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Dear Prof. Adiseshiah,

It is with much interest that I have read your serialised article in the *Financial Express* on the mid-year review of the economy. In part IV, towards the end of the part, you refer to Science & Technology and its roles including that of imported technology. At the Conference of Economists called at Calcutta over 10-12 October, 1985, a statement was issued, the last part of which also refers to this matter. I am afraid the "Economics Community" continues to misunderstand the whole area of Technology-in-Development. This is a large, much-explored, but none-the-less dimly illuminated area and I do not wish to burden you with an uninvited tome on the matter. However, it is not insignificant that the Prime Minister made a statement in the Lok Sabha on May 15, 1985 which encapsulates the essential problem of the imports Vs. local development question so far as technology is concerned. "Technology Dumping" is as much a matter of concern as the dumping of goods. I have tried to arrange for this statement to be publicised more widely but the press has so far ignored the attempt. I enclose a copy.

You mention the successful lead given by agriculture in the process of understanding, adapting and improving upon imported technology and rightly contrast this with the situation prevailing in industrial technology. One key difference (among a few others) between the two cases is that the importing agency in the agriculture case was/is an R&D institution funded by Government (viz. IARD) and not, directly, the farmer. In the industrial situation, the importing agency is the user industrial unit (even in the Public Sector) and not an industrial R&D Laboratory. The result is complete lack of assimilation and repetitive imports of technology (usually embodied in the form of Capital Goods). There are a great many other issues of Science & Technology-in-development which stem from your analysis (e.g. meeting the consumption style and demands of the top deciles of society). These have, in fact, been explored in considerable depth by the scientific community in 1972-73 in a document

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entitled "An Approach to the Science & Technology Plan" - a copy of which I have the pleasure of enclosing. The document makes the crucial (and only now accepted) distinction between "demand" and "need".

Industrial innovation, particularly in a newly industrialising country, is overwhelmingly (but not exclusively) "demand-pulled". Shaping "demand" so that it more closely approximates "needs" is a socio-political-economic problem. Except where only small community-scale investments are called-for, there is no way in which "supply side" policies for Science & Technology can cater to "needs" directly. "Demand-shaping" is not in the realm of Science & Technology or R&D investments: It is the realm of industrial, fiscal, monetary and other instruments of policy that are outside the Science & Technology sector, and, therefore, outside the control of the Science & Technology community which, nevertheless, is the butt of the economist's ire for "not delivering the goods".

If the "economics community", of which you are a leading member, were to begin a dialogue on the sorts of the issues I have outlined above, with the (younger) members of the scientific community, it would, I believe, be of benefit to both.

Yours sincerely

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The Prime Minister (Shri Rajiv Gandhi): If I may add a little bit to that because it is on the policy. What has happened in the past that we have tried to develop everything right across the board from small components to large finished units, and invariably we have lagged behind what is happening in the world. Except for very few areas, we have not been able to keep up with the frontline technology. And as we go further, technology is advancing very, very rapidly and it is going to be more and more difficult for us to keep up this race. What happens is this. First we want to buy something. They do not sell it to us. You cannot buy it So, we try to develop it. The minute we develop it and we are on the verge of getting into production, they suddenly say, 'You can buy it'. Then our own development cost is wasted. Our production costs are higher because it is a new development and they have been making it for some years. So, it frustrates our own process. We must identify certain, what we are going to call 'mission areas' and thrust along those areas. We want to improve the technology. When we talk of technology, I am talking on a broader concept, not only of electronics but we might want to improve, for example, the seed of rice, we might want to improve fertiliser, we might want to improve something else; and we concentrate on these 'mission areas' so that ten years from now, we are the most advanced country in that area irrespective of anything else. Because we will have to concentrate along these lines, we will have to reduce our efforts on some of the other lines. This is the basic change. I thought I would just explain that.