

confirming our own experience' (176) and, unfortunately, 'getting in touch with our feelings'. Now all this may well be, and probably is, genuine self-expression. But can one devise a morally justifiable social order around the aim of not hurting individuals? As said, Seidler does not discuss paternalism.

I began by saying that this is a book of importance *qua* Kant-scholarship. Now I would add that it is likewise important as a critique of modern liberal individualism. It is important as such not merely because it portrays so much injustice that is truly unpalatable in our social order, built on the fiction of Kantian autonomy, but also because it highlights the shortage of alternatives. That people want different things would not be such a destructive counter-argument against 'caring' which it now is, only if there were available a *Gemeinschaft* within the bounds of which all of us would find security and happiness, because our conflicting desires and wills would there somehow be sublimated in the greater communal good, in which we all partake and have our being. It may well be that we are not as responsible for our fate as liberal doctrine would have it (98f), but then where should one shift such responsibility? It is more than likely that any paternalistic *Gemeinschaft* which would undertake to look after our welfare and happiness would end up by being at least as oppressive as liberal capitalism. And here is another omission of the book. There is, unfortunately, no discussion of historical applications. It might have been well to cast a glance at the level of unhappiness in our manifestly imperfect system of individualism as compared with the level of happiness in societies dedicated to some 'good' or other. Had this been done, Kant might have emerged, despite much that is objectionable in his ethics, as the philosopher of perhaps the best of all available options. Individualism, respect and autonomy, we should not be allowed to forget, are categories of the historical critique of *Gemeinschaften* and collectivities. The present work offers a strong case i.e., complaint against Kantian modernity. It makes no case at all for the alternative.

Trinity College, Hartford, Conn.

GERSHON WEILER

Challengeability in Modern Science. BY J. O. WISDOM. Aldershot: Avebury, 1987. Pp. xii + 166. \$33.50.

J. O. Wisdom's aim in this book is to defend a refurbished version of Popper's account of the nature of scientific theories. Rejecting the instrumentalist, conventionalist and inductivist approaches usually favoured by philosophers of science, Wisdom takes Popper's conception of scientific inquiry in terms of conjecture and refutation to be basically sound. 'With relatively minor adjustments', he argues, Popper's theory is 'acceptable as far as it goes' (5). Not even the fact that science is shot through with metaphysics should lead us to repudiate his standpoint, the 'metaphysical underlay' of science being no less subject to challenge than its theoretical overlay. It is simply a mistake to regard the existence of nontestable metaphysical elements within science as antithetical to its objectivity and rationality.

Like Popper, Wisdom takes modern science to be predicated on the repudiation of 'essentialism' and the replacement of inner reflection by observation and experiment (see chapter 2). But he is also at pains to emphasize the other less salutary side of the coin, namely that 'science is still reacting against [essentialist] philosophy by clinging to observationalism [the view that observations provide an incorrigible basis for theory]' (77). As Wisdom sees the issue,

fear of essentialism has impeded our understanding of science since it has resulted in observation being accorded an overexalted status. Worse still, in opting for observationalism, philosophers have quite naturally taken themselves to be committed to the anodyne picture of scientific theories as instruments or conventions or inductive generalizations.

The reason that this is wrong, Wisdom argues, is that there is no such thing as pure, incorrigible observation, all observation being 'theory-laden' (chapter 12). For him observationalism is no more than an unfortunate over-reaction to essentialism, as are the various versions of instrumentalism, conventionalism and inductivism that this doctrine has spawned. As Popper has shown, one can combat essentialism without going to the opposite extreme of regarding observations as incorrigible 'givens', tentatively acceptable observation being all that is required for the purpose of testing theoretical speculation. The plain fact is that essentialism can be repudiated, theories treated as genuinely informative and scientific objectivity and rationality defended at one and the same time.

Indeed Wisdom even goes so far as to argue that instrumentalism, conventionalism and inductivism stand and fall with observationalism. In his view it is only because philosophers mistakenly take Popper's theory to be defective that they embrace these doctrines and ignore their observationalist roots. For insofar as observations are 'instrument-laden' or 'convention-laden', the task of science cannot be to find an instrument or a convention to 'pass from a pure observation . . . to another one'; and insofar as observations are interpreted, we 'lose the characteristic point of induction, of getting theory from pure observation' (73). In other words, instrumentalism and conventionalism are nonstarters because they 'cannot be articulated' and inductivism is untenable because it 'presupposes an infinite regress of inductive justification' (72).

This would be the end of the story if it were not for the fact that scientific theories contain metaphysical components that cannot be refuted by means of observations. In particular 'a loophole for the conventionalist interpretation' remains (82), the conventionalist being in the happy position of being able to provide both for the ontological claims (or 'embedded ontology') of theories and for the policies and methods (or 'weltanschauung') associated with these claims. The critics' objections notwithstanding, conventionalism is superior to strict Popperian falsificationism if only because it counts 'metaphysical claims' about the constancy of total energy, the infinite divisibility of matter, the absoluteness of space and the like as genuinely scientific (see 127-28).

Wisdom's response to this difficulty is surprisingly non-Popperian in one respect, remarkably Popperian in another, his view being that the embedded ontology and weltanschauung of theories are refutable, if only indirectly. What needs to be recognized, he argues, is that an 'embedded ontology [even though] not refutable by observation [may be] found to be refutable by an empirical theory' for the simple reason that the theory with which it is associated may be superseded by a theory with an incompatible ontology (130). Moreover it should be borne in mind that 'a weltanschauung would be rejected by an empirical theory [if this theory] successfully refuted the ontology prescribed by the weltanschauung' (133). In short Wisdom maintains that the difficulties that attend Popper's theory on account of its excessively narrow conception of science can be readily taken care of by the expedient of extending his conception of refutability to cover metaphysics as well as empirical theories.

Of course in contradicting so many cherished positions, Wisdom is bound to raise hackles. Few instrumentalists, conventionalists or inductivists are likely to let his sharp refutations of their positions go unchallenged, let alone be won over to his neo-Popperian standpoint. True, if observation is theory-laden, science

cannot be based on pure observation. But even those willing to grant Wisdom's point about the pervasive character of observational theory-ladenness—a by no means small concession—can retrench to positions that recognize the impurity and corrigibility of observation. After all instrumentalists, conventionalists and inductivists are no more debarred than Popperian falsificationists from regarding the basic building blocks of science as open to revision.

In a similar vein I should note that Wisdom is mostly concerned with a rather stringent form of inductivism. Without doubt some inductivists confine their attention to simple generalizations and some overplay their hand by suggesting that such generalizations are no less firm than the observations on which they are based. But most have surely been considerably more circumspect. Indeed in arguing against Popperians, inductivists are nowadays generally more concerned with the question of whether scientific research can be adequately characterized purely negatively (i.e., without reference to confirmation understood in the full-blooded sense) than with questions about the purity of observations and the possibility of proving or rendering theories more probable.

As for the Popperians themselves, I would not expect them to be fully persuaded by Wisdom's treatment of theoretical challengeability. To the contrary, they are likely to retort that his modified Popperianism hovers precariously between restating the original Popperian theory and acknowledging a role for the very type of speculation that this theory was expressly designed to exclude. The trouble is that an embedded ontology is plausibly regarded as being integral to the theory with which it is associated only to the extent that it results in additional observations, and to the extent that it results in such observations, it too must be 'observation-refutable'. In particular the Popperian may argue that 'scientific' metaphysical claims of the sort to which Wisdom alludes appear irrefutable only when they are taken in isolation and the crucial role of auxiliary hypotheses overlooked.

Finally there is the question of how Wisdom regards the conventionalist and inductivist elements that by Popper's own admission occur in his philosophy. If Popper is right to maintain that 'convention or decision' enters into the acceptance of singular statements as 'test statements', conventionalism presumably continues to deserve a hearing. And if he is right to concede that there is a 'whiff of inductivism' associated with his 'vague realist' assumption that science tells us something about the world, it can hardly be denied that inductivism (albeit in an attenuated form) is still in the running. Does Wisdom believe that Popper gives in too quickly and that falsification can (as some have argued) be shown to be self-sufficient? Or is he perhaps also willing to allow that conventionalism and inductivism are not wholly mistaken?

University of Ottawa

ANDREW LUGG

From Marx to Kant. BY D. HOWARD. Albany: State University of New York Press, 1985. Pp. 300. \$52.50 (cloth), \$19.95 (paper).

From Marx to Kant, ce titre qui semble nous faire signe vers le passé, nous inscrit au coeur de deux interrogations fondamentales d'aujourd'hui, celles qu'articulent la question de la post-modernité et la question du politique, en effet, inscrit lui-même dans la continuité d'une recherche dont l'auteur nous retrace dans sa préface les étapes—