urban is assigned a higher value than a lower level of involutionary change (such as the rural to rural).

Based on the above considerations, a short-distance, intrastate move within the same strata, such as rural to rural is the least critical. On the other hand, a migration which is rural-urban, interstate, over 51 miles, with an occupational and employment status change from informal to formal and from primary to a tertiary sector constitutes the most critical move. While it has been quite easy to give scores to both the positive and negative extreme cases, for example, shifts from primary to tertiary industries or secondary to tertiary-informal industries, it has been harder to assign values to the "medium" type changes. However, it is hoped that possible discrepancies of these scores may cancel each other out in the summation of the total index.

A programme has been constructed to calculate the individual critical moves for 168 cases in the study villages. The next section examines possible ways of analyzing critical moves using the above indices to answer questions specific to the aims of this study.

**Methods of Analysis of Critical Moves**

The definition of critical moves, and the creation of a critical move index using the criteria and dimensions outlined above, enables us to summarize the historical profile of moves of individual migrants in a sample or panel. Using this as the basic data, it is possible to conduct several analyses aimed at classifying the migration profiles and to relate these to the different levels of structural determination.

The most basic method of analysis is to undertake a frequency analysis of critical moves and relate them to other household or village data. The Rand Study based on the Malaysian Family Life Survey is an example of this type of approach. But this loses the structural linkages in the life-history data. Although a frequency analysis is also undertaken here, the more meaningful way of summarizing and classifying the individual critical move profiles would be to create a life-history matrix from the basic

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35 I would like to thank Datuk Dr Kamal Salih
data set, as shown in Figure 4.11.

Having constructed this life-history matrix of critical moves, it is a simple step to classifying these profiles by using a clustering method or a multivariate reduction technique such as Q-mode principal components analysis which provides a grouping of individuals according to similarity of their life-history profiles – that is, the similarity of their migration experiences. Profiles of migration history by groups may then be studied and related to structural shifts in the economy (Figure 4.12).

The next question is how are these profiles related to the broader structural analysis. This would depend on the level of structural analysis adopted. Taking the most micro-level of analysis within the argument of this thesis, that is, the family demographic level of analysis, first, several alternatives with decreasing levels of sophistication may be suggested. The first method (Figure 4.13) involves panel studies of every member of the family in which at every point of the individual migrant’s critical move, the family life situation is examined in order to determine the influence of factors such as size of family, household income, average education of household members, the occupation of head of household and so on. These data, when analyzed across groups of individuals will enable the analyst to examine household labour strategies and their relationships with local and national economic structural changes.

A second alternative, less stringent on data requirements, considers such data only for particular points or conjunctures in the family demography history (Figure 4.13). A slightly better method is by comparing a particular conjuncture with a previous conjuncture. These conjunctures can then be related to particular structural shifts in the local-regional economy.

An even less stringent technique is to study only one individual migrant at a point in time where all data on his family background and situation, as well as the state of the extra-family’s current structures, are brought to bear on the individual profile of critical moves. Most surveys are of this type, being similar to cross-sectional analyses where retrospective migration profiles can be constructed from their life-history data.

Numerous cross-sectional analyses may also be conducted which dissect the moves individually or in groups, from which cross-tabulations may be derived to determine functional linkages between cohorts in terms of occupation, level of education at first entry into job market, etc. Particular periods may be blocked off for comparative
Figure 4.11
Construction of a Life-History Matrix from Critical Moves Data

Figure 4.12
Group Profiles Using Factor Scores
Figure 4.13
Alternative Techniques of Family-Demographic Analysis of Migration Profiles

(a) Panel Studies of Family Members

1
Individual
member of
2 household

3
move 1 2 3

Ages/Critical Points

(b) Cohort Analysis of Personal Conjectures (All-Family Members)

Control/
Comparison
Conjecture

Current
Conjecture

(c) Individual Conjunctural Study

Critical moves

Historical
Conjecture

Current
Conjecture
analyses of cohort experiences or of individual migration history. These period analyses may be related to particular stages of development of the local economy.

Pertinent questions here relate to the more specific objectives of this study. We can apply the above techniques to examine the following questions:

a) What is the distribution of critical moves within an individual’s life-cycle? Do they vary, if so, how?

b) Do Malays and Chinese of the pre-1957 cohort (using time of entry into the labour force as the criteria for cohort) and post-1957 cohort display different patterns of critical moves? The year 1957 was used as it was the year of Independence and an important point where national policies changed. Were these individuals, in their migration and labour experiences more affected by the macro-structure of the political, socio-economic processes than the more obvious Malay-Chinese socio-cultural differences. If so, this lends further evidence of the structured nature of migration in Peninsular Malaysia, discernible from national level migration and occupational characteristics (Young, 1979; 1981).

c) Do individuals achieve a similar extent of “criticalness” at similar stages of their life-cycle, pointing to the universality of the stage of the life-cycle impinging on migration and labour mobility behaviour? To relate this back to the previous question, what is the relative importance of the life-cycle and the macro-structural processes of critical moves?

d) Are there certain factors in the family of the individual (for example, average household education) which conditions and sets a threshold on critical moves?

Answers to these questions will give us some important relationships between macro-structures, government policy implementation (for example, the NEP), households and individual dimensions of population mobility.

The outline of techniques of analyzing critical moves is confined mainly to integrating the life-history study of migration to family-demographic structures and their articulation within the local economy. In order to go beyond the taxonomic-structural dimension of individual labour mobility, it is necessary to relate critical moves to higher-level structural analysis. This step requires a specification of the model of the national economy and the structural characteristics of migration streams within the particular economy. Using the Malaysian case, we can situate the analysis of critical moves within a two-circuit structure of migration and development, posed as a specific description of Malaysia’s historical and contemporary migration phenomenon.

At this point, it is useful to recall that the construction of the index of critical moves had
already incorporated structural factors which are dimensions of the economic structure at a higher level of analysis. Labour mobility within the dimensions of occupation and employment status (divided into formal and informal), economic sector (divided into primary, secondary and tertiary sectors) and location (strata, i.e. rural-urban, intra- and interstate, and distance) are central to the analysis of structural change. The main point is that the level of criticalness of moves is directly related to structural changes or lack of it as experienced by an individual or groups of individuals during their life-course.

4.10.2 Profiles of Critical Moves

Frequency of Critical Moves

The critical moves of the individuals in the sample are subjected to a frequency analysis with results as shown in Table 4.27. It can be observed that two-thirds of the sample population made no move that is defined as a critical move during their lifetime, while the remaining third made at least one such move during their life so far. Of the “critical” third, the distribution is skewed towards one critical move (nearly one in every five). There are, however, nearly two in twenty persons in the sample who have made more than four critical moves in their lifetime.

<table>
<thead>
<tr>
<th>Absolute Freq.</th>
<th>Relative Freq. (%)</th>
<th>Adjusted Freq. (%)</th>
<th>Cum Code (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.</td>
<td>420</td>
<td>66.7</td>
<td>66.7</td>
</tr>
<tr>
<td>1.</td>
<td>119</td>
<td>18.9</td>
<td>19.9</td>
</tr>
<tr>
<td>2.</td>
<td>52</td>
<td>8.3</td>
<td>8.3</td>
</tr>
<tr>
<td>3.</td>
<td>23</td>
<td>3.7</td>
<td>3.7</td>
</tr>
<tr>
<td>4.</td>
<td>10</td>
<td>1.6</td>
<td>1.6</td>
</tr>
<tr>
<td>5.</td>
<td>5</td>
<td>0.8</td>
<td>0.8</td>
</tr>
<tr>
<td>6.</td>
<td>1</td>
<td>0.2</td>
<td>0.2</td>
</tr>
<tr>
<td>Total</td>
<td>680</td>
<td>100.0</td>
<td>100.0</td>
</tr>
</tbody>
</table>


If the critical moves were cross-classified by age (Figure 4.14), it is clear that the total
Figure 4.14
Simpang Empat: Number of Critical Moves and First Critical Move

number of moves are concentrated at three critical ages, namely at age 15, 19 and 25. The first transition coincides with the school-leaving age for those who entered the labour force probably after entering secondary school (after six years of primary education). The second transition occurs at age 19 coinciding with those leaving secondary education or pre-university. It must be remembered that the entry into the labour force is not counted as a critical move; all critical moves are defined as the first job-location move after entering the labour force. The third transition at age 25 is most likely a major career move or one made involving a university or tertiary-level graduate.

This pattern is confirmed by the distribution of value of the critical move index by age. The highest values for the index tend to be bunched around the 15-17 age-group, spread in a narrow band from age 10 to 26. In other words, the most significant job-location move was most likely made after the first job.

The period lapse between critical moves can be better observed if we group the individuals in the sample according to the number of critical moves made over the duration of their lives to the date of the survey. Figure 4.15 (a-d) shows these profiles of critical moves according to age for those who move once, two times, three times and, four and five times, respectively. The slopes of the lines between moves indicate the length of the transition between moves, the steeper lines indicating longer “stays” in the job than the flatter ones which indicate a more rapid transition between moves. From Figure 4.15 (b), it is evident those who made two moves tend to make the second move sooner than later. Only three or four (Cases 59, 123, 156 and 172) appear to be the more exceptional. Likewise in the three-move group, the third move tended to be soon after the second, especially for the younger set. A variation of a similar pattern is discernible for the five-move group, albeit involving fewer cases (Figure 4.15 (d)). The most interesting profile of moves is for the four-move group (Figure 4.15 (d)). Except for Case 173 who is more similar to the other cases except for the number of moves, the four cases in this group showed long stays between critical moves throughout their respective careers.

This classificatory procedure is not really satisfactory, although it has brought out some salient aspects of the profile of critical moves. A multivariate grouping technique is used in the next section to achieve greater generality to the profiles, and to undertake some further analysis of critical moves along the lines discussed earlier.
Cohort Analysis

These indices were then transformed into a life-history matrix according to the approach discussed above (see Figure 4.11). These life-history matrices were partitioned into sub-matrices according to different cohorts as part of the structural analysis of characteristics of profiles of critical moves. Two cohort categories were used: a pre-1957 versus a post-57 cohort; and a Malay versus non-Malay cohort. These cohorts were then subjected to a Q-mode principal components analysis as a classificatory device. This is a grouping technique which will enable us to classify the cases into groups of similar profiles of critical moves, to reflect similarity of job-migration experience. An arbitrary maximum number of eight factors will be extracted in each cohort analysis, thus limiting the number of groups in the classification exercise. This is to allow for sufficient comparability across cohorts for the purpose of the structural analysis of critical moves. In addition, a factor loading of more than 0.45 (which measures the degree of membership of the group) was used as the cut-off for all the cohort analysis. Factor scores, which in this Q-mode version gives a summary profile of critical moves for each group obtained in each cohort, are then used to give a visual impression of the differences between not only the different groups in each cohort, but also the differences between each cohort. The group (factor score) critical move files may then be used to study the underlying structural differences between the groups in order to explain the variability in job-migration experience between groups and cohorts.

Pre-57 Versus Post-57 Cohort Analysis

The choice of 1957, the date of entry into the labour force, as the cut-off year for the division of the cohorts in this analysis is based on the assumption that the year of Malaysia's Independence will distinguish between the work and mobility experience of those who entered the labour force before Independence from those who did after Independence. It should be pointed out here that confounding this will be the fact that the two cohorts will be at different stages in the family life-cycle and that the life-cycle profile of the post-57 cohort will be truncated when compared with that of the pre-57 cohort. This limitation is overcome by the fact that the factor analysis is done independently for each cohort. This point is however, to see whether the conditions prevailing before 1957 and those after 1957 have any bearing on the job-migration experience of the village population.
Of the 157 cases used in this analysis, 68 cases were classified as members of the pre-57 cohort and 91 in the post-57 cohort. The results of the principal components analysis are shown in Table 4.28. The eight groups obtained for the pre-57 cohort represented some 48.9 per cent of the total variance of critical move experience in this cohort, as compared to 73.4 per cent for the eight groups classified in the post-57 cohort. This may be interpreted as a gross measure of the greater variability of the critical job-migration experience of those who entered the labour market before 1957 when compared with those who entered the job market after 1957. This is further reinforced by the fact that the percentage of non-classifiable cases (that is, those whose factor loading is less than 0.45) for the pre-57 cohort (35.3 per cent) is higher than that for the post-57 cohort (28.6 per cent).

Table 4.28
Critical Move Profiles:
Results of Q-Mode Principal Components Analysis for Pre-1957 and Post-1957 Cohorts

| Factors Extracted | Eigen Value | Percentage of Variance | Cumulative Percentage
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
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<td>Pre-1957 Cohort</td>
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</tr>
<tr>
<td>1</td>
<td>5.336</td>
<td>7.8</td>
<td>7.8</td>
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<tr>
<td>2</td>
<td>4.874</td>
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<td>5</td>
<td>4.034</td>
<td>5.9</td>
<td>33.9</td>
</tr>
<tr>
<td>6</td>
<td>3.582</td>
<td>5.3</td>
<td>39.1</td>
</tr>
<tr>
<td>7</td>
<td>3.452</td>
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</tr>
<tr>
<td>8</td>
<td>3.228</td>
<td>4.7</td>
<td>48.9</td>
</tr>
</tbody>
</table>

Total No. of Cases = 68
No. not Classifiable = 24 (35.3%)

<table>
<thead>
<tr>
<th>Post-1957 Cohort</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>15.812</td>
<td>17.4</td>
<td>17.4</td>
</tr>
<tr>
<td>2</td>
<td>10.331</td>
<td>11.4</td>
<td>28.7</td>
</tr>
<tr>
<td>3</td>
<td>8.503</td>
<td>9.3</td>
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<tr>
<td>4</td>
<td>8.304</td>
<td>9.1</td>
<td>47.2</td>
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<tr>
<td>5</td>
<td>7.489</td>
<td>8.2</td>
<td>55.4</td>
</tr>
<tr>
<td>6</td>
<td>5.793</td>
<td>6.4</td>
<td>61.8</td>
</tr>
<tr>
<td>7</td>
<td>5.485</td>
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</tr>
<tr>
<td>8</td>
<td>5.100</td>
<td>5.6</td>
<td>73.4</td>
</tr>
</tbody>
</table>

No. of Cases = 91
No. not Classifiable = 26 (28.6%)

Note: *Errors are due to rounding-off.
Using the factor scores for each group, it is possible to see much more clearly this variability (or lack of) variability between the groups and cohorts. Since these factor scores are standardized aggregate measures of the group profile then peaks and troughs represent the variations in criticalness of job-migration changes mapped for the group as a whole. The peaks are the more relevant indicator of the structural value of a positive change at the different stages (ages) in the individual's life-cycle, while the troughs reflect reversals in terms of criticalness which suggest a negative change in the structural value of the move from the previous job-location.

Figure 4.16 (a–h) show the critical move profiles for the pre-57 cohort for the first eight groups obtained from the principal components analysis. Three general observations may be made about these group profiles. First, it appears that the most critical move for most individuals in the various groups occurs early in their life-cycle, the variation among groups manifesting mainly in the age when this occurs. This observation applies with equal force for the post-57 cohort (Figure 4.17 (a–h)) as a result of the stage of their life-cycle (shown in the truncated nature of their critical move profiles which remain flat after age 30).

The second observation is the increasing variability of the experience for the latter group’s profiles (reflecting the order in which they were extracted). More importantly, the number of peaks in criticalness of job-location change increases, although at a declining rate, except for later groups where they increasingly reflect individual variability of critical move experience.

The third observation is that, from Figure 4.17 (c), (e), (f), (g) and (h), as well as Figure 4.16 (h) to a certain extent, there appears to be three critical points in the life-cycle of moves among the groups, namely around the age 16-20 years, a second at 30-32 years and a third at around 50 years. Exactly the same pattern was observed in the national-level migration streams between 1965-70 (Chapter 3). This might be a universal phenomenon, with the age at 50 years a critical point of optional retirement, especially for Malay civil servants.
Figure 4.16
Critical Move Profiles for Pre-1957 Cohort,
Using Factor Scores, for Eight Groups
Figure 4.17
Critical Move Profiles for Post-1957 Cohort,
Using Factor Scores, for Eight Groups
**Malay Versus Chinese Cohorts**

A similar analysis of the pre-57 and post-57 case was undertaken for the Malays and Chinese cohorts in the village case study.

The critical move profiles based on factor scores of the different cohorts is shown in Figure 4.18 and 4.19, respectively. Almost the same observations can be made between the Malay groups and Chinese groups as was made in the 1957 cohorts above. There may be a slight indication that the first significant critical move may be made somewhat earlier for the Chinese than the Malays, that is before age 16, but this dissimilarity cannot be pushed too far. A more significant difference between the two cohorts is the absence of evidence of a critical move for the Chinese groups at 50 years (Figure 4.20). The overall variability between the Chinese and the Malay cohorts may be illustrated by Figure 4.21. The differences in experience is more contrasting (judging by the peaks and troughs) in the earlier years (11 to 30) of their life-cycle and the coincidence of the critical move profiles after that, except for the difference mentioned above at age 50. On the whole there is little variability of significance between Chinese and Malay critical move profiles when moves are related to the broad structural changes in the economy.

One result of the comparison of critical move profiles between the two ethnic groups is in the incidence of negative scores. As mentioned earlier, critical moves measure the occupational and locational progress of the individual migrant through his life-course as the broad structural patterns, whether family-demographic or macro-events unfold. Negative scores, however, cannot be interpreted as reversals of fortune since it is merely a statistical effect of the extraction of orthogonal factors, namely, of independence between the groups of migrants showing similar profiles of moves.

But, the greater variability of the Chinese over the Malay migration experience judging from the incidence of negative and positive scores reflect the greater diversity of experience of critical moves among the Chinese compared to the Malays. This in itself suggests that a process of heterogenization takes place in the process of breaking the circuit, involving moves between rural and urban areas, and among occupations in the urbanized upper-circuit. These critical moves are job-related, thus the indices tend to reflect the heterogeneity of urban jobs more than homogeneity of rural occupations.
Figure 4.18
Critical Move Profiles for Malay Cohort, Using Factor Scores, for Eight Groups
Figure 4.19
Critical Move Profiles for Chinese Cohort, Using Factor Scores, for Eight Groups
Figure 4.20
The Difference Between Malay and Chinese Critical Move Profile

Figure 4.21
The Maximum Difference Between Malay and Chinese
Critical Move Profile.

4.11 CONCLUSION

From the analysis of mobility groups at the village-level, we conclude that a typology of mobility and migration groups certainly provides a fuller understanding of the processes of migration. Conclusions drawn from research on migration is highly dependent on the scale of the study and from which end it had been undertaken. For example, a total village population from the source-end will highlight the importance of family migration while an urban-end study will reiterate the importance of economic reasons. The typology is closely related to stages of the life-cycle and shows the links between different mobility groups, e.g., intending migrants with outmigrants.

The rural-end study has also pointed out the importance of commuters which will be missed in an urban-end study. Such a phenomenon has been extensively studied in the industrialized countries for its implications on transport, etc. but have been somewhat neglected in many Third World countries, and certainly the study of commuters from a rural area. The contribution of this typology is to put these commuters, an important mobility group, into a total mobility framework, in relation to other forms of mobility and migration. It is an important group as commuting may be an option available to potential outmigrants. It was shown that merely analyzing outmigrants may neglect a closely associated mobility group which, while contributing to the urban labour market does not add to the burden of congested urban areas. And as suggested in Chapter 3 commuters may well disguise the real extent of rural-urban migration and therefore, urbanization rates which are measured on the basis of residence. Also, they may reduce pressure on urban areas (for example, housing and basic services) caused by immigration. At the same time, they affect village populations in both tangible (for example, income) and intangible ways (attitudes and perceptions).

This chapter has also shown that the rural and urban sectors in Peninsular Malaysia are more complex than that envisaged in the Harris-Todaro’s (1970) migration model. The economic characteristics of mobility groups have demonstrated the fragmentation and segmentation of both the source and destination labour markets, which in the Malaysian context are highly influenced by institutional (for example, government policies in recruitment) and cultural and historical factors (for example, Malay and Chinese differences in attitudes and perceptions of occupations).

The two-circuit system of migration operated within the village setting and in fact, in terms of occupations and industry, reflected the national patterns. The Malays remained quite undiversified, their absorption into manufacturing which was to signify the
third wave of urbanization, still not being felt in the region. However, some historical
data of the outmigration from the village indicated evidence of the circuit starting to
disintegrate. It is now left to the last three chapters to examine in greater detail this
phenomenon.

We have also analyzed the links between individual migration decisions and experience
with the broad structural changes of the economy through the introduction of a concept
of critical moves using life-history data. The methodology requires a descriptive
measure of the historical profile of moves undertaken by the individual in his lifetime,
and a grouping of the profiles in order to draw the salient aspects of the critical moves.
Other methods of analysis may be applied to the matrix of critical move index, but these
have not been attempted here.

What is important in this analysis so far is the reconfirmation of the ideas on the
structured nature of migration in Peninsular Malaysia, drawn out in various ways using
different techniques, whether derived from cross-sectional data or longitudinal data, and
whether census-wide data or special surveys. It has shown that a more micro-level
analysis, using ethnographic-type data on individual migration is necessary in order to
understand further the decision to migrate and to link it to the broader structural
processes. This will be attempted further in Chapters 5, but mainly Chapter 6 which
delves into two migrant workers' family histories in great depth.