Chapter VI

VALIDITY AND RELIABILITY

(i) Content Validity

(ii) Testing of Validity
   a. Formulation of Hypotheses
   b. Preliminary Study: Verification of Hypotheses

(iii) Reliability of the Scales
Chapter VI

VALIDITY AND RELIABILITY

Validity of an instrument is generally proved by showing that the instrument under consideration measures what it is purported to measure.

A detailed examination of the components of the Desirability and Attributability Scales is here made primarily with a view to pointing out their content validity. Hypotheses bearing on the validity of the two Scales mentioned above from the standpoint of their potentiality to generate Compatibility data are also those bearing on the construct validity of the two Scales and the Compatibility Model are formulated. These hypotheses are tested through the data obtained in a preliminary study. The validity of the "Laya to Live" is also indicated.
(1) Content Validity

The Desirability Scale

The purpose of the Desirability Scale is to obtain the conceived value to each of a set of social relationships with reference to each of the three basic value orientations. The Scale, it may be recalled, has four basic components: the instructions; the five-point rating scale spread on the dimension of 'desirability-undesirability'; the value orientations; and a set of five social relationships. These four components could be classified into two groups: (i) the procedures or the methods employed for obtaining the conceived value and (ii) the referents towards which the conceived values are obtained. The former consists of the instructions and the five-point rating scale, and the latter consists of the three value orientations and the five social relationships.

The Procedures for Obtaining the Conceived Value

As conceptualized here, eliciting conceived value is a matter of creating a framework for the respondent and providing the operational terminology for giving expression to the conceived value.
It has been shown earlier in the chapter on 'Terminology' that the instructional set to the Desirability Scale is aimed at creating the necessary framework for eliciting the conceived value. The five points of response ranging from 'Highly Desirable' through 'Neutral' to 'Highly Undesirable' are intended to provide the operational terminology for two levels of intensity on either side of the conceived value and a neutral point for expressing the absence of conceived value. Therefore, the procedures for studying the conceived value are an inbuilt aspect of the Desirability Scale.

The Referents: The Value Orientations and the Social Relationships

The Value Orientations

The three value orientations employed in the Desirability Scale—Receptivity, Dominance, and Detachment—are taken over from Morris (1948, pp. 36-37). According to Morris these three are basic dimensions of value orientations. Morris (1956b, pp. 39-40, 133-134) has shown that the 15 'Ways' and the 'five value dimensions' that he identified in the ratings to "Ways to Live" could be grouped into the three value orientations employed here. Further, Morris (1956b,
pp. 41-66 and 1964, p. 41) has shown that there is a differential emphasis on these value orientations in different major cultural groups.

From the above considerations, it follows that these three basic value categories represent adequately at least some of the major value orientations with reference to which preferential behavior could be studied. This may be considered as indicating the content validity of one aspect of the referents studied here.

These three value orientations have been scored as independent in the present investigation. It was stated earlier, that Morris relates these three orientations to five value dimensions derived from factor analysis. If relation of these three value orientations to value dimensions derived from factor analysis could be established, one could assume these as independent orientations. Further, the relation of these three value categories to temperament and body types (Morris, 1956b, pp. 105, 122-143) is also an indicator of their independence. Therefore, in the present study, the conceived value to each orientation...
has been obtained separately on the assumption of their independence.

The Social Relationships

The social relationships with reference to which the conceived values are obtained may be considered as expressing some common and important social interactional contexts. All these relationships have been used in the Bogardus (1928) 'Social Distance Scale' or its variants. However, the coverage of these social interactional situations is necessarily restricted to some of the positive social relationships. As in the case of many scales using social relationships as part of the items of the scale, one can claim some limited content validity for this aspect of the referents of the Desirability Scale.

The conceived value is obtained with respect to each of the social relationships separately. In contrast to the assumptions of Bogardus (1928), unidimensionality with respect to the responses to the different social relationships is not assumed—i.e., if a given value category is conceived of as desirable in a more intimate relationship it need not necessarily
be conceived of as desirable in a less intimate 
relationship. In other words, for studying the 
conceived value, the social relationships are assumed 
to be different. Triandis (1967a), while commenting 
on the assumption of unidimensionality of the attitude 
responses on the Bogardus 'Social Distance Scale', 
contends that this assumption is not always justified. 
On the other hand, the acceptability of individuals 
and groups to different social relationships should 
be obtained independently. Therefore, it is reasonable 
to assume that the conceived values to social relationships 
be obtained independently.

Theoretically considered, then, the referents of 
the Desirability Scale may be thought of as having 
content validity. The procedures for obtaining the 
conceived value are valid in the sense that they 
provide the operational framework for the manifestation 
of conceived value as defined here.

The Attributability 
Scale

The purpose of the Attributability Scale is to
obtain the 'judgements' of attributability or non-attributability of each of the value orientations to each of the three religio-cultural groups.

The Scale has four basic components: the instructions; the five-point rating scale spread on the dimension of attributability and non-attributability; the value orientations; and the three religio-cultural groups. These components are classifiable into two groups: (i) the procedures for obtaining the 'judgements' regarding the attributability or non-attributability and (ii) the referents with reference to which such 'judgements' are obtained. The former consists of the instructions and the five-point rating scale, and the latter consists of the three value orientations and the three religio-cultural groups.

The Procedures for Obtaining the 'Judgements' of Attributability

The instructional set to the Scale makes it clear to the respondent that the ratings on the five-point rating scale be given from his or her own standpoint--i.e., from the standpoint of each respondent's perception. Therefore the instructions aim at developing the required framework for eliciting 'judgements' of
presence or absence of the value orientations in different groups. The five-point rating scale provides the operational terminology for expressing such 'judgements'. The five points of the scale also provision for expressing such 'judgements' with two levels of certainty on the positive side and two levels of certainty on the negative side of the scale with the neutral point for expressing indecision.

The Referents: The Value Orientations and the Religio-cultural Groups

The Value Orientations

It was pointed out in the chapter on 'Material and Methods' that concepts comparable in content with Receptivity, Dominance, and Detachment have been used by anthropologists like Florence Kluckhohn (1952) and Ruth Benedict (1934) to characterize cultural groups. Therefore, their usage in the Attributability Scale is justified. Further, the formulation of those three value categories is based on an extensive analysis of the major religio-cultural systems of the world including those of India. This fact should lend some content validity to the value orientations as referents in the Attributability Scale.
The Religio-cultural Groups

The religio-cultural groups—Hindus, Muslims and Christians—with reference to which the 'judgements' of 'attributability' of the value orientations are obtained, are more or less distinguished as having different religio-cultural practices in the Indian cultural context. From the standpoint of intercultural interactibility, each group observes certain limitations while interacting with the other groups.

Therefore, a theoretical consideration of the referents would render them with some degree of content validity. The procedures for obtaining the 'judgements' regarding the perceived attributability or non-attributability of the value orientations may be thought of as valid in the sense that they provide the necessary response set and the operational terminology for expressing such 'judgements'.
(ii) Testing of Validity

a. Formulation of Hypotheses

Validity of the Desirability and Attributability Scales from the Standpoint of Their Potentiality to Generate Compatibility Data

A basic purpose in developing the Desirability and Attributability Scales is to relate the data independently obtained on these two Scales through the Compatibility Model to derive Compatibility data. It may therefore be necessary to verify each Scale independently for the existence of properties to generate Compatibility data.

It was indicated earlier that basic to the Compatibility Model is the assumption that the value orientations used must elicit some degree of approval (in the Desirability Scale) and also must be perceived to be attributable or not attributable (in the Attributability Scale), if they are to produce compatibility or incompatibility in the interactional contexts.

The Desirability Scale

In the context of the above assumptions, therefore, verifying whether the Desirability Scale has the necessary
potential to produce Compatibility data would involve testing the following basic hypothesis:

1. Each value orientation would elicit some degree of appraisal (positive or negative) in social interactional contexts.

Closely related to this hypothesis, but focusing on the appraisal with respect to different interactional contexts is the hypothesis:

2. There would be differential appraisal of each value orientation in different interactional contexts.

Positive evidence on the hypothesis (1) above would indicate that the value orientations do form an aspect of the social stimulus environment which is responded to with some degree of like or dislike in interactional contexts. In other words, it would not that the value orientations possess the necessary 'desirability' potential required to generate compatibility or incompatibility. Positive evidence on the hypothesis (2) above would confirm that the responses on the Scale do discriminate between the social relationships which are 'known' to be different.
The Attributability Scale

The verification of the Attributability Scale from the standpoint of its potentiality to generate Compatibility data would involve testing the following hypothesis:

1. Each value orientation would be perceived as attributable or not attributable to some extent to each of the groups studied.

Positive evidence on this hypothesis would indicate that the contents embodied in the value orientations are usable for characterizing the evaluative tendencies of the groups studied. In other words, it would show that the value orientations possess the necessary "attributability" potential to generate the Compatibility data.

Within the framework of the hypothesis pertaining to the Attributability Scale discussed above, a testable prediction regarding the attribution of Detachment value orientation can also be included. In the Hindu religious teachings there is a strong emphasis on valuing detachment. Further, there is a popular notion that Hindus consider detachment as an important value.
Given this understanding, one might predict:

2. Hindus would have a tendency to attribute to themselves Detachment value orientation to a significant extent.

Confirmatory evidence on this hypothesis would testify that the ratings on the Attributability Scale bring out about a group what is already 'known' about it.

Construct Validity* of the Desirability and Attributability Scales via a Predictable Relation Between the Ratings on the Two Scales

The Desirability Scale

As stated earlier, the purpose of the Desirability Scale is to obtain the conceived values of the subjects to different social relationships within the framework of three value orientations. It was also brought out earlier that the subjects are instructionally prepared to show their appraisal in the 'conceived' sense towards a value orientation in a given interactional context.

* In formulating the hypotheses for testing the construct validity, the investigator was guided by the notion of construct validity as expounded by L.J. Cronbach and P.E. Meehl (1955) and also as applied to various attitude scales by V. Kramer and J. L. Wright (1967).
Therefore, that the value elicited in 'conceived' is ensured through the instructions. However, the more general problem of what is measured through the Desirability Scale is reflective of preferential behaviour of the subject or indicative of his 'value', requires to be empirically considered.

The measuring device used in the Desirability Scale is the five-point rating scale. Consequently, to test whether the Desirability Scale measures 'value' would involve verifying if what is measured through the five-point rating scale is 'value'.

The problem of what is measured through the five-point rating scale in the framework of the Desirability Scale is 'value' may be approached from the standpoint of a predictable relation between ratings on the Desirability Scale and ratings on the Attributability Scale. The prevalent thinking in the fields of personality and motivation (Cattel, 1957; Edwards, 1957a), and stereotype studies (Fiske, et al., 1969) suggests that there is a relation between evaluating a piece of behaviour and the attributability of the behaviour thus evaluated: what is considered as 'desirable' is more likely to be perceived as attributable
to the self than what is considered as 'undesirable'. In the terminology of the present investigation it may be put thus: If there exists a positive appraisal towards a value orientation, it is likely to be perceived as attributable to the ingroup; if there exists a negative appraisal, it is likely to be perceived as not attributable to the ingroup. This relation between the nature of appraisal expressed towards a value orientation and how the value orientation thus evaluated would be perceived as attributable or not attributable with reference to the ingroup, may be tested through the correlational measures between ratings on the Desirability Scale and ratings on the Attributability Scale. If the correlational data indicate a considerable degree of positive relationship between the ratings on the two Scales for the ingroup, then it follows that what is studied through the five-point rating scale in the Desirability Scale is 'value'. Therefore, to validate the Desirability Scale, the following hypothesis may be tested:

The 'desirability' ratings of a given group would be so aligned with its 'attributability' ratings to the ingroup as to produce positive correlation co-efficients of considerable degree.
The Attributability Scale

The purpose of the Attributability Scale, as stated earlier, is to obtain the 'judgements' as to the attributability or non-attributability of the value orientations to each of the three religio-cultural groups. It was made clear that the 'judgements' on the Attributability Scale are likely to be influenced by the value considerations, prejudices, stereotypes, social distance, etc. In other words, besides the nature of appraisal (positive or negative) associated with what is to be judged as attributable or not-attributable, the intergroup dynamics existing between the respondent group and the referent group is likely to influence the ratings on this Scale.

Given the intergroup dynamics governing the interaction of the groups under study, it is possible to hypothesise the nature of relation that is likely to exist between the 'desirability' ratings of a given group and its 'attributability' ratings to a given referent outgroup. It is reasonable to assume, for example, that a piece of behaviour which is positively evaluated is less likely to be perceived as attributable to a referent-outgroup towards which there exist negative stereotypes, conflict.
and social distance. And again towards such a referent-outgroup, what is considered as undesirable is more likely to be perceived as attributable.

Evidence in support of formulating such a hypothesis may be drawn from stereotype studies. Harding et al., (1969) report that in studies adopting the Katz-Draly technique, the characteristics which are considered as undesirable are more likely to be stressed in describing an outgroup—especially if there has been a recent history of conflict between the two groups.

Now, the intergroup dynamics obtaining between the groups studied here—i.e., Hindus, Muslims, and Christians—is somewhat known. There is a history of conflict between Hindus and Muslims (Murphy, 1963; Shuryo, 1968), whereas there is no such recorded history of conflict between Hindus and Christians. Further, Hindus have unfavourable stereotypes towards Muslims and favourable stereotypes towards Christians (Nataraj, 1963, 1965a).

The nature of the intergroup dynamics stated above suggests that (taking Hindus as the respondent group).
Hindus are more likely to attribute what they consider as 'undesirable' and less likely to attribute what they consider as 'desirable' to Muslims. Further it suggests that this tendency should operate to a lesser extent with respect to Christians in view of favourable stereotypes towards them, and the absence of history of conflict between them and Hindus.

The operation of the intergroup dynamics may be tested, therefore, through the correlations between the Hindu students' 'desirability' ratings and their 'attributability' ratings to Muslims and Christians. The following pattern of correlations may be expected:

Negative or low positive correlations for Muslims; and for Christians less negative or more positive correlations than those for Muslims.

If the correlational data provide positive evidence on this hypothesis, then the predictable trends in the attributability ratings of the value orientations would be borne out. This could be considered as providing some evidence of the construct validity of the Attributability Scale.
A Combined Hypothesis for the Desirability and Attributability Scales

Now, since the hypotheses on the Desirability and Attributability Scales are verifiable through the correlations derived from the ratings on these two Scales, the implications of these hypotheses may be combined, and stated in a comparative and more testable framework:

The correlations for the ingroup (i.e., Hindus here) should be positive, while those for Muslims and Christians may be positive or negative. If the correlations for Muslims and Christians are positive, they should be less positive than those for Hindus. Further, the correlations for Christians should be less negative or more positive than those for Muslims.

Validity of the Compatibility Model and the Data Derived from the Model

It was shown earlier that some of the data derived from the Compatibility Model refer to intergroup acceptability pattern. The data obtained from the social distance measures also refer to intergroup acceptability pattern. However, the social-distance-data are a measure of directly reported distances between groups; whereas the Compatibility data are only the dynamic potential for harmony or conflict in the
context of interaction between groups on value considerations. Nonetheless, it might be suggested that, while the social distance scores embody the attitudinal data, the Compatibility data are a potential base for such attitudes.

In view of both the social distance methodology and the Compatibility Model leading to an understanding of basically a similar phenomenon (i.e., the intergroup acceptability pattern), the following hypothesis may be set up to validate the Compatibility Model and the data derived from it:

There should be some degree of correspondence between the intergroup acceptability pattern emerging from the data derived from the Compatibility Model and the pattern emerging from the studies adopting social distance methodology.

Such correspondence should confer some construct validity upon the Compatibility Model and the data derived from it. Besides, the social distance methodology obtains responses on referent-group-acceptability directly, while the Compatibility Model derives the intergroup acceptability pattern via the 'desirability' and 'attributability' ratings. Despite these methodological differences between the two approaches,
if there is similarity in the understanding gained of the intergroup acceptability pattern, it should strongly argue for the construct validity of the Compatibility Model.

Finally, it may be pointed out that evidence on the validity of the Compatibility Model and the data derived from it would, by inference, bring out the validity of the Desirability and Attributability Scales as the ratings on these two Scales together form the basis of the Compatibility data.

b. The Preliminary Study: Verification of the Hypotheses

In order to test the various hypotheses pertaining to the validation of the Scales and the Compatibility Model, a preliminary study was conducted.

Sample

A sample of 89 Hindu male students studying in the final year of B.A., degree class of the Karnataka Arts College, Dharwar, with a mean age around 21 years, constituted the subjects of the preliminary study.
Collection and Analysis of Data

The Inventory consisting of the Desirability Scale and the Attributability Scale was administered. The data thus collected were analysed with a view to verifying the extent to which the hypotheses were supported by these empirical data.

The Desirability Scale from the Standpoint of Its Potentiality to Generate Compatibility Data

The following were the hypotheses formulated with respect to the Desirability Scale:

1. Each value orientation would elicit some degree of appraisal (positive or negative) in social interactional contexts.

2. There would be differential appraisal of each value orientation in different interactional contexts.

In order to verify these two hypotheses, the responses on the Desirability Scale were scored and summarized into frequency tables for each social relationship and for each value orientation. The mean scores for different social relationships and the differences in mean scores between social relationships were calculated.
Hypothesis 1
Receptivity

The data presented in column 1 of Table 1 indicate that the Mean scores of 'desirability' range from -.120 to +.900. Of these, the Mean score of 'Intimate friend' is statistically significant (Z=3.64**). The Mean scores for other social relationships, though considerable in some cases, do not reach the level of statistical significance.

Dominance

The Mean scores for different social relationships (column 2 of Table 1) range from -.434 to +.310. The Mean score for 'Close kin' which is -.434 is significant (Z=2.95**). Except in 'Room-mate', in all other relationships the Mean scores indicate considerable appraisal either positive or negative.

\* The value of Z indicated in brackets refers to absolute value of Z, i.e., Z without regard to sign. Two asterisks (**) indicate that the value of Z is significant at .01 level, while one asterisk (*) indicates the significance at .05 level. The value of Z should exceed 2.58 for .01 level of significance and 1.96 for .05 level of significance (see J.P. Guilford, 1955, pp. 148-153).
TABLE 1

'Desirability' Mean Scores on the Three Value Orientations for Different Social Relationships (Preliminary Study, n=52)

<table>
<thead>
<tr>
<th>Social Relationships</th>
<th>Value Orientations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Receptivity</td>
</tr>
<tr>
<td>Close kin</td>
<td>-.055</td>
</tr>
<tr>
<td>Intimate friend</td>
<td>+.500*</td>
</tr>
<tr>
<td>Room-mate</td>
<td>+.120</td>
</tr>
<tr>
<td>Co-employee</td>
<td>+.166</td>
</tr>
<tr>
<td>Neighbour</td>
<td>-.120</td>
</tr>
</tbody>
</table>

Note:
* : Significant at .05 level
** : Significant at .01 level
Detachment

The Mean scores for different social relationships (column 3 of Table 1) are all positive ranging from +.040 to +.500. The Mean scores are significant in 'Intimate friend' ($Z=3.32^{**}$), 'Room-mate' ($Z=2.83^{**}$), and 'Co-employee' ($Z=2.00^*$).

From the foregoing discussion, it would appear that the subjects have expressed considerable degree of appraisal towards the value orientations. In some cases, the appraisal is significant and considerable while in some other cases it is not so. It may, however, be concluded that the three value orientations are appraised in varying degrees in social interactional contexts.

Hypothesis 2

In Table 2 are presented the differences in the Mean scores between different social relationships in each value orientation.

Receptivity

From Table 2 it is seen that within the Receptivity
TABLE 2

Differences in the 'Desirability' Mean Scores of Different Social Relationships on Each of the Three Value Orientations
(Preliminary Study, N=30)

<table>
<thead>
<tr>
<th>Value Orientations</th>
<th>Social Relationships</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SR₁</td>
</tr>
<tr>
<td>SR₁</td>
<td>-</td>
</tr>
<tr>
<td>Receptivity</td>
<td>SR₂</td>
</tr>
<tr>
<td></td>
<td>SR₃</td>
</tr>
<tr>
<td></td>
<td>SR₄</td>
</tr>
<tr>
<td>Dominance</td>
<td>SR₁</td>
</tr>
<tr>
<td></td>
<td>SR₂</td>
</tr>
<tr>
<td></td>
<td>SR₃</td>
</tr>
<tr>
<td></td>
<td>SR₄</td>
</tr>
<tr>
<td>Detachment</td>
<td>SR₁</td>
</tr>
<tr>
<td></td>
<td>SR₂</td>
</tr>
<tr>
<td></td>
<td>SR₃</td>
</tr>
<tr>
<td></td>
<td>SR₄</td>
</tr>
</tbody>
</table>

Note:  
* : Significant at .05 level  
** : Significant at .01 level  
SR₁: Close kin; SR₂: Intimate friend; SR₃: Room-mate;  
SR₄: Co-worker; SR₅: Neighbour.
orientation 'Intimate friend' differs significantly from each of 'Close kin' ($Z_d=2.83^{**}$) and 'Neighbour' ($Z_d=3.46^{**}$). 'Intimate friend' also differs considerably from each of 'Room-mate' and 'Co-employee' though the difference is not significant. Further, 'Co-employee' differs considerably from each of 'Close kin' and 'Neighbour'.

**Dominance**

In Dominance orientation, the Mean score of 'Close kin' is significantly different from those of 'Intimate friend' ($Z_d=5.03^{**}$), 'Co-employee' ($Z_d=2.85^{**}$), and 'Room-mate' ($Z_d=2.13^{*}$). Although there are considerable differences in the Mean scores between the rest of the relationships, they are not statistically significant.

**Detachment**

From Table 2, it can be seen with reference to Detachment that there is significant difference in the appraisal between 'Intimate friend' and 'Neighbour' ($Z_d=2.31^{+}$). There are considerable differences between the Mean scores of the rest of the relationships,

© The notation $Z_d$ indicates the $Z$ ratio of the difference between Means.
though they do not reach the level of statistical significance.

The foregoing analysis indicates that to some extent differential appraisal is accorded to the value orientations in different social interactional contexts.

The Attributability Scale from the Standpoint of Its Potentiality to Generate Compatibility Data

The following were the hypotheses set up with respect to the Attributability Scale:

1. Each value orientation would be perceived as attributable or not attributable to some extent to each of the groups studied;

2. There would be a tendency on the part of the Hindus to perceive Detachment Orientation as attributable to their own group significantly.

In order to verify the hypotheses stated above, the responses on the Attributability Scale were scored and summarized into frequency tables for each group with reference to each value orientation.

Hypothesis 1

Receptivity

Table 3 indicates that the mean scores of
TABLE 3

'Attributability' Mean Scores of Hindu Students to the Three Religio-cultural Groups on the Three Value Orientations (Preliminary Study, n=89)

<table>
<thead>
<tr>
<th>Religio-Cultural Groups</th>
<th>Value Orientations</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Receptivity</td>
</tr>
<tr>
<td>Hindus</td>
<td>+.303*</td>
</tr>
<tr>
<td>Muslims</td>
<td>+.191</td>
</tr>
<tr>
<td>Christians</td>
<td>+.280*</td>
</tr>
</tbody>
</table>

Note:

* : Significant at .05 level
** : Significant at .01 level
attributability of Receptivity to Hindus and Christians are significant ($Z=1.97^*$ and $Z=2.01^*$ respectively). This value orientation is found to be attributable to some extent to Muslims also.

**Dominance**

It can be observed (from Table 3) that the attributability mean scores of Dominance to Muslims and Christians are significant ($Z=3.58^{**}$ and $Z=3.67^{**}$ respectively). It is found to be slightly attributable to Hindus.

**Detachment**

The Detachment value orientation is perceived to be significantly attributable to Hindus ($Z=3.96^{**}$). For Muslims and Christians this value orientation is perceived to be not attributable.

Therefore, from the foregoing findings, it could be concluded that these value orientations could be used to describe the evaluative tendencies of groups.

**Hypothesis 2**

Table 3 which embodies the data pertaining to the
attributability of the value orientations including the Detachment value orientation was discussed above. It was pointed out that Hindu students perceive the Detachment value orientation to be significantly attributable to their own group. This evidence confirms the hypothesis that Hindus have a tendency to perceive the Detachment value orientation to be significantly attributable to their own group.

The study of the data pertaining to the Attributability Scale, therefore, provides positive evidence on the hypotheses formulated regarding the validity of the Scale. Construct Validity of the Desirability and Attributability Scales via a Predictable Relation Between the Ratings on the Two Scales

The following hypothesis was set up in order to test the construct validity of these two Scales:

The correlations for the ingroup (i.e., Hindus here) should be positive, while those for Muslims and Christians may be positive or negative. If the correlations for Muslims and Christians are positive, then, they should be less positive than those for Hindus. Further, the correlations for Christians should be less negative or more positive than those for Muslims.
With a view to verifying this hypothesis the coefficients of correlation (r's) between the 'desirability' ratings of Hindu students and their 'attributability' ratings to the ingroup, to Muslims, and to Christians were calculated. The differences between the r's for the ingroup and those for each of the two outgroups (i.e., Muslims and Christians) and also between the two outgroups were found out.

From columns 1, 4, and 7 of Table 4, it can be seen that the r's for the ingroup (i.e., Hindus) are positive in all the relationships and in all the three value orientations except a zero correlation in 'Co-employee' in Reactivity. However, in Reactivity the degree of positive correlation is considerable in 'Intimate friend'. Some degree of correlation is also noticed in 'Close kin' and 'Neighbour'. In Dominance the r's are all considerably high. In Restriction there is a considerable positive r in 'Co-employee' and there is some degree of correlation in all the other relationships except in 'Room-mate' where it is negligible.

Therefore, the correlations obtained for the ingroup are all in the theoretically expected direction.
## TABLE 4

Coefficients of Correlation ($r^\prime$s) Between the 'Desirability' Ratings of Hindu Students and Their 'Attractability' Ratings to the Ingroup, to Muslims, and to Christians on the Three Value Orientations for Different Social Relationships (Preliminary Study, n=39)

<table>
<thead>
<tr>
<th>Social Relationships</th>
<th>Receptivity</th>
<th>Dominance</th>
<th>Detachment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HI</td>
<td>HE</td>
<td>HC</td>
</tr>
<tr>
<td>Close kin</td>
<td>.15</td>
<td>-.11</td>
<td>.08</td>
</tr>
<tr>
<td>Intimate friend</td>
<td>.24</td>
<td>-.10</td>
<td>-.01</td>
</tr>
<tr>
<td>Room-mate</td>
<td>.09</td>
<td>-.03</td>
<td>-.07</td>
</tr>
<tr>
<td>Co-employee</td>
<td>.00</td>
<td>.03</td>
<td>-.04</td>
</tr>
<tr>
<td>Neighbour</td>
<td>.13</td>
<td>-.04</td>
<td>.05</td>
</tr>
</tbody>
</table>

*Note: HI : Hindu Students Towards the Ingroup<br>TI : Hindu Students Towards Muslims (Outgroup)<br>HO : Hindu Students Towards Christians (Outgroup)*
Regarding the correlations obtained for 'Muslims', it is observed from columns 2, 3, and 6 of Table 4 that the r's are negative in all five relationships in Dominance, and in four relationships in Receptivity, and in three relationships in Detachment. In 'Co-employee' and 'Neighbour' in Detachment, and in 'Co-employee' in Receptivity, there are low positive r's.

Furthermore, as may be seen from columns 1, 4, and 7 of Table 5 where the differences between the ingroup r's and the r's for Muslims are given, the differences are quite high especially in Dominance (column 4).

Regarding the r's obtained for Christians, it may be seen from Table 4 (columns 3, 6, and 9) that they are all negative in Dominance, and in three relationships each in Receptivity and Detachment. In 'Close kin' and 'Neighbour' there are low positive r's. Further, from columns 2, 5, and 8 of Table 5, it may be seen that the differences between the ingroup r's and the r's for Christians are considerably high, particularly in Dominance orientation.
TABLE 3

Differences in the Coefficients of Correlation (r's) of 'Desirability' and 'Attributability'
Between the Ingroup and Each of the Two Outgroups on the Three Value Orientations
for Different Social Relationships (Preliminary Study, n=89)

<table>
<thead>
<tr>
<th>Social Relationships</th>
<th>Receptivity</th>
<th></th>
<th></th>
<th>Dominance</th>
<th></th>
<th></th>
<th>Detachment</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>HK-HM</td>
<td>HM-HC</td>
<td>HM-NC</td>
<td>HK-HM</td>
<td>HM-HC</td>
<td>HM-NC</td>
<td>HK-HM</td>
</tr>
<tr>
<td>Close kin</td>
<td>+.26</td>
<td>+.07</td>
<td>-.12</td>
<td>+.54</td>
<td>+.44</td>
<td>-.10</td>
<td>+.17</td>
</tr>
<tr>
<td>Intimate friend</td>
<td>+.34</td>
<td>+.25</td>
<td>-.09</td>
<td>+.35</td>
<td>+.47</td>
<td>-.23</td>
<td>+.19</td>
</tr>
<tr>
<td>Room-mate</td>
<td>+.17</td>
<td>+.16</td>
<td>-.01</td>
<td>+.72</td>
<td>+.55</td>
<td>-.17</td>
<td>+.38</td>
</tr>
<tr>
<td>Co-employee</td>
<td>-.03</td>
<td>+.04</td>
<td>+.07</td>
<td>+.47</td>
<td>+.41</td>
<td>-.06</td>
<td>+.24</td>
</tr>
<tr>
<td>Neighbour</td>
<td>+.17</td>
<td>+.08</td>
<td>-.09</td>
<td>+.43</td>
<td>+.32</td>
<td>-.11</td>
<td>+.14</td>
</tr>
</tbody>
</table>

Note:

HK : Hindu Students Towards the Ingroup
MI : Hindu Students Towards Muslims (Outgroup)
HC : Hindu Students Towards Christians (Outgroup)
Now, to compare the differences between the r's for Christians and the r's for Muslims: The r's for Christians are less negative than those for Muslims in all the relationships in Dominance (columns 5 and 6 of Table 4), and in two relationships each in Receptivity and Detachment (columns 2 and 3, and 8 and 9 of Table 4). However, for 'Co-employee' in Receptivity and 'Neighbour' in Detachment, there are low positive r's for Muslims and low negative r's for Christians. The r's for these two relationships are not in accordance with the expected pattern of r's for these two groups—i.e., less negative or more positive r's for Christians than those for Muslims.

To summarize, it may be observed that the r's obtained for the ingroup with one exception are all in the direction theoretically expected. A comparison of the r's for the ingroup with those for Muslims and Christians also indicates a pattern theoretically expected. The r's obtained for Christians and Muslims, with a few exceptions, are also found to be following the expected pattern.

The correlational data, therefore, generally support the hypothesis set forth. These data could
be considered as providing some evidence of the construct validity of the Desirability and Attributability Scales.

Validity of the Compatibility Model and the Data Derived from the Model

The hypothesis pertaining to the construct validity of the Compatibility Model may be reformulated (in view of the respondent group in the preliminary study being Hindus) thus:

There should be some degree of correspondence between the intergroup acceptability pattern exhibited by Hindus (i.e., the acceptability of Muslims and Christians to Hindus) emerging from the data of the Compatibility Model and the pattern emerging from the studies adopting the social distance methodology.

In order to verify this hypothesis, the ingroup and outgroup Compatibility data were derived from the 'desirability' and 'attributability' ratings of Indian students for each social relationship and for each value orientation. The mean scores for these data were calculated. The mean scores obtained for each of the relationships in the three value orientations were pooled separately for the ingroup and for each of the
two outgroups. The differences of the pooled scores between the ingroup and each of the two outgroups, and between the two outgroups, were found out.

The pattern of intergroup acceptability that emerges from these data is compared with the intergroup acceptability pattern emerging from the available social distance studies.

The results presented in column 1 of Table 6 indicate that Hindu students have a significant degree of compatibility towards the ingroup in all the relationships: 'Close kin' ($Z=3.17^{**}$), 'Intimate friend' ($Z=5.63^{**}$), 'Room-mate' ($Z=4.18^{**}$), 'Co-employee' ($Z=3.47^{**}$), and 'Neighbour' ($Z=3.18^{**}$).

There is incompatibility towards Hindus in all the relationships (column 2 of Table 6). The degree of incompatibility is also significant in 'Close kin' ($Z=2.99^{**}$), 'Intimate friend' ($Z=2.59^{**}$), and 'Room-mate' ($Z=3.26^{**}$). In the other two relationships although there is a considerable degree of incompatibility, it is not statistically significant.

From column 3 of Table 6, it may be observed that
### TABLE 6

The Hindu Students' Combined Ingroup and Outgroup Compatibility Scores and Their Differences in Different Social Relationships
(Preliminary Study, n=89)

<table>
<thead>
<tr>
<th>Social Relationships</th>
<th>Mean Scores</th>
<th>Differences</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ingroup</td>
<td>Outgroup</td>
</tr>
<tr>
<td></td>
<td>HH</td>
<td>IM</td>
</tr>
<tr>
<td>Close kin</td>
<td>+1.275*</td>
<td>-.796*</td>
</tr>
<tr>
<td>Intimate friend</td>
<td>+2.143*</td>
<td>-.771*</td>
</tr>
<tr>
<td>Room-mate</td>
<td>+1.548*</td>
<td>-.881*</td>
</tr>
<tr>
<td>Co-employee</td>
<td>+1.315*</td>
<td>-.170</td>
</tr>
<tr>
<td>Neighbour</td>
<td>+1.153*</td>
<td>-.303</td>
</tr>
</tbody>
</table>

Note:
- HH: Ingroup Compatibility of Hindu Students
- IM: Outgroup Compatibility of Hindu Students Towards Muslims
- HC: Outgroup Compatibility of Hindu Students Towards Christians
- *: Significant at .05 level
- **: Significant at .01 level
Hindu students find themselves incompatible with Christians also. However, it is worth noting that the incompatibility expressed towards Christians is not statistically significant.

Now, to discuss the relative acceptability of different groups to Hindu students: The difference scores presented in column 4 of Table 6 show that to Hindu students their ingroup is significantly more acceptable than Muslims in all the relationships:

'Close kin' ($\overline{Z}_d = 4.09^**$), 'Intimate friend' ($\overline{Z}_d = 6.05^**$), 'Room-mate' ($\overline{Z}_d = 5.29^**$), 'Co-employee' ($\overline{Z}_d = 3.24^**$), and 'Neighbour' ($\overline{Z}_d = 3.17^**$).

Again, as may be seen from column 5 of Table 6, to Hindu students their ingroup is significantly more acceptable than Christians in all the relationships:

'Close kin' ($\overline{Z}_d = 3.04^**$), 'Intimate friend' ($\overline{Z}_d = 4.10^**$), 'Room-mate' ($\overline{Z}_d = 3.37^**$), 'Co-employee' ($\overline{Z}_d = 3.47^**$), and 'Neighbour' ($\overline{Z}_d = 2.66^*$).

The scores bearing on the relative acceptability of Muslims and Christians to Hindu students given in the last column of Table 6 indicate that Christians are more acceptable than Muslims in all the relationships.
except in 'Co-employee'. In 'Co-employee', however, Muslims are slightly more acceptable than Christians.

To summarize, Hindu students have significant degrees of value compatibility towards their ingroup and they have significant degrees of value incompatibility towards Muslims. Towards Christians also Hindu students have incompatibility but the same is not statistically significant. For Hindu students, their ingroup is significantly more acceptable than either Muslims or Christians in social interactional contexts; but, between Muslims and Christians, Christians are more acceptable than Muslims.

Therefore, the Compatibility scores generated by the ratings of Hindu students place the intergroup acceptability pattern thus: Hindu students have a large and significant degree of difference between their ingroup acceptability and the acceptability of Muslims and Christians; but, between Muslims and Christians, Christians are placed nearer themselves by Hindu students.

The studies adopting the social distance methodology have placed the intergroup acceptability pattern between
Hindus, and the other two groups thus: Hindus have considerable social distance towards both Muslims and Christians; but they have greater social distance towards Muslims than towards Christians (Nataraj, 1965a).

Therefore, the intergroup acceptability pattern emerging from the social distance study is similar to the pattern obtained from the Compatibility Model of the present investigation. This correspondence in the conclusions may be considered as an evidence of the construct validity of the Compatibility Model and the data derived from it.

Finally, it may be pointed out that any validation of the Compatibility Model and the data derived from it would by implication constitute some evidence of validity of the Scales, namely, the Desirability and Attributability Scales, which form the basis of the Model.

Validity of the "Ways to Live" Scale

The "Ways to Live" document is based on an extensive analysis of the major religio-ethical systems of the world (Morris, 1953a). The major themes of West
of the religio-ethical systems find a place in this
document. This would ensure content validity for the
document.

Besides, Morris (1956b) in his factor analytic
studies with the ratings of the American students on
"Ways to Live" identified five factors. Essentially
the same factors emerged for the Indian and Chinese
students also. The identification of factors could be
taken as evidence of validity.

Further, Morris (1956b) has demonstrated the
relationship between the ratings on the "Ways to Live"
and (i) "Social determinants" such as economic status
and population density; (ii) "Biological determinants"
such as somatotype and body size; and (iii) "Psychological
determinants" such as temperament and character.
(iii) Reliability of the Scales

Reliability refers to the degree of consistency with which an instrument measures a defined phenomenon. In order to study the reliability of the Desirability and Attributability Scales the test-retest method was followed. The test-retest coefficients of correlation (r's) were calculated. For the Desirability Scale, the r's were calculated for each social relationship in each of the three value orientations. For the Attributability Scale, the r's were calculated for each religious-cultural group in each of the value orientations.

Reliability of the Desirability Scale

It can be seen from Table 7 that the test-retest r's in Receptivity orientation are all above .55 in all the relationships except in 'Neighbour' where it is .22. In two relationships, namely, 'Intimate friend' and 'Room-mate', the value of r is .77 in each.

* A group of 30 students were administered these two Scales with an interval of four weeks between test and retest. The retest was given to 33 students of a final year B.A. degree section included in the sample of 49 students of the preliminary study. Of the 33 students, three had not completed the questionnaire.
TABLE 7

Test-retest Coefficients of Correlation (r's) of the Ratings on the Desirability Scale for Different Social Relationships on Each of the Three Value Orientations

<table>
<thead>
<tr>
<th>Social Relationships</th>
<th>Coefficients of Correlation (r's)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Receptivity</td>
</tr>
<tr>
<td>Close kin</td>
<td>.57</td>
</tr>
<tr>
<td>Intimate friend</td>
<td>.77</td>
</tr>
<tr>
<td>Room-mate</td>
<td>.77</td>
</tr>
<tr>
<td>Co-employee</td>
<td>.55</td>
</tr>
<tr>
<td>Neighbour</td>
<td>.28</td>
</tr>
</tbody>
</table>
Within the framework of Dominance value orientation, the r's of four relationships are above .42, with .79 for 'Close kin' and .56 for 'Room-mate'. In respect of 'Neighbour', however, the value of r is very low (i.e., .04).

Within the framework of Detachment orientation, the r's are all considerably high ranging from .53 to .77.

Thus, it can be observed that the test-retest r's in respect of the various relationships within the framework of each of the three value orientations are generally high. However, regarding the relationship of 'Neighbour', it should be noted that it has low r's in both Receptivity and Dominance, while it has a high r in Detachment. Low correlations in Receptivity and Dominance in respect of 'Neighbour', perhaps, reflect the non-relevance of these value orientations in this relationship. Hence, perhaps is the absence of consistency in responding to 'Neighbour' in two value orientations.

In totality, however, it can be assumed that the Desirability Scale is a fairly reliable Scale.
Reliability of the Attributability Scale

It is observed from Table 8 that in Receptivity and Dominance all the r's are fairly high ranging from .55 to .72. In Detachment orientation, however, the r's are somewhat lower than those of the other two orientations. However, considering the r's obtained in the three value orientations, a fair degree of reliability can be assumed for the Attributability Scale.

Reliability of the "Ways to Live" Scale

As stated earlier, the short form of Morris' "Ways to Live," revised by Dempsey and Dukes (1966), is used in the present investigation. For this short form test-retest reliability coefficient of .56 and alternate-form reliability coefficients of .82 and .71 are reported (Dempsey and Dukes, 1966, p. 830).
### TABLE 8

Test-rotost Coefficients of Correlation (r's) of the Ratings on the Attributability Scale to the Three Religio-cultural Groups on Each of the Three Value Orientations

<table>
<thead>
<tr>
<th>Religio-Cultural Groups</th>
<th>Coefficients of Correlation (r's)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Receptivity</td>
</tr>
<tr>
<td>Hindus</td>
<td>.70</td>
</tr>
<tr>
<td>Muslims</td>
<td>.59</td>
</tr>
<tr>
<td>Christians</td>
<td>.61</td>
</tr>
</tbody>
</table>