CHAPTER 4

ADAPTATION OF THE TESTS

- Basic Principles for Adaptation
- Why Adaptation?

Description of Tests and the changes made therein.

Changes made in the Directions for Administering the Tests.
- Language
- Item limit
- Consecutive failures

Test items and the changes made therein.
- General Information
- General Comprehension
- Arithmetic
- Similarities
- Digit span
- Vocabulary
- Digit symbol
- Picture completion
- Block design
- Picture arrangement
- Object assembly

Changes made in the scoring system and scoring standards.
Basic Principles for Adaption

It is always good to adapt well-known intelligence tests of other countries because they are prepared with great care and precision. However, such adaptation is not easy, nor is the translation equivalent to the original. All the American and British tests are based on their environments which differ tremendously from the Indian culture. Even ordinary things like dresses and articles of daily use differ completely. Besides, every language has its own niceties and various modes of expression which cannot be conveyed in another language through mere translation.

Again, every word has its specific significance, denotation and cannotation in a particular language, the essence of which cannot be maintained by the translation of the word. The exact translation may perhaps lose the original subtlety and significance of the word. Moreover, some of the words may not have the exact equivalents in another language.

In addition to that, the contents of the test items for intelligence testing are usually based on social and work experiences. The situations and environments in our country and its several religions and cultures are absolutely different from the western world.

Finally, the value of a test in one environment cannot be the same in another and therefore, such an adapted test must pass through the entire process of standardization which involves a lot of statistical work like fixation of norms and establishing reliability and validity. It is therefore, necessary to adapt a test making suitable changes for the cultural differences and restandardize it, rather than simply prepare a translation of it using foreign norms.
According to Cronbach, the test designer has to face four problems:

First he must decide what he intends to measure. Second he must invent or select items which serve that purpose. Third he must find a measuring unit in which to express results. Fourth he must show the validity of the test.

(Cronbach, 1963)

The first problem was naturally solved by adapting the WAIS. But, to solve the second problem, she had to face a difficult situation. Of course, she didn't have to frame new items but she had to translate or modify the items to suit the different culture in such a way that when either translated, modified or coined, they suited the original ones.

To overcome the last two problems, K.C. Bhattachaty mentions twelve points which must be kept in mind while attempting an adaption of a foreign test. They are as follows:

1. The successful taking of each test involves some specific mental functions and processes. The sub-items of a test usually require the same mental functions and processes to some extent. The underlying mental functions of newly coined items should correspond with the original ones as far as possible.

2. The unfamiliar content of the test should be replaced by the familiar one based on the testee's environment and experiences.
3. Proper names: names of things, cities, articles, fruits, units of measurement etc., which are not within the testee's experiences are to be replaced by familiar words.

4. The phrasing in the sentence has to be changed in such a way that the underlying meaning remains unchanged. During this process, some of the words, for which the exact equivalents are lacking, may be replaced by longer expression, while some of the phrases may be expressed through a single word.

5. Unfamiliar words may be replaced by familiar ones.

6. A test like 'vocabulary' must be newly framed.

7. Verbal tests require changes that suit the testee's development and experiences.

8. The scoring scheme and the scoring standards are to be modified in the light of data collected through an adapted scale.

9. At the initial stage, an item is to be replaced by two or three newly coined items to give the examiner a chance for comparative evaluation and proper selection later on.

10. As far as possible, the original item should be replaced by one having the similar difficulty value. All the same, the difficulty value of all the items should be established on the data collected.
11. The wordings of the tests require checking during the preliminary runs.

12. A specific time-limit for each item should be established on the analysis of the data obtained through the adapted test during the preliminary runs.

**Why Adaptation?**

Desai is right in his argument when he says

"If all the steps of standardization of a new test are also to be done in adapting a foreign test, it is better to not construct a new test?"

(Desai, 37)

But the case is different when an individual test of intelligence like WAIS is concerned.

As Mitra puts it:

"Inspite of our attempts to adapt foreign tests, we have not been able to achieve substantial results except with the Stanford-Binet because of the lack of persistent effort and coordinated endeavour."

(Quoted in Ramalingaswami, 1964)

The present writer wants to eliminate this shortcoming.

The Wechsler scale has proved to be the best available individual test for evaluating the intelligence of adults. This scale has been adapted successfully in other countries such as Germany, Spain and Japan, to mention only a few, although it
was originally developed in an American setting for the American people. A study of the test contents reveals that some of the sub-tests like Arithmetic, Similarities, Digit Span, Digit Symbol, Block design and Object Assembly are applicable to situations other than those in the U.S. and sub-tests that have a cultural difference such as Information, Vocabulary, Picture Completion and Picture Arrangement can be adapted successfully. In view of these considerations, it was felt that instead of trying to evolve an entirely new battery of tests, an attempt should be made to adapt the Wechsler, Adult Intelligence Scale in Gujarati for the state of Gujarat.

Description of the tests and the changes made therein:

Since this is an adaptation of a foreign test, the problem of selecting the sub-tests does not arise. The WAS contains eleven sub-tests consisting of six verbal and five performance tests. They are as follows:

<table>
<thead>
<tr>
<th>English Name</th>
<th>Gujarati Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. General information</td>
<td>સામાન્ય માહિતી.</td>
</tr>
<tr>
<td>2. General comprehension</td>
<td>સામાન્ય સમજ.</td>
</tr>
<tr>
<td>3. Arithmetical Reasoning</td>
<td>સાધારણ વિચાર.</td>
</tr>
<tr>
<td>4. Similarities</td>
<td>સાથીતા ધરા સાથીતા.</td>
</tr>
<tr>
<td>5. Digit span</td>
<td>અંક વિચાર.</td>
</tr>
</tbody>
</table>
The first task was to study the WAIS manual with a view to making necessary changes. The test items of each test of the scale were critically studied with a view to incorporating the desirable modifications made necessary due to the cultural, social and economic differences.

The modifications introduced in the test items were entirely confirmed to those inevitable in translating the tests from English into Gujarati thus transferring the scale and its material from the U. S. A. to Gujarat. Only those test items that were based on the American culture were either changed or replaced by equivalent items with a Gujarati background. For the purpose of discussion, the points mentioned above can be divided into three parts:

1. Directions for administering the tests
2. Test items to be presented to the testees
3. The scoring system, the scoring standards and the essentials of acceptable answers.
Changes made in the directions for administering the tests:

1. Language:

First of all the names of all the eleven tests mentioned earlier in this chapter were translated into Gujarati. Second, the directions for test administration were translated into Gujarati. As far as possible, word to word translation was attempted but following the basic and common-sense principles of translation neither the niceties of the language nor the underlying meaning in the structural phasing of the sentences was lost. This process was carried out for the entire battery of tests.

2. Item-limit:

Most of the tests in WAIS give specific item-limit where the subjects are to be tested. If they pass the prescribed items successfully they are credited for the former items. If the subject fails on any of the prescribed item he is to be tested on the former items and credited for only those on which he is successful. If the subject fails in the former item also, the test is discontinued and the testee gets 0 score in that test.

Thus the information test is to begin from item 5 and if the subject passes item 5, 6 and 7, he is credited for item 1, 2, 3 and 4. If any of these items is failed, the tester administers items 1, 2, 3, 4 before giving further items. Most of the tests of this battery have item-limit but general comprehension, digit symbol, picture completion and object assembly have no time-limit. In changing of the
test items and sample of standardization these time limits must be adapted so as to suit Gujarati adults.

3. Consecutive Failures:

Another unique feature of WAIS is the discontinuation of a test after the specific consecutive failures on its items. Thus the information and vocabulary tests are to be discontinued after five consecutive failures. General comprehension, arithmetic and similarities are to be discontinued after two consecutive failures. Digit span is to be discontinued after failures on both trials on a given series. Picture completion is to be discontinued after four consecutive failures. Picture arrangement and block design are to be discontinued after two consecutive failures. Object assembly has no such limit and Digit symbol being a speed test is imposed a time-limit.

It is natural that such a complicated procedure adapted by Wechsler for American population has been straight away used with Indian population without any try-out. Thus such time limits were also dropped and the testees were tested on all the items of the scale.
Test-items and the changes made therein:

GENERAL INFORMATION

The fact is, all objections considered, the range of a man's knowledge is generally a very good indication of his measured intellectual capacity. (Matarazzo, 197)

The information test consists of all the factors of main knowledge. It was furnished by the data obtained from the Army Alpha examination, the first strong support for the range of information as a good measure of intelligence. When the individual tests of the Army Alpha battery were analyzed with regard to their correlation with various estimates of intelligence, the information test, to the great surprise of many, turned out to be one of the best of the entire series. Compared with other tests in Alpha, the Information Test gave much better distribution. The Curve showed a relatively smaller percentage of zero scores, and showed little tendency towards piling up maximum scores at the upper end. Altogether the information test proved to be one of the most satisfactory in the battery, though the range of a man's knowledge, depends in no small degree, upon his education and cultural opportunities.

In practice the value of the information test will depend in a large measure on the actual items which are
included in it. There are no universal principles which can serve as unfailing guides to 'good' questions. In general, the item should call for the sort of knowledge that an average individual with average opportunity may be able to acquire for himself.

WAIS Information Test contains 29 questions, each representing a selection from a much larger list. Looking towards the educational and environmental opportunities that are available to the average Gujarati adults, the following changes were made before giving the test to the testees.

Thus the item:

1. The American Flag, naturally may not be easily known by Gujarati people and therefore the item 'What are the colours in the American Flag?' was changed to

"अमेरिकन फ्लाग के सारे रंग शुदा क्या है?

'How many colour: stripes are there in the Indian national flag?' Three colour: stripes are there in Indian national flag.

2. Since Gujarati people may not be conversant with presidents of the United States, therefore the item 'Name four men who have been presidents of the United States since 1900.' was changed to

'अमेरिकन राष्ट्रपति के नाम क्या हैं? वे अमेरिका के राष्ट्रपति क्या नामों?'
Give three names of the presidents of our country. Any three names of the presidents from Rajendra Prasad to the current one, inclusive are accepted.

3. 'Long fellow was a famous man, what was he?'

Long fellow is an unknown man for Gujarati people. Very few knows who Longfellow was. So while changing the item with a view to selecting a better item the following two items were coined.

"हो ल ग प ल न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि न क ए क ि
'In what direction would you travel if you went from Ahmedabad to Surat?'

Ahmedabad is one of the biggest cosmopolitan cities of Gujarat. It was the capital city of Gujarat before the construction of the present capital - Gandhinagar. Surat is another biggest city of Gujarat.

5. We cannot expect the knowledge about a country of South America from Gujarati people. So the item, 'Where is Brazil?' was replaced by the following two items with a view to selecting the best one.

"Where is Japan?"

'Where is Israel?'

'Japan' and 'Israel' are usually known to Gujarati people.

6. The item 'How tall is the average American woman?' was replaced by

"How tall is the average Gujarati woman?"
7. As Indian people are not usually familiar with the capital of Italy, the item was changed to

"What is the capital of Rajasthan?"

"What is the capital of Kashmir?"

Rajasthan and Kashmir are the states of India. Jaipur is the capital of Rajasthan and is known as the pink city. Srinagar is the capital of Kashmir and is known as the city of lakes.

8. Washington's birthday naturally may not be easily known to Gujarati people. So the item

"When is Washington's birthday?" was replaced by

"When is the Independence day of India?"

The fifteenth of August is the Independence day of India.

9. Gujarati people may not be conversant with Shakespeare's "Hamlet" so the item

"Who wrote Hamlet?" was replaced by two items.

"Who wrote Hamlet?"

"Who wrote Hamlet?"
"Who wrote Ramayana?"

"Who wrote Saraswatichandra?"

'Ramayana' and 'Saraswatichandra' are the well-known books written by two famous writers 'Valmiki' and 'Govardhanram Tripathi'.

10. 'What is the Vatican city?' was replaced by

'आयो कों किया गया है कि?'

'Who was Aryabhatt?'

Aryabhatt was a famous scientist. Aryabhatt is the name given to the first artificial satellite floated by India with Russian help.

11. Indian people are not familiar with the population of United States. So the item

'What is the population of the United States?' was replaced by

'कितने लोग हैं अमेरिका में?'

'What is the population of India?'

The population of India is approximately 60 to 70 million.

12. The number of senators in the United States senate is not easily known by Gujarati people. So the item

'How many senators are there in the United States senate?' was changed as

'कितने सेनेटर्स हैं अमेरिका सेनेट में?'
'How many members are there in the Indian Parliament?'

There are 542 members in the Indian Parliament at present.

13. The main theme of the book of Genesis is not known to Gujarati people, so the item

'What is the main theme of the book of Genesis?' was changed as

"महाभारत का नाट गणना करे है?

'What was the moral of Mahabharat?'

"महाभारत का नाट गणना को है?

'What was the main advice given by Jesus Christ?'

14. Iliad is a book of Greek poetry written by Homer. So it is not easily known to Gujarati people. So the item

'Who wrote Iliad?' was changed as

"होमर ने श्रीमत रचना की थी?

'Who wrote Gitanjali?'

'Gitanjali' is a book of poetry in Bengali, written by Rabindranath Tagore and for this book he got the Nobel prize.

15. The Muslim population is quite big in India. So Kuran is well known to Gujaratis. So

'What is Kuran?' is a very easy question for the Gujarati people. It was therefore replaced by these two questions

"क्या ज्ञान का यह धार्मिक रहे?

"स्वास्थ्य का यह धार्मिक रहे?

...
Jatak stories are stories of Buddhist religion. Granth-sahib is the main religious scripture of the Sikh community.

16. The item
'Who wrote Faust ?' was replaced by these two questions
‘अगर वो लिखे गये थे हैं ?’

'Who wrote Kadambari ?'
‘कदम्बरी के लिखे गये थे हैं ?’

'Who wrote Shakuntala ?'

'Kadambari' and 'Shakuntala' are well-known Sanskrit dramas written by two famous writers Ban and Kalidas.

17. 'What is ethnology ?' was changed as
‘पूर्ववर्तिष्ठ लेखन की वैज्ञानिकी क्या हैं कहने के साथ ?’

'What is Geology ?'
‘वैज्ञानिकी ज्ञान की वैज्ञानिकी क्या हैं कहने के साथ ?

'What is Astronomy ?'

18. Apocrypha is unknown to Gujarati people. So it was replaced by a known item. The item
'What is Apocrypha ?' was changed as
‘अपोक्रिफ़ा क्या हैं ?’

'Where was the Vallabhi Vidyapith ?'
WAIS comprehension test is the total of 13 items. Wechsler turned it into a test of common sense like the Army Alpha. He says, "It is of interest to note that in the foreign adaptations of the scale the translators have not found it necessary to make any important changes either in the form or in the content of the questions. The questions involve no unusual words, so that individuals of even limited education generally have little difficulty in understanding their content." (Wechsler, 69; Materazzo, 20)

As per Wechsler's quotation when the present writer adapted this test slight modifications in the content were made. Only one item needed modification.

"Why does the state require people to get a license in order to be married?" was changed as

"इलाज़ की रजिस्ट्रेशन में लोगों के साथ किसी भी विवाह के लिए रजिस्ट्रेशन किया जाता है?

"Why does the Government insist on getting a license to keep a radio set?"

In India people are not required to get a license in order to get married. In India marriage registration is compulsory but marriage license is not required. A license is required to keep a radio set so the writer changed the item.
In this test, with a view to selecting the best item
the writer put one more item

"क्यों आपके लिए ऐसा अद्यनिमश्क करना है?"

'Why should people pay income tax?'

With a view to getting money from the people the State
charges income tax.

ARITHMETICAL REASONING

The Arithmetical reasoning test has long been recognized
as a sign of mental ability. It was used as a rough and ready
measure of intelligence. Most of the intelligence scales include
the arithmetical reasoning in one or other forms. Arithmetical
reasoning tests are easily devised, standardized and objectively
evaluated. Most of the arithmetical problems are not beyond
those taught in school grades or what an average adult can
solve in the course of day-to-day transactions.

NAIS Arithmetical reasoning test includes 14 problems
to be solved orally by the subject. All problems tough upon
commonplace situations or involve practical calculations. Most
of the changes made in the test pertain to Americans and the
names of American currency. This test has also been adapted by
British National Foundation of Educational Research (NEFR).
In this test they could not make any changes. They only changed dollars and cents in pounds. Thus they changed only the names of the American currency. The present writer also changed pennies and cents to paisa and dollars to rupees. While making these changes, the prices of things in India and Gujarat were also taken into consideration.

Thus the item

1. 'If a man buys six cents worth of stamps and he gives the clerk ten cents, how much change should he get back?' was changed as

"એક શું વાત છે કે ક્લર વાતે કેટલાક પૈસાની વાત કરી શકે છે અને 10 પૈસા દીદા? તે કે કે  કેલો પૈસા વાલી પૈસા માફ કરી?

'If a man buys a 10 paise worth of stamp and he gives the clerk 20 paise how much change should he get back?'

In India there is no stamp worth 6 paise and it is the fourth item in the test, so with a view to keeping a very easy item first the examiner changed six cents to 10 paise and 10 cents to twenty paise.

2. Since India has adopted 'metre' and 'cm' instead of 'feet' and 'inches' as the unit of measurement of length the item

'How many inches are there in two and one half feet?' was modified as

"બે પરિમાણ ફીટ એક સેક્યંડ કેલો ખૂબ વિઝ ?"
'How many centimeters are there in two and one half metres?'

3. The environmental and cultural forces together with the standard of living in Gujarat forced the modification of the following item:

'How many oranges can you buy for 36 cents if one orange costs six cents?'

''अब गर्दा नारियली पिकेंट 30 पैसे होने तो 60 पैसे मालि त्रो तेजसी नारियली परिल के लाभः ?''

'How many oranges can you buy for 90 paise if one orange costs 30 paise?'

4. As Gujarati people are not familiar with canned peas, the item

'The price of canned peas is two cans for 31 cents, what is the price of one dozen cans?'

was replaced by

''अब 31 पैसावां चे परिल के तो 1 डब परिल के ?''

The price of two kites is 31 paise, what is the price of one dozen kites?
SIMILARITIES

The similarity test gives one of the most reliable measures of intellectual ability. It appears in different forms in many group and individual tests. The questions of a similarity test have been used very sparingly in the construction of previous scales.

The similarity test has several merits. It is easy to give and it appears to have an interesting appeal over an average adult. It is the kind of test which has been recognized by all investigators as containing a great amount of ability to measure a factor. As noted by Terman and others, it is not until the individual approaches adult mentality that he is able to discriminate between essential and superficial likenesses. But it is remarkable that a large percentage of adults never get beyond the superficial type of response.

The list of similarities used in WAIS contained 19 paired words. Unlike the previous methods of scoring, the one employed in our scale distinguishes between superior and inferior responses by allowing different credits for each. Most of the items of similarities did not need any changes. So only one item was changed. Two more items were included in the test with a view to selecting the most reliable item.
1. Bicycle - Boat

As Gujarati are not very familiar with wood-alcohol, so the item was changed as

'અક્ષર-નીઝ'

'Bicycle - Boat'

The theme of the question is the same that is, both are vehicles.

With a view to selecting the best item the examiner put one more item.

'લેબર-દલીસર'

Both are electrical instruments.
DIGIT SPAN

Digit Span is one of the most widely used tests in the scale of intelligence. It forms a part of the original Binet scale and has been used for a long time as a test of retentiveness and in all sorts of psychological studies. Its popularity is based primarily on the fact that it is easy to administer, easy to score and the specific ability it measures. Although, Digit Span for backward and forward is a poor measure of intelligence, it is an extremely good test at the lower level.

In WAIS batteries memory span for Digits forward and memory span for Digits backward have been combined into a single test. Digit forward starts with 3 digits series and ends with 9 digit series and Digit backward starts with 2 digit series and ends with 8 digit series. The subject is given two trials on each series and therefore each series is provided with an alternate one. In case the subject fails in the first trial of any series, he is given second trial of the same series.

If the subject fails in both the trials of a given series the test is discontinued.

This test was adapted with Gujarati translation as no need was felt for any change in the content or the procedure.
VOCABULARY

The size of a man's vocabulary is not only an index of his schooling, but also an excellent measure of his general intelligence and so vocabulary test has formed an integral part in most of the test batteries. Its excellence as a test of intelligence may stem from the fact that the number of words an individual knows is a measure of his learning ability, his fund of verbal information and of the general range of his ideas. An individual's vocabulary is necessarily influenced by his education and cultural opportunities, but the nature of a vocabulary test minimizes it. The list of words included in a test consists of verbs, common nouns, material nouns, adverbs, adjectives etc. and the testee is required to define, explain or describe them.

The Vocabulary test holds up better with age than any other tests of the scale. In general more difficult words are passed by the older groups with greater frequency than by the younger groups. Sometimes the quality of a subject's definition tells us something about his cultural milieu and his hidden personality. All these aspects provide sufficient data for mental diagnosis.
WAIS vocabulary test consists of 40 words selected from American environment. It is quite obvious that the English vocabulary translated into Gujarati cannot be applied as it is to Gujarati subjects. So a new Gujarati vocabulary test was constructed. In the beginning, a standard Gujarati dictionary 'Sarth Gujarati Jodini Kosha' published by Gujarat Vidyapith and printed at Navjivan Press, Ahmedabad was selected for this purpose. With a view to selecting 40 words for the final test, 60 words were selected in the beginning through random selection method. A random sample of the pages of this dictionary was first made and the first word from each page was selected. As a result of this procedure, the list was full of unfamiliar words to the educated people. Therefore though it was decided to select the first word from the selected page, discrimination had to be made among the easiest and the most difficult words. If the first word was the easiest or the most difficult one, any other word was selected from the same page. The selection was based on the pronunciation, difficulty value and the cultural content of the word. Thus a list of 60 words was prepared in the beginning. These words were tried with 107 students studying in the first or the second year of college and then were arranged tentatively according to the order of difficulty. Sixty words were chosen in this preliminary test.
so that 40 words could be selected according to their difficulty values.

No changes were needed in the directions to be used for test administration.

DIGIT SYMBOL TEST

The Digit Symbol Test is one of the oldest and best established of all the psychological tests. It is to be found in a large variety into different intelligence scales and its wide popularity is fully merited. The task is to associate certain symbols with certain other symbols. The speed and the accuracy with which the testee does it serve as the measure of his intellectual ability and the testee's visual activity, motor co-ordination and speed may play an important role in the performance of the task.

In this test 90 numbers are in various lines and in varied positions. The subject is asked to associate certain symbols with certain numbers. The key is provided in the upper part of the printed test. The subject looks towards the key and proceeds with his work. This test is administered with time allowance. A period of 1½ minutes is found to give best results.
The only change needed in this test was the transformation of English numerals into Gujarati ones. Except this, no changes were made in administering the test.

**PICTURE COMPLETION TEST**

This test is intended to measure the ability of the individual to comprehend and identify, essential with non-essential details. This ability is an important characteristic of concentration as Rapaport puts it.

> The discovery of inconsistency or consistency the appraisal of relationships in a limited time is one essential characteristic of the function referred to as concentration. The reference to lack of knowledge here is merely a guise for impaired concentration.

(Ramlinga Swami, 32)

To be able to do this one must be familiar with the objects used in the test.

This test consists of 21 items. All the items are selected from common day-to-day experiences. The content of this test is concrete in nature and the informations required for the success in this test is rather common informations from every day life. In all these drawings one important portion is missing. The subject has to find out what is missing in the picture? The subject is given
only one drawing at a time. The subject has to make up his mind as to which is the most important detail that is missing in the picture. This has been done with a view to evaluating the ability of the subject to comprehend essential aspects of a thing. Correct response gets a score of one and each wrong response a score of zero.

After doing the pilot study employing the original WAIS tests it was learnt that the items in this scale could be used on Gujarati subjects in their original form. Some new items were introduced and an adaption WAIS was then developed to make a total of 21 items in this test. The adapted pictures and newly drawn pictures were tested on a small group in order to ensure that discrepancies in the drawings did not affect the responses. Following changes were made before giving the test to the testees.

1. Girl-nose:

There is a picture of a girl's face. In this picture the missing portion is nose. This is the picture of an American lady who has no bindi on her forehead and hair style is also different. So the writer changed this picture with the face of an Indian lady with a bindi on her forehead and with an Indian style hair dressing.
2. **Violin-wire:**

Violin is not very familiar in our country as a musical instrument. So the picture of a violin was changed to Tamboora. Tamboora is a musical instrument familiar to our people. So the writer changed the picture with Tamboora and the missing part was the peg.

3. **Flag-Stars:**

The American Flag naturally may not be easily known to Gujarati people and therefore the item of American flag with the missing part of stars was changed by the Indian flag with the missing part of Ashoka Chakra.

4. **Map-florida:**

As we cannot expect our people to know about the missing part of Florida, a state, in American map. So the item was changed to the Indian map with the missing part of bay of Kharbhat.

5. **Woodpile - snow:**

India is a hot country. We do not have snowfall in winter in Gujarat. So the examiner changed this picture to the note of a rupee with the missing part of number.
6. **Girl - eyebrow:-**

There is another picture of girl's face. In this picture the missing part is eyebrow. This is the picture of an American lady without bindi on her forehead. So the writer changed this picture to the picture of an Indian lady with a bindi on her forehead.

**BLOCK DESIGN TEST**

The block design test is to measure comprehension with non verbal type of test. This test is originally developed by Kohs. It has become a part of a number of intelligence tests either in one or the other form. Weschler himself modified the Kohs' Block Design Test reducing the colours to just red and white in a number of designs. It is not only an excellent test of general intelligence but also an admirably qualitative analysis.

It consists of blocks with 6 sides. Each block is painted white on two sides, red on other two sides and half red and half white on remaining two sides. There are 10 design cards. The subject has to make similar designs by arranging the blocks. Six designs can be made by using 4 blocks. The remaining 4 designs need all the 9 blocks. This test to be completed in the time limit.
The culture free characteristic of the designs is not likely to be influenced by any social or cultural aspects and therefore does not need any change in its content during its adaptation for Gujarati people. So it was decided not to introduce any modification in the original WAIS. The original items with the prescribed time-limit were therefore employed.

No change was also made in the test administration during its adaptation. Thus no change is made either in the form of any design or in the procedure for test administration.

**PICTURE ARRANGEMENT**

The Picture arrangement test consists of a number of pictures which when placed in the right order tell a small story. The pictures are made of line drawings like cartoons.

Decroly was the first to use this type of test in 1914 and later in 1917. It was tried out by Army psychologists in America without any success. Because of the complicated scoring and the difficulties in getting good sequences, the picture arrangement test has not been used to a great extent,
nor had it been included in the test batteries. Wechsler included this as a subtest in all his intelligence tests. He gave a sound system of scoring for the test and gave a number of acceptable responses and time bonuses.

The themes for the pictures are taken from common, day-to-day experiences. The pictures are presented to the subject in a jumbled sequence and the subject is asked to sort them out and arrange them in an order which would make a sensible little story.

The Picture series of WAIS consists of 9 such sets covering various levels of difficulty. Maximum number of changes were made to suit the local situations. The pictures had been modified and redrawn to make them look Indian, while the themes were essentially the same as in Wechsler’s. Special care had been taken in drawing the characters so as to make the situation real and plausible in the Indian setting. The description of each item in the test and the modifications in which it had been adopted are given below.

Item 2:-

This item is about a 'House'. It consists of three pictures. In the first picture the house is in the process of construction and is without a roof. In the second picture the roof is being built and in the third the roof
of the house has been completed and the outer walls are
being painted. The theme is exactly like that of its
counter part in WAIS, but the house and man were redrawn
to suit local conditions. A simple house being built
by one man is the pattern developed which is exactly like
that in WAIS.

Item 5:

This item is based on item 'Lousy' in WAIS. In
WAIS two children are shown fighting over a comic when a
gentleman comes along, makes them friends and sends them
away. In this process he himself picks up the comic and
reads it. The theme and the pictures in the present test
are quite similar to this. But the name of the book is
modified in order to make it look real in the Indian setting.
The name of the comic has been replaced by the name of
Gujarati journal 'Ramakadu' because most of the
Gujarati children do not read English comics. So
instead of changing the situation and figures, only the
name is modified.

Item 6:

This item is based on the item 'Flirt' in WAIS.
Wechsler had taken this item from 'Little King' series.
the popular cartoons in U.S.A. The situation is pretty common in the American setting. It would look quite strange in India and so it was necessary to adapt into the Indian social environment. In place of the little king, a rich man was introduced and in place of a woman carrying her laundry on her head a young woman with a baby with a heavy basket in her hands was depicted. The pattern of a car is also changed.

No other change is made in the test administration and scoring during the adaptation.

OBJECT ASSEMBLY

The object assembly test is found to have high discriminative value at the higher level of intelligence. The interpretation of this test is valuable in qualitative analysis and clinical interpretation. Wechsler copied it from Patner Paterson Scale.

This is the last test in the entire battery. It consists of four items. In each item there are a number of pieces which, when assembled together, make a manikin, a profile, a hand and an elephant. The scoring is based on the number of joints one assembles in the given time-limit. Those who finish the item before the given time-limit gets extra bonus.
The content and the material are so familiar and perfect, not only for a Gujarati person but for any person in any country, that they hardly need any addition or modification. So no adaptation was found necessary. Therefore the items and the material were adapted for Gujarati persons without any change in the content or the form.

**CHANGES MADE IN THE SCORING SYSTEM AND SCORING STANDARD**

The **WAIS manual** gives various scoring systems for various items on all the test of its battery.

Most of the verbal tests like **Information**, **Arithmetic Reasoning** and **Digit Span** are scored either 0 or 1 depending on correctness or incorrectness of answers. This objective type scoring is possible as the nature of the items insists on only one possible correct answer. The language of the answer is not taken into consideration.

The correct responses on the other three verbal items like **Comprehension**, **Similarities** and **Vocabulary** are scored at two levels viz. 1 or 2 depending upon the generalization and quality. The **WAIS manual** presents three appendices,
corresponding to these three tests, for the criteria for scoring and for sample answers. They give general rules that are to be followed and the typical marginal sample responses which are to be scored 0, 1 or 2.

During the process of adaptation the scoring system and scoring criteria were prepared. The sample answers were translated and other possible answers were thought out so that they can be helpful in later evaluation. Specific sample answers were also thought out and listed at all the levels of scoring for the newly coined items in Information, Similarities and Comprehension. Vocabulary test being an original prepared, no sample responses were translated but the general scoring principles given by Wechsler for 2 point responses, 1 point responses and 0 point responses were translated. The list of the tentative sample answers at all these three levels, based on the meaning given in Standard Gujarati dictionary was prepared in the beginning with a view to achieving objectivity later on.

The possible score per item on performance tests ranges from 0 to 9. The picture completion test is scored either 0 or 1 for the correct or incorrect pointing out of the missing part. According to the WAIS manual, if a subject points to the correct missing part, but either
fails to name it or names it incorrectly, he is given the score. The scoring of the items on other 3 performance tests viz. Block Design, Picture Arrangement and Object Assembly depends mostly on the time taken by the subject to finish them correctly. Thus for example, if a subject completes an item 'Elephant' within 10 seconds, he gets the score 12, but if he finishes it within 20 to 30 seconds he gets the score 11. Similar ranges of time are given of other scores. Wechsler calls these as bonus scores for speedy performance. The range of time and the range of scores varies from item to item and from test to test depending upon the nature of the item and its difficulty. For the first trial and the second trial different scores are given. Moreover Object Assembly test gives credit for partly correct arrangement. For example, if the subject arranges 'HAND' test by omitting thumb he is credited 4 points. The WAIS manual gives all these complicated procedures and scoring systems in details. All these things were translated during the adaptation without any changes.

It will be seen from the discussion throughout this chapter, that though many changes are made in the contents of the tests to take care of the cultural differences, the basic principles of test administration and scoring are not changed.