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SOCIOLOGISM, EPISTEMOLOGY AND EDUCATIONAL THEORY

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The problem of relativism of truth and knowledge has emerged as a central consequence of the reductionism of the Sociology of Educational Knowledge With the increasing influence of the sociology of knowledge within the sociological analysis of education, analytical Philosophy of Education has challenged the sociologists' encroachment on their traditional territory of epistemology Philosophers of education have re-asserted the specificity and purity of their method of conceptual analysis over and above the empirical analysis of Sociology They have also pointed to the worrying implications of sociologistic reductionism for educational practice This paper questions the specificity of the method of conceptual analysis and in turn centrally locates analytical philosophy within an epistemic framework common with Sociology It is within this framework, the historical materiality of knowledge, that the problem of relativism must be reposited and tackled and more over a synthesis between philosophical and sociological analysis of education developed, which might directly inform educational practice

In contemporary educational literature, philosophy and sociology of education as disciplines are locked in mortal combat over their respective territorial claims The sociological thrust, with the increasing influence of the sociology of knowledge within the sociological analysis of education, has been towards a relativizing reduction of traditional philosophical questions and approaches to the nature of truth, knowledge and morality This, in turn, raises its own epistemological and moral problems (20) The philosophic response is to restress the specific and differentiating nature of philosophic enquiry (4) and to point to some of the worrying practical consequences which would seem to result from the subverting relativism of the sociology of knowledge paradigm (14, 18) Attempts at dialogue (18) have further highlighted the radically incommensurable and mutually incompatible nature of the two discourses Moreover, attempts at synthesis (17) of the two approaches and specifically the analysis of the nature of educational knowledge have conceived the mediation as consisting of some (entirely unspecified, spurious) interaction of logico-philosophical and sociological orderings of public thought The result is a mediation between

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differing levels of analysis of secure discourses rather than a mediation which in its very nature comes to re constitute these traditional discourses in a genuine synthesis The resulting synthesis transcends the myopic demar ations and barriers raised within each distinctive discourse more out of territorial anxiety and ideological purpose than out of a consideration of their epistemological, or indeed educational, pertinence

In this paper I suggest the possibility of a third alternative which transcends the former antithesis articulated between philosophical and sociological modes of analysis My proposed analysis is based on sociologistic premises, as is, I would argue, all major twentieth century western philosophy, including analytic philosophy (wittingly or unwittingly) In particular, the proposed analysis is based on the fundamental premises of the materiality and historicity of man and knowledge Furthermore, it is radically reflexive with regard to its own theory and method, i e , it is philosophic, as traditional sociology has not been It is hoped that such a materialist analysis might contribute to a shifting of attention from the territorial anxieties of disciplines, which compete for epistemic control of educationalist discourse, to the pressing problem of the specific nature and status of educational theory, qua theory, and its relationship to concrete educational practice

PHILOSOPHIC METHOD AND INFORMAL LOGIC

The argument for the specificity of a philosophical analysis of education in the face of sociological reductionism rests apparently on a single assumption, and that is the logically different type of questions asked by philosophers and sociologists, the former being concerned with formal conceptual enquiries into the meaning of concepts with a view to clarifying these and the latter being concerned with empirical investigations into regularities in social life aimed at the collection of a body of substantive knowledge

However, as critics of analytical philosophy of education point out (1,5), the methodological approach of conceptual analysis seems unwittingly to generate and support particular substantive views of the nature of education as a process and the status of knowledge and its forms, as if it were the case that the type of questions asked by this philosophical approach were a response to the absent presence of a substantive ideological answer which precedes their asking Indeed, the paranoic response of analytical philosophers to such ideological analysis appears as the repression of an

unconscious context of knowledge production, a particular ideological view, a philosophy (they hate that word) which lies beyond the horizon of their consciousness, unseen, ungrasped but determining their thought Their responses suggest that this ideological analysis hits the most sensitive point, 'the point of the intolerable, the point of the repressed' These ideological determinants are unperceived because, to quote Althusser,

> They are rejected in principle, repressed from the field of the visible and that is why their fleeting presence in the field when it does occur (in very peculiar and symptomatic circumstances) goes unperceived and becomes an indivulgable absence – since the whole function of the field is not to see them, to forbid any sighting of them (2, p 26)

For example, it is clearly the case that Peters has a particular conception of the nature of education, best circumscribed by the notion of liberal education Likewise, Hirst details a specific set of forms of knowledge, which curiously seems to legitimize a traditional liberal educational curriculum These philosophers continue to represent their work as being, in essence, formal conceptual analysis It is to this supposedly neutral ground of methodology that they serenely retire when the ideological muck begins to be raked by sociologists or others As I have said, this methodological stand of defence on the purely descriptive, conceptual, non substantial nature of their linguistic analysis functions so as to forbid any sighting of the subtle but intimate relationship between the unseen, unconscious, ideological context of their own analysis and their specific but unobtrusive concerns in the field of education

There is a tension between Peters' and Hirst's concern to adhere to the methodological neutrality and purity of anglo saxon linguistic philosophy and their intimate concern with the promotion of particular models of education, society and knowledge This tension reveals itself in the interesting fact that the major debates specifically dealing with methodology which take place within linguistic philosophy take place within philosophy of education This preoccupation is understandable given the specific function of the methodological claim as a diversion from the examination of the ideological roots of their discourse

A constant tension emerges between the methodological and the substantive Conceptual analysis as it directs itself to substantive issues always threatens to spill over into the ideological and has to be checked by a constant reassertion of its neutral, formal nature This is apparent in the

actual form of linguistic analysis pursued by Peters and Hirst and others The activity is no longer one of naturalistic description of usage and the contextual features of meaning and language, the redirection of philosophy promised by the work of Wittgenstein and Austin Rather it becomes an activity best described as *legislative linguistics* Peters, in fact, ends up telling us we should use words like 'education'

Peters (13, p 43) has noted that 'the concept of education here developed, it might be said, is almost indistinguishable from that of liberal education' The 'development' of the concept, however, is arrived at not by a descriptive account of the usage of the word in various contexts but rather by the specification of a specific 'logic' of educational discourse plotted by means of the procedures of identification of paradigm cases of the meaning of concepts and of 'logically necessary conditions' for the application of particular concepts As such, the form of linguistic analysis pursued has moved from the investigation of the social and pragmatic context of language and meaning to the investigation of language as a quasi logical system Again, at just that point where the patently obvious prescriptive and legislative form of Peters' and Hirst's analysis threatens to slide over into the opening abyss of ideological assertion, analytic philosophy of education checks itself and disciplines its excesses by a return to the surer ground of methodological discussion and of logical objectivities

Of course Peters is not alone amongst analytic philosophers in seeking beneath the vagaries of everyday usage some sort of 'informal' logical structure of concepts and meaning (16) However, the whole notion of an informal logic seems somewhat contradictory For it is the case that the chief characteristic of logical or axiomatic systems is their purely formal nature whereby propositions are related not by substantive relations of meaning but rather by formal rules of inference The sentences used to express truth in logic must be formulas of a formal language, that is, a language that can be specified without any reference at all, direct or indirect, to the meaning of the formulas of the language Modern logic clearly sees itself as a branch of formal axiomatic theory, concerned with the investigation of the transmission of formal truth functions in axiomatic systems by valid rules of inference, thus, the concept of meaning has long since been banished from its concerns

Moreover, as Quine (15) has shown, the importation of logistic approaches into the study of natural languages is unwarranted, resting as it does on a confusion and conflation between logical relations and relations

of meaning or synonomy The notion of analyticity in natural language where it does not rest on the analyticity of pure tautology (e g , all spades are spades) is based on a prior notion of synonomy (e g , in the proposition no bachelor is married) The assertion of the analytic nature of the state ment, or the 'logical' nature of its truth, rests on the postulated synonomy of the terms 'bachelor' and 'unmarried man' However, the notion of synonomy utilized here (i e , interchangeability of the terms without change of truth value of the statement) itself pre-supposes the notion of analyticity for it is the case that the term bachelor is regarded as synonomous with unmarried man if and only if the statement 'all and only bachelors are married men' is analytic Thus, the importation of the notion of analyticity into the analysis of meaning relations without any prior independent clarification of the notion of synonomy results in a certain circularity

PHILOSOPHY AND SOCIOLOGISM

Ultimately, ordinary language philosophers embrace a notion of synonomy based not on analyticity but rather on identities of meaning conventionally rooted in the usages particular to various social contexts and activities – language games The normative rules of these with their social origin, rather than the rules of implication of logical systems, are the framework of their analysis This move constitutes the specificity of their revolution in philosophy In the passage from the formal and syntactical to the social and semantic they seek, as they say, a more informal logic as the object of their analysis Analytic philosophy has made the move from a form of linguistic analysis based on the construction of a logico syntactical framework for the language of science which demarcated the possibility and limits of meaningfulness, an ideal language project, to a form of language analysis based on the descriptive analysis of the usage of ordinary language in various social contexts, with little or no self reflection on the epistemological consequences of this very move from an objectivist standpoint to a sociologistic one

For analytic philosophers since the 1920s it became more and more apparent that language owed its form not only to logical syntax, nor even to referential sematics, but primarily to what Charles Morris called 'pragmatics', that is, to the use everyday people made of it in specific social contexts, to specific language games with constitutive rules However, this awareness was not accompanied by a corresponding self reflection on the fundamental rupture in philosophical knowledge in both the areas of epistemology and ontology that the move to a conventionalist approach to

language analysis entailed To quote Karl Otto Apel

> The logic of science as it was developed by the logical positivists has not, up to now, reflected upon the fact that, after the exposure of the hidden metaphysics of its early days it moved to the new ground of the A priori of Communication Instead of reflecting upon this new pre supposition of its conventionalist phase it has tacitly held on to its former pre suppositions inherited from logical atomism which implied methodological solipsism (3, p 7)

Apel's claim is that language communication provides the prior method ological basis for all science, social or natural Since Dilthey and Weber, the specificity and irreducibility of social science has been held to reside both in the nature of its object, that is, systems of cultural meaning and value, and in the form of its method – interpretative or hermeneutic under standing

For Apel, however, natural science and its traditional positivist philosophy is also founded on the possibility of inter subjective communication, not merely because such communication is a material condition for carrying out research and transmitting results but also because of the form of neo positivistic logic of science Analytical philosophy of science is character ized since Russell by its having taken 'the linguistic turn' It is held that language is a necessary inter subjective mediation between mind and the real world Initially, this entailed the search for an ideal language of science which could bring together mathematical logic and primitive referential propositions to produce a systematic *calculus ratiocinator* the embodiment of scientific rationality However, this project was soon to flounder when it became apparent that the ontological status of logical connectives and observational statements was unclear For both of these elements of the ideal language rested on a conventional basis and thus involved issues of the clarification of meaning and implementation of rules of usage Conventions cannot be deduced from first principles within a calculus, nor can they be derived from empirical observation or by induction from such observation Rather they pre suppose inter subjective communication or language games with distinctive rules Rule following, convention adherence, as Wittgenstein has shown, itself pre supposes sociality and communication, a solitary ego cannot be said to follow a rule

The cognitive operations of science pre suppose then a 'community of interpretators' who arrive at both tacit conventions about the use of basic

terms, observational and theoretical, as well as explicit conventions about definitions, theoretical constructs, etc As such, Apel claims, the 'a priori of communication' is the 'transcendental' foundation of natural science as much as it is the foundation of social and cultural science It is the auspices of analytic philosophy's linguistic method

The consequences for analytical philosophy of this unthinking, this oversight of an absent presence – the newly emergent sociologistic foundation of their conscious analysis – have been just the arrival at this contradictory notion of informal logics The foundation and form of linguistic analysis moves from the 'ideal language project' to the description of everyday usage, from a notion of language as a logico syntactic frame work and universal object language to one of a series of socially contextualized language games However the terms of the surface discourse of ordinary language analysis are carried over from the objectivist formal theories of the ideal language project Not only is this true i the very notion of an informal logic but also in the maintenance of the rigid distinctions between 'formal' and 'substantive' questions, 'conceptual' and 'empirical' issues, 'analytic' and 'synthetic' truths and in talk of 'logically necessary conditions' for the application of concepts All of this is quite inapplicable to a conventionalist approach to language and meaning In what sense at all, if one abandons the neo positivist reduction of language to logical syntax and universal object language, can one talk, as does Peters and many others, of a purely formal analysis of 'education'?

A further consequence of the carrying over of these logistic terms into the discourse of ordinary language analysis has been the preservation of the specificity of the philosophic approach over and above the sociological despite, as I have asserted, their common epistemic foundation in the 'A priori of Communication ' The claim of specificity rests on the very claim of the specific formal and conceptual nature of philosophical analysis as opposed to the substantive empirical approaches of sociology

Indeed the traditional hostility of analytic philosophers to sociology itself as a discipline can be seen partly as the consequence of this same inability or unwillingness of philosophers to reflect critically on the auspices of their own analysis, namely, on the central tenet of that analysis – an essential sociologism

Let us be clear here what I am asserting The academic discipline of sociology, as it has developed and is practiced today, has *not* been

responsible for the sociologistic mutation of philosophical knowledge which has produced in European philosophy, of different schools, a rupture from the absolutist ego logical tradition of the post Cartesian period and the movement to a new position – the A priori of Communication For sociology itself, trapped by its own positivist origins, has been slow to reflect on the epistemological consequences of its form of analysis What I am claiming is that a fundamentally more profound rupture in the field of knowledge than the mere appearance of sociology has taken place in the twentieth century, a rupture, first visible in the historically precocious work of Nietzsche, Freud and Marx These seminal theorists wrested the nine teenth century Western concept of man away from its enlightenment individualist and asocial roots In turn they asserted the social situatedness of man's being and traced the epistemological and ethical implications of this fundamental sociality *This rupture has* rendered possible the major trends in twentieth century philosophizing in the four major traditions, phenomenology, marxism, pragmatism and anglo saxon analytic philosophy And in particular, it has thrown up the problems within language analysis which have lead analytical philosophy, in all its blindness, 'through the back door' into the epistemic area traditionally occupied by the Geisteswissenschaften

Thus it is paradoxical, yet understandable, that philosophy of education should recoil in horror from the implied relativism of a sociology of educational knowledge which in confronting western thought with its own radical sociality and historicity subverts traditional epistemological and moral absolutisms characteristic of that thought in its search for the apodictic For if it is the case, as my symptomatic re reading of analytic philosophy suggests, that linguistic philosophy now occupies, wittingly or not, a common epistemic space with sociology, the 'A priori of Communication', then the new problems posed by this major move in western thought to a social logistic problematic must also be pondered by analytical philosophy

The 'logic' of linguistic analysis, explicated in the notion of language games and forms of life, has clearly abandoned the previous objectivism of the neo positivist period The obscurantist clinging to the terms and categories of the former problematic may preserve the illusion of object ivity But the very fragility of these outmoded terms cannot conceal the spectre of a lurking relativism more threatening because more ungrasped, than any resulting from sociological enquiry The replacement of the outmoded categories of the neo positivist problematic is the primary theoretical obligation of analytical philosophy today

For analytical philosophers of science and of education it is necessary to rethink the problem of relativism in the light of recent developments in the philosophy of science and meaning rather than to continue to address it from the standpoint of an outmoded positivist philosophy of science The common starting point of the new analytic philosophy is a challenge to the view that statements, whether in the form of scientific theories or ordinary language descriptive utterances, have some fixed meaning as a result of their representation of or correspondence to particular empirically given states of affairs Rather, it is argued, that statements have meaning only by virtue of their relations to other statements in the structured discourse to which they belong This contextualist theory of meaning implies a conception of science which stresses the following features (i) The primacy of the theoretical over the observational This is primarily explicated in terms of the assertion of the absence of a neutral pre theoretical realm of scientific evidence, a central tenet of classical empiricism There is no set of facts independent of the scientific observer's theoretical optic which constitute neutral evidence As such, scientific cognition is no mere reflection of objective reality but rather an interpretation and hence appropriation of it through the mechanism of theoretical practice (ii) The incommensurability of scientific paradigms Scientific concepts, methods and theories are intelligible only within structured and mutually exclusive universes of discourse A paradigm is 'the network of theory through which the scientific community deals with the world (10)' As scientific criteria for the selection of hypotheses are internal to paradigms, individual scientists, lost in their interiors, cannot judge these networks by independent criteria For this would require an objective supra paradigmatic point outside the boundaries of current discourse (iii) The pragmatic and socio historical dimension of scientific discovery With the abandonment of the notion of a neutral realm of facts and attack on invariant criteria of scientific rationality (viz, theories of confirmation or refutation) implicit in the paradigmatic view, epistemology has begun to reorient its structure Systematic historical and sociological study of the concrete practices of the sciences has suggested that with regard to the selection and acceptance of scientific hypotheses, social institutional constraints and paradigmatic dynamics may be more important than observation and verifying experiment

The stress on these three features in analytical studies of scientific method has shifted concern away from a unified positive method for science, founded on a naive empiricism, to a consideration of the social and historical parameters of scientific research I would argue that both the contextualist theory of meaning and the paradigmatic view of scientific

practice are indices of the emerging centrality of sociologism to modern analytic philosophy.

Thus a consideration of recent developments in analytical philosophy of science indicates what we have earlier noted with regard to the philosophy of language and meaning, namely that analytical philosophy in its contemporary linguistic phase occupies a common epistemic space with sociology. Moreover, and philosophers of education should note, the problem of relativism haunts analytical philosophy as much as it does the sociology of knowledge and of education.

The central problem has become within each of these areas *how to theorize about certain social relations as constitutive of science while maintaining a non-reductive and hence non-relativist account of their relationship.* This is the reformulated problem of relativism. Neither the phenomenologically oriented sociology of education nor comtemporary philosophy of science has been able or willing to think through this reformulation. The former retreats to philosophical anthropology and existential encounter to cope with the problem while the latter follows Kuhn (10) and Feyerabend (7) up the anarchic and irrationalist cul-de-sac they have entered. Both responses lead to subjectivism and self-defeating relativism and scepticism.

Within analytical philosophy of education, the pseudo-formalism of Hirst's attempt to legitimize current curriculum structures by reference to postulated forms of knowledge with a quasi-transcendental logical status is an even more patently absurd philosophic response to the problem. The universalism of the 'forms' clearly resides in the hypostatization of the myopic world of English elitist liberal education and the curriculum of the traditional English grammar school.

TOWARDS A MATERIALIST EPISTEMOLOGY

In this section I wish to sketch the foundations of a materialist theory of knowledge. I shall be concerned here with the problems of science, not of cognition in general. In particular, I am concerned to outline the elements of a historically and sociologically informed analysis of scientific practices which is non-reductionist and demarcative with regard to ideology. Within this analysis I shall address myself to the specific and differentiating nature of educational theory.

The problem of relativism as traditionally stated, that is unreformulated, is a consequence of empiricist epistemology Because empiricism has traditionally conceived of science in logical and experimental terms, it restricted its analysis to formal proof and evidential support This has led to an impoverished, rarified conception of science In particular, the whole processes of discovery and dissemination which are inaccessible to logical analysis are ignored As a result, the analysis of these processes of discovery and dissemination, in the end social processes, are artificially separated from issues of proof and verification of formulated hypotheses Empiricist epistemology becomes 'a broken backed compromise between the unrestricted realm of an individual subjectivity that creates and the absolute restrictions imposed by a timeless true sphere of confirmation or falsification in its proof (19) '

The subjectivization of the creative moment is accompanied by the reification of the verificational process, both result from the impoverished and abstracted conception of science The more freedom given to the subject hypothesizer the tighter the objective controls on the verification/ refutation of hypotheses, viz Popper's logic of science Within this couplet

subjectivity		objectivity
creativity	———	verification

the freedom of subjective creativity is purchased by constricting the verificational process within impossible limits (impossible because science actually does not operate according to this logic) Correspondingly, any concern with the creative moment within the couplet implies a move to the subjective pole and the problem of relativism threatens There is no investigation of the objective material, that is, historical and epistemic conditions for the production of scientific knowledge These objective conditions which include the social and historical context of particular scientific communities and individuals, the dominant structurations of knowledge in a science at a given period and indeed the technological conditions for experimental work, are not theorized within empiricist theory of science They are obscured and ignored under the psychologized notion of 'creativity' and the sole objective conditions for the emergence of scientific knowledge located in the realm of an invariant verification procedure 'Scientificity' then resides in the prescriptions for an ideal science, often a stylised model of physics, and philosophers of science sit in judgement on the methodology of various areas, a constant overarching vigilance ' Against this supreme yardstick of scientific rationality, educational

theory is effectively disenfranchised as an autonomous area of scientific practice

However, theories which take as their object the whole of knowledge, seeking an epistemology for all scientific practices in a general theory of cognition, set up the conditions for their own dissolution in scepticism This is so for two reasons Firstly, there is a difficulty in conceiving of knowledge as a unity, given the obvious specific and differentiating nature of various sciences And secondly, any half blown historical or sociological study of a science reveals that scientific practice simply does not correspond to the legislative canons of positivist epistemology Indeed, it could be argued that the very notion of invariant criteria of scientific rationality is in fact only necessary if the terms of scepticism are accepted If one accepts the materiality of scientific production of knowledge and realizes that scientific practice has an objectivity which cannot be reduced to an invariant hypothesis selection procedure, then in what sense can knowledge be cast in doubt? Can we doubt the material existence of research reports, conference papers, scientific abstracts, journals and books? Can we doubt the collection of scientific data, its storage and calibration, its utilization in technological process, its dissemination in educational programmes? Empiricism confuses and conflates two questions How is science possible? How are human minds able to gain knowledge of the world? A failure to answer the latter question, provokes a retreat to scepticism which means that the former problem cannot be objectively and rationally approached Because within empiricism the sciences' privileged epistemic status is guaranteed by an invariant verification principle, any assault on this principle as in Kuhn or Feyerabend results in a problem of relativism This epistemological edifice is built like a house of cards – tamper with the key card and the whole house collapses

A materialist epistemology, on the other hand, attempts to wrench epistemology from its traditional concerns, that is the truth scepticism opposition, and to reconstitute its form by a systematic study of the concrete practices of the distinctive sciences The central task of such an epistemology is to theoretize the objective conditions of production of scientific knowledges The major assumptions of this approach are

(1) Science is epistemology functioning in its practical state The epistemology must be extracted from the historical process of the develop ment of various sciences by way of concepts which specify the conditions of possibility of that science and its development (a) As such, epistemology

interacts with the history of science which is given a new privileged position in relation to epistemological concepts A link is forged between epistemology and the actual practice of the history of the sciences (b) Historical conditions do not exhaust the objective conditions of possibility of particular sciences Scientific practice has a degree of autonomy which regards the material determinants of historical processes It is governed then by epistemic dynamics and structures which cannot be reduced to those of other levels of social formation – economy, polity, etc As such, epistemology must draw on the resource of a theory of discourse, that is, an objective analysis which can formalize the structure of thought systems in their distinct systematicities and which can, in particular, theoretize the specificity of various sciences as signs systems viz a viz ideology Kuhn's unclear notion of a 'paradigm' is inadequate as an analysis of the structur ation of scientific knowledge It must be replaced by a rigorous semiotic study of scientific discourses

(ii) The object of such an epistemology is the distinctive practices of specific sciences (a) This is a denial of the notion of a unitary science Such a unity depends in its conception on a belief in a universal invariant methodology, such a belief is counter factual The singular term 'science' is in fact an imaginary unity constituted by philosophers of science (b) Accordingly, the demarcation between science and ideology is not an invariant, absolute and universal one but rather specific to various scientific practices which struggle to differentiate themselves from their ideological context, a struggle objectively represented in their discrete systematicity of theory and method Galileo's defence of Copernicanism and the emerging construction of classical mechanism illustrates such a struggle and the historical specificity of the science/ideology opposition (c) Epistemological intervention plays a subsidary, auxiliary role within actual scientific practice Epistemology must abandon its second order pretensions as a legislator of invariant scientific rationality Such prescriptions of traditional epistemology have often functioned so as to hinder the production of scientific knowledge, consider, for example, the effects of positivism on social science, and, in particular, on educational theory

'Science' then is characterized in terms of the metaphor of production Scientific practice is seen as a complex of definite processes of production of knowledge, the unifying principle of which is a common conceptual field and set of discrete methods The metaphor serves to challenge the whole atomistic and abstracted conception of knowledge In turn, it stresses the historical, epistemic and indeed institutional and technological

situatedness of scientific practice, factors which condition the very possibility of that practice The major concern of epistemology is then conceived of as the analysis of the process of production of knowledge,

> the transformation of a given raw material (scientific knowledge and/or pre scientific representation) into a given product (new scientific knowledge), this transformation would take place by the application of definite scientific agents of production using definite means of labour (concepts, theories, methods) in definite production conditions (both material and social) (6)

With 'science' grasped in its material situatedness, a materiality which is constitutive of scientific practices, and with epistemology conceived of as an analysis of the conditions of possibility, historical and epistemic, of discrete scientific practices, then the question of objectivity can be seen in a completely different light than within the rarified optic of positivism Objectivity is no longer held to reside merely in the invariant hypothesis selection controls but rather to be a function of a science's form as a definite, that is historically and materially given means of conceptual labour in definite production conditions To assert that scientific practice is objectively determined is to deny that the social and structural relations of scientific production of knowledge can be reduced to the subjectivity or indeed inter personal subjectivity of an individual scientist or group of scientists It is this reduction of the social relations of scientific practices to those of a set of interacting subjectivities, involved in interpersonal communication, that leads to the very subjectivism and relativism that epistemology sociologized has been accused of The materiality and objectivity of the social relations of scientific production is essentially of the same nature as that of other aspects of production Marx reminds us

> In the social production of their life, men enter into definite relations that *are indispensible and independent of their will,* relations of production which correspond to a definite stage of development of their material productive forces (11) (my stress)

A historical materialist theory means that for the first time it is possible to theoretize the social relations of scientific production as constitutive of scientific practice, without a relapse to the relativism characteristic of phenomenological conceptions of inter subjectivity

Secondly, with the development of a theory of semiotics, that is a theory of discursive practice, originally derivative of the science of linguistics but

increasingly differentiating itself as it develops its own specific concepts and methods, it has become possible to theoretize the specificity and relative autonomy of the production of knowledge Given, as we have seen, that scientific 'perception' and hypothesizing takes place within determinate structurations of theory and concepts, then the adequate analysis of these discursive structures is of paramount importance if we are to grasp the totality of the conditions of production of scientific knowledge The key concept here is 'problematic' rather than 'paradigm', for this term stresses that structurations of knowledge are not merely the ossified product of scientific practice but rather the mechanism by which scientific practice operates and hence the condition of that practice We must understand how this specific machine operates As it is in form a set of irreducible discursive practices, then the analysis of its mode of effectivity is a task for semiotics Sign systems such as scientific knowledge can be analysed formally as distinct objectivities

Within the circumscribing materiality of history it is possible to analyse the structural systematicity and discursive objectivity of systems of scientific knowledge Materialist epistemology is then a synthesis between a history of scientific practices and a semiotic study of scientific discourses This synthesis is accomplished within the theoretical ambit of historical materialism, the science of social formations and their determining modes of production Such an epistemology has been sketched in its skeletal form by Louis Althusser, who draws heavily on historian of science Gaston Bachelard Althusser's student Michel Foucauld has developed the perspective and applied it in a monumental historical and structural study of the social sciences (8) In England, the Marxist orientated journal *Economy and Society* has championed the new epistemology, reprinting many articles of French and Italian origin

EDUCATIONAL THEORY AND PRACTICE

Within a materialist epistemology, sciences are defined by their different iating specificity Criteria of scientificity are internal to distinct sciences and specific to their different modes of production and distribution of knowledge What then is the specific nature of educational theorizing as a science? Is it a science?

An adequate answer to the latter question would require a thorough epistemological analysis of educational theory from the materialist perspective formally sketched above It would require an investigation both into the history of education as a discipline and into the structure of the

discourse of educational theory, examining whether there are specifically educational concepts and methods of enquiry with a specific systematically organized structure. Such an analysis is beyond the scope of this paper; it remains however a pressing matter if education is to achieve critical self-reflection. Here I shall concern myself with a few final comments about the major differentiating feature of educational theory.

As educationalists, our major concern is the area of the social sciences. However, the major discriminating distinction as far as education is concerned may not be between natural and social science but that between contemplative rationality and interventionalist scientific endeavour.

Up to the present, empiricist epistemology has been the dominating form of educational theory's self-reflection. However, its invariant logic of verification/refutation and rigid distinction between facts and values has effectively disenfranchised educational theory as a realm of discrete scientific practice. The neo-positivist conception of theory and explanation (deductive nomological model) and the distinction between ideology and science (verificational principle) has had a dominating influence in models of educational theory. This conception is itself based on a particular correspondence and contemplative view of truth based on the fundamental duality of a cognizing subject (psychological or transcendental) and a transcendent object (static or dynamic) world. This is held in the social sciences only at the expense of, on the one hand, abstracting the subject or scientific community from the abiding historical context of their cognitive practice and, on the other hand, by reifying society to provide for the transcendental objective facticity, out-thereness, this empirical problematic requires. Positivist methodology generates an abstract and contemplative model of theory which is inappropriate to gauge the nature and role of educational discourse.

Education as a mode of theorizing is, I would argue, not contemplative but rather interventionalist in form. Moreover, it involves an emancipatory interest, concerned as it is with facilitating and improving educational process. This emancipatory interest entails unlike technological forms of intervention, widening the whole basis of research activity beyond the inter-subjectivity of scientists and technical control of administrators, so that it informs the practice of everyday people. Which is to say that, in educational theory as in critical social theory generally, truth resides in the relation of theory to practice, in the realization of theory in concrete social practice. To quote Marx:

> The question whether objective truth can be attributed to human thinking is not a question of theory but is a practical question In practice man must prove the truth that is the reality and power, the this sidedness of his thinking The dispute over the reality or non reality of thinking which is isolated from practice is a purely scholastic question (12, p 28)

Education as a social practice requires a theory that is practico-critical A materialist epistemology in that it radically situates the subject within history and in turn subverts the absolute facticity of the object world, natural and social, provides for a dialectical relationship of man and the world and in turn for the interventionist and practical nature, 'this-sidedness', of our thinking As such, the eruption of the field of knowledge of the materiality of man and his cognition, a historical materiality, clears the ground for a type of theory which both reflects on its own situatedness – the constitutive historical and social context of its production – and also on the potential context of its application It allows for a type of theory which formulates itself at the very interface of theory and practice, anticipating in its own theorizing the context of its own application It grasps as the core of its method 'a kind of methodological inner view of the relationship of theory to practice', in which the mediation and obligation of theory with regard to practice resides in the role of theory as a critique and revolutionizing of current practice

However, critical theory can only achieve its emancipatory interest and operate as an agent of social change, when as a body of knowledge (or to be more accurate knowledge practices), it enters the communicative practice of those to whom it is addressed Whether in the case of educational theory to teachers and parents or in the case of political theory to the working class, the concrete unity of theory and practice in the end resides in the enlightened action of these groups That is, its claims to validity rest materially on the successful process of enlightenment which is its obligation and on the resulting revolutionizing of practice which is the realization of theory

The conception of critical social and educational theory sketched here has been most closely worked out in the area of political theory and specifically within the theoretical practice of Marxist militants However, in so far as this discourse has conceived of the role of theory as a revolution izing of practice which can take place only in real socio historical contexts which are objective determinations of the possibility of the effective realization of theory in practice, then I would argue this model has a

particular pertinence in the formulation of models of educational theory Traditionally, these models have abstracted educational theory from concrete practice in institutional settings and have failed to grasp that the understanding of the conditions and means for the realization of theory are not peripheral to educational theory but rather its central component, its discrete specificity On the other hand, a critical theory of education has as its point of focus the very interface of educational theory and practice in so far as the contribution of social theory to human activity and, in particular, the teacher's activity is not merely a contemplative one It can only be understood as an enlightened revolutionizing of that practice Further, the realization of theory in practice (revolutionizing of practice) can take place only in real socio historical contexts which, in the case of education today, means in institutional settings governed by socio structural constraints The institutional realization of theory (revolutionizing of institutional practice) as a question is not analytically distinct from the theoretical component as such, but rather is its central aim and constitutive of its specific nature as educational theory Finally, the understanding of the condition of the means for the realization of theory (revolutionizing of practice) are not peripheral to educational theory but rather its central component Thus, we conclude that a critical theory of education encompasses a mode of theorizing which is not positivist – seeking to explain and predict 'educational phenomena' on the basis of covering general laws determining an object world from which the theorist is objectively removed – but rather re constitutes educational theory as critical social theory with an emancipatory interest

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