Forum

Where There's Smoke There's Fire — An Apology and a Statement

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The *Review* of April 1983 carried a survey article by me in which I summarized the applications of Leontief's input-output analysis in Australia. One of the applications discussed was on the impacts of the tobacco industry by Powell *et al.* (1981). In discussing their paper, I said that the author's "took on the anti-smoking lobby". This phrase has caused concern to at least two of the authors and I agree that the choice of words was poor. The phrase is both flippant and unscholarly and I unreservedly apologize to all of the authors concerned.

The issue, however, is not just one of choice of words but of meaning. There is a clear implication in my wording that I was accusing the researchers and their work of bias. I was, and I still do, because almost all scientific research[1] is biased either intentionally or unintentionally. There are two distinct parts to the argument on this issue. Firstly, it must be established that scientific research is biased and secondly there is the ethical question of whether researchers can be regarded as being separable from their research.

Bias in scientific research may arise from a number of sources, but it will be convenient to consider it under the headings of conscious and unconscious. The former will usually be obvious in that some vested interest will generally be apparent. In economics, such bias is usually regarded as the province of *normative* economics and is regarded as being full of value judgements about what "ought to be". Positive economics on the other hand, is supposed to be about measuring and analyzing "what is".

However, it is within positive economics that we find unconscious bias. Researchers may claim that they do nothing more than measure and observe facts. But "facts" depend for their meaning upon a conceptual framework and a definition. Both involve judgement. An often quoted economic example is the measure of unemployment. A change in the definition of unemployment, or the framework within which it is being applied, changes the measure. As Myrdal has written, "facts do not organize themselves into concepts and theories just by being looked at; indeed, except within the framework of concepts and theories, there are no scientific facts, only chaos. There is an inescapable *a priori* element in all scientific work" (Myrdal 1954).

Choices about the nature of a system and how to conceptualize it have to be made before any part of it can be measured. For example, an economic researcher who is attempting to measure the elasticity of demand for a commodity may feel free from bias. However, the concept "elasticity of demand" only has meaning within a particular way of looking at a particular economic system. The value judgement about choice of economic system and the choice of how to conceptualize it has already been made. Similarly, the concepts and techniques used by Powell *et al.* in measuring the impacts of the tobacco industry only have relevance within the framework of our own mixed free-enterprise economic system. Only in such a system is there a meaning attached to measuring impacts by valuing output with prices, and income with wages. The input-output concepts used are not features of nature, they are a construct of science operating within a predetermined system. The value judgement has been made in selecting the system.

Bias also arises in such work by virtue of its *selectivity*. When researchers select only one aspect of a larger problem for study, their research is automatically biased in the direction of the aspect being studied. Martin (1979) compared two research projects on the earth's

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[1] I am using the term "scientific research" in its broadest sense and I include economic research under this umbrella.

ozone layer. He found that each selected different aspects of the earth's ozone for study, and that the conclusions of each were affected accordingly. He writes "fundamental assumptions are involved in the choice of certain features of the world for study and explanation" (Martin 1979, p.76).

The tobacco study by Powell *et al.* restricted its attention to the economic impacts of growing, production and distribution. None of the consumption effects including externalities, were looked at, indeed they are specifically excluded in the preface. The bias involved here is that economic impacts in terms of employment and income creation are seen by the community as *benefits* of an industry. On the other hand, many of the consumption effects are harmful and would be regarded as such by the community. The Powell *et al.* study is therefore biased in that it concentrates only on benefits and ignores costs.

Such bias is not new, unique, or even immoral. My own work on measuring the economic impacts of the construction of the Alice Springs to Darwin railway line is subject to the same bias (Mules 1982). Such bias will always be present when different researchers tackle different parts of a larger problem. The selection of the part to be studied biases the research in that direction. There is no need to fear such bias but there is a need to be aware of it and to recognize it.

Turning now to the issue of responsibility and independence of the researchers themselves, I have no doubt that Powell and his co-authors have acted in good faith and have had no intention to deliberately act as lobbyists or advocates. The question still arises as to whether a researcher can stand aside from the research and take the position that the work was done as a professional piece of research and that no responsibility for its transmission or application rests with its author. This question seems to me to be a moral one.

Some researchers, aware of the selective bias of their work, take refuge in an analogy with the legal profession. Professional lawyers are hired to represent their client's interests, even if the lawyers themselves have views or opinions which differ from those of the client. The lawyer and the lawyer's work are seen as two distinct and separable things. Similarly it is argued that the researcher and the researcher's work are ethically separable.

There are two things wrong with this argument. Firstly, the legal profession does what it does, but this should not be taken as a benchmark for the moral philosophy of the scientific community. If lawyers were all racists, that would not make racism ethically or morally correct. Secondly, lawyers operate in an adversary environment where both sides of an argument or case are presented by opposing sides. By contrast scientists and scientific research do not operate in such an environment. Scientists are able to consider *both* sides of an argument or problem and are expected to evaluate them using objective research. Scientific research can be and should be judge and jury, not prosecution or defence.

Finally, is it possible for the person who invented the rifle to claim "I only invented it, I'm not responsible if it is used to kill"? In other words, do researchers have any responsibility for the *use* of their research by others? Martin (1979, pp.66-70) has a long argument about the bias in research that is inherent in its *selective useability*. The essence of the argument is that for a variety of reasons, research results are usually biased towards some end-use and in favour of use by a particular group in society. Thus, although the results of the Powell *et al.* study are available to both sides of the debate on cigarette smoking, they are really only *useable* by one side, namely the tobacco industry.

As individuals, the authors may hold quite strong views against cigarette smoking, but because of the biases which I have outlined, their research is slanted in the opposite direction. They, like other researchers, would or should be aware of the selective useability of their research results. This is not to say that they must be presumed to be aligned, as individuals, with the interests of the tobacco industry.

However, I believe that they, like other researchers, have a responsibility to recognize research and to declare them, as clearly as possible, to the reader. Powell *et al.* have indeed gone some way in this direction with the warning in their preface about the partial nature of their enquiry. Although it may be

argued that they did not elaborate enough here, it is clear that the authors *do* recognize their responsibility for the selective useability of their research and *have* attempted to warn readers of their report.

Many would argue that this is insufficient. If the authors do not wish to be aligned with the pro-tobacco lobby, the onus is on them to produce a more comprehensive study. If constraints of time and resources prevent this, then that is a judgement of priorities that they have made. It is not simply a question of facts.

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