CHAPTER III

THE PRESENT STUDY

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3.1 Introduction

The last chapter described various Multi-factor Test Batteries which were developed in U.S.A. and other countries after the War. The importance of such batteries in our schools need not be much emphasized. Before India gained independence, the use of tests was limited and the stress was in intelligence testing. There was an emphasis on individual testing and Binet's scale was most well known and used. The early Indian efforts were, therefore, mostly limited to the adaptations of Stanford-Binet Intelligence Scale. Soon after Independence, some efforts towards preparation of Group Intelligence Tests were made noticeable. Notable among earlier attempts are Group Tests of Intelligence in Hindi by Mohsin,[1] Jalota[2] and Mehta.[3] Some of these tests were later adapted and/or

1. S.M.Mohsin, Verbal Intelligence Test, Bureau of Educational and Vocational Guidance, Bihar, Patna.
2. S.Jalota, Manasik Yogyata Pariksha, Psycho-centre, Varanasi.
3. P.Mehta, Samanya Buddhi Parikshan, Manasayan, Delhi.

translated in some other Indian languages, and many new tests were also prepared. Now there is a group test for almost every major language in India.[1]

Stress on Aptitude Testing in India is of rather recent origin; it especially gained momentum after the report of the Secondary Education Commission set up in 1952. The report included a chapter on Guidance. They maintained that "the secret of education consists in enabling the student to realise what are his talents and aptitudes and in what manner and to what extent he can best develop them so as to achieve proper social adjustment and seek right types of employment."[2] Another important recommendation of the Commission was the one which proposed a system of multi-purpose schools. It was recommended that diversified courses should be provided in secondary schools to act as a "corrective to existing 'single track' system of secondary education."[3] The government of India implemented this recommendation and opened several multi-purpose schools, where two or more of the following courses were provided: humanities, sciences, technology, commerce, agriculture, fine arts, home science and technical. "Each group offered a range of seven to ten subjects out of which a

1. A good description of some of these may be found in S.D.Kapoor (ed.), Psychological Researches in India-a commemorative volume, and in the Mental Testing No. of Education and Psychology, 1954:4-5.

2. Ministry of Education, Govt. of India, Report of Secondary Education Commission, 1953, p. 107.

3. Minstry of Education, Review of Education in India, p. 23.

combination of any three could be selected according to the pupil's interest or aptitude.[1]

The Commission also discussed the importance and need of objective tests and evaluation.[2] In pursuance of the above recommendations, the Ministry of Education established the Central Bureau of Educational and Vocational Guidance in Delhi in 1954. Besides the Central Bureau, several states have their State Bureaux by now to train personnel for Educational and Vocational Guidance. Much literature, in the form of tests, cumulative records and other evaluation techniques have been published both by the Central as well State Bureaux. The Central Bureau is now also bringing out a periodical named, 'Guidance Review.'"The movement has made a promising beginning and will be expanded."[3] The Central Bureau "is engaged in helping to develop a guidance movement in the country as a whole."[4]

An important event in this direction was the establishment of National Council of Educational Research and Training as an autonomous organisation. The Ministry of Education sponsored and set up the Council in 1961. The Council is now engaged in organising the National Institute of Education with a strong Department of Psychological Foundations, of which the Central

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1. ibid.,
2. Ministry of Education, Report of Secy. Educ. Commission, p. 122.
3. Ministry of Education, Review of Education, p. 802.
4. ibid., p. 59.

Bureau of Educational and Vocational Guidance is a part. The other important part is Psychometric Unit a function of which is the development of research techniques and tools to meet the need of the present day secondary-school system.

The above brief description of some important educational events during the past decade or so suggest that the educational and vocational guidance and psychological testing including aptitude testing have been receiving increasing attention. These are viewed as methods for improvement of the educational system. Suggestions have been made from time to time for improvement of the system of admission to the universities. One of such suggestions is the introduction of better admission tests including aptitude testing. Properly standardised tests would play a vital role in this direction.

Aptitude testing plays an important part in many other spheres besides education. Tests are developed and used widely by the Directorate of Psychological Research of Defence Science Organisation. Another unit of Ministry of Defence which uses Psychological tests in the Directorate General of Ordnance Factories. The tests used and instruments developed by these organisations are not generally known for obvious reasons, but one of the probable use in the selection of recruits and skilled workers. The Directorate-General of Employment and Training in the Ministry of Labour and Employment recently developed a series of aptitude tests for selection

of trainees for their trade courses.

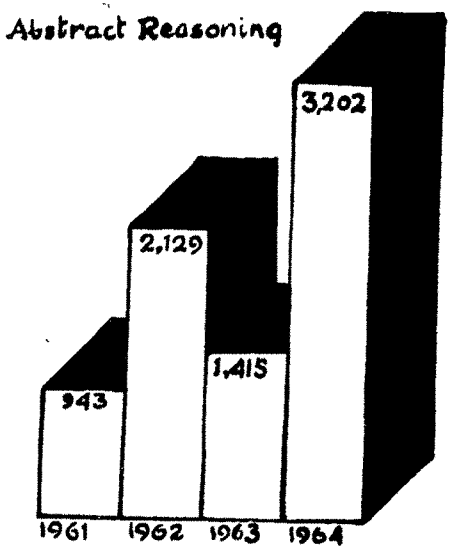
The above brief description indicate some areas where there is an increasing demand for aptitude tests. A well-prepared battery of aptitude tests for schools, or industries, therefore, may not only be worthwhile and useful but also would be much helpful to the Nation by making a proper utilisation of human resources.

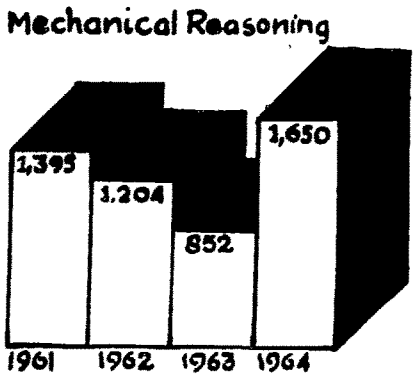
Unfortunately, so far, good aptitude tests are almost totally lacking in our country. Some skill tests have been prepared for specific jobs, but most of them are either for departmental use, (as in Defence Ministry) or are unpublished.

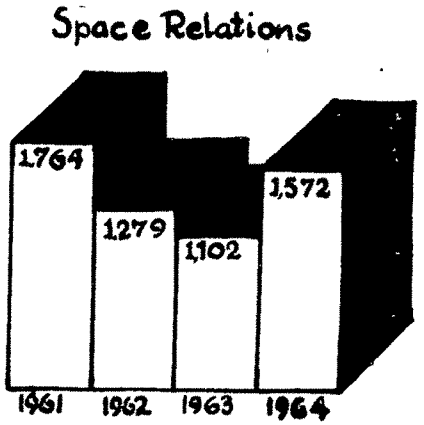
The Differential Aptitude Tests, the subject of this investigation, is perhaps the most important and widely used tests in this regard. This battery, as described in the previous chapter, consist of 8 tests, five of which are comparatively non-verbal and easily "translable" in Indian Languages. These five tests are widely used, though the other 3 verbal tests, are used in certain English medium schools, especially those whose students speak English as their mother tongue or major language.

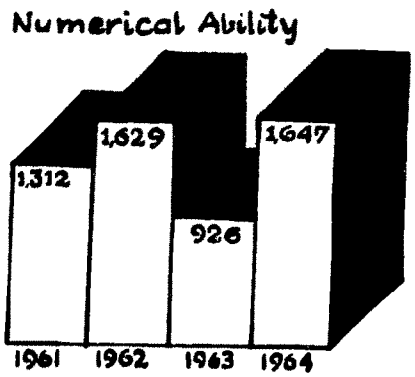
The use of Differential Aptitude Tests is widespread in India. They are used for research, for demostration, and for educational and vocational guidance. In former Bombay State, a particular test of the DAT series was also used for selection of students to various courses. The main organisations to

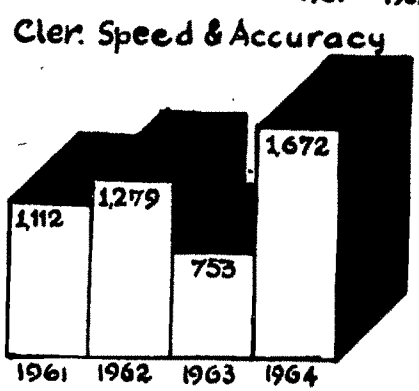
PLATE 1
Showing sale of DAT booklets in India

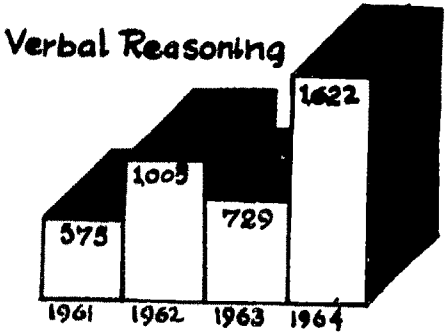


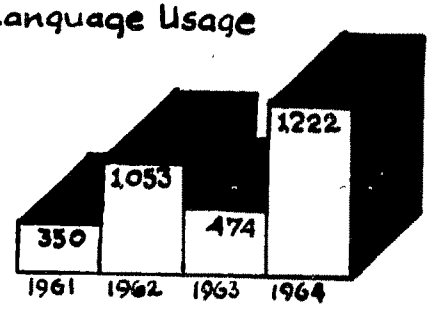












direct the use of tests for guidance purposes were the Central and State Bureaus of Educational and Vocational Guidance. Table 2 shows the increasing use of the Indian editions of the DAT tests, from 1961 onward when the full battery was available.[1]

TABLE 2

Sale of Indian Editions of DAT booklets (Form A)

Test	Years			
	1961	1962	1963	1964
AR	943	2,129	1,415	3,202
MR	1,395	1,204	852	1,650
SR	1,764	1,279	1,102	1,572
NA	1,312	1,629	926	1,647
CSA	1,112	1,279	753	1,672
VR	575	1,005	729	1,622
LU*	350	1,053	474	1,222

*There is only one test booklet, containing both the the tests of the Language Usage.

Plate 1 shows this increasing trend in a graphical illustration. It is clear from the table and the plate that the use is rapidly increasing, except a fall during 1963 which seems to be an accidental unwarranted fall, as significant reasons can not be discovered. It is also clear that the use of the verbal tests has always been limited.

It may be noted that the number represents the quantity

1. The informations mentioned in this paragraph and that in Table 2, was obtained from the official records of Manasayan, the Indian publisher of the DAT.

of reusable booklets purchased during the various years. Assuming that each booklet is used 5 times on an average (the booklet may be used over again for about 10 times or more without being spoiled) the wide use of the DAT in India, can be very well inferred.

In most of the researches on test construction, DAT are used as models for new items and/or as criteria for concurrent or predictive validational studies. These are always used for demonstration and acquainting the students with technique of construction, administration, scoring and interpretation of aptitude tests. Several state Bureaux have developed local norms for some of the tests of the DAT battery. Such tests are used for the purpose of guidance in secondary or multi-purpose schools.

The large use of these tests, especially the AR, MR, SR, NA, and the CSA where the language factor is not a predominant one, go to show that while, on the one hand the growing need for well prepared aptitude tests for our schools, one the other the popularity of the Differential Aptitude Tests for this purpose.[1] As mentioned in the previous chapter, the tests are being translated in several Indian languages and are used. They have shown good results. The investigator believes that a complete revision of the test in Hindi which

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1. The verbal portions (Directions etc.) of these five tests, except the Clerical Speed and Accuracy Test, are sometimes translated in the regional languages for use with the local population.

is the language of almost one third of the population in India, may be a good beginning for further adaptations of this test in different languages. Inasmuch as the basic contents of the nonverbal tests are relatively culture free, it may also be presumed that standardised tests in Hindi, may be used, with seperate local normative and validational studies in other regions; further adaptation and standardisation, however, may be required for the 3 verbal tests.

3.2 Delimitation

Region.-- Complications in test construction arise often due to the peculiar nature of the linguistic distribution in India. The Hindi region is very vast in more senses than one, though the uniform factor is the same principal language i.e. Hindi, as the medium of instructions. Hindi is the mother tongue and/or principal language of about 1/3 of the population of the country. It was, therefore, decided to prepare various tests of the DAT series in Hindi.

The language problem in India is a complex one and is further made difficult because of the wide divergence, at many places, between the spoken and written languages. Although occasional dialectical variations-sometimes quite wide- may be found in this area, the accepted standard style is Khari Boli, which is the literary and formal style of the Hindi language. The script is also common to the entire area. This standard form has a uniform grammar and syntax and is the medium of

instruction throughout the entire region.

In other circumstances this would probably be a difficult issue as it is not possible to conveniently find such a region, but fortunately in India, we have Delhi-which is a cosmopolitan city. Delhi was the seat of Moghal rulers, birth place of Urdu and has always remained a place for the intellectuals and elite of the country. It is here, that the standard forms of Khari Boli was born; in fact an earlier name for Khari Boli style is देहल्वी (Dehalavi-which is spoken in and around Dehli).[1] According to Varma,[2] "the origin of Urdu is the Khari Boli in and around Delhi, and this form is also the basis for modern literary Hindi." Pandeya also opines that "Delhi is the birthplace of Khari Boli" and quotes Grearson according to whom the Hindi language is that which is spoken nearabout Delhi, i.e. the Khari Boli."[3]

This status of the language of Delhi is due to its unique position, as being probably a city which has continously been a central point in Indian history as a capital of the most of the empires. Infact there is an old Sanskrit saying, दिल्लीश्वरो वा जगदीश्वरो वा, the king of Delhi is the king of the entire Universe. All literary, activities, had their central nuclei in Delhi, and to Delhi all gathered to get the royal recognition.

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1. Chandrabali Pandeya, "Hindi Bhasha Ka Pradesh" (The region of Hindi language), Saraswati, Allahabad, Diamond Jubilee no., 1961, pp. 716-721.
2. Dhirendra Varma, quoted in ibid.,
3. ibid.,

But Delhi's environs were not static. Delhi was exposed to the influences of all cultures and disturbances from outside. She assimilated them and these were reflected in her life and language. Delhi was the scene of frequent incursions and each such incursion left an impact on the cultural life of the city. It was only during Moghal rule that Delhi had a comparatively stable and peaceful life, away from the turbulations and invasions. Thus, it is during Moghal rule that the arts and literature flourished; changing tones stabilised and obtained a form. Khari Boli was such a stabilised form of the language, and we find that this was the official form of the language of the Moghal empire.

After Moghals too, Delhi has been the seat of the Central Government and this fact, along with her Central situation gives her a representative and cosmopolitan character. After independence and resulting partition, Delhi has been subjected to a heavy impact of different regional characteristics, but the main language of Delhi remains the same that is the Khari Boli. At the same time, Delhi is inhabited by persons from all over the country, who impart a colour and a regional shade to the spoken Hindi. Here we find mixed schools-areas where the typically Hindi speaking population resides, and also areas which more or less are inhabited by a particular linguistic group.

The above consideration and some others, led the investigator

to select Delhi as the field of the present study which was to be ultimately meant for the schools of Hindi speaking region. The writer believed that careful selection of the schools would bring out the results which could be extended to other Hindi speaking portions of the country, and that the tests, resulted from the present investigation could, as a result, be used for other Hindi speaking regions, with probably seperate norms.

It was decided to standardise the tests only for the class IX of secondary school, at present. It was planned, however, to make an adequate study for other classes of Secondary School, that is classes IX, X and also XI because ultimately the tests are meant for all classes. For this purpose items were developed for the language tests, on basis of the study of the entire range of secondary classes. Class IX has assumed special importance in view of the diversification of courses from this stage in all Hindi speaking states. Almost all the various aptitude tests (adapted or original) prepared in India include the average age of the children reading in class IX or are specifically prepared for this grade. The general age-range of the students reading in Higher Secondary classes is 11-16 years, varying according to the region. The tests are usually given in class VIII, the Delta class, for final allocation of pupils in classIX.

In short, therefore, the scope of the present investigation

was the standardisation of tests for class IX of Delhi Higher Secondary School. The battery, however, was prepared and the items developed, so that ultimately it could be used for the entire range of the Secondary school, beginning with class IX and ending with class X or class XI as the case may be.

3.3 Design

The various steps of the investigation are detailed in chapters IV, V, VI, VII and VIII. The study begins, with a full design for the item analysis of all tests, except the CSA. It was decided to prepare new verbal tests parallel to the existing ones in English, and to item analyse them by finding both Diff. and Disc. Indices. For the other tests, it was to be seen whether a full item analysis procedure was necessary. All the evidences and experiences at the disposal of the investigator led to the conclusion that most of the non-verbal tests do not require changing of items, except the MR, some of whose items are culturally biassed. The evidences are present at appropriate places.

After item analysis and finalization of all tests, administration of the entire battery of eight tests was planned to see the efficiency of the tests, intrinsically as reliability and extrinsically as validity. Study of predictive validity was planned and in fact, an aptitude test stands or falls with the accuracy of prediction of success in any specific course or occupation. The main problem before

us nowadays is to locate potential talents and give them the necessary opportunities to develop their abilities towards this goal, all our educational policies are directed. In the studies presented, the tests are validated with examination marks.

Other important aspects of this study are the estimates of reliability of all the tests, from various methods, finding of intercorrelations and reporting of the differential power of the tests. Various issues, which crop up from discussion of respective topics would be also dealt with.

Norms have been left out for the present, but would be prepared before publication or when the tests come into operational use. The normative study of these tests would be a study too big for the present investigation. It is planned to take this as a further study, outside the scope of present one, and to obtain norms for different groups.

In all these, the investigator had always counted on the cooperation and goodwill of the authorities of various schools and governmental departments. As the expected amount of cooperation is not always forthcoming the investigator did as best as he could in the existing circumstances. In his comments on the F A C T, Super also gives due consideration to this fact, when says that,

> "Obtaining the cooperation of school officials in the large scale administration of unpublished experimental tests is very difficult; it is very

> difficult enough with published tests known validity... Perhaps getting cooperation in his own community for preliminary studies, and then publishing on the basis of limited data with the declared intention of getting the additional needed data, is the best way available to a test author seeking to do a scientific and professional job of test development. It is easy for test specialists who do not publish tests to criticize this method, but as a test specialist who now specializes in criticism I prefer to recognise the very real problems faced by tests constructors,-as one who may want to publish a test some day meself, I doubt whether I can comfortably throw the first, or even third, stone."[1]

When such is the position in U.S.A. where the authorities are so cooperative and testing is so much developed, the various obstacles in the way of implementations of one's plans, can be easily imagined in India.

The investigator has the satisfaction that he has attempted to carry out his plans as best as he could under the circumstances and he has elaborately reported various steps, procedures and findings. He is aware of the limitations of the present investigations and emphasises the need for further studies. He also believes that the present reporting would be a suitable base on which further studies may be built up. As far as the investigator knows, this is the first reported attempt to revise the entire DAT battery in Hindi, with newly prepared verbal tests.

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1. Super, "Comments on the Flaugan Aptitude Classification Tests" in his Use of Multi-factor Tests in Guidance, p. 78. Also in Personnel and Guidance Jour., 35:504-507 (April 1957).

3.4 Summary

The chapter discusses the need for the study of the differential aptitudes and the importance of the present investigation for this. Due to the new directions in current educational policies, the need for a differential battery such as this is more and more felt.

The writer has also defined the scope of the investigation, with respect to the area and the level. The tests are standardised for Class IX of Delhi Higher Secondary schools, but the item analysis study is based on all the three classes, so that the same study may be extended for use in all the three classes, and thus may cover the entire Higher Secondary range. The chapter also outlines the steps and procedures which would be followed for this investigations, to be presented in the following chapters.