On Cognitive and Social Values:  
A Reply to My Critics

HUGH LACEY

Department of Philosophy, Swarthmore College, Swarthmore, PA 19081-1397, U.S.A.

ABSTRACT. This article is a response to six critics of my article, "Scientific Understanding and the Control of Nature," published as the lead article in this issue: Douglas Allchin, Roger C. Cross, William Herfel, Seng Piew Loo, Peter Machamer & Heather Douglas, and Ernan McMullin. It clarifies themes in the earlier article, responds to criticisms, and reaffirms the significance of distinguishing between cognitive and social values for the sake of gaining a better grasp of scientific understanding.

In "Scientific Understanding and the Control of Nature", I argued that there is an elective affinity between adopting what I called the "materialist constraint/selection strategy" and the "modern value scheme of control". Thence, I concluded, much of modern science is not value neutral. Nevertheless, I went on to argue that this is compatible with scientific judgments made under the materialist strategy being impartial, since there remains a distinction between cognitive and social values, and these two kinds of values influence scientific judgments at different logical moments. My commentators offer some thoughtful criticisms. McMullin queries my use of the term "materialist". He also addresses my view of the "affinity". Loo and Allchin seem to take issue with this view, though Allchin is more concerned with who bears responsibility for projects informed by scientific knowledge. Machamer and Douglas argue directly against the separation of roles of the cognitive and social values. Herfel challenges the distinction between different forms of understanding to which my argument appeals, and suggests an alternative account both of materialist understanding and of control. Finally, Cross reflects critically upon the implications for science education that I sketched. I welcome the opportunity to respond to these criticisms and to clarify my arguments.

MATERIALIST UNDERSTANDING AND THE CONTROL OF NATURE

The following theses summarize my view that there is an elective affinity between adopting the materialist strategy and the modern value scheme of control.

1) Theories established under the materialist strategy provide knowledge that serves to inform practices of control, and they represent objects, insofar as they can enter into human practices, as they must be
represented in order to enhance our capability systematically to exercise control over them.

2) There is a dialectic of technological and (materialist) theoretical developments.

3) Materialist understanding\(^1\) is gained from the perspective of practices of control, including experimental ones.

4) The world has become so shaped by projects expressing the modern value scheme of control (and thus, especially in recent decades, projects themselves informed by materialist knowledge) that central objects of our practical life and lived experience (e.g., technological objects) are explicable in their workings, and their material possibilities charted, only by materialist understanding.

5) Success in extending vastly the realm of control, the widespread adoption of the modern value scheme of control, and the consequent common expectation that all social problems have in principle a solution involving our control over objects – reinforced by the appeal of materialist metaphysics – have dimmed our sensibilities to other modes of understanding, including those that might provide the categories for legitimating subordinating control to other social values.\(^2\)

I appealed to these five theses, to explain the virtual (though not complete) monopoly of materialist research in contemporary science. (1)–(3) by themselves\(^3\) are not sufficient to this end. (McMullin is right to insist on this!) Moreover, they are compatible with (4) and (5) being false; and thus both with materialist understanding being one among a variety of forms of valued understanding, and with control being subordinated to other social values. There is no logically necessary connection between all of the five theses. The way in which materialist understanding and control are drawn to each other, as expressed in the theses, is socially embodied; it reflects historical conditions and the dominance of social institutions that, along with such other values as (especially today) those of multinational capital and free markets, manifest the modern value scheme of control.\(^4\) Thus, under different historical and social conditions, the link of (1)–(3) with (4) and (5) would be broken, so that engaging in materialist research as such does not imply commitment to the modern value scheme of control, and it may (I believe, will) find an appropriate place within other value perspectives – not in an unqualified way, but tied to where it can be significant for their projects.

The affinity between materialist understanding and control of nature is summed up in the five theses. McMullin’s remarks, in his section “Control of Nature”, largely provide helpful clarifications and elaborations of my view. His attempts to identify an affinity are all contained in my theses. His “strategies... as a necessary condition” for informing technological projects is built into (1), and to some extent (4). (5) is usefully elaborated by: “...the absence of all considerations bearing on human well-being from the strategies that enable structural [materialist] explanations to be developed affords a precedent of sorts for the subordination of human