

... & 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 FM 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 "aberration" occurred is good, hence I summarize below, rd) disputes

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. FEW, because it is the basis of the quatic 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 is true."

PM says Mx can term diamat "but used the word material" to designate the primary conditions of all human existence Hegel's dialect merely (ridiculous, rd) formed the point of departure of Mx's critique of cap. soc. (then he quotes Engels p. 351 LE, 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 this stemmed from the "physical determinism derived from Newtonian mechanics." (Born, p. 320 Bull. p. 351 LE, though later he'll blame FE for everything.) "By pitting

direct opp. to the materialism based on Newtonian mechanics, in

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 was anti-Mxism."

In 1st section "Marxism as Ideology", PM show how the pre-cap. was agitation 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 Alphone 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

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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 human activity.

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, for many idealists the idealist theory of knowledge became an idealist theory of reality.

At the close of the 19th 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, (altho unintentionally) a rising idealistic trend in the phil. of science."

PM influenced Bogdanov who tries to combine them with Marx. & Lenin's this which VIL sent out to destroy in Mat. & Empirio Criticism, p. 354, "not mere speculation but the work 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 a-c-r-s 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)

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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. Or for Mach atoms were a mental artifice not susceptible to

ense experience, matter is now regarded as something 'in-bet.', Q
Bohr (The Concept of Reality in Physics, p.319): matter as given by
our senses appears as a (EY) 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
"qualitative effort."

1905 Einstein formulated the (EY) 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. -ly speaking - that the old
concept of matter is insufficient to acct. for physical reality."

1927 The equivalence of mass & energy (of 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 complementary. ... Because in their
totality the elementary processes constitute physical reality,
the indeterminist, 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, world. They know reality.

163 = 163.c = Brownian motion but concentration in ASD may be
dev of Wald date

163.c = matter = atoms
Nech = atoms = mental artifact: "We cannot move up
without sense-experience" self-evident supposition
20.c = matter = indet =
20.c = Born = Q
Einstein = 12. mass
matter = all physical phenomenon of what we are
aware

Remark
All elemental particles are made of ENERGY
Matter exists because energy assumes form of elementary