ESSAY REVIEW

Frank Musgrove, Education and Anthropology: other cultures and the teacher. Chichester: John Wiley, 1982. NZ$43.15.

Frank Musgrove's Education and Anthropology:

An Exercise in Moral and Intellectual Hegemony

> "It is always difficult for the psychologist to think of anything 'existing' in culture - or however one wishes to express the presence of traits and skills transcending any one individual's life or even the span of a generation. Psychology is in the main acultural and ahistorical in its theories .... all these are matters that are vaguely embarassing to the working psychologist, in spite of our lip service to such ideas as 'culture-and-personality'. We are, also, wedded to the idea that human reality exists with the limiting boundary of the human skin." (1)
>
> Jerome Bruner

For a multi-cultural society such as New Zealand (or Australia) the prospect of a book subtitled Other Cultures and the Teacher might seem to hold considerable interest. Certainly the relevance and promise of cross-cultural research to the concerns of educationists hardly needs demonstrating in a country which has only recently begun to recognise the extent of its institutional racism and the assimilationist ethos behind its social policies.

At first sight, then, Professor Musgrove's new book might raise one's educational expectations about potentially constructive moves towards models of genuine diversity. Indeed, such hope would be initially bolstered by the fact that the author had been the Chancellor's Lecturer at Victoria University of Wellington in 1970, and by the knowledge that he had both carried out fieldwork in Africa and held a series of distinguished academic posts in different parts of the world.

While Education and Anthropology purports to be a careful, scientific sifting and theoretical synthesis of cross-cultural research on learning processes, it is, in fact, an overtly ethnocentric polemic celebrating Western "superiority". The title itself is quite misleading for the book in actuality represents an all-out assault on any anthropological research which could lend weight to the encouragement of cultural pluralism. Instead, it highlights the findings of cross-cultural (Piagetian) psychology on the nature of "primitive thinking", and appeals to the authority of Western scientific rationality in a way which obscures the crucial epistemological issues at stake, and minimizes the methodological difficulties.

This review rather than attempting to describe the entire contents of Education and Anthropology focuses on these two areas of utmost concern for Musgrove and attempts to approach them in critical fashion. The first (evidence conducted within the Piagetian research paradigm), Musgrove uses to back his claims of Western "superiority", and, more specifically, interprets as unequivocally supporting his conclusions concerning the crucial importance of abstract or out-of-context learning (p.15), and the effect of Western-styled

schooling and cities in promoting it (p.64). Under the aegis of Piaget Musgrove, for example, attempts to establish the following sort of claim:

> "[t]his cognitive superiority [i.e., of modern scientific-industrial societies] does not necessarily mean superiority in other spheres of life, but it will tend to do so. It will usually help to increase a society's wealth which in turn has the long-run effect of reducing inequality. There is probably simply more human decency around " (p.128).

What is particularly disturbing about this sort of claim is that the methodological and epistemological issues involved in appraising the status of the relevant research are quickly glossed over, and what is counted by the author as "evidence" then becomes the basis for sweeping moral and political claims regarding the "inferiority" of non-Western cultures. The notion that "cognitive superiority" increases a society's wealth which, in turn, reduces inequality also deserves attention. Construed as an empirical statement, the above claim is unsupported by data and advanced as fact. Construed as an argument, it is simply asserted. Indeed, if it were possible clearly to elucidate the concept of "cognitive superiority" - or to make it operational - then given the recent evidence of income disparities between, say, blacks and whites in U.S.A. (2), or Maoris and Pakehas in New Zealand (3), the claim would be false.

The second area represents an underlying argument that lies at the heart of Musgrove's enterprise and - at a general level - seems to sanction all else that he writes. It is an argument which for the sake of convenience I shall refer to as the Argument from Western Science. For Musgrove the argument simply asserts that Western science is the paradigm of rationality, and, therefore, the measure or standard by which all societies and cultures should be judged - cognitively, culturally, morally and politically - inferior or superior. Education and Anthropology, which is so clearly designed to spark off a controversy, may be read, in part, as an attempt to vindicate the author's earlier view formed while serving in the Colonial Education Service in Uganda : namely, that there is "no real alternative for primitive societies to the ... ['manifestly superior'] scientific rationality of Western Civilization", and that "this Western Civilization is best mediated by small, highly selected and native elites" (p.13).

In both areas my strategy will be to review Musgrove's "arguments"; to clarify the way he handles the "evidence" and reaches his conclusions; and finally, to suggest that the conception of rationality with which he is working is based on a spurious distinction between form and content.

By way of concluding this introduction to the issues it is interesting to note the central and guiding motif of the book; it is the image of Rousseau's "noble savage" which for Musgrove represents all that is misconceived in anthropology and pernicious in its effects. Rousseau, whom Levi-Strauss credited with having founded the science of anthropology, is held responsible for first entertaining the unfavourable contrast between the savage and the civilized - an original innocence and a contemporary corruption. Margaret Mead, in similar vein, is castigated for echoing the notion that we might have something to learn about ourselves by attempting to understand other cultures. (She is also described (p.3) as an English anthropologist who came to occupy the Chair of Education at the University of London!).

Rousseau's ideas, however, are heavily caricatured. No reference is made to the renewal of Rousseauian scholarship, and there is no effort to locate his philosophy within the context of its age. (4) While Musgrove is clearly committed to some "theory" of progress contra Rousseau - of irreversible meliorative change - the scope of his thesis is highly localized in terms of both human history and cultures, referring as he does to Western civilization (and implicitly the so-

called "Free World"), since the Industrial Revolution. It is, apparently, upon the scientific and technological developments within this relatively short period of history that Musgrove bases his claims of Western progress and superiority. No attempt is made to elucidate or defend what is a highly complex and difficult philosophical position to maintain. There is a range of positions one might take given assent to a general theory of progress - some of which are clearly compatible, others incompatible, with the sorts of claims Musgrove makes. Van Doren (5), for instance, identifies eleven different types of theories of progress from those of Pascal, Saint-Simon and Compte to those of Dewey, Marx and Teilhard de Chardin. Without further clarification it is impossible to know exactly what Musgrove means when he talks of "progress".

At the philosophical level any discussion of "progress" must take into account not only those theories and the various grounds on which they affirm progress, but also theories of regress put forward by such figures as Wiener, Marcuse and Ellul, not to mention the cyclical theories of Spangler, Toynbee and so on.

Rousseau is the "token" regress theorist - the straw man - and brief allusions to the image of the "noble savage" are the closest Musgrove gets to a recognition of the philosophical import of these issues.

Even given an unsympathetic reading of Rousseau, there are good prima facie grounds to question Musgrove's underlying appeal to Western "progress" on his own terms. The notion of progress in Western science is sufficiently problematical to warrant the concern of mainstream philosophers and historians who not only disagree amongst themselves as to its meaning and possible criteria, but also debate the propriety of labelling the transition from one paradigm to another, "progress".

In terms of social revolution alone, the duration of scientific-industrial societies as a proportion of the longevity of non-state societies hardly provides convincing grounds to entertain claims concerning Western progress. At the level of political protest it is increasingly clear that ever-growing numbers of Westerners do not share Musgrove's confidence over the "direction" we are headed in.

While Musgrove might be forgiven for overlooking the alternatives to arguments for Western progress - it is, after all, only "natural" to view the world in terms of one's own cultural standards and to regard these as absolutes - he is not to be forgiven for the way in which he goes beyond the evidence to make sweeping moral and political claims for Western superiority.

Cross-Cultural Piagetian Research

Both the Piagetian paradigm and the cross-cultural research conducted within its boundaries are clearly essential to Musgrove's case as the following passage amply demonstrates.

> "Extensive cross-cultural research using Piagetian tests seems firmly to establish three things: that cognitive development in childhood proceeds everywhere in the same way, in the same order, through the same 'stages'; that in primitive cultures it is considerably delayed; and that schooling is enormously potent in speeding it up. A fourth conclusion is more tentative: that in many non-Western cultures most people would never, without the benefit of schooling, reach cognitive maturity at all ...
>
> All this cross-cultural research into Piagetian stages of

cognitive growth is the most powerfvul argument for schools and literacy that we have."

(pp. 45-46, my emphasis)

That is, four claims involved are here:

(1) that there are universal stages of cognitive development and a universal developmental sequence (though not a universal rate of development);

(2) that in the cross-cultural application of Piagetian tests non-Western children score significantly lower than their Western counterparts;

(3) that the Western-styled schooling accentuates cognitive development;

(4) that without Western-styled schooling most non-Westerners would not develop beyond the stage of concrete operations.

Musgrove advances each of these claims as conclusions/established truths. However his right to do so is doubtful because of serious problems in his argument. First, the method of handling the evidence is open to question for the author not only selects from a large corpus of research those studies which best substantiate his own views while ignoring "troublesome" potentially falsifying instances, but he also interprets the authors on whom he bases his case in a highly selective and distorting way.

Thus Brown and Desforges (6), in a discussion of the cross-cultural contributions to the validation of Piaget's theory, mention five studies, all ignored by Musgrove, which run counter to the 'Genevan' sequence. (7) While they concede that it is frequently found that both concrete and formal operational thinking are absent in primitive societies, they also acknowledge, as Musgrove does not, that "formal operational thinking is by no means universal amongst highly educated Western students" (p.66).

Musgrove is fond of quoting from Cole and Scribner just at the points where their research findings support his thesis - for example the effect of literacy on thinking - but conveniently overlooks certain of their results which threaten his conclusions. Cole and Scribner (8) for instance, have recently critiqued the developmental view of literacy represented by Bruner, and Olson - a view which holds that literacy and education push cognitive growth. From their work among the Vai of Liberia they question the developmentalist conclusions that literacy encourages abstract, out-of-context learning. They found contra Musgrove's conclusion, that literacy amongst the Vai was not "associated in any way with generalized competencies such as abstraction, verbal reasoning, or Metalinguistic skills" (p.457). They argue that specific uses promote specific skills, and attempt to develop a functional approach to schooling and literacy as against the developmental approach.

Second, Musgrove almost completely ignores the difficulties in comparing the research studies to which he refers, and the reader is accordingly given the impression that the "evidence" is all of a piece. Dasen (9), in preparing a summary of Piagetian research dealing with non-Western cultural groups, emphasises that there is no guarantee that results are strictly comparable:

"[t]he techniques, scoring methods, age ranges, the extent to which verbalization is taken into account and indeed the whole conceptualization of Piaget's framework, vary a great deal from one investigation to the next " (p.24).

He draws our attention to the fact that the verification of Piaget's stages has been obscured by "an unfortunate failure to distinguish three different interpretations" viz., the global stages, "horizontal decalages" and the sequence of sub-stages on any particular test (p.25). Some of his conclusions provide a useful note of caution to Musgrove's optimism in generalizing from the data. Thus, regarding the verification of the three global stages Dasen indicates the necessity of longitudinal studies, or at least the examination of all three stages in the same ethnic group. "As far as we know, this has not been done in any non-Western culture" (p.26). While he acknowledges that "cultural lag" or "retarded development" of the concrete operational stage (claim 2) has been reported many times, he does so in the context of recognizing four distinct possibilities, including options where concepts in non-Western children develop both earlier, and at the same time, as in European children. (Musgrove does not consider these possibilities.) Even with the typical "retarded development" finding, Dasen qualifies the inference to be made.

"The extent of the time-lag, however, has not always been precisely established in these studies, either because a European standardization was not available, or because, in many cases, the age of the subjects could not be established with precision" (p.28).

He further notes that at the time of writing (over a decade ago) research on the sensori-motor and formal stage was so limited that there was "not nearly enough evidence on which to draw firm conclusions" (p.26). In general, the situation has not changed greatly over the intervening years. While there have been numerous studies completed during that time, the general conclusion still seems to be that results are irregular and difficult both to interpret and make confirming generalizations about. (10)

One additional observation from Dasen is in order. At the time of review he found four authors (including Greenfield (11) whose findings Musgrove makes much of) who believe that schooling was one of the principal cultural influences on operational development (claim 3), but at the same time he mentions six authors, (12) among others, whose studies led them to believe "that there is no direct relationship between the development of concrete operations and Western-type schooling" (p.34).

Musgrove argues that cities (Western urbanization) together with schooling make a "prepotent contribution to cognitive growth" (p.51) in what he terms "city effect". Evidence certainly suggests, as Dasen points out, that "European contact" is an important variable but it is experimentally difficult to define precisely, and while it has been linked with rural/urban differences it has also been associated with linguistic and social class factors. Furthermore, not all studies show that city-schooled children do better than bush-schooled children.(12) Musgrove, however, is apparently not interested in the aberrant examples and he proceeds to generalize, concluding that cognitive growth and economic growth (modernization and urbanization) develop together such that conditions promoting the latter also promote the former. This leads him to claim, for instance:

"thirty years ago we talked about 'culture contact and change'; today we talk about 'modernization'. The former was about customs and values; the latter is more about economic growth. But both are about the way primitive people come to resemble us " (p.88).

Musgrove seems here to be embracing a form of economic reductionism that relies for its force on a conception of Western progress (see also pp. 123-4). It should, then, come as no surprise when he informs us that his book "celebrates modernity" (p.173) or that cities and elites point the key to modernity" (p.105).

This extraordinary conclusion is arrived at without a consideration either of theories of underdevelopment that link Third World poverty and international corporate capitalism (14), or the fact that the rapid urbanization of Third World countries has been quite different from that of Western countries, and has more often proceeded with disastrous economic and social consequences. (15)

Given the argument so far, the conclusions regarding the curriculum both in Third World and multi-cultural countries are as expected: "The school must be blatantly, straight-forwardly, and assertively 'assimilationist' " (p.129), regarding traditional Western intellectual disciplines. Musgrove writes: "There can be no tincture of compromise over a core curriculum of Western science, Western mathematics, Western logic, and Western language ..." (p.138). If one wonders why Musgrove doesn't go all the way and include Western politics and morality (whatever they might mean) the answer is clear. He does not need to. For what is omitted is there implicitly. Compare:

> "'other cultures' are often worthy of respect and support, but everyone must acquire a mastery of mainstream culture [i.e., of Western culture]. Personal dignity, social efficiency, and above all justice requires nothing less " (p.115).

Stripped of its ethnocentrism, one may inquire as to the usefulness of Musgrove's conclusions regarding the curriculum. That science and mathematics has a place may not be seriously disputed. But this in itself says nothing about the structure of such a curriculum in a multi-cultural society: how it should be taught, its relations with other core subjects thought necessary (such as Maori language in New Zealand curricula), or whether it should be linked with provisions for positive discrimination. Indeed, at just those practical points where we might expect some guidance Musgrove's rhetoric has exhausted itself.

Third, and perhaps most importantly, Musgrove does not fully acknowledge either the conceptual problems involved in the cross-cultural application of Piagetian tests, or the way in which a number of the methodological difficulties of testing Piaget's claims are, at root, conceptual. It is necessary given limitations on space here to narrow the focus of attention in order to substantiate this claim. In what follows I shall concentrate particularly on the postulated universal development sequence and the related "retarded development" research finding.

Let us first briefly recall that Piaget's project of establishing a universal (and "scientific") psychology is based on a particular conception of knowledge which has become known as genetic epistemology. (16) For Piaget the basic issue in epistemology is the relation between the subject and the object; and the basic (empirical) question concerns their respective contributions to knowledge.(17) Unlike, the traditional rationalist and empiricist approaches (termed respectively, structure without genesis, and genesis without structure), Piaget seeks to provide a scientific solution to the question in a programme of genetic epistemology, which, in a developmentalized Kantian synthesis, he refers to as genesis with structure. Like Kant, Piaget stresses the activity of the knowing subject in interpreting and structuring experience via certain categories or schemas. But unlike Kant's, Piaget's categories of experience are not static. They evolve and develop. (18) In fact, Piaget argues, there is a developmental necessity and necessary sequence to the evolution of these categories or schemas. The immanent logic of this developmental progression through the global stages is dialectical such that at each stage the knower - acting on and interacting with the object of knowledge in order to transform and adapt to his/her environment - will experience contradictions or tensions of opposites (disequilibrium) which will, given certain other conditions, give way to a new synthesis, or stage (and equilibrium). It is important to note that whereas epistemology and science

are conceived of in evolutionary terms - both are open to change and revision - the underlying dialectical logic and those concepts which define each stage, are not. They are universal (ahistorical and acultural), and absolute. Piaget thereby embraces a distinction which radically separates form and content. While there has been a gradual liberalization of Piagetian theory toward the recognition of historical and cultural factors, this distinction is firmly embedded within the Piagetian paradigm - part of its hard core, so to speak. This distinction, however, has been strongly criticized. For instance Wittgenstein (19) and Quine (2) have attacked in various ways, the dualism between form and content. Davidson (21), refers to it as "the third and last dogma of empiricism".

Even within the Piagetian paradigm this distinction has come in for trenchant criticism at both conceptual and empirical levels. With reference to Adorno, Buck-Morss (22) argues that the separation of form and content is an epistemological mistake built into Piaget's theory: that this distinction, far from being a universal feature of thought, is itself a product of the history of Western industrial capitalism. She summarizes her thesis thus:

> "with the advent of wage labor, production as well as exchange acquired abstract value, and the purely formal language of mathematics (the language of commercial transactions) became the expression of the social relations of production as well as those of the marketplace. It is thus not surprising that in Third World countries, especially in rural areas where social structures of kinship have not yet been pre-empted by those of market exchange, children do not develop their capacities for abstract, formal cognition, and in testing for this the development of other cognitive modes may have gone unnoticed." (23)

Musgrove is not concerned to recognize or countenance these conceptual criticisms of Piaget. And when he does mention research evidence to the contrary, as in the case of Bruner and Greenfield over the effects of schooling, he does so in a way which obscures the epistemological issues. For instance Musgrove chooses to emphasize Greenfield and Bruner's conviction that Western-style schooling "pushes" cognitive growth. He conveniently forgets to mention Greenfield's finding that Wolof (Sengalese) children use a different route to the same cognitive acquisition (24) - a claim which, if accepted, would clearly conflict with Piagetian theory and raise fundamental questions regarding the testability of the equilibration model.

Piaget claims that while content may differ radically, the mental processes in a given stage do not. Yet there is much evidence to suggest that content influences not only the rate and course of intellectual development, but also the performance on Piaget tests. (25) Given these sorts of problems, and others that they engender, it is difficult to see how Musgrove can appeal to both Piaget and the work of, say, Greenfield or Cole and Scribner, without attempting clearly to formulate the points of contradiction. Such a formulation would, of course, make obvious the need to deal with a welter of epistemological issues. Musgrove, however, simply side-steps these problems using the "evidence" to make sweeping moral and political claims regarding the superiority of Western culture.

The Argument From Western Science

Earlier I briefly characterized Musgrove's argument from Western Science. I hasten now to add that my reconstruction gives a false impression of the overall statement and organization of Musgrove's underlying argument.

The argument as presented by him only surfaces explicitly at various points - in the chapter on the social basis of rationality and in his attack on relativism (Chapter 6) - yet it underlies the whole book and serves as a basis for his sweeping claims. Thus, for example, he recognizes that the "touchstone of rationality in England since the late seventeenth century has been the use of evidence provided by the mathematical and experimental sciences" (p.73), and it becomes clear that this is Musgrove's basis or standard for evaluating the rationality of beliefs. He tells us that he agrees with the philosopher Settle (26) who considers science the paradigm of rationality. Conversely he takes "witchcraft at the supreme manifestation and symbol of irrationality " (p.69). Later, in stating that the concept of culture "invites relativism although does not require it" (for it is a neutral term), he comments:

> "[b]ut that does not preclude the ordering of cultures by some external standard or measuring rod " (p.123).

It becomes clear in his talk of the "repugnance of relativism" (pp.126ff) that he has accepted the possibility of ranking cultures (which is what he proceeds to do) on criteria of rationality that assume Western science as the paradigm.

The argument has the effect of making Western culture the standard of all other cultures. Once committed to the "argument", it necessarily follows that Western culture is the superior culture, and all other cultures can be graded on a superior-inferior continuum according to how closely "they" resemble or approximate "us".

As may have become apparent by now, I am concerned to argue against the view that Western science is the paradigm of rationality. Further, I argue that Musgrove is committed to a positivist view of science, and, thereby, also to the positivist distinction between fact and value. On its own terms, I attempt to demonstrate that even if Western science is regarded as the paradigm of rationality (per positivism), such a position provides no basis for judgements of value about other cultures.

Burian (27) has commented that the notion of rationality is one of those accordian words which philosophers pull and stretch to fit a great variety of different situations. While it is almost certain that this has not always been the case, the present diversity in contemporary philosophy of science might be thought to sanction the point. Indeed, such diversity, taken by some (28) to represent a loss of faith in science as the exemplification of rationality at its best, in itself counts against Musgrove's unproblematic rendering of Western scientific rationality. If, for example, there is no one unanimously agreed theory of science, let alone one that takes Western science as the paradigm of rationality, then the sort of appeal made by Musgrove automatically collapses.

However, while recognizing the present diversity, the case I want to argue is slightly different. My argument is simply that the absolutist and ahistorical notion of scientific rationality typical of positivistic conceptions of science (to which Musgrove evidently subscribes) is a result of certain, now well-recognized, mistaken logicist assumptions regarding the nature of both meaning and knowledge.

In fact, the movement variously known as Logical Empiricism or Logical Positivism, originating with the "Vienna Circle" in the 1920's and holding sway in philosophy of science for some thirty or so years, was committed to a view of science as the paradigm of rationality by virtue of certain doctrines it held about meaning and knowledge. While continuing in the tradition of Empiricism it represented a new approach to questions of knowledge - they were seen to be

correctly reformulated as questions of meaning: "The question 'How do I know p?' now became secondary to another: 'What does "p" mean?'" (29) Questions of meaning came to be construed largely in empiricist terms. Although, this "verificationism" went through a series of formulations - each one successively weakened to incorporate objections raised against it (30) - in its original and most extreme form it maintained that non-tautological propositions are significant if and only if they are empirically verifiable. It was given perhaps its most famous formulation by Moritz Schlick.

> "Stating the meaning of a sentence amounts to stating the rules according to which the sentence is to be used, and this is the same as stating the way in which it can be verified (or falsified). The meaning of a proposition is its method of verification." (31)

The empiricist principle or criterion of meaning became not only a vehicle for distinguishing sense from non-sense - that is, "scientific" from "non-scientific" talk - it resulted in a construal of rationality as an absolute and ahistorical method, or algorithm, immune to revision or change in the light of scientific discovery. Along with analytic statements (typically those of logic and mathematics), the statements of science were considered the only meaningful or significant statements. Given this characterization of meaning it is not difficult to see why science was regarded as the paradigm of rationality - every other type of sentence (including value judgements) falling outside the class of declarative (or fact-stating) sentences was deemed meaningless and, therefore, irrational. The positivist ideal of knowledge was considered both objective and value-free, and the underlying notion of rationality as one centering around an ahistorical method, bolstered this conception of science, and granted philosophy of science an epistemological autonomy.

McMullin (32) has succinctly sketched the logicist view of an implicit rationality in positivist science - a rationality given once and for all, and apparently immune to the cultural and historical conditions of its development:

> "[t]he (largely unexamined) logicist assumption was that there is a rationality implicit in the work of natural science since about the time of Newton, which explains why this work has been so successful ... It was assumed that this rationality was lacking in earlier work ... It was further assumed that by 1800 or 1850, it was fully operative in the work of major natural scientists, so that one could speak of 'the' scientific method and suppose that physicists and chemists picked it up as part of their training. There was no thought that it might yet be developing, that what will count as 'scientific' proof or 'scientific' understanding a century hence might differ from what would be so regarded today."

Of course the philosophy of science has moved on since the hey-day of positivism. Between them, Quine's (33) attack on the notion of analyticity underlying positivist theories of meaning and Sellars' (34) criticism of the empiricist myth of "the given", have dismantled the framework of positivism. Hanson (35), Popper (36), Kuhn (37) and Feyerabend (38) have all advanced arguments concerning the theory-ladenness of observation. In a sense these arguments serve to invert the positivist dictum that an observation language is epistemologically privileged by calling our attention to the way in which all observation is preceded and influenced by theoretical beliefs and expectations. Observation-statements do not constitute a firm, infallible foundation on which scientific knowledge can be constructed. The lesson is clear: there is no way to decide between competing theories by reference to uninterpreted or brute data.

Further, Kuhn (39) has attempted to demonstrate the relevance of the history of science to the philosophy of science, whilst Lakatos' (40) notion of "research programmes" has spelt the end to an instant methodological rationality. While, Popper (41) argues for a fallibilist and objectivist account of science, Toulmin (42) and Laudan (43) argue for an evolutionist but truth-independent account, and Feyerabend (44) argues for epistemological anarchy.

Clearly the traditional positivist notions of rationality and science have receded. And while "rationality" has become increasingly problematic for a whole generation of philosophers, no longer is science uniformly seen as the paradigm of rationality - the standard by which all systems of belief and people are judged.

Musgrove (who devotes most of his philosophical time to the easily identifiable target of relativism) not only ignores this massive assault on a notion of scientific rationality he apparently embraces, but also neglects to mention the contemporary diversity of philosophy of science.

One immediate consequence of this is that if Musgrove's conceptions of Western science, rationality, and logic are astray, his argument from Western science loses its force and his conclusions can be seen to be logically misplaced.

There is now a well developed body of literature in philosophy of science which seeks to explain or construe rationality as constitutive of any sustaining system of beliefs - a position which emphasizes the coherence of a network of beliefs and the importance of context that would seem to cast doubt, in principle, on Musgrove's conclusion regarding the importance of out-of-context learning. Philosophers of science are beginning to question the inherited logicist assumption that questions of form are not discoverable in the same way that "facts" are, and at the same time, are suggesting that scientific method, goals and criteria have been learned or discovered alongside empirical content.(45) It is a great pity that the move away from logicist to historicist models of scientific rationality has gone entirely unnoticed by Musgrove (except for an attack on Kuhnian "relativism"). Had he recognized the significance of this historicist "turn" in the philosophy of science, he may have been led to acknowledge that the distinction between form and content, though conventionally discernible on one account of science, is seldom, if ever, neatly separable in the actual practice of scientific research. (46) Given this realization Musgrove may have even gone on to recognize how both the position of conceptual relativism and the attack on it, require the distinction of form/scheme and content. Both emanate from the same single source: the Cartesian duality between the world, and our representations of it. To point to this "dogma", and to expose the source in the way Davidson (47) does, according to Hiley (48), results in undermining both the position and the attack on it, equally.

As it is, Musgrove does not draw these lessons. He takes from the literature only what he wants to support his own polemic, and we are left $43.15 (N.Z.) out of pocket.

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