PROFESSOR Robert Solow is one of the most distinguished and prestigious economists of our time. He is a calm and confident scholar with rare mastery of the technical tools of economic and quantitative analysis. To the extent that economics qualifies as a science, it is men like Professor Solow who have earned it the reputation. The rather subjective standards of the social sciences in general and of economic theory in particular allow men a certain liberty in defining their own competence. A scholar is often what he claims to be. But Professor Solow's superior mastery of his discipline is acknowledged and admired I think by all.

It is because Professor Solow is so intimately associated with the scientific claims of our profession that I find myself writing this comment. It is not to dispute his view of The New Industrial State; this naturally differs from mine, and did I agree with it I would hardly have been justified in publishing the book. But the book is in the public domain and to a degree surpassing my far from modest expectations. Review s of books that are technical or otherwise obscure are of no slight importance. Others depend on them as do theatre goers to whom first night admission is denied. But human vanity what it is, the person who has seen for himself will reach his own conclusions. So it is here, and this is the principal reason, as I have often said, why I years ago determined to seek a substantial audience. One is not at the risk of those who react adversely to that with which they disagree or find otherwise distasteful.

However, Professor Solow's review seems to merit a word on its own account. It exemplifies a tendency of social scientists, unconscious but not above reproach, to divest themselves of the rules of scientific discourse when they encounter something they do not like. Carelessness also no doubt plays a part. This tendency acquires its
special poignancy when, as in the case of Professor Solow, the writer is, and with reason, conscious of his scientific prestige. He is held to even higher standards than the rest of us. The phenomenon is worth explicit examination, and I trust that Professor Solow will not be perturbed by my using him, in effect, as a case study. Thus this review of his review.

2

Although the rules of scientific discourse have never been fully codified, a number enjoy wide acceptance in the common law. They can all best be stated in negative form. One should avoid comment ad hominem — that is to say, one should not attack a position by slighting or adverse comment on the personality or behavior of the person who defends it. One should be accurate. One should avoid obiter dicta; that is to say, nothing should be allowed to rest on the unsupported word of the speaker, however great his prestige. Both over- and understatement should be avoided — matters where I long ago learned to confess guilt. It is possible that another rule might be added although this may be a counsel of perfection. The scientist should be aware of, and disclose, personal interest. It is this, more than incidentally, that may cause him to violate the other rules. In the review in question Professor Solow is in more or less serious violation of the first three canons. There is at least a possibility that he violates the last. Even for a scholar with no special scientific pretensions this is a poor score. Let me specify.

He begins his review with a number of ad hominem observations — the alleged social life of the author and his association with what he calls the Beautiful People, the power that “he shares with William McChesney Martin . . . to shake stock prices by simply uttering nonsense,” and this form of comment recurs when he takes exception to my suggestion that higher living standards are not a primary measure of social excellence. “One wonders if that paragraph were written in Gstaad where, we are told, Professor Galbraith occasionally entertains the muse.”

Were this all and true, one would doubtless dismiss it as harmless needling, not damaging to careful discourse. I wouldn’t, in reply, comment on Professor Solow’s social preoccupations or choice of recreation or residence, but these are matters on which there is room for many levels of taste. But the reader will observe, I think, that these observations are in keeping with, and in some small measure serve, the larger design of his article. They suggest a certain frivolity of purpose. (One notices the use of the word nonsense.) Clearly, the deeply serious scholar should not be detained. It would surely be better scientific method though rather more demanding work simply to argue the case. More significant, perhaps, none of it is true. I regard most social activities, fashionable or otherwise, as a bore, and since I have been an ambassador there is even documentary evidence in the archives. In March of 1955 I gave testimony before the Senate Banking and Currency Committee, carefully prepared and not before
described as nonsense, on the nature of the speculative fever in 1929 and the measures that might prevent a recurrence. I had just finished a book on the subject. While I testified the market dropped very sharply. On no other occasion have I ever seen it suggested that a remark of mine has affected the market. As opportunity allows, I certainly do go to Switzerland (as did Alfred Marshall), but in recent years it has been because I can work there free of both interruption and a disagreeable respiratory ailment. So even Professor Solow’s personal comments, it will be evident, establish a rather disconcerting pattern of unreliability. Presumably, even ad hominem argument should be accurate. And his reliability does not become greater when he comes to substantial matters, and we measure his essay against the scientific canon that requires accurate meaning accurately conveyed. Let me offer what can only be a partial list.

3

The New Industrial State draws rather extensively from the empirical work of other economists. That, presumably, is one thing such empirical work is for. Professor Solow states that the author “gingerly pays tribute to the little-thinkers [his term and assuredly not mine] whose work he has used….” That most readers will take to mean that I was miserly in my credit to others. Here, that the reader may judge, is what I said:

This book has not, it will be agreed, been confined to narrow points. But I have singularly little quarrel with those who so restrict themselves. I have drawn on their work, quantitative and qualitative, at every stage; I could not have written without their prior efforts. So I have nothing but admiration and gratitude for the patient and skeptical men who get deeply into questions, and I am available to support their application to the Ford Foundation however minute the matter to be explored. I expect them to judge sternly the way their material has been used in this book.*

In commenting on my contention that the large corporation is a highly important, strongly characteristic feature of the American economy Professor Solow says that “Professor Galbraith is not the first person to have discovered General Motors” and that “There is, after all, a moderate amount of activity that is not carried on by General Motors, or by the 100 largest or 500 largest corporations.” Most readers would conclude from Professor Solow that I somehow claim originality as the discoverer of the great corporation and that I equate all economic activity with the large firms. There are no such suggestions in the book. I do say that the great firm has not made its way in modern economic theory. This Professor Solow concedes. I am careful to point out that the world of the large corporations, what I call the Industrial System, is not the whole of the economy. The remaining “part of the economic system is not insignificant. It is not, however, the part of the economy with which this book… [is] concerned.”

I might add that Professor Solow then concludes this part of his discussion by saying that "enough has been said to suggest that it is unlikely that the economic system can usefully be described either as General Motors writ larger or the family farm writ everywhere." His logic here will surely seem casual. He is saying, in effect, that one cannot (as I do) describe a part of the economy, even a highly important part. One must do nothing unless he has a model that will cover all. This, I am sure, he does not intend.

Professor Solow says that "The 'separation of ownership from control' in the modern corporation is not a brand new idea," adding that it is to be found in Veblen's writings as well as in Adolph A. Berle, Jr. and G. C. Means.* Again the reader will suppose that Professor Solow is correcting, perhaps mildly rebuking, a spurious claim to novelty. None was made. Veblen's great point was, in fact, a different one. The engineers and the technicians he believed to be held in check by the greater power of the controlling pecuniary interest. The owners were unduly in control. Relying on his admitted competence on these matters, rather than more meticulous scholarship, Professor Solow uses error to rebuke precision. And my acknowledgement of the work of Adolf Berle, R. A. Gordon as well as of such later writers as Edward Mason, Carl Kaysen and Robin Marris on the separation of ownership from control could hardly be more complete or heartfelt.** But there is no need to argue a point that can otherwise be decided. Let Professor Berle, the scholar mentioned by Professor Solow as somehow slighted, say whether or not, both here and over the years, I have done less than justice to his work.

The reader will see what Professor Solow, however innocently, has sought to suggest. Here speaks the superior scholar. I must warn you against something that is not quite careful. I do not protest Professor Solow's superior view of his competence; it has much to commend it, and we are all allowed the enjoyment of our vanity. He has, however, gravely underestimated his task. An author will usually be more knowledgeable about his work than any critic. Accordingly, the latter has only slight leeway for error. And it will be evident that Professor Solow, so far from being careful, has been very careless. One final small example will show what he has let himself in for. In noting the importance that I attach to growth as a goal of the corporation he observes that Mr. Robin Marris, the distinguished British

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*The Modern Corporation and Private Property (New York: Macmillan, 1934). When this book first appeared economists and statisticians of high technical reputation, the men of the professional establishment, led in this instance by Professor W. L. Crum of Harvard, attacked it vigorously. They pointed to shortcomings in its measures of concentration and its concept of control. These being present, it was held, in effect, that the book should be ignored.

**One name, to my embarrassment, is missing, that of James Burnham. Scholars, perhaps put off by his subsequent extreme views on foreign policy, have not given sufficient credit to the ideas he offered in The Managerial Revolution. Their importance is at least suggested by the phrase he added to the language and which I do, of course, acknowledge.
economist, has reached the same general conclusion, only his effort is "much more closely reasoned." Again the warning flag. But I do not disagree. Marris' reasoning occupies an entire book as compared with a chapter in my case. And as I told in the book, and most explicitly in the Reith lectures which have also been published, I made great use of Mr. Marris' argument. I did not duplicate it. In large measure I followed it, Professor Solow is in the odd position of finding something less well done that wasn't attempted.

In arguing against growth and in favor of profit maximization as a primary goal of the corporation, Professor Solow comes out on the side of the latter. That, of course, is his privilege; it is the received view and one that is vital if the omnipotence of the market is to be assumed. But it is hardly proper that Professor Solow should ignore what, from his viewpoint, is the most difficult point. If the technostructure — the autonomous and collegial guiding authority of the corporation — maximizes profits, it maximizes them, in the first instance at least for others, for the owners. If it maximizes growth, it maximizes opportunity for, among other things, advancement, promotion and pecuniary return for itself. That people should so pursue their own interest is not implausible. Professor Solow, as he elsewhere makes clear, does not think it so.

In attacking the importance that I attach to the control by the large corporation of its own capital supply — an importance that Professor Solow also concedes — he compares for 1966 the total flow of funds from within nonfarm, nonfinancial corporation to that coming from outside. More came from outside. Professor Solow then observes: "I don't know how the proportion of external and internal finance differs between large and smaller corporations although the usual complaint is that the larger firm has easier access to the capital market." It is hard to explain this by carelessness. For Professor Solow knows that construction and trade (the latter with its need to finance inventories and sales) rely heavily on borrowed funds. Firms here tend also to be relatively small — as he agrees elsewhere in the case of trade. It is from such firms as he also knows that complaints come when money is tight. And his reference to the easier access to the capital market of the larger firm is surely disingenuous. He knows that the security that is associated with an ample flow of funds from internal sources will favor the firm so blessed when it goes into the capital markets for additional supplies. Such "ease of access" proves nothing as regards reliance on outside funds.

When there is an industrywide wage increase a normal expectation is of a compensatory price increase with, perhaps, something more. I note that if an industry is able to so increase revenues the day after a wage increase, it could have done so the day before, always assuming that it could find some substitute for the wage increase as a signal for action. It follows that before the wage increase it was not maximizing its revenues; it had some unliquidated margin of monopoly gain. The conclusion is based, Professor Solow states, in language that many will think a trifle lofty if not otherwise unsuited
to scholarly discourse, on "sophomore error." The textbook firm, already maximizing its profits, would also raise its prices "to a calculable extent." Alas, the error is again Professor Solow's—though I naturally forego any pejorative adjectives. He omitted to notice that the two responses—my full and immediate compensation for the wage increase and an unspecified response to a cost change—are not the same. The first would not generally be possible were profit already at a maximum. And he did not notice that I carefully allowed for the second.*

One will sense that Professor Solow's desire to attribute error has undermined his instinct to precision. This is most disturbingly evident in the last example I will cite. He suggests that I ignore the danger of a "takeover bid" for the firm that sacrifices earnings for growth and thus abnormally depresses the value of its securities thereby making them open to acquisition. Thus I am indifferent to the disciplines of the capital market. But then he concedes that the takeover is not a threat to the very large firms with which I am concerned. (It arises only farther down the size scale.) And he has elsewhere himself suggested that I write of an economy in which General Motors is writ large. The reader at this point will surely have begun to wonder. I am accused of being indifferent to dangers that by his admission do not exist for the large firms with which I am excessively concerned. In point of fact I considered this problem at length. The danger of involuntary takeover is negligible in the management calculations of the large firm and diminishes with growth and dispersal of stock ownership.

The list of the points on which Professor Solow has left himself vulnerable could be extended. I have not said, as he states, that the "industrial firm has 'planned' itself into complete insulation from the vagaries of the market." To have to make a point vulnerable by exaggeration is again to suggest a determination to find error so compulsive as to allow it to be invented. On the defense of consumer sovereignty, a vital matter as I will suggest presently, there is already something approaching an agreed line. To this Professor Solow adheres. I have not shown that demand can be managed fully and for all. So the effort can be safely dismissed. (Much or most advertising Professor Solow ventures "serves only to cancel other advertising and is therefore merely wasteful," He suspects that I am influenced by a dislike for billboards and singing commercials.) I argue only for a partial management of consumer choice. But it will hardly be suggested that what is imperfect or incomplete can, as a matter of sound scientific method, be ignored. Professor Solow to the con-

*I fear that I, in some sense, tricked Professor Solow into this error. In an article in The Review of Economics and Statistics in 1957 I explored this problem in detail. I did not refer to it in The New Industrial State—I sought to ration footnotes beginning with those to my own work. Had Professor Solow been reminded of this earlier work he would not have fallen into the error of assuming a more simplistic rather than a more comprehensive view than his own. But it could be also argued that scholars should check the literature before reacting so strongly.
trary, I do deal with the stabilization of markets for nonconsumer's goods, and I treat at length of the influence of producers on public procurement including, in particular, weaponry. Enough has been said, I think, to indicate a fairly serious default in the canon of scientific discourse that requires careful attention to subject and statement. Let me now advert more briefly to the use of obiter dicta—to reliance not on evidence but on the undoubted scientific reputation of the speaker.

4

There are two of these which troubled me and which may well have troubled readers who have approached these matters with more care than Professor Solow. One is his concluding statement, which I confess I came upon with surprise, that "the reduction of inequality and the alleviation of poverty play negligible roles in Galbraith's system of thought." Rightly or wrongly the treatment of poverty in The Affluent Society has been widely cited as helping pave the way for the modern belief that, in the forms therein described, it would survive a steady increase in aggregate income. (The observations of Michael Harrington are perhaps relevant in this regard.) The same book had at least something to do with drawing attention to deficiencies in the public sector—shortcomings in education, the squalor of the cities—as sources of residual poverty and the anger we now experience in the ghettos.* A paper I presented before a special group working on the problem of "pockets of poverty" in the autumn of 1963 was at least well-timed in relation to the legislation establishing the Office of Economic Opportunity the following year.** I participated actively in drafting that legislation and served on the statutory advisory board to the Office until new legislation, plus possibly my views on Vietnam, brought my involuntary severance. I also served, though not with any great usefulness, on Mayor Lindsay's task force on this problem. None of this is final proof of a preoccupation with poverty and inequality, and in the nature of the case my own assessment is hardly to be trusted. But most fairminded readers will agree, I believe, that it is sufficient to place a certain burden of proof on Professor Solow. He could conceivably be suggesting, though the words do not imply it, that The New Industrial State is not directly concerned with poverty and in-

*The very first title of this book was Why People are Poor, and it was under this cachet that I negotiated a small grant for research from the Carnegie Corporation of New York in the early fifties. Later titles, The Opulent Society and then The Affluent Society, reflected my more mature view of the problem. That was less why people are poor than why residual poverty persists and other problems remain unsolved under conditions of generally high and rising income. I think it possible that Professor Solow might wish to plead that he has not read The Affluent Society. This is a wholly legitimate defense, one that would be offered by many other intelligent people, but it does, I would judge, deny him the right to pass on my preoccupations.

equality. But one does not cover all subjects in one book, and I was additionally careful to say:

There are many poor people left in the industrial countries, and notably in the United States. The fact that they are not the central theme of this treatise should not be taken as proof either of ignorance of their existence or indifference to their fate. But the poor, by any applicable tests, are outside the industrial system. They are those who have not been drawn into its service or who cannot qualify. And not only has the industrial system — its boundaries as here defined are to be kept in mind — eliminated poverty for those who have been drawn into its embrace but it has also greatly reduced the burden of manual toil. Only those who have never experienced hard and tedious labor, one imagines, can be wholly indifferent to its elimination. *

With equal absence of proof Professor Solow suggests that I have exposed myself only “very selectively” to the vast empirical literature relevant to the facets of the system I establish. Here again one is a poor witness for himself. I am naturally impressed by the time I have spent in the last ten years in tracking down and assimilating the distressingly vast material within the ambit of this volume — the case material on the management of the corporation, monographs on organization theory and practice, on the nature of scientific and technical development, trade union development and attitudes, socialist and Soviet planning including one substantial and one lesser journey for work on the ground, literature on political change and business ideology and the newer materials on the much more limited range of matters on which I consider myself a specialist and much, much more. (I need scarcely add that to my distress I keep on encountering materials that I should have seen.) Professor Solow as a teacher and scholar and distinguished public servant has, most plausibly, covered even more completely this same range of literature. Only as a result of having done so could he claim to pass on the adequacy or inadequacy of anyone else’s coverage. But again the reader can rightly ask for at least some argument on behalf of his own greater and more systematic diligence. To let it stand on his own unsupported assertion is surely to trade unduly on scholarly reputation.

5

I come now to the point of it all. And here I am on less certain ground. Professor Solow’s error and his use of obiter dicta are objective. They are visible to all. To ascribe reasons other than the obvious one of carelessness in the case of so distinguished a scholar involves elements of subjectivity. One could easily find himself in scientific default. Moreover, I am not wholly critical of Professor

Solow for failing to disclose the interest which forces him into so unappealing a posture and performance. He may not be fully aware of it.

The issue concerns the future of economics in general and of the highly prestigious work with which Professor Solow is associated in particular. That work is within a highly specific frame. Within that frame it is the best of its kind. But it is only good if the frame is reasonably intact. When the frame goes so do the scholars it sustains.

What is the frame? It is that the best society is the one that best serves the economic needs of the individual. Wants are original with the individual; the more of these that are supplied the greater the general good. Generally speaking the wants to be supplied are effectively translated by the market to firms maximizing profits therein. If firms maximize profits they respond to the market and ultimately to the sovereign choices of the consumer. Such is the frame and given its acceptance a myriad of scholarly activities can go on within. Any number of blocks can be designed and fitted together in the knowledge that they are appropriate to — that they fit somewhere in — the larger structure. There can be differences of opinion as to what best serves the purposes of the larger structure. Mathematical theorists and model builders can squabble with those who insist on empirical measurement. But this is a quarrel between friends.

Should it happen, however, that the individual ceases to be sovereign — should he become, however subtly, the instrument or vessel of those who supply him, the frame no longer serves. Even to accommodate the possibility that humans are better served by collective than by individual consumption requires the framework to be badly warped. Should the society no longer accord priority to economic goals — should it accord priority to aesthetic accomplishment or mere idleness — it would not serve. And no one quite knows the effect of such change. One can only be certain that, for a long time, economics, like the lesser social sciences, will be struggling with new scaffolding. And the work of economists will be far less precise, far less elegant, seemingly far less scientific than those who are fitting pieces into a structure the nature of which is known and approved and accepted. And if social priority lies elsewhere, it will be less prestigious.

The threat to economics is a serious one; it could become like sociology and partly a branch of political theory. And there are even more pointed aspects. Students are attracted to economics partly by the fascination of working with men of precise and well articulated mind like Professor Solow. But they must be assured, also, that their work is within a framework of sound social purpose. (There remains considerable attraction, though not sufficient attraction, in being a member of a small band of technical initiates. It is somewhat like being a member of a fraternity, a lodge or a chess club.) To enhance the well-being of the individual has, in the past, seemed a sound social purpose. To assist the individual in his subordination to General Motors will not be so regarded. The sanctity of economic purpose
will also be questioned if well-being as conventionally measured continues to improve and leaves unsolved the problems associated with collective need — those of the cities and their ghettos and the by-passed rural areas — or if this progress involves an unacceptable commitment to the technology of war. And the doubts so engendered will be especially acute if concentration on narrow economic priority appears to be a cause of other social shortcomings. The fate of the business schools is a warning of what happens when scholars lose their reputation for association with social purpose. The better students desert in droves and what is a scholar without a school?

I have been looking, however inadequately, at the frame. This, it is plain from the response, does not seem an unreasonable exercise to those outside the profession. Nor to those within who do not feel endangered — whose temperament allows them to watch and philosophically adjust. But it is a threat to those whose prestige and academic position is profoundly associated with the existing structure. It is perhaps not too surprising that it should inspire a counteroffensive. It is less agreeable that it should be compulsively negligent of the scientific mood which, given the old frame, could be so proudly avowed.

A Rejoinder

ROBERT M. SOLOW

I have always laughed at Professor Galbraith's jokes, even when they have been directed at me or my friends. So it is naturally a little disappointing that he should come on so solemn when I tease him a little.

There are one or two places where Professor Galbraith, and therefore possibly other readers, may have misunderstood me. I mentioned that the existence of very large corporations, and the separation of ownership from control within them, had been observed before now. My intention was not at all to hint that Professor Galbraith has tried to palm these off as brand new observations of his own. He has not. My purpose was to suggest to the reader that ideas so long in circulation must have evoked some response, one way or the other, from economists. I agreed that the response had not been wholly satisfactory from an analytical point of view, but I did not think Professor Galbraith had done it justice. The facts about the size and organization of industrial firms matter to the workaday economist mainly as they affect the substance of pricing, production, and in-
vestment decisions. There is, in fact, a large body of empirical work on pricing, production and investment behavior in manufacturing industry. Much of it explains the data moderately well while staying loosely within the framework of supply-demand theory. The facts of large size and diffused stock-ownership do not seem to change that very much.

By the way, it was this range of material that I had in mind when I observed that Professor Galbraith seemed to have missed some of the relevant literature.

I wrote that the reduction of inequality and the alleviation of poverty play negligible roles in Galbraith's system of thought. Professor Galbraith interprets me to be accusing him of indifference to the plight of the poor. But the context of my remarks was a discussion of the low valuation Professor Galbraith puts on the growth of private consumption and real output generally. My point was not that Professor Galbraith is hard-hearted, but that it is difficult to accommodate drastic reduction of the extent of poverty in a system of thought based on the unimportance of increased real output, except perhaps by sharply redistributive taxation. But the mean income is not so high as all that, and anyway Professor Galbraith does not talk much about redistribution.

Professor Galbraith is wrong to ascribe to me a belief in wants that are "original with the individual" and in "the omnipotence of the market." As to the first, it is hardly a deep thought that nearly all consumer wants beyond the most elementary physiological ones are socially or culturally determined. Indeed, that is precisely why I fear the whole issue is rather tricky. It is a very fine line between analytical statements about the creation of wants by advertising and elaborate indications that one believes one's own tastes to be superior to those of the middle classes.

As to the second, it is only to Professor Galbraith that I seem to believe in the omnipotence of the market. To people who really believe in it, I suppose I seem like Professor Galbraith. I do believe that market forces operate over a large part of the modern economy, sometimes loosely, sometimes tightly. That does not mean that whatever the market turns up is good, or immune from tinkering on the part of the political authority. It does suggest that it will often be efficient to accomplish the social good by using the market.

Finally, Professor Galbraith suggests that I disbelieve his argument not because it is unconvincing or unhelpful, but because I have a personal interest to protect. His doctrine is so subversive of conventional economics that if it were to be widely accepted my sort of work would fall in the academic pecking order, my students would diminish in number and quality, and economics would take a tack uncongenial to my sort of mind. About my motives, he may of course be right. Who knows what evil lurks in the hearts of men, as Lamont Cranston used to say. As for the rest, he may equally be right. I shall try to roll gracefully with the punch, and if I can not, well, then Après moi, la sociologie.