

Dhawan and the Transformation of the Indian Institute of Science

Dhawan took charge as Director of the Institute on the last day of 1962 and continued in the position till 31 July 1981. His tenure of more than seventeen and a half years was the longest in the Institute's history for any director. Over this period Dhawan was able to exert a long-lasting influence on the Institute's intellectual character, its programmes in both research and education, and its administrative structure. The period was also marked by an extraordinary expansion in the diversity of the research programmes at the Institute, as a large number of new faculty joined at various times and a variety of new centres were set up. Indeed, the Institute as we see it today is by and large the outcome of a series of changes that took place through Dhawan's tenure, at any given time seeming to be incremental, but adding up over nearly two decades to a remarkable transformation.

When Dhawan took over the Institute it was relatively small: around 1960 there were only 11 departments and 5 sections, the recurring budget was Rs. 54 lakhs and the non-recurring budget just a little more than Rs. 6 lakhs. The Senate of the Institute could sit around the oval table in the old Council Chamber on the ground floor of the Tower. (I attended one of its meetings as an invitee in the early 1960s.) By the time Dhawan left there were some 40 Departments and Units in the Institute, the recurring budget was approaching Rs. 10 crores and the non-recurring budget had gone up by two orders of magnitude; at the farewell meeting in July 1981, the Senate filled a fair part of the Faculty Hall. (By the way, the one departing plea he made to the assembled senators on that occasion was that they should continue the tradition of deciding by consensus, and not be too impatient with minority views; he hoped it would

never be necessary to count heads in the Senate.)

In retrospect, Dhawan's initial years seem to have been taken up in consolidation and reorganization of the units already on the campus: for example, in 1963, the Power Engineering Department was split into the present Mechanical, Electrical and High Voltage Engineering Departments. However towards the end of the 1960s, Dhawan began taking a series of new initiatives that transformed the Institute in less than a decade. In 1968-69 a major campaign to recruit new faculty, especially from abroad, was set in motion. In 1969 the School of Automation was set up with I G Sarma (who came from IIT Kanpur) as its first head; the School was inspired by Russian ideas and was an unusual academic unit in the country at the time. In 1970 a computer centre was set up (with an IBM 360). The same year the teaching programme was reorganized (after overcoming much initial resistance) into a unit or credit system, giving much greater flexibility to the student. Around that time a review committee headed by the well-known chemist, T R Sheshadri, made a series of recommendations about the administrative structure of the Institute as well as its scientific programmes, endorsing some of the changes that Dhawan had already put in place. These included a new system of promotion so that, instead of a single professor in each department who was also automatically its head (or czar, as Dhawan sometimes referred to them), there were now several professors: and departments were being grouped together into divisions to encourage interdisciplinary work and, more generally, to break down the rather impenetrable walls that every department at the Institute had erected around itself.

In 1971, for the first time in the twenty years after

he had joined the Institute, Dhawan took a sabbatical break to spend a year at his alma mater, Caltech. But following the tragic death of Vikram Sarabhai he was asked by the Prime Minister, Mrs Gandhi, to run the national space programme, and returned from Caltech in the middle of 1972 to assume the position of Chairman of the Indian Space Research Organization as well. He made it known, however, that IISc was not only his base but also his first charge; so ISRO Headquarters were set up at Bangalore, and Dhawan continued to take his salary from IISc.

In spite of holding these two jobs, Dhawan continued with his strong initiatives: the early 70s saw another major influx of talent to the Institute and the flowering of many scientific programmes. Dhawan invited G N Ramachandran to the Institute to set up the Molecular Biophysics Unit in 1971, George Sudarshan to set up the Centre for Theoretical Studies in 1972 and C N R Rao to set up the Solid State Structural Chemistry Unit in 1976 (followed by the Materials Research Laboratory in 1978). As a young faculty member at the Institute I could sense that in a matter of some six or seven years the intellectual character of the campus had been transformed, and new disciplines, new ideas and new programmes had grown rapidly. There was in fact a new buzz in the air on campus. It was characteristic of Dhawan that the new programmes were spread across both science and engineering, and also included such areas as the application of science and technology to rural areas (headed by A K N Reddy), a Centre for Electronics Design and Technology (set up in collaboration with ETH Switzerland) and the Centre for Scientific and Industrial Consultancy, a joint programme with TIFR on the applications of mathematics, and a research programme on atmospheric sciences. As the number of profes-

sors in the Institute went up dramatically, both because of those who joined from outside and because of the flexible promotion policies that were adopted at the Institute, the heads of departments now became chairmen holding their position for a few years and rotating it among other colleagues in the department.

As both Institute and ISRO grew, there was great pressure on Dhawan's time; the appointment of S Ramaseshan as Joint Director was of some help. At his last meeting with the Council, Dhawan was for once emotional; his voice faltered, and he was at a loss for words. (The awkward spell was broken when he was called away to take a telephone call announcing the successful launch of the India's first experimental geostationary satellite APPLE.) Thirty years at the Institute, more than half of that period as its Director, meant that his life and that of the Institute were inextricably linked; the 'idea' of the Institute, of what it ought to be, had consumed him throughout that period.

The Institute has continued to grow and flourish under successive directors after Dhawan, and there have been many new programmes as well. But I think that in the eight years between 1968 and 1976 the character of the campus was changed, irreversibly, as it now appears. In the 1950s the Institute was by and large a laid-back campus, with the vigorous research group being the exception rather than the rule. By the late 1970s research had taken firm root and was pursued with unprecedented vigour across the campus, the number of research students as well as academic staff having roughly tripled during Dhawan's time. The Institute as we see it today took birth in those years.

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