

THE NEW PHYSICS By Paul Mattick (rec'd 2/61; pub'd. in PHIL. OF SCIENCE, Oct. '62)

claims no connection bet. Mxism & physical theory, deterministic or indeterministic. While PM is correct in saying Mxism does not "derive" its social theory from physical process or "read" social dev. into nature, the conclusion of "no connection" does not seem to me to follow. However, the his. of how "aberrations" occurred is good, hence I summarize below, rd)

PM & Max Born's "The Concept of Reality in Physics" from Bull. of Atomic Scientists, 8, 1958, p. 320; diamat is the real root of the conflict bet. E&W, because it is the basis of the fanatic belief of Mxists that the world is bound to fall to them spontaneously & inevitably. Born p. 319: Born that in Mx's time "nothing was known of today's relativistic & atomic physics; matter was at that time what our senses conveyed it to us; physical measurement dealt with sensually perceivable properties of things which in fact were true."

PM says Mx can term diamat "but used the word material" to designate the primary conditions of all human existence. Hegel's dialectic merely (ridiculous, rd) formed the point of departure of Mx's critique of cap. soc. (then he quotes Engels' p. 351: "LF, though later he'll blame FE for everything.") "By pitting against Hegel & Hegel against Feuerbach, Mx dev'd. his own concept of social dev., for which (FE) coined the term his mat." Again, against Born's idea that Mx's stemmed from the "physical determinism derived from Newtonian mechanics." (Born, p. 320 Bull. p. 35) "On the contrary, it developed, by way of dialectic, in direct opp. to the materialism based on Newtonian mechanics."

Then PM says that unfortunately persuasive power of diamat carried away in Engels "who spoke of its universal validity." Q Croce who found this "amusing", Croce Lebendiges und Totes in Hegels Phil., Heidelberg, 1909 & others who found it as excuse to throw out all of Mxism) "It is not the ideas of Mx but 'Mxism' as the ideology of the rising European labor movement & of the self-declared 'socialist' states of the Eastern power bloc, that nourishes anti-Mxism."

In 1st section "Marxism as Ideology", PM show how the pre-cap. was agitation of the ques. of the primacy of spirit or nature. "Freed from religious superstitions, science devoted itself to the discovery of natural laws, & Newtonian mechanics served as the basis for a growing conviction that all natural phenomena follow definite causal rules." Urgency of this lost with est. of middle class as ruling class who did not bother to extend freedom of natural science from religion into society from religion & Q Napoleon (in Alphonse Aulard's 1901 wk. p. 734) "As far as I am concerned, religion is not the mystery of creation but the mystery of society. Religion connects the idea of equality with heaven & thus prevents the butchery of the rich by the poor. Society depends on the inequality of incomes, & the inequality of incomes, on the existence of religion."

p. 352: "The early materialists, or natural philosophers (Francis Bacon & Thomas Hobbes) were convinced that thru sense experience & thru intellectual activities derived

therefrom, it would be possible to gain absolutely valid knowledge of the external world. This optimism vanished with John Locke, who saw this knowledge limited by the very intervention of ideas. Immanuel Kant accepted the proposition that ultimates (the thing-in-itself) are not knowable & that empirical knowledge restricts itself to the sub-forms in which man becomes aware of the obj. world. It was for this reason that he saw the need for a priori concepts which brought order into experience & made it intelligible. Concepts of time, space, & causality were inventions of the human mind & tho not empirically verifiable were nevertheless necessary to science, phil., & reflective thought.

In its essential structure, the world was, then, a product of the idea. & just as the materialist theory of knowledge became for many materialists the materialist theory of reality, so for many idealists the idealist theory of knowledge became an idealist theory of reality.

At which point at turn of century enter Ernst Mach, who opposed both idealism & old mat. PM Q. EM (from The Science of Mechanics, 1943, p. 27) "we cannot make up properties of nature with the help of self-evident suppositions, but that these suppositions must be taken from experience." Then PM says: "Mach's critical empiricism supported, with unintentional, a rising idealistic trend in the phil. or sciences."

son influenced Bogdanov who tries to combine them with Marx. & 1913 this which VIL sent out to destroy in Mat. & Empirio Criticism, p. 354, "not mere speculation but the wk. of chemists & physicists led from the atomic to the nuclear theory, to the new physics (new phil. associated with it) All real knowledge of the external world is the product of men's theoretical & practical activity in the actual world."

PM then jumps to the contention that the "specific Leninist version of Marx" as if Mat. & E-C = Leninism plus decline of Wes. labor movement led to s-c. This situation required an ideology pvt. cap. didn't need. & out of nowhere PM suddenly rejects also "the outdated & unreliable principle of nat. self-det." \*\*\*\*\*NB NB NB\*\* (PM refers to Korsch & Pannekoek)

p. 356

Science & Society: (p. 357) "Because there is no 'end' to science & because its fields of exploration are unlimited, science can choose to concentrate upon one or another. The emphasis upon a specific field & a particular direction depends upon the needs, structure, & superstructure of a particular society. There was, in the 16th & 17th c., an obvious connection bet the concentration on astronomy & the dev. of world trade. There is an obvious connection bet the present emphasis on atomic physics & the current imp. military struggles. "In Marxist values, man is the measure of all things & science should be science for men."

Mat. & Determinism (Q V.G. Childe, "Soc. & Knowledge" 1956, p. 97.

Matter is now different what it was in 19th c. when it appeared as composed of atoms & the very stuff of nature. For Mach atoms were a mental artifice not susceptible to

ence experience, matter is now regarded as something 'in-between', Q  
Bohr (The Concept of Reality in Physics, p.319): matter as given by  
our senses appears as a (E) phenomenon, created by the inter-  
action of our sense organs with processes whose nature can be  
discovered only indirectly, thru theoretical interpretations of  
experimentally observed relationships; in other words, thru a  
mental effort.

1905 Einstein formulated the (E) of mass into energy - now the  
term, matter, when it is used includes all the physical  
phenomena of which men are aware. ... Then PM Q W.  
Heisenberg, from Plato to Max Planck (Atlantic No. 11/59, p. 213):  
"All elemental particles are made of the same stuff -  
namely, energy. Matter exists because energy assumes  
the form of the elemental particles." The PM  
continues: "The material world is the world of men, quite ind. of  
the fact - scientifically or phil. - speaking - that the old  
concept of matter is insufficient to acct. for physical reality."

1927 The equivalence of mass & energy, or (light matter)  
extended the wave corpuscle duality - at last discovered  
for light - to all matter. ... The application of quantum  
mechanics to the problems of atomic structure by Niels Bohr  
& Werner Heisenberg led to the principle of uncertainty or indeter-  
minism, etc to the concept of complementarity. ... Because in their  
totality the elementary processes constitute physical reality,  
but indeterminate, statistical, probabilistic character of  
quantum physics led to a denial of causality. Not all scientists,  
however, are willing to recognize causality as a fundamental  
aspect of nature. For Einstein, quantum theory in all its implica-  
tions seemed only a temporary makeshift - an expression of our  
ignorance...."

Man as measure of all science, math, with their knowledge - theory, reality;

16<sup>B</sup> = 16<sup>B.C.</sup> = obvious connection but concentration on ASD may be  
des of world state

16<sup>B.C.</sup> = matter = atoms  
16<sup>B.C.</sup> = atoms = mental artifact: "we cannot move up  
properties, not are w/ help  
self-evident suppositions  
the physical world, chemist  
physicists led for  
atoms to matter theory"

16<sup>B.C.</sup> = Born = Q  
Einstein = 12. mass  
matter = all physical phenomena of what we are  
aware

All elemental words or made of SAME stuff, i.e. ENERGY  
Matter exists because energy assumes form of elementary