for idealism, a Kantian thing-in-itself [we shall speak later in detail of the fact that our Machians confuse the Kantian thing-in-itself with the materialist thing-in-itself], an abstraction without reality, but it is nature that causes the downfall of idealism. Natural science, at least in its present state, necessarily leads us back to a point when the conditions for human existence were still absent, when nature, i.e., the earth, was not yet an object of the human eye and mind, when, consequently, nature was an absolutely non-human entity (absolut unmenschliches Wesen). Idealism may retort: but nature also is something thought of

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by you (von dir gedachte). Certainly, but from this it does not follow that this nature did not at one time actually exist, just as from the fact that Socrates and Plato do not exist for me if I do not think of them, it

does not follow that Socrates and Plato did not actually at one time exist without me."⁴⁹

This is how Feuerbach regarded materialism and idealism from the standpoint of the existence of nature prior to the appearance of man. Avenarius' sophistry (the "mental projection of the observer") was refuted by Feuerbach, who did not know the "recent positivism" but who thoroughly knew the old idealist sophistries. And Bazarov offers us absolutely nothing new, but merely repeats this sophistry of the idealists: "Had I been there [on earth, prior to man], I would have seen the world so-and-so" (Studies "in" the Philosophy of Marxism, p. 29). In other words: if I make an assumption that is obviously absurd and contrary to natural science (that man can be an observer in an epoch before man existed), I shall be able to patch up the breach in my philosophy!

This gives us an idea of the extent of Bazarov's knowledge of the subject and of his literary methods. Bazarov did not even hint at the "difficulty" with which Avenarius, Petzoldt and Willy wrestled; and, moreover, he made such a hash of the whole subject, placed before the reader such an incredible hotchpotch, that there ultimately appears to be no difference between materialism and solipsism! Idealism is represented as "realism," and to materialism is ascribed the denial of the existence of things outside of their action

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on the sense-organs! Truly, either Feuerbach did not know the elementary difference between materialism and idealism, or else Bazarov and Co. have completely altered the elementary truths of philosophy.

⁴⁹ L. Feuerbach, *Samtliche Werke* [Collected Works], herausgegeben von Bolin und Jodl, Band VII, Stuttgart, 1903, S. 510; or Karl Grun, *L. Feuerbach in seinem Briefwechsel und Nachlass, sowie in seiner philosophischen Charakterentwicklung* [His Correspondence, Posthumous Works and Philosophical Development], I. Band, Leipzig, 1874, S. 423-35.

Or let us take Valentinov, a philosopher who, naturally, is delighted with Bazarov: 1) "Berkeley is the founder of the correlativist theory of the relativity of subject and object" (p. 148). This is not Berkeleian idealism, oh, no! This is a "profound analysis." 2) "In the most realistic aspect, irrespective of the forms [!] of their usual idealist interpretation [only interpretation!], the fundamental premises of the theory are formulated by Avenarius" (p. 148). Infants, as we see, are taken in by the mystification! 3) "Avenarius' conception of the starting point of knowledge is that each individual finds himself in a definite environment, in other words, the individual and the environment are represented as connected and inseparable [!] terms of one and the same co-ordination" (p. 148). Delightful! This is not idealism -- Bazarov and Valentinov have risen above materialism and idealism -- this "inseparability" of the subject and object is "realism" itself. 4) "Is the reverse assertion correct, namely, that there is no counter-term to which there is no corresponding central term -- an individual? Naturally [!] not.... In the Archean period the woods were verdant ... yet there was no man" (p. 143). That means that the inseparable can be separated! Is that not "natural"? 5) "Yet from the standpoint of the theory of knowledge, the question of the object in itself is absurd" (p. 148). Of course! When there were no sentient organisms objects were nevertheless "complexes of elements" identical with sensations! 6) "The immanentist school, in the person of Schubert-Soldern and Schuppe, clad these [!] thoughts in an unsatisfactory form and found itself in the cul-de-sac of solips-

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ism" (p. 149). But "these thoughts" themselves, of course, contain no solipsism, and empirio-criticism, of course, is not a paraphrase of the reactionary theories of the immanentists, who lie when they de-

clare themselves to be in sympathy with Avenarius!

This, Messrs. Machians, is not philosophy, but an incoherent jumble of words.

5. DOES MAN THINK WITH THE HELP OF THE BRAIN?

Bazarov emphatically answers this question in the affirmative. He writes: "If Plekhanov's thesis that 'consciousness is an internal [? Bazarov] state of matter' be given a more satisfactory form, e.g., that 'every mental process is a function of the cerebral process,' then neither Mach nor Avenarius would dispute it" (*Studies "in" the Philosophy of Marxism*, p. 29).

To the mouse no beast is stronger than the cat. To the Russian Machians there is no materialist stronger than Plekhanov. Was Plekhanov really the only one, or the first, to advance the materialist thesis that consciousness is an internal state of matter? And if Bazarov did not like Plekhanov's formulation of materialism, why did he take Plekhanov and not Engels or Feuerbach?

Because the Machians are afraid to admit the truth. They are fighting materialism, but pretend that it is only Plekhanov they are fighting. A cowardly and unprincipled method.

But let us turn to empirio-criticism. Avenarius "would not dispute" the statement that thought is a function of the brain. These words of Bazarov's contain a direct untruth.

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Not only does Avenarius dispute the materialist thesis, but invents a whole "theory" in order to refute it. "The brain," says Avenarius in *The Human Concept of the World*, "is not the habitation, the seat, the creator, it is not the instrument or organ, the supporter or substratum, etc., of thought" (p. 76 -- approvingly quoted by Mach in the *Analysis of Sensations*, p. 32). "Thought is not an indweller, or commander, or the other half, or side, etc., nor is it a product or even a physiological function, or a state in general of the brain"

(*ibid.*). And Avenarius expresses himself no less emphatically in his Notes: "presentations" are "not functions (physiological, psychical, or psycho-physical) of the brain" (*op. cit.*, § 115, p. 419). Sensations are not "psychical functions of the brain" (§ 116).

Thus, according to Avenarius, the brain is not the organ of thought, and thought is not a function of the brain. Take Engels, and we immediately find directly contrary, frankly materialist formulations. "Thought and consciousness," says Engels in *Anti-Duhring*, "are products of the human brain" (5th Germ. ed., p. 22). [36] This idea is often repeated in that work. In Ludwig Feuerbach we have the following exposition of the views of Feuerbach and Engels: "... the material (stofflich), sensuously perceptible world to which we ourselves belong is the only reality," "our consciousness and thinking, however suprasensuous they may seem, are the product (Erzeugnis) of a material, bodily organ, the brain. Matter is not a product of mind, but mind itself is merely the highest product of matter. This is, of course, pure materialism" (4th Germ. ed., p. 18). Or on p. 4, where he speaks of the reflection of the processes of nature in "the thinking brain," [37] etc., etc.

Avenarius rejects this materialist standpoint and says that "the thinking brain" is a "fetish of natural science" (*The* page 92

Human Concept of the World, 2nd Germ. ed., p. 70). Hence, Avenarius cherishes no illusions concerning his absolute disagreement with natural science on this point. He admits, as do Mach and all the immanentists, that natural science holds an instinctive and unconscious materialist point of view. He admits and explicitly declares that he absolutely differs from the "prevailing psychology" (Notes, p. 150, etc.). This prevailing psychology is guilty of

an inadmissible "introjection" -- such is the new term contrived by our philosopher -- i.e., the insertion of thought into the brain, or of sensations into us. These "two words" (into us -- in uns), Avenarius goes on to say, contain the assumption (Annahme) that empirio-criticism disputes. "This insertion (Hineinverlegung) of the visible, etc., into man is what we call introjection" (§ 45, p. 153).

Introjection deviates "in principle" from the "natural conception of the world" (natürlicher Weltbegriff) by substituting "in me" for "before me" (vor mir, p. 154) "by turning a component part of the (real) environment into a component part of (ideal) thought" (ibid.). "Out of the amechanical [a new word in place of "mental"] which manifests itself freely and clearly in the experienced [or, in what is found -- im Vorgefundenen], introjection makes something which hides itself [Latitierendes, says Avenarius -- another new word] mysteriously in the central nervous system" (ibid.).

Here we have the same mystification that we encountered in the famous defence of "naive realism" by the empirio-critics and immanentists. Avenarius here acts on the advice of the charlatan in Turgenev: [38] denounce most of all those vices which you yourself possess. Avenarius tries to pretend that he is combating idealism: philosophical idealism, you see, is usually deduced from introjection, the exter-

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nal world is converted into sensation, into idea, and so forth, while I defend "naive realism," the equal reality of everything presented, both "self " and environment, without inserting the external world into the human brain.

The sophistry here is the same as that which we observed in the case of the famous co-ordination. While distracting the attention of the reader by attacking idealism, Avenarius is in fact defending idealism, albeit in slightly different words: thought is not a function of the brain; the

brain is not the organ of thought; sensations are not a function of the nervous system, oh, no! sensations are -- "elements," psychical only in one connection, while in another connection (although the elements are "identical ") they are physical. With his new and muddled terminology, with his new and pompous epithets, supposedly expressing a new "theory," Avenarius merely beat about the bush and returned to his fundamental idealist premise.

And if our Russian Machians (e.g., Bogdanov) failed to notice the "mystification" and discerned a refutation of idealism in the "new" defence of idealism, in the analysis of empirio-criticism given by the professional philosophers we find a sober estimate of the true nature of Avenarius' ideas, which is laid bare when stripped of its pretentious terminology.

In 1903 Bogdanov wrote ("Authoritative Thinking," an article in the symposium *From the Psychology of Society*, p. 119, et seq.):

"Richard Avenarius presented a most harmonious and complete philosophical picture of the development of the dualism of spirit and body. The gist of his 'doctrine of introjection' is the following: [we observe only physical bodies directly, and we infer the experiences of others, i.e., the mind of another person, only by hypothesis].... The

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hypothesis is complicated by the fact that the experiences of the other person are assumed to be located in his body, are inserted (introjected) into his organism. This is already a superfluous hypothesis and even gives rise to numerous contradictions. Avenarius systematically draws attention to these contradictions by unfolding a series of successive historical facts in the development of dualism and of philosophical idealism. But here we need not follow Avenarius."... "Introjection serves as an explanation of the dualism of mind and body."

Bogdanov swallowed the bait of professorial philosophy in believing that "introjection" was aimed against idealism. He accepted the evaluation of introjection given by Avenarius himself at its face value and failed to notice the barb directed against materialism. Introjection denies that thought is a function of the brain, that sensations are a function of man's central nervous system: that is, it denies the most elementary truth of physiology in order to destroy materialism. "Dualism," it appears, is refuted idealistically (notwithstanding all Avenarius' diplomatic rage against idealism), for sensation and thought prove to be not secondary, not a product of matter, but primary. Dualism is here refuted by Avenarius only in so far as he "refutes" the existence of the object without the subject, matter without thought, the external world independent of our sensations; that is, it is refuted idealistically. The absurd denial of the fact that the visual image of a tree is a function of the retina, the nerves and the brain, was required by Avenarius in order to bolster up his theory of the "indissoluble" connection of the "complete" experience, which includes not only the self but also the tree, i.e., the environment.

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The doctrine of introjection is a muddle, it smuggles in idealistic rubbish and is contradictory to natural science, which inflexibly holds that thought is a function of the brain, that sensations, i.e., the images of the external world, exist within us, produced by the action of things on our sense-organs. The materialist elimination of the "dualism of mind and body" (i.e., materialist monism) consists in the assertion that the mind does not exist independently of the body, that mind is secondary, a function of the brain, a reflection of the external world. The idealist elimination of the "dualism of mind and body" (i.e., idealist monism) consists in the assertion that mind is not a function of the body, that, consequently, mind is primary, that the "environment" and

the "self" exist only in an inseparable connection of one and the same "complexes of elements." Apart from these two diametrically opposed methods of eliminating "the dualism of mind and body," there can be no third method, unless it be eclecticism, which is a senseless jumble of materialism and idealism. And it was this jumble of Avenarius' that seemed to Bogdanov and Co. "the truth transcending materialism and idealism."

But the professional philosophers are not as naive and credulous as are the Russian Machians. True, each of these professors-in-ordinary advocates his "own" system of refuting materialism, or, at any rate, of "reconciling" materialism and idealism. But when it comes to a competitor they unceremoniously expose the unconnected fragments of materialism and idealism that are contained in all the "recent" and "original" systems. And if a few young intellectuals swallowed Avenarius' bait, that old bird Wundt was not to be enticed so easily. The idealist Wundt tore the mask from the poseur Avenarius very unceremoniously when he praised

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him for the anti-materialist tendency of the theory of introjection.

"If empirio-criticism," Wundt wrote, "reproaches vulgar materialism because by such expressions as the brain 'has' thought, or the brain 'produces' thought, it expresses a relation which generally cannot be established by factual observation and description [evidently, for Wundt it is a "fact" that a person thinks without the help of a brain!...]... this reproach, of course, is well founded" (*op. cit.*, pp. 47-48).

Well, of course! The idealists will always join the half-hearted Avenarius and Mach in attacking materialism! It is only a pity, Wundt goes on to say, that this theory of introjection "does not stand in any relation to the doctrine of the independent vital series, and was, to all appearances, only

tacked on to it as an afterthought and in a rather artificial fashion" (p. 365).

Introjection, says O. Ewald, "is to be regarded as nothing but a fiction of empirio-criticism, which the latter requires in order to shield its own fallacies" (op. cit., p. 44). "We observe a strange contradiction: on the one hand, the elimination of introjection and the restoration of the natural world conception is intended to restore to the world the character of living reality; on the other hand, in the principal co-ordination empirio-criticism is leading to a purely idealist theory of an absolute correlation of the counter-term and the central term. Avenarius is thus moving in a circle. He set out to do battle against idealism but laid down his arms before it came to an open skirmish. He wanted to liberate the world of objects from the yoke of the subject, but again bound that world to the subject. What he has actually destroyed by his criticism is a caricature of idealism rather than its genuine epistemological expression" (ibid., pp. 64-65).

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"In his [Avenarius'] frequently quoted statement," Norman Smith says, "that the brain is not the seat, organ or supporter of thought, he rejects the only terms which we possess for defining their connection" (op. cit., p. 30).

Nor is it surprising that the theory of introjection approved by Wundt excites the sympathy of the outspoken spiritualist, James Ward,⁵⁰ who wages systematic war on "naturalism and agnosticism, and especially on Thomas Huxley (not because he was an insufficiently outspoken and determined materialist, for which Engels reproached him, but) because his agnosticism served in fact to conceal materialism.

Let us note that Karl Pearson, the English Machian, who avoid all philosophical

⁵⁰ James Ward, *Naturalism and Agnosticism*, 3rd ed., London, 1906, Vol. II, pp. 171-72.

artifices, and who recognises neither introjection, nor co-ordination, nor yet "the discovery of the world-elements," arrives at the inevitable outcome of Machism when it is stripped of such "disguises," namely, pure subjective idealism. Pearson knows no "elements"; "sense impressions" are his alpha and omega. He never doubts that man thinks with the help of the brain. And the contradiction between this thesis (which alone conforms with science) and the basis of his philosophy remains naked and obvious. Pearson spares no effort in combating the concept that matter exists independently of our sense-impressions (*The Grammar of Science*, Chap VII). Repeating all Berkeley's arguments, Pearson declare that matter is a nonentity. But when he comes to speak of the relation of the brain to thought, Pearson emphatically declares: "From will and consciousness associated with material machinery we can infer nothing whatever as to will

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and consciousness without that machinery."⁵¹ He even advances the following thesis as a summary of his investigations in this field: "Consciousness has no meaning beyond nervous systems akin to our own; it is illogical to assert that all matter is conscious [but it is logical to assert that all matter possesses a property which is essentially akin to sensation, the property of reflection], still more that consciousness or will can exist outside matter" (ibid., p. 75, 2nd thesis). Pearson's muddle is glaring! Matter is nothing but groups of sense impressions. That is his premise, that is his philosophy. Hence, sensation and thought should be primary; matter, secondary. But no, consciousness without matter does not exist, and apparently not even without a nervous system! That is, consciousness and sensation are secondary. The waters rest on the earth, the earth rests on a

⁵¹ *The Grammar of Science*, 2nd ed., London, 1900, p. 58.

whale, and the whale rests on the waters. Mach's "elements" and Avenarius' co-ordination and introjection do not clear up this muddle, all they do is to obscure the matter, to cover up traces with the help of an erudite philosophical gibberish.

Just such gibberish, and of this a word or two will suffice, is the special terminology of Avenarius, who coined a plenitude of diverse "notals," "securals," "fidentials," etc., etc. Our Russian Machians for the most part shamefacedly avoid this professorial rigmarole, and only now and again bombard the reader (in order to stun him) with an "existential" and such like. But if naive people take these words for a species of bio-mechanics, the German philosophers, who are themselves lovers of "erudite" words, laugh at Avenarius. To say "notal" (notus = known), or to say that this or the other thing is known to me, is absolutely one and the same, says

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Wundt in the section entitled "Scholastic Character of the Empirio-Critical System." And, indeed, it is the purest and most dreary scholasticism. One of Avenarius' most faithful disciples, R. Willy, had the courage to admit it frankly. "Avenarius dreamed of a bio-mechanics," says he, "but an understanding of the life of the brain can be arrived at only by actual discoveries, and not by the way in which Avenarius attempted to arrive at it. Avenarius' bio-mechanics is not grounded on any new observations whatever; its characteristic feature is purely schematic constructions of concepts, and, indeed, constructions that do not even bear the nature of hypotheses that open up new vistas, but rather of stereotyped speculations (blosse Spekuli-erschablonen), which, like a wall, conceal our view."⁵²

⁵² R. Willy, *Gegen die Schulweisheit*, p. 169. Of course, the pedant Petzoldt will not make any such admissions. With the smug satisfaction of the philis-

The Russian Machians will soon be like fashion-lovers who are moved to ecstasy over a hat which has already been discarded by the bourgeois philosophers of Europe.

tine he chews the cud of Avenarius' "biological" scholasticism (Vol. I, Chap. II).

6. THE SOLIPSISM OF MACH AND AVENARIUS

We have seen that the starting point and the fundamental premise of the philosophy of empirio-criticism is subjective idealism. The world is our sensation -- this is the fundamental premise, which is obscured but in nowise altered by the word "element" and by the theories of the "independent series," "co-ordination," and "introjection." The absurdity

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of this philosophy lies in the fact that it leads to solipsism, to the recognition of the existence of the philosophising individual only. But our Russian Machians assure their readers that to "charge" Mach "with idealism and even solipsism" is "extreme subjectivism." So says Bogdanov in the introduction to the Russian translation of *Analysis of Sensations* (p. xi), and the whole Machian troop repeat it in a great variety of keys.

Having examined the methods whereby Mach and Avenarius disguise their solipsism, we have now to add only one thing: the "extreme subjectivism" of assertion lies entirely with Bogdanov and Co.; for in philosophical literature writers of the most varied trends have long since disclosed the fundamental sin of Machism beneath all its disguises. We shall confine ourselves to a mere summary of opinions which sufficiently indicate the "subjective" ignorance of our Machians. Let us note in passing that nearly every professional philosopher sympathises with one or another brand of idealism: in their eyes idealism is not a reproach, as it is with us Marxists; but they point out Mach's actual philosophical trend and oppose one system of idealism by another system, also idealist, but to them more consistent.

O. Ewald, in the book devoted to an analysis of Avenarius' teachings, writes: "The creator of empirio-criticism commits

himself volens nolens [39] to solipsism" (loc. cit., pp. 61-62).

Hans Kleinpeter, a disciple of Mach with whom Mach in his preface to *Erkenntnis und Irrtum* [40] explicitly declares his solidarity, says: "It is precisely Mach who is an example of the compatibility of epistemological idealism with the demands of natural science [for the eclectic everything is "compatible"!], and of the fact that the latter can very well start

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from solipsism without stopping there" (*Archiv für systematische Philosophie*, [41] Bd. VI, 1900, S. 87).

E. Lucka, analysing Mach's *Analysis of Sensations*, says "Apart from this ... misunderstandings (Missverständnisse) Mach adopts the ground of pure idealism.... It is incomprehensible that Mach denies that he is a Berkeleian" (*Kant Studien*, [42] Bd. VIII, 1903, S. 416-17).

W. Jerusalem, a most reactionary Kantian with whom Mach in the above-mentioned preface expresses his solidarity ("a closer kinship" of thought than Mach had previously suspected -- Vorwort zu "Erkenntnis und Irrtum," S. x, 1906) says: "Consistent phenomenalism leads to solipsism." And therefore one must borrow a little from Kant! (See *Der kritische Idealismus und die reine Logik* [Critical Idealism and Pure Logic], 1905, S. 26.)

R. Honigswald says: "... the immanentists and the empirio-critics face the alternative of solipsism or metaphysics in the spirit of Fichte, Schelling, or Hegel" (*Ueber die Lehre Hume's von der Realität der Aussendunge* [Hume's Doctrine of the Reality of the External World], 1904, S. 68).

The English physicist Oliver Lodge, in his book denouncing the materialist Haeckel, speaks in passing, as though of something generally known, of "solipsists such as Mach and Karl Pearson" (Sir

Oliver Lodge, *La vie et la matiere* [Life and Matter], Paris, 1907, p. 15).

Nature, [43] the organ of the English scientists, through the mouth of the geometrician E. T. Dixon, pronounced a very definite opinion of the Machian Pearson, one worth quoting, not because it is new, but because the Russian Machians have naively accepted Mach's philosophical muddle as the "philosophy of natural science" (A. Bogdanov, introduction to *Analysis of Sensations*, p. xii, *et seq*)

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"The foundation of the whole book," Dixon wrote, "is the proposition that since we cannot directly apprehend anything but sense-impressions, therefore the things we commonly speak of as objective, or external to ourselves, and their variations, are nothing but groups of sense-impressions and sequences of such groups. But Professor Pearson admits the existence of other consciousness than his own, not only by implication in addressing his book to them, but explicitly in many passages." Pearson infers the existence of the consciousness of others by analogy, by observing the bodily motions of other people; but since the consciousness of others is real, the existence of people outside myself must be granted! "Of course it would be impossible thus to refute a consistent idealist, who maintained that not only external things but all other consciousness were unreal and existed only in his imagination, but to recognise the reality of other consciousness is to recognise the reality of the means by which we become aware of them, which ... is the external aspect of men's bodies." The way out of the difficulty is to recognise the "hypothesis" that to our sense-impressions there corresponds an objective reality outside of us. This hypothesis satisfactorily explains our sense-impressions. "I cannot seriously doubt that Professor Pearson himself believes in them as much as anyone else. Only, if he were to acknowledge it explicitly, he would

have to rewrite almost every page of *The Grammar of Science*."⁵³

Ridicule -- that is the response of the thinking scientists to the idealist philosophy over which Mach waxes so enthusiastic.

And here, finally, is the opinion of a German physicist, L. Boltzmann. The Machians will perhaps say, as Friedrich Adler said, that he is a physicist of the old school. But we are concerned now not with theories of physics but with a fundamental philosophical problem. Writing against people who "have been carried away by the new epistemological dogmas," Boltzmann says: "Mistrust of conceptions which we can derive only from immediate sense-impressions has led to an extreme which is the direct opposite of former naive belief. Only sense-impressions are given us, and, therefore, it is said, we have no right to go a step beyond. But to be consistent, one must further ask: are our sense-impressions of yesterday also given? What is immediately given is only the one sense-impression, or only the one thought, namely, the one we are thinking at the present moment. Hence, to be consistent, one would have to deny not only the existence of other people outside one's self, but also all conceptions we ever had in the past."⁵⁴

This physicist rightly ridicules the supposedly "new" "phenomenalist" view of Mach and Co. as the old absurdity of philosophical subjective idealism.

No, it is those who "failed to note" that solipsism is Mach's fundamental error who are stricken with "subjective" blindness.

⁵³ *Nature*, July 21, 1892, p. 269, page 103

⁵⁴ Ludwig Boltzmann, *Populare Schriften* [Popular Essays], Leipzig, 1905, S. 132. Cf. S. 168, 177, 187, etc.).

