

INDIVIDUAL AND SOCIAL FACTORS ASSOCIATED

WITH THE BEHAVIOUR OF CHILDREN

IN A PLAY SETTING

by

ELIZABETH ANNE CHILD

DOCTOR OF PHILOSOPHY THESIS

THE UNIVERSITY OF ASTON IN BIRMINGHAM

SEPTEMBER 1982

LIST OF CONTENTS

VOLUME 2

	Page
PART 3 THE FIELD STUDY AND ITS FINDINGS	
<i>CHAPTER 7 RESEARCH DESIGN AND METHODOLOGY</i>	
<i>Choice of Method of Data Collection</i>	4
1 Dimensions of Observation	8
2 Sampling	17
3 Focus of the Study	22
4 Recording Equipment	23
<i>Selection of Variables</i>	29
1 Selection of Independent Variables	29
2 Dependent Variables: Selection of Indicators of Play Behaviour	34
3 Nuisance Variables	40
<i>The Sample and the Play Environment</i>	41
1 English Working Class Children	42
2 English Middle Class Children	45
3 Asian Children	46
4 Relationship between Play Supervisors and Children	53
5 Location of Fieldwork	55
<i>Reliability and Validity of Observation Measures</i>	62
1 Reliability	62
2 Validity	74

	Page
<i>CHAPTER 8 TYPES OF PLAY</i>	
<i>The Procedure Adopted in this and the Following Chapter</i>	89
1 Tactile Play	93
2 Artistic Play	101
3 Imaginative Play	108
4 Physical Play	117
5 Constructive Play	124
 <i>CHAPTER 9 MODES OF PLAY</i>	
1 Scope of Play	140
2 Passivity/Activity of Play	158
3 Sociability of Play	178
<i>Hypotheses Supported</i>	219
<i>Hypotheses Partially Supported</i>	224
<i>Hypotheses Unsupported</i>	227
 <i>CHAPTER 10 COMPOSITE PROFILES</i>	
1 Age Profiles	234
2 Sex Profiles	236
3 Social Group Profiles	238
4 Social Class Profiles	252
 PART 4 CONCLUSION	
 <i>CHAPTER 11 GENERAL CONCLUSION</i>	
1 Purpose and Findings of the Research Study	266
2 Implications of the Study	278

	Page
<i>APPENDIX 1 CODING SCHEDULES</i>	
Coding Schedule ... Sheet 1	289
Coding Schedule ... Sheet 2	292
Coding Schedule ... Sheet 3	295
Coding Schedule ... Sheet 4	297
Coding Schedule ... Sheet 5	299
Coding Schedule ... Sheet 6	301
Coding Schedule ... Sheet 7	304
 <i>APPENDIX 2 ADDITIONAL TABLES</i>	
 <i>APPENDIX 3 PHOTOGRAPHS OF HOUSING AREAS IN WHICH WORKING AND MIDDLE CLASS ENGLISH CHILDREN LIVED</i>	
Housing Areas in which Working Class Children Lived	314
Housing Areas in which Middle Class Children Lived	316
 <i>APPENDIX 4 VIDEO-TAPED STUDIES</i>	
<i>English and Asian Preschool Play on Sam, Suzie and George</i>	319
<i>The Reliability Study</i>	332
 <i>BIBLIOGRAPHY</i>	 333

LIST OF TABLES

	Page
VOLUME 2	
<i>CHAPTER 7</i>	
7.1 Distribution of Children by Social Group	5
7.2 Aspects and Indicators of Play	38
7.3 Muslim, Hindu and Sikh Children's Command of English	51
7.4 Reliability Study No.1.	67
7.5 Reliability Study No.2.	70
7.6 Alpha Coefficients and Spearman Brown split-half Reliability Coefficients	73
7.7 Principle Component Analysis of data from 163 Children using 23 Indicators of Aspects of Play Behaviour	78
7.8 Varimax Rotated Factor Matrix of data from 163 Children using 23 Indicators of Aspects of Play Behaviour	81
7.9 Correlation Matrix for Indicators of Scope of Play	82
7.10 Correlation Matrix for Indicators of Passivity/Activity	83
7.11 Correlation Matrix for Indicators of Social Orientation	83
7.12 Scale for Scope of Play	84
7.13 Scale (1) for Passivity/Activity of Play	85

	Page
7.14 Scale (2) for Passivity/Activity of Play	85
7.15 Scale for Orientation towards Peers	86
7.16 Scale for Orientation towards Play Supervisors	87

CHAPTER 8

8.1 Types of Play:- Variables and Statistical Tests Employed	92
8.2 Incidence of Sand Play	96
8.3 The Relationship between Sex and Sand Play	97
8.4 The Relationship between Sex and Sand Play among English Children	97
8.5 The Relationship between Social Group and Sand Play	98
8.6 The Relationship between Age, Sex, Social Group and Sand Play	100
8.7 Incidence of Paint Play	102
8.8 The Relationship between Sex and Paint Play	104
8.9 The Relationship between Social Group and Paint Play	104
8.10 The Relationship between Age, Sex, Social Group and Paint Play	105
8.11 The Relationship between Sex and Paint Play among English Children	106
8.12 The Relationship between Sex and Paint Play among Asian Children	106
8.13 Incidence of Imaginative Play	111
8.14 The Relationship between Sex and Imaginative Play	112
8.15 The Relationship between Social Group and Imaginative Play	113
8.16 The Relationship between Age, Sex, Social Group and Person Oriented Imaginative Play	114

	Page
8.17 The Relationship between Age, Sex, Social Group and Object Oriented Imaginative Play	115
8.18 The Relationship between Sex and Imaginative Play among English Children	115
8.19 The Relationship between Sex and Imaginative Play among Asian Children	116
8.20 Incidence of Unstructured Physical Play	119
8.21 The Relationship between Sex and Unstructured Physical Play	120
8.22 The Relationship between Sex and Unstructured Physical Play among Asian Children	120
8.23 The Relationship between Sex and Unstructured Physical Play among English Children	121
8.24 The Relationship between Social Group and Unstructured Physical Play	122
8.25 The Association between Social Group and Unstructured Physical Play	122
8.26 The Relationship between Age, Sex, Social Group and Unstructured Physical Play	123
8.27 Incidence of Glue Play	127
8.28 The Relationship between Sex and Glue Play	127
8.29 The Relationship between Social Group and Glue Play	128
8.30 The Relationship between Social Group and Glue Play among English and Asian Children	128
8.31 The Association between Social Group and Glue Play among English and Asian Children	129
8.32 The Relationship between Age, Sex, Social Group and Glue Play	130
8.33 The Relationship between Sex and Glue Play among English Children	131

	Page
8.34 The Relationship between Sex and Glue Play among Asian Children	131
8.35 The Association of Age, Sex and Social Group with Types of Play	135
 <i>CHAPTER 9</i>	
9.1 Modes of Play:- Variables and Statistical Tests Employed	139
9.2 Incidence of the Average and Longest Attention Spans and the Diversity of Play Activities	144
9.3 The Relationship between Age and Scope of Play	145
9.4 The Relationship between Sex and Scope of Play	146
9.5 The Relationship between Social Group and Scope of Play	147
9.6 The Relationship between West Indian and English Children and Scope of Play	148
9.7 The Relationship between Social Class and Scope of Play	148
9.8 The Relationship between Age, Sex, Social Group and Average Attention Span	150
9.9 The Relationship between Age, Sex, Social Group and Longest Attention Span	151
9.10 The Relationship between Age, Sex, Social Group and Diversity of Play Activities	152
9.11 The Relationship between Sex and Scope of Play among Asian Children	152
9.12 The Relationship between Sex and Scope of Play among English Children	153
9.13 The Incidence of Passivity/Activity of Play	163
9.14 The Relationship between Age and Passivity/Activity of Play	163

	Page
9.15 The Relationship between Sex and Passivity/Activity of Play	164
9.16 The Relationship between Social Group and Passivity/Activity of Play	166
9.17 The Relationship between English and Asian Children and Passivity/Activity of Play	166
9.18 The Relationship between Social Class and Passivity/Activity of Play	167
9.19 The Relationship between Age, Sex, Social Group and Passivity	170
9.20 The Relationship between Age, Sex, Social Group and Passive/Materials	171
9.21 The Relationship between Age, Sex, Social Group and Passive/No Contact Materials	172
9.22 The Relationship between Age, Sex, Social Group and Activity	173
9.23 The Relationship between Age, Sex, Social Group and Playfulness	174
9.24 The Relationship between Sex and Passivity/Activity of Play for Asian Children	175
9.25 The Relationship between Sex and Passivity/Activity of Play for English Children	175
9.26 The Relationship between Sex and Passive/Materials for English and Asian Children	176
9.27 Summary of Main Associations Hypothesized for Sociability of Play	181
9.28 The Incidence of Sociability of Play	182
9.29 The Relationship between Age and Sociability of Play	183
9.30 The Association between Age and Sociability of Play	184
9.31 The Relationship between Sex and Sociability of Play	185

	Page
9.32 The Relationship between Social Group and Sociability of Play	187
9.33 The Relationship between Sociability of Play and English and Asian Children	188
9.34 The Relationship between West Indian and English Children and Sociability of Play	189
9.35 The Relationship between Social Class and Sociability of Play	190
9.36 The Relationship between Age, Sex, Social Group and Solitary Play	196
9.37 The Relationship between Age, Sex, Social Group and Group of Two	197
9.38 The Relationship between Age, Sex, Social Group and Group of Three	197
9.39 The Relationship between Age, Sex, Social Group and Group of Four	198
9.40 The Relationship between Age, Sex, Social Group and Solitary/Passive Play	198
9.41 The Relationship between Age, Sex, Social Group and Solitary/Active Play	199
9.42 The Relationship between Age, Sex, Social Group and Parallel/Passive Play	199
9.43 The Relationship between Age, Sex, Social Group and Parallel/Active Play	200
9.44 The Relationship between Age, Sex, Social Group and Talks to other Child	200
9.45 The Relationship between Age, Sex, Social Group and Spoken to by other Child	201
9.46 The Relationship between Age, Sex, Social Group and Talks to Self	201

	Page
9.47 The Relationship between Age, Sex, Social Group and Talks to Supervisor	202
9.48 The Relationship between Age, Sex, Social Group and Supervisor Talks to Child	202
9.49 The Relationship between Age, Sex, Social Group and Plays with Supervisor	203
 <i>CHAPTER 10</i>	
10.1 Prediction Results for Younger and Older Children	235
10.2 Prediction Results for Boys and Girls	237
10.3 Standardized Discriminant Function Coefficients for English and Asian Children	238
10.4 Prediction Results for English and Asian Children	239
10.5 Standardized Discriminant Function Coefficients for Muslim, Sikh and Hindu Children	240
10.6 Prediction Results for Sikh, Muslim and Hindu Children	241
10.7 Standardized Discriminant Function Coefficients for Younger Sikh, Muslim and Hindu Children	242
10.8 Prediction Results for Younger Sikh, Muslim and Hindu Children	243
10.9 Standardized Discriminant Function Coefficients for Older Sikh, Muslim and Hindu Children	244
10.10 Prediction Results for Older Sikh, Muslim and Hindu Children	245
10.11 Standardized Discriminant Function Coefficients for Sikh, Muslim and Hindu Boys	246
10.12 Prediction Results for Sikh, Muslim and Hindu Boys	246
10.13 Standardized Discriminant Function Coefficients for Asian Girls	247

	Page
10.14 Prediction Results for Sikh, Muslim and Hindu Girls	248
10.15 Standardised Discriminant Function Coefficients for Middle and Working Class Children	253
10.16 Prediction Results for Middle and Working Class Children	254
10.17 Standardized Discriminant Function Coefficients for Younger, Middle and Working Class Children	255
10.18 Prediction Results for Younger Working and Middle Class Children	256
10.19 Standardized Discriminant Function Coefficients for Older Working and Middle Class Children	257
10.20 Prediction Results for Older Working and Middle Class Children	258
10.21 The Incidence of Different Play Behaviours among Younger Working and Middle Class Children	259
10.22 The Incidence of Different Play Behaviours among Older Working and Middle Class Children	259
10.23 Standardized Discriminant Function Coefficients for Working and Middle Class Boys	260
10.24 Prediction Results for Working and Middle Class Boys	261
10.25 Standardized Discriminant Function Coefficients for English Working and Middle Class Girls	262
10.26 Prediction Results for Working and Middle Class Girls	262

APPENDIX 2

A2.1 Frequency Distribution of Play Behaviours	307
A2.2 The Relationship of Aspects of Play Behaviour to Age	309
A2.3 The Relationship between Sex and Aspects of Play	310

	Page
A2.4 The Relationship between Social Group and Aspects of Play	311
A2.5 The Relationship between Social Class and Aspects of Play	312

LIST OF FIGURES

	Page
VOLUME 2	
CHAPTER 7	
7.1 Fieldstudy Matrix	6
7.2 Dimensions of Observation	7
7.3 Schematic Plan of Playbus Lower Deck "George"	57
7.4 Schematic Plan of Playbus Upper Deck "George"	58

PART 3

THE FIELD STUDY AND ITS FINDINGS

CHAPTER 7

RESEARCH DESIGN AND METHODOLOGY

The purpose of undertaking fieldwork was to observe and distinguish between the associations that individual (bio/psychological) and social variables might have with children's play behaviour. Figure 1.1 in Chapter 1 suggested that a child's propensity to engage in a type or mode of play was determined by several sets of variables. The individual and social variables, shown on the left hand side of the model, were seen to constitute motivational factors, while the variables operating in the proximal play environment, shown on the right hand side of the model, were seen to constitute constraining factors. The scope of the present study is limited to the former set of variables. At a theoretical level, the model presented in Figure 1.1 suggests that a child's predisposition to engage in certain types and modes of play, ("orientation towards play"), is determined by a combination of psycho-biological factors in the child's personal make-up with social factors encountered in its home environment. The context in which play occurs ("playground situation") contains factors which permit or hinder play behaviour from occurring. The interaction of immediate play environment with orientation towards play is seen to determine the types and modes of play for the individual child. At an empirical level, the present study attempted to secure data appropriate for an examination of the propositions inherent in the model. This chapter will now turn to the design framework and procedure of the empirical study.

This chapter is divided into four main parts. The first is concerned with the method of data collection used in the fieldwork study. It indicates how observation was the main method of data collection and describes the different dimensions of observation that were used. The structure of the taxonomy is examined, together with the methods of sampling that were employed. The reasons for not using alternative methods of sampling are also considered. The second part of the chapter is concerned with the variables covered in the study. It first of all examines the independent variables and then the dependent variables. The indicators of the eight aspects of play discussed in Chapter 2 are specified, together with the reasons for their selection. The role of nuisance variables is also given attention. The third part of the chapter describes the composition of the sample, the background of the children, the relationship between play supervisors and children and the play environment afforded by the buses. Part four is concerned with questions relating to reliability and validity. The meaning of these concepts is examined together with measures adopted in this study to assess them. The findings of the two reliability studies which were carried out are reported and the results of Spearman Brown split-half reliability tests and Alpha coefficients are also presented. Factor analysis was used as a method for assessing validity.

The study to be described in the following four chapters took four years to complete. The main stages involved were as follows:-

PERIOD OF TIME	RESEARCH STAGE	RESEARCH WORK MODE
October 1978- April 1979	1	<u>Planning</u> - the hypotheses to be tested were set out, the fieldwork study was planned and its locus was decided on
May - July 1979	2	<u>Experimenting</u> - different tools, methods and focii of observation were experimented with. Five video-tapes were made for use in Stage 3
August 1979	3	<u>Constructing a taxonomy</u> - the video-tapes were watched and analysed and formed the basis for constructing a taxonomy
September - October 1979	4	<u>Pilot Study</u> - a six week pilot study was carried and its results analysed
October 1979- July 1980	5	<u>Main Study</u> - the main study was carried out, together with a supplementary video-taped study. Reliability and Validity tests were carried out during June and July
August - December 1980	6	<u>Coding</u> - the data from the main study was coded and put on the computer
January - October 1981	7	<u>Data analysis and interpretation</u> - statistical tests were carried out and their results interpreted
November 1981- September 1982	8	<u>Writing up</u> - the thesis was written

CHOICE OF METHOD OF DATA COLLECTION

In order to operationalise the analytical model of children's play in Figure 1.1 and trace the association between the independent and the dependent variables of play behaviour, it was desirable to try and keep constant the factors in the immediate play environment. Children of different ages and sexes and from different social class

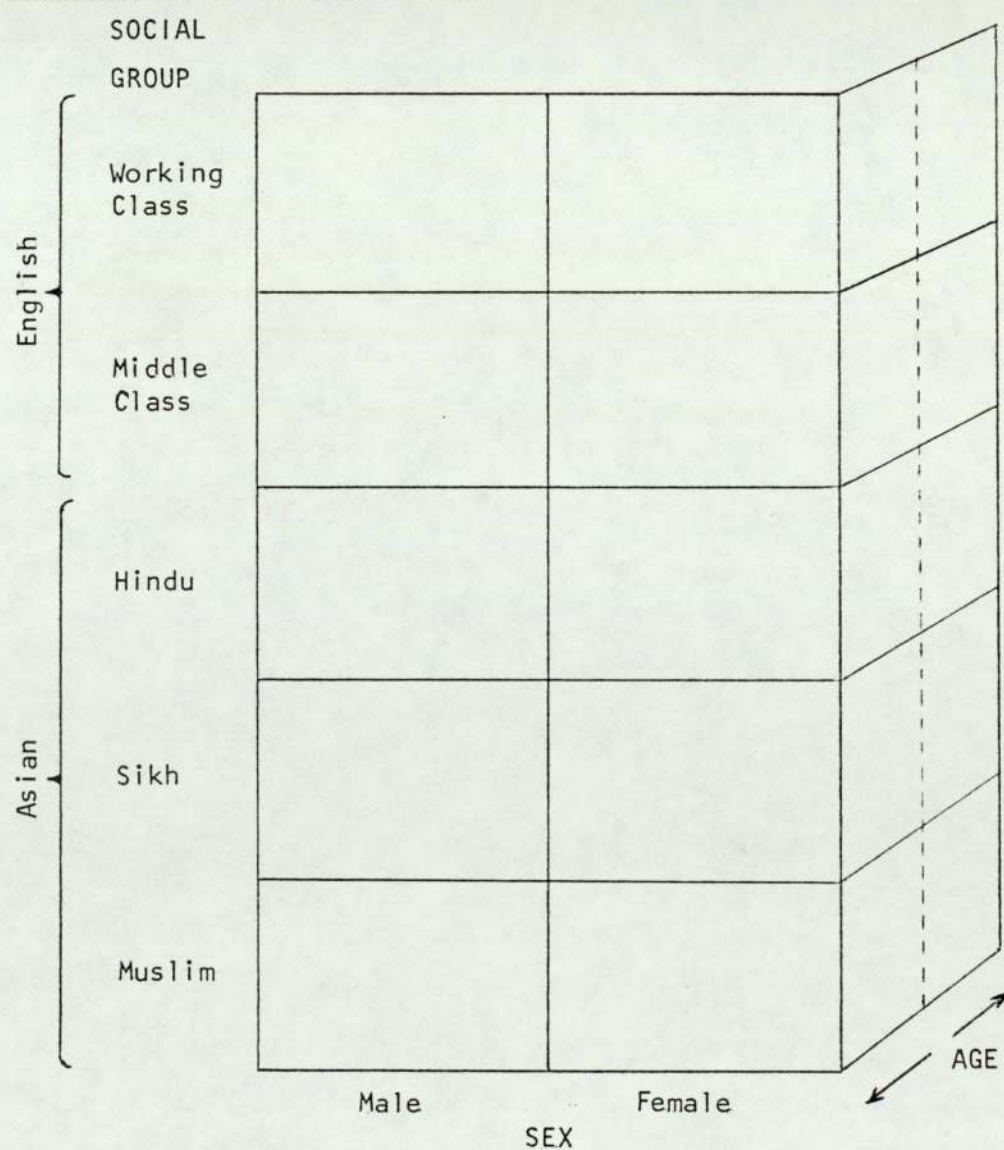
and cultural backgrounds had to be observed at play in a similar play environment, so that any differences in play behaviours which emerged could be examined in relation to the sampling variables, without possible interference from characteristics of the immediate environment. The attempt was made to hold immediate environment constant. The investigation was therefore located in three virtually identical Birmingham Playbuses called, George, Suzie and Sam. These buses are shown in the accompanying video (No. 1, counter Nos. 019-032). The sample was composed of three groups of English working class children, three of English middle class children, three of Sikh, three of Muslim, two of Hindu and one of West Indian children. The numbers of children in these class and cultural categories were:-

Table 7.1 Distribution of Children by Social Group

<u>Social Group</u>	<u>Number of Children</u>	<u>Percentage of total</u>
English Middle Class	27	16.4
English Working Class	34	20.6
Sikh	30	18.2
Muslim	33	20.0
Hindu	26	15.8
West Indian	13	7.9
Christian Asian	2	1.2
Total	165	100.1

In order to operationalise the model in Figure 1.1 a tridimensional matrix was adopted with a 6 x 2 x 2 design (six social groups, two age groups and two sex groups). This matrix necessitated a sample size of at least 120 in order to have a minimum of five children in each cell, and 120 would only suffice for a perfectly distributed sample. It was considered that five was a minimum number for chi-square tests. The design of the matrix is presented below as Figure 7.1. The West Indians are excluded as there were too few of them to include for most statistical tests.

Figure 7.1 Fieldstudy Matrix



In this study observation was the chief method of data collection. This method of collection was chosen in preference to other methods such as interviewing, questionnaire or projective techniques as information was wanted on children's actual behaviours and their choice of play materials rather than parent's or playleaders' accounts of children's play behaviour. Projective techniques were considered an inappropriate tool for this study as they rely on children's introspection and verbal reports and pre-school children's grasp of language and powers of introspection are limited during these early years. The main dimensions of choice available in the use of observation are set out in Figure 7.2. Asterisks summarize the form the observation utilized in the present study.

Figure 7.2 Dimensions of Observation

1. Directness	Direct*	Non-Direct
2. Setting	Natural (field)*	Artificial (lab.)
3. Observer Participation	High (member)	Low (outsider)*
4. Relationship with Subjects	Close (dialogical)	Distant (monological)*
5. Obtrusiveness	High	Low*
6. Reactivity	High ('Hawthorne effect')	Low*
7. Disclosure	Full (overt)*	————*None (overt)
8. Structure	High* ————— (hypothesis testing)	*Low (grounded theory)

1. Dimensions of Observation

1.1 Directness

Direct observation was employed in this study. That is observations were made in the research location at the time events occurred rather than relying on indirect evidence such as the quantity of different play materials consumed during a previous play session. One of the main advantages of observing behaviour directly is the wealth of data obtained. On the negative side are problems relating to observer reliability, bias, decay and drift.

At the beginning of this century the direct observation of children in natural settings largely took the form of baby biographies and diary accounts of behaviour. These behaviour logs were unsatisfactory for comparative purposes as they lacked uniformity and suffered from observer bias. As a result of observer bias, many studies recorded selective observations. To remedy these two main defects "time sampling" was introduced and refined by researchers at the University of Minnesota, Columbia University and the Yale Institute of Human Relations during the period 1920 - 1943. The year of Arrington's review of time sampling, 1943, may be taken as a turning point in methodology. Since then American psychologists have tended to move away from observing children in their natural settings in favour of more controlled forms of observation in artificial settings and the use of more precise testing instruments.

Some of the leading researchers in the time sampling of children's play behaviour were Parten (1932 and 1933), Goodenough (1928 and 1930), Beaver (1932), Loomis (1931), Arrington

(1932, 1939 and 1943) and Thomas (1932 and 1933). Goodenough defined this more rigorous approach to observing children as consisting

"simply in the observation of the every-day behavior of an individual or a group of individuals for definite short periods of time and recording of the occurrence or non-occurrence of certain specified and objectively defined forms of behavior during each of these periods. The number of periods in which the report is positive for a given individual is then treated as his score. Since the number and length of the observational periods are the same for all individuals a direct comparison of the frequencies or scores is thus made possible. A further requirement is that all individuals be observed under similar conditions, either during the performance of similar activities or when variation in activity is brought about only through the free choice of the subject himself. Such circumstances are provided by the ordinary school classroom, the playground, or the free-hour in the nursery school or kindergarten". (Goodenough, 1928 : 230-231)

Olson (1929) first applied the term "time sampling" to this technique of observation in a study he conducted into the "nervous habits" of school children. Time sampling facilitated comparisons of results between different researchers and introduced a measure of objectivity into the direct observation of children's behaviour. Time sampling still had its weaknesses. Chief among these was the tendency of some researchers to attribute motivational states to their subjects. For instance some observers inferred states of jealousy or aggression. This often resulted from observers applying a priori evaluative categorisations.

During the last fifteen years this main defect in time sampling has been largely remedied due to the application of ethological methods to the direct observation of children's behaviour in natural settings. The application of ethological methods to time sampling studies did little to change the actual methodology

but it did bring about a new critical awareness of the complexities of children's behaviour. Armed with this added insight observers tended no longer to attribute motivational states to their subjects or to apply a priori evaluative categorisations in their studies.

Modern ethology owes its origin largely to Konrad Lorenz. His approach was followed in this country by Tinbergen at Oxford and some years later by Thorpe and Hinde at Cambridge. The main distinguishing feature of the ethological approach is that it

"involves attempts to tackle, from a descriptive base ...questions of immediate causation, development, function and evolution." (Hinde, 1982: 275)

It employs a methodology which observes and describes the behaviour of subjects prior to classifying it. The taxonomy is closely linked to observed actions so that little inference is required by an observer. The phenomena being observed are precisely described and motivational states, such as jealousy and aggression are normally excluded from study. As a result of the application of this approach to time sampling studies of children, findings from these have wider applicability and the comparability of research findings has been enhanced. Researchers now have the opportunity to utilise similar taxonomies and know the exact areas of behaviour which have previously been studied.

The methodological foundations for this present study are the time sampling studies carried out during the years 1920-1943 and the more recent studies of children's play which utilise the ethological approach. Leading researchers in the second category include Blurton Jones (1967 and 1972), McGrew (1972), Smith (1972, 1973,

1974, 1977, 1978 and 1980) and Roper and Hinde (1978). Although the present study may share a common methodology with the above studies, the issues with which it is concerned are not confined to immediate causation, development, function and evolution but stretch out into the realms of sociology, anthropology, ethnic relations and education.

1.2 Setting

The study was carried out in a natural as opposed to an artificial setting. In general, studies using the direct method of observation in natural settings aim at assessing how people or animals behave in a "taken for granted" environment. The normal environment in which children play are the home, its immediate vicinity, structured and unstructured play settings. An example of an unstructured play setting is the beach. In order to operationalize the matrix presented in Figure 7.1 a large sample of children was required, evenly distributed between the different age, sex and social groupings. I did not observe children at play outside their homes or in unstructured play settings since I would not have been able to select the groupings I required. I did not observe children at play in their own homes as I would not have been able to observe their play with peers and mothers might have behaved unnaturally. The research study was not located in other structured play settings such as nursery schools, day nurseries or pre-school playgroups since it would be unlikely for any two groups of children in one of these settings to have similar physical environments, spatial arrangements,

equipment and ratios of leaders to children. In contrast, the three playbuses offered a unique opportunity to study variations in children's play behaviour along the dimensions of age, sex, social class and ethnic background, keeping constant such situational variables as type of equipment, layout, nature of play environment and ratio of leaders to children.

1.3 Observer Participation

Observer participation was low as I did not want to influence the situation being observed but instead wanted to keep it as "natural" as possible. Secondly I wanted to note behaviour from an "objective" standpoint (i.e. what happened) rather than from an "interpretative" standpoint which was concerned with the meaning of what happened. I was no stranger to the children as I had been visiting the playbuses for six months prior to the commencement of the main study. In common with Smith (1970 and 1980) I attempted to be non-participative by adopting a passive stance, only answering children briefly when spoken to and by avoiding direct eye contact. It appeared that children were little interested in me and I was usually completely ignored.

1.4 Relationship with Subjects

My relationship with the children was distant. I did not join in their play and only interfered on the rare occasion to prevent an accident.

1.5 Obtrusiveness

Children seemed to quickly grow accustomed to my presence. I tried

to give no indication to a focal child that he was being observed. I avoided eye contact and did not follow the child too deliberately when he moved from one activity to another.

1.6 Reactivity

One research problem, which was not so salient in this present study, arises from subjects behaving unnaturally when they think they are being observed. Bailey (1982), Arrington (1943) and Smith (1970 and 1980) do not consider reactivity a problem in the case of preschool children since

"extensive observation of groups of preschool children has demonstrated that observer-consciousness is a negligible factor at the early age levels, provided observations are made with reasonable regularity and observers consistently refrain from participation in the activities of the individuals concerned. The presence of observers has no appreciable effect upon the behavior of the preschool child for the reason that he has not yet learned to attach any particular meaning to such observational paraphernalia as stop watches, record blanks, and the like and is comparatively free from culture-imposed inhibitions that tend to reduce spontaneity of action in older children and adults". (Arrington, 1943: 89)

Barker and Wright (1949) consider that only children over the age of nine years show an awareness of being observed. In the present study the playleaders did not consider that my presence on the playbuses influenced the children's patterns of play behaviour.

1.7 Disclosure

I did not tell the children the purpose of the present study. I did, however, explain to the playleaders and any interested parents exactly what I was doing and the reasons for it. Fourteen video films

were made of children's behaviour in the playbuses. Near the end of the study children, parents and play supervisors were given an opportunity to come on a number of occasions to view the video films in the University. Refreshments were provided on each occasion and a party atmosphere reigned. Social Services provided a minibus for transport purposes and were invited to some of the viewings. Before the study commenced the approval of the Department of Social Services had been obtained.

1.8 Structure

1.8.1 Low structure

I wanted to construct a taxonomy which was derived from actual observed play behaviour rather than impose one on the situation from without. For this purpose five video films were made of children's play behaviour during the period May to July 1979. These tapes were viewed for fifty hours during the following August. At first distinct activities were hard to discern but eventually patterns of play behaviour were differentiated and formed the basis of my categorisation system. The taxonomies used by Smith (1970), Van Alstyne (1932) and Parten (1932) were also of assistance in drawing attention to certain behaviours which I might otherwise have overlooked.

No measurement parameters were abstracted for imaginative play. Instead, it was decided to describe all instances of imaginative play in longhand, putting the time at the side, so that duration of episodes could be measured. The results were later analysed from the standpoint of their thematic content.

1.8.2 High structure

I used a highly structured taxonomy as I had limited time and needed a large sample of children. The coding structure on the record sheets contained 141 coding categories. The taxonomy was divided into five sections. The first two were concerned with the content of play behaviour, namely "what" the child was playing with and "how" he was playing with it. The third section concerned social aspects of play behaviour, including interactions, group size and qualities of relationships. The fourth section concerned vocalisations. The last section concerned imaginative play.

1.8.3 Characteristics of scoring systems

A taxonomy or scoring system can be classified along two main dimensions: Molar/Molecular and Extensive/Intensive. The molar and molecular systems differ in how close or far the scoring categories are from the specific actions and in the amount of inference required by the observer. The molar approach endeavours to combine a number of specific actions and behaviours into generic wholes or classes which are defined by the function or outcome of the behaviours or actions under study. For example, a number of actions may be categorised under the heading of aggression or jealousy. In molar systems a high degree of observer judgment intervenes between the actual data observed and its coding. In the present study it was thought preferable to interpret and to make inferences about data only at a later stage. The molecular observer aims to record as closely as possible what he sees and no more, recording whether an individual says or does something, in contrast with the molar observer who has to depend on his experience and interpretation of the meaning of the actions observed. In this study a molecular

coding system was used in the attempt to make available for analysis all that had taken place without prejudging its key overall characteristics. A molecular taxonomic structure was designed in which the categories were defined as closely as possible to specific motor and ludic actions. With the purpose of recording as nearly as possible what was seen, inference on the part of the observer was kept to a minimal level. Extensive and intensive dimensions refer to the degree of complexity found in the taxonomy. It can be defined as the relative number of coding categories and the distribution of behaviours over them during the observation period. The scoring system in this study is extensive in nature and employs a relatively large number of coding categories. In short, the taxonomic structure chosen can be regarded as both molecular and extensive in character.

Before employing the taxonomy care was taken to ensure that it was exhaustive, that is that there was a category for each kind of behaviour being observed, and that the coding categories were mutually exclusive, so that each behaviour could only be coded in one category. In order to ensure that these two conditions were complied with I used the taxonomy during the end of August 1979 to categorise the video tapes. When children's play behaviour on these films could be adequately classified in the taxonomy I was ready to conduct a pilot study which commenced the first week in September 1979 and finished the second week in October. The main study then commenced and continued until July 1980. The pilot study showed that my methodology was adequate and in analysing the results significant differences emerged along the hypothesised dimensions. I, therefore, incorporated the pilot results into the main study.

2. Sampling

Behaviour sampling can be divided into two main types, according to whether the observer concentrates on behavioural occurrences and events, or on selected items of behaviour observed at different points in time. The first type of sampling is termed event sampling and the second, time sampling. Time sampling was used in this study. Time sampling can be subdivided into three main types. First there is "continuous real time measurement" which involves measuring each frequency of codeable behaviour. This method was not employed in the present study as it would have proved too exhausting to watch all the behaviours contained in my categories for very long at a time and I needed to observe children for at least ten minutes at any one time in order to have a measure of duration for play on different items of play equipment. Second there is "discontinuous probe time sampling" which involves sampling codeable behaviours for short durations at random or fixed probe intervals. This method was not used in the present study since I would not have been able to measure the duration of different play activities.

The third method of time sampling and the one used in the present study is "modified frequency sampling". In contrast to discontinuous probe time sampling, behaviour is observed in real time, but, in contrast to continuous real time measurement, a sampling interval is chosen and behaviours are scored once only if they occurred within the time interval, regardless of how often they actually happened. This method of observation corresponds to the "all-or-none" recording described by Goodenough (1928) and the "one-zero sampling" described by Altmann (1974). The number of occurrences of each item of

behaviour listed in the taxonomy is termed its modified frequency score. In the present study the maximum modified frequency score for each item of codeable behaviour is 120. Sackett has indicated that if an accurate measure of duration is required using modified frequency sampling, the sampling or behaviour unit should be shorter than the average duration of behaviours being measured. If this is the case and

"the MF interval is shorter than the average duration per behaviour change, MF scores can be used to estimate true frequency and duration." (Sackett, 1978: 36)

Smith and Connolly (1972) noted similarly that

"If the time sampling period is much less than the behaviour duration (bout length) then the distinction between frequency and all-or-none recording vanishes. Use of sequential samples gives information on both number of occurrences and durations." (Smith and Connolly, 1972 quoted in Altmann 1974: 254)

On the other hand, Altmann has made the point that one-zero-sampling does not give an exact figure for the frequency and duration of observed behaviours. It only gives a correct measure of the percent of time spent in a behaviour

"If the behaviour in question took up all of the time in each interval in which it was scored, and none of the time in the others" (Altmann, 1974: 255)

If this did not occur then Altmann considered that one-zero-sampling only gave a percentage of frequency intervals in which the behaviour occurred.

In the present study a measure of duration of infrequent behaviours such as hitting, biting and taking toys was not attempted. This also applied to such fleeting behaviours as smile and laugh; and to such frequently occurring activities as talking and making play noises. In all these cases the behaviour measured usually lasted less than 30 seconds, and in some cases a number of occurrences took place within the 30 second behaviour unit. In these instances behaviour was measured as a percentage of occurrences out of 120 behaviour units. In contrast an accurate measure of duration was required for play activities with equipment and materials. In order to obtain this measure the behaviour unit had to be longer than the average time children spent at one activity and the sampling period had to be longer than the average duration of the longest attention span.

The shortest average attention span which I found recorded in the literature was 1½ minutes (Herring and Koch 1930). Guided by this and by the considerations of Smith and Connolly (1980: 44-46) I decided to take 30 seconds as my behaviour or sampling unit. Smith and Connolly maintained that

"a period of 40 seconds was long enough to enable the observer to appreciate the flow of the child's behaviour and make accurate judgements about companions and activities at the end of the period. Some reasonable details of agonistic encounters could also be gathered...a 30 - or - 40 - second period was generally long enough to pick up the behaviour units characteristic of the activity the child was engaged in; if, say, the child was engaged in some kind of group activity, the sample was long enough to pick up the repertoire of social behaviour he or she was employing in the situation. On the other hand, periods of one minute or more seemed to be unnecessarily long, given one-zero coding. The observer was by now mostly noting items already checked, until the child

substantially changed activity." (Smith and Connolly, 1980: 44-46)

There is a wide discrepancy in the measures recorded for mean average duration of the longest attention span. Bridges (1927 and 1929) placed it as high as 37 minutes and Gutteridge (1935) as 18.97 minutes. On the other hand Tizard et al (1976) found that in a structured play setting children did not usually spend more than five or six minutes in one play activity. In order to assess the longest attention spans of children on the Birmingham playbuses I analysed my five video tapes for this information. I found that the average duration of the longest attention span was between ten and eleven minutes. Taking into consideration the findings of other researchers and the results of my video taped studies I decided to take 15 minutes as my sampling period.

I next had to decide how many sampling periods to include in the study. Again the literature is at variance regarding this issue. For instance Parten (1932) concluded from her results that

"twenty one minute observations give a reliable portrayal of a child's participation in group activities".
(Parten, 1932: 253)

While Smith considered that

"Generally high reliabilities were obtained with one hundred 30 second all-or-none samples for each child"
(Smith, 1980: 47)

Koch and Streit (1932) used only 15 one minute samples. Iwanga (1973) also only employed 15 one minute samples. Washburn (1932)

considered that 3 five minute samples for each child was sufficient, while Goodenough (1930) recommended 25 one minute samples. Caille (1933) used 24 samples of five minutes and Olson (1931) 10 five minute samples for each child. The Oxford Preschool Research Project (1980) considered 40 half minute samples to be adequate, while Cattell and Peterson (1958) preferred 2 forty minute periods.

Manwell and Mengert (1934) were concerned with this issue of adequacy of behaviour sampling and researched into it. They carried out a series of studies. They observed children for five twenty minute periods and compared these results with scores on five alternate periods. They found that some scores were stable across different watches while others showed marked fluctuations. For instance "dramatic activity" was stable between different watches, while "physical activity" showed considerable fluctuations. The conclusion they reached was that play behaviour scores

"on a series of five twenty minute periods, spread systematically throughout the hours of the morning and the weeks of the month, yield, on six items at least, ... stable scores." (Manwell and Mengert, 1934)

Before deciding on the number of sampling periods to include in the present study I decided to carry out a similar study to that of Manwell and Mengert. I observed seven children for two hours on two occasions and compared the results for the first hour with those for the second and looked at the stability of behaviour patterning over the eight fifteen minute sampling periods. I found that some of children's social behaviours, such as their amount of talking and positive and negative social interactions varied little between the two hours and over eight sampling periods. On the other hand I found children's

choice of play materials and equipment showed little stability between the hours and over the watches, though the manner in which they used the equipment showed a measure of stability. After weighing up the considerations and practices of previous researchers and the results of my preliminary studies I decided to use four fifteen minute samples in the present study. I considered that this period of time should be sufficient to give me an adequate and representative sample of a child's "normal" behaviour in the playbus, though I should emphasise that it is very difficult to estimate the exact cut off point where the addition of more fifteen minute samples would cease to appreciably affect the measures of frequency and variability already obtained.

3. Focus of the Study

Before designing a classification system for recording children's play behaviour, the focus of the study had to be decided on. During May, June and July 1979, I attempted to observe children using (1) play materials, (2) a focal child and (3) a group of children as the focus. The best results came from watching a focal child as this provided information which was of the greatest relevance to the hypotheses in question. I could only utilise the extensive coding schedule which I required if I watched one child at a time. When materials and equipment was focussed on I found it difficult to distinguish children according to their age, sex and social grouping and I was provided with information on equipment usage which was not pertinent to the present study.

Taking a group of children as the focus proved unsuccessful as I did not have visibility over the whole play area and children kept leaving the group to go up or down the stairs. Again with a group as a focal point I could not use an extensive taxonomy of the sort I needed as there were too many coding categories. I did, however, find that this method of recording behaviour was superior to the focal child method for instances of dramatic role play and social interactions. When these occurred using the focal child method of observation the taxonomy had to be complemented by longhand accounts of observed behaviours.

4. Recording Equipment

4.1 Video-camera

During August 1979 a decision had to be made concerning the relative advantages of a video camera, a tape recorder, or pencil and paper as media for collecting data. The criteria adopted to assess this were the accuracy with which these tools captured children's actual behaviour in the playbus and whether this recorded behaviour represented their "normal" behaviour in this setting. It was considered that a live observer using paper and pencil achieved the most adequate recording of children's actual and "normal" behaviour in the playbus. This was due to one main drawback with using a video camera. The video camera and its deck were rather large and they were, as a result, rather obtrusive within the small confines of the playbus. Although the children did not appear very aware they were being filmed and did not noticeably change their behaviour, the equipment did restrict

their freedom of movement since they could no longer run freely up and down the playbus. The size of the camera also made its transport up and down stairs difficult when following a focal child. As an addition, however, to personal observation it proved invaluable with its ability to focus on children's changing expressions, intricate hand movements and sequences of behaviour, preserving these on tape for constant replay and analysis. It was decided to use video films as a complement to live observations. Their purpose was to illustrate areas of behaviour which it was difficult to record with only pencil and paper and by frequency counts.

Smith (1974) and Hutt and Hutt (1970) have indicated how useful video-tapes are in research into children's play. Smith considered that video-tapes are of value in the following research cases-

"rapidly occurring activities such as fights and rough-and tumbles are difficult to describe accurately in situ, as anyone who has tried to do so will know. Here the use of videotape is indispensable." (Smith, 1974: 124: emphasis in original)

Hutt and Hutt enumerated five instances when they considered the use of video-tape to be an appropriate research tool, these are as follows:-

- "(1) where the action proceeds so swiftly that it is not possible to record all the required elements by any other method...
- (2) where the action is so complex that attention is focussed on certain components at the expense of others...
- (3) where changes in the behaviour are so subtle that satisfactory morphological delineation between one act and another is difficult...
- (4) where sequential changes in fairly complex behaviours are being considered... and
- (5) where it is required to measure precisely specific parameters of certain brief or complex behavioural events." (Hutt and Hutt, 1970: 97-98)

In the present study it was decided to make fourteen video-tapes of children's behaviour in the playbuses. The purpose of five of these, as was mentioned earlier, was to provide material for constructing a taxonomy. It was decided to make one additional one to demonstrate differences in equipment use and eight more to provide additional case study material. Eight children were selected out of the 165 children in the sample for this more detailed study. Two children were Muslim, two Sikh, two Hindu and two were drawn from the English sample. I planned to film each child for fifteen minutes on four different occasions.

The purpose of the eight tapes which provide case study material is to give a detailed description of the ways in which Asian children differ from English children in their orientation towards adults, peers and equipment in the Birmingham playbuses. This purpose relates to Hutt and Hutt's second category of video-taped investigations, since I intended to use a video-camera to describe complex behaviour patterns, the subtlety of which could not be captured by a quantitative frequency count.

Asian children's orientation to adults in the playbus separates into two modes of behaviour - orientation towards play supervisors and orientation towards their own mothers. I decided to use the video-tapes to illustrate three features in the relationship between Asian children and play supervisors. The first of these is the respect which these children give to play supervisors. This is displayed in an avoidance of eye contact, a general reluctance to initiate verbal and play contacts and a reluctance to ask for needed play materials. The second feature in this relationship is the tendency of Asian

children to seek physical rather than verbal contact with play supervisors. The third feature is the desire of many Asian children to be directed by play supervisors in their choice of play activities.

Asian children not only show variations from English children in their relationship with play supervisors but also in their relationship with their mothers when on the playbus. In general Asian children are more dependent emotionally on their mothers than English children. Asian girls less so than the boys. Sikh boys in particular seem very emotionally dependent. Sikh mothers often accompany their sons, but not daughters, to the playbus and stay for a while on it to make sure their sons are happily settled in.

In order to capture the nature of this dependent mother-son relationship and its association with play behaviour I decided to film a Sikh boy on an occasion when his mother was present on the bus and when she was absent in order to contrast the boy's play behaviour on the two occasions.

Asian children differ from English children in their orientation to peers and I decided to try and capture those behaviours which contributed to this difference with the video-camera. In general the relationship between older and younger related Asian children mirrors the authority structure of the typical Asian family. In the absence of their mothers on the playbus older children tend to assume responsibility for younger related children who in turn obey and respect them. I planned to employ a video-camera to portray the essence of this relationship and the difference in children's role structure that occurs when mothers are absent and present.

Asian children also vary in their play behaviour from English

children in their apparent need for less physical space. In order to illustrate this difference English and Asian children from two different playgroups were filmed at play in the sand. Another difference between the two groups of children is the way Asian children handle aggressive provoking situations and encounters. The video-camera was used to film the manner in which disputes are typically settled. Quarrels are usually brief and the manner in which they are resolved is often barely perceptible to an observer. Typically if two children are in dispute over the same toy each pulls at it until the weaker gradually gives way to the stronger and releases it and retreats from the situation and plays elsewhere.

I planned also to use the video-camera to portray Asian children's mode of passivity, a behaviour rarely exhibited by English children. Asian children often go into states of personal disassociation for periods of up to fifteen minutes. They sit or stand and appear to gaze into the distance. It seems as if other children recognise this behaviour because they do not attempt to rouse children from this state or to engage in conversation with them. Video recordings were made of children in this state of passivity and attention was focussed in particular on the behaviours exhibited when they emerged from it. Often they engage in a very active play mode shortly afterwards, usually in a group context.

English and Asian children vary from each other in their handling of certain play materials. The video-camera was used to illustrate the nature of some of these differences. English and Asian children, matched for age and sex, were filmed at play with sand, water, paint and at imaginative play. The main difference in the use of play materials

is that Asian children are more concerned with the process of play, in feeling and handling the materials, and English children in the product of play, in making something out of the materials. One edited tape gives a selection of the main differences between English and Asian children's play along the lines just described and is presented in Appendix 4.

In addition to the eight video-tapes, two video-tapes were made of a reliability study which is described in the last part of this chapter. Their purpose is to describe how the reliability study was carried out and to indicate how much weight should be attached to the figure for inter-observer agreement. The tapes highlight the issue of how much prior training and practice should be given to observers. Attention is also given in the tapes to problems encountered by observers in assisting in the study, an area which is not usually the concern of reliability studies. An edited tape of this study is also presented in Appendix 4.

4.2 Tape recorder

The use of a tape recorder did not prove very successful. In some cases the tape recorder was hidden in the playbus and recorded the one hour free play session. This failed because there was so much background noise that it was difficult to hear what individual children were saying. I then attached a lead from the tape recorder to a telephone and hid the tape recorder in the playbus and put the telephone on a table in the Wendy house hoping that children would play with it. The tape recorder was activated when the receiver was lifted and in this way I thought I might get some clear speech recordings as only one child at a time would be talking and its speech would be directed solely into the tape recorder through the medium of the telephone. However these tape recordings were not successful either. Firstly, this procedure

involved the observer spending the whole play session seated outside the wendy house recording who was using the phone, in order to identify which child was being recorded. Secondly, the recordings were not representative of all the children on the playbus since only certain children used the telephone. Thirdly, there was the practical problem of not being able to understand what some of the Asian children were saying. As a result, tape recordings were not used in the main study.

SELECTION OF VARIABLES

1. Selection of Independent Variables

In order to try and assess the effects of individual variables the play behaviour of children of different ages and sexes was contrasted. Where possible an approximate measure was taken of children's intelligence through the administration of Goodenough's draw-a-man test. Children were asked to draw or paint their fathers. The test proved rather unsatisfactory as many children, especially younger and Asian children, did not want to participate in it. As a consequence only 64 pictures were obtained. A further indicator of intelligence was provided by the measurement of children's attention spans. The children's ages ranged from 22 to 55 months, with a mean and median of 38 months and a mode of 42. For purposes of analysis age was calculated to the nearest six months as in 15 cases it was difficult to obtain exact dates of birth from Asian mothers. The sexes were almost equally divided with 82 boys and 83 girls. Sampling was also designed to produce, as far as possible, a comparability in age ranges and sex distribution among children within each social class and cultural subgroup. As a check for this and also to

verify the independence of the sampling variables, crosstabulations were run for age, sex and social group. The criteria of independence and a balanced distribution of age and sex in each subgroup were met as none of the crosstabulations reached the 0.5 level of significance.

With regard to social class, children from English working and middle class backgrounds were observed, the primary criterion of class membership being parents' home ownership. The 1972 General Household Survey illustrated that for English people in Britain there was a relationship between tenure and socioeconomic group. For instance 77 per cent of heads of households who were in professional or managerial occupations owned their own houses, compared with 20 per cent of heads of households in unskilled manual work. Council housing is far more common among the lower than among the higher socio-economic groups. 56 per cent of unskilled manual households are in council housing, compared with only 9 per cent of professional and management households. In the present study children categorized as working class all lived on council estates, while those whose parents owned their homes were categorized as middle class. Four additional cultural groups were observed, these were Sikh, Muslim, Hindu and West Indian. The justification for differentiating within the Asian sample and for examining social class differences in the English sample lies in the hypothesis that economic level, religious and cultural background are likely to affect behaviour. The sample of English children is differentiated by economic manifestations of class difference ie. house type and location.

Different socio-economic backgrounds among English children are usually indicative of different cultural backgrounds (Bernstein and Henderson, 1969). This leads to differences in child-rearing patterns and expectations of how children should play as between the social classes.

The case is different, however, with Asian children. Here the most obvious sources of cultural differences lie not in differences stemming from economic background, but in differences of religion and areas of origin. Thus in order to tease out cultural differences among the Asian group of children it is necessary to look at the area from which they came and the religion they practise. The General Household Survey for 1972 indicates that the relation between tenure and socioeconomic group for Asian heads of households is contrary to the usual one. Among Asian households the level of owner-occupation is substantially higher for manual workers than for professional and white collar workers. Over 80 per cent of households of manual workers are owner occupiers, which is over four times as high as among the general English population. Moving up the job hierarchy the proportions of Asians and English in owner-occupation come together and cross at the white collar level. At this point an equal proportion of Asians and English are owner-occupiers, while among the professional and managerial Asian heads of households only 58 per cent own their own homes. In short, as Smith (D) observed (1977) the poorer the Asians the more likely they are to buy their own homes. Smith illustrated that among the English

owner-occupation and good quality housing are strongly associated, whereas there is a negative relationship between these two factors among the Asian population. Poor Asians buy sub-standard properties because they are unable to rent council houses as they do not fulfil the allocation requirements and are unable to afford the rent of the size of house they need to meet their family requirements.

There is no one generally accepted way of measuring social class. Social class is a multi-dimensional phenomenon, and occupational status is its most commonly used index. However, as Douglas noted (1964), such an index has its disadvantage because it can not take job mobility into account and socially mobile families tend to have

"the characteristics and aspirations of the group they are joining rather than of the one they have left"
(Douglas, 1964: 40)

More recently Stewart, Prandy and Blackburn (1981) have recommended that people's jobs should not be used as indicators of their class position without taking into account age and therefore stage in career progression. They illustrate this, in particular, with regard to clerical work. Young ^{middle class} clerical workers often view such work as the first rung of a job hierarchy and do not anticipate being in such jobs for very long. In the present study it was considered that occupation might not be the most reliable indicator of social class as most of the fathers of the children in the sample were in their twenties and in many instances were at the bottom of their occupational hierarchy. It was felt that such criteria as occupation and income level might be more appropriate in cases where the main wage earner was in his thirties, forties or fifties and near or at the peak of his career.

A number of researchers have tried to assess social class according to house type or dwelling area of the sample. Warner(1949) used a scale based on weights attached to occupation, dwelling area, house type and source of income. Hollingshead (1958) used occupation, dwelling area and education. Bossard (1951) considered that the best way to arrive at an estimate of social class was to consider the house itself as the variable. In this connection he developed a Spatial Index for Family Interaction based on the number of persons in the household and the size of their living quarters. Osborn and Morris (1979) developed a social index for measuring social class which focused on a child's home and cultural milieu. The three most significant social factors in the index were occupational status, level of education, house type and location. Rex (1971) used the concept of "housing classes" to describe the social structure of Birmingham and indicated that

"The concept of housing classes was intended to pose questions and help the way towards a more precise delineation of the social structure and conflicts of the city." (Rex, 1971: 295)

In other words the concept of housing class was useful as a starting point in outlining the social class situation in Birmingham. I think home ownership taken in conjunction with dwelling area is an adequate indicator of social class. It is particularly useful as a social class indicator in a large city such as Birmingham where social classes tend to live in separate areas (Rex and Moore, 1967).

The present study took home ownership as the criterion of social class. The criterion seemed to work in practice as all those who rented their homes also lived on council estates, while those who owned their own homes lived in more spacious surroundings. Photographs were taken of the dwelling areas of the children in

the sample^{*}. Where it was possible also to ascertain the occupation of children's parents this was done, such information was more forthcoming from middle class mothers. The evidence I had on parents' occupation fitted almost exactly with my own distinction of social class according to the situation of home ownership. In only two cases was there a discrepancy between home ownership and parents' occupation. As a result two children were subsequently re-classified when their parent's occupations were known as it was considered that the type of house they lived in was out of keeping with the father's occupational status.

2. Dependent Variables: Selection of Indicators of Play Behaviour

Chapter 2 described how attention in the literature had centred round eight main aspects of play. The literature reviews in the subsequent four chapters were concerned with drawing hypotheses which related to these eight main aspects of play. These aspects are 1. Tactile play, 2. Artistic play, 3. Imaginative play, 4. Physical play, 5. Constructive play, 6. Passivity/Activity of play, 7. Scope of play, 8. Sociability of play. This section of the chapter will now consider which dependent variables will act as indicators of these eight main dimensions or aspects of play behaviour.

The 56 dependent variables in the present study related directly to the eight main aspects of play. Initially these 56 variables were examined as indicators. These were then reduced in two stages as the number was too unwieldy for statistical testing and it was thought desirable only to include the best indicators for analytical purposes. In the first instance indicators were eliminated according to three criteria. They were excluded if there was non-comparability in the

*These are presented in Appendix 3

play behaviour across the whole sample. This was the case with water and the climbing frame. As these were not present all the time on the playbuses children did not have equal opportunities to engage in play with them.

The second criterion for elimination was ambiguity in the interpretation of a particular behaviour. If it were thought that an item of behaviour could be interpreted in more than one way it was eliminated from the list of indicators. For example, constructing an object with lego or building blocks was eliminated as an indicator of constructive play as it was difficult to ascertain the exact point where the manipulative element gave way to the constructive. Two year old children in the sample enjoyed manipulating lego and other building materials. Between about the ages of three and four, the manipulative element involved in play with building materials gradually gave way to a constructive element. Children over four years of age could readily be identified as involved in constructive play with bricks and lego, and they now built constructions such as garages for cars and houses for small dolls. The intervening period between about three and four, when children's play with bricks and lego contained both manipulative and constructive elements, made it difficult for an observer to assess accurately which aspect was dominant at any one point in time.

The third criterion was non-occurrence of particular play behaviours. An acceptable threshold was taken to be that at least one-quarter of the sample had exhibited the play behaviour, in other words 41 children. A cut-off point of 41 children made it very likely that children from at least one social group would have participated in the

activity since the largest social group contained 34 children, and there was therefore some basis for comparison. If a variable did discriminate between groups of children it was necessary to have sufficient numbers in each in order to carry out statistical tests. Also from the point of view of statistical analysis it was thought desirable to avoid extremely skewed distributions*, and a variable having more than 75 per cent non-occurrences would be very skewed indeed.

After the first stage, 17 of the 56 original indicators had been eliminated on grounds of low frequency, 2 on account of non-comparability across the whole sample and 3 on grounds of possible ambiguous interpretations. The remaining 34 indicators were all relevant and described important behaviours falling into the main aspects of play behaviour; children had equal opportunities to engage in them on the playbuses; and their interpretation was unambiguous.

It was, however, intended to apply parametric statistical testing to these indicators because this offered the only satisfactory basis for multivariate analysis. It was therefore decided to apply the criterion of a minimum number of occurrences even more severely, in order to reduce skew even further. A further selection was made from the 34 indicators by applying the criterion that in the whole sample there should have been more occurrences than non-occurrences of the behaviour in question. In other words, the number of children who did

*skewness measured as per formula in Nie et al 1975. Statistical Package for the Social Sciences, New York: McGraw-Hill.

not exhibit this play behaviour should be less than the number of children who did exhibit it at least once; that is at least 82 children out of 163 (the 2 Asian Christians were excluded from most of the analysis) will have manifested the behaviour on at least one occasion. From a visual check of the frequencies it was evident that where half the sample of children had not participated in a play activity the discriminating power of the variable was generally low. Glue was the most popular play activity in this category. It had a low level of occurrence among children (N=55) mainly because only the older preschool children generally engaged in it. In the case of unstructured physical play this was also the only indicator remaining of physical play. With these two exceptions any indicators not satisfying this further criterion of at least 50 per cent occurrences were excluded from statistical analysis. At this second stage the number of indicators was reduced from 34 to 27. Table 7.2 lists these 27 indicators and orders them according to the eight main aspects of play previously identified.

The selection criterion of distributional skew which was used to reduce the originally large and unwieldy number of indicators is somewhat more stringent than that adopted by statisticians such as Lindquist (1953), Norton (1950) and Boneau (1960) who argue

"that the ordinary t and F tests are nearly immune to violations of assumptions" (Boneau, 1960: 50)

Norton conducted a study in which he took random samples of populations which violated the assumptions of normality and homogeneity of variance in F tests in predetermined fashions.

Lindquist, considering Norton's data and results, concluded that

Table 7.2 Aspects and Indicators of Play

TYPES OF PLAY	ASPECT OF PLAY	INDICATOR VARIABLES
MODES OF PLAY	1. Tactile Play	Sand.
	2. Artistic Play	Paint.
	3. Imaginative Play	Person-Oriented Imaginative Play Object-Oriented Imaginative Play.
	4. Physical Play	Unstructured Physical Play.
	5. Constructive Play	Glue.
	6. Scope of Play	Average Attention Span, Longest Attention Span, Diversity of Play Activities.
	7. Passivity/Activity of Play	Passive/Materials, Passive/No Contact Materials, Active/Materials, Active/No Contact Materials, Playfulness.
	8. Sociability of Play	Solitary, Group of two, three, four. Solitary/Passive, Solitary/Active, Parallel/Passive, Parallel/Active, Talks to other child, Spoken to by other child, Talks to self, Talks to Supervisor, Supervisor talks to child, Plays with Supervisor.

"the F-distribution is practically unaffected by lack of symmetry, per se, in the distribution of criterion measures ...the departure from normality will probably have no appreciable effect on the validity of the F-test, and the probabilities read from the F-table may be used as close approximations to the true probabilities" (Lindquist, 1953: 73-86)

Boneau in similar vein to Norton computed a large number of t values, each based upon samples drawn at random from distributions which had specified characteristics. As a result of this study he concluded

"That for a large number of different situations confronting the researcher, the use of the ordinary t test and its associated table will result in probability statements which are accurate to a high degree, even though the assumptions of homogeneity of variance and normality of the underlying distributions are untenable". (Boneau, 1960: 62)

Boneau illustrated how increases in sample size decreased the skew of the t distribution. Having developed a sampling distribution of t derived from different shaped curves he reached the conclusion that provided the sample sizes are the same, samples of 15 will suffice unless both distributions are skewed in opposite directions.

"Sample sizes of 15 are generally sufficient to undo most of the damage inflicted by violation of the assumptions...only in extreme cases would it seem that slightly larger sizes are prescribed" (Boneau, 1960: 60)

Boneau considered that in cases of extreme skew, samples of 30 were sufficient to ensure that the resulting distribution of t's would return to normality. He concluded that for practical purposes

"the t test is functionally a distribution-free test, provided the sample sizes are sufficiently large (say, 30, for extreme violations) and equal." (Boneau, 1960: 60)

In the present study in instances where an indicator has a skew

value of three or more, results will also be presented for nonparametric tests where they are available in equivalent forms. This provides the reader with the chance to make a comparison, according to his views about the criteria governing the choice between parametric and non-parametric tests. Researchers such as Blurton Jones (1972) and Arrington (1939) have similarly had skewed distributions and a high proportion of zero scores. Arrington considers that J distributions such as hers, together with a high proportion of zero scores, are to be expected in time sampling studies of children's play behaviours.

"there was no reason to expect symmetrical distributions of the frequency scores for most of these behavior categories ...When behavior is recorded in terms of a five-minute sample subdivided into five-second intervals, J distributions are to be expected for infrequently occurring behavior or for behavior which is required by the situation in which observations are made, the distribution being positively skewed in the former case, negatively skewed, in the latter. Very young children or nonsocial persons at any age level would, for example, be expected to have J-type distributions," (Arrington 1939: 155)

3. Nuisance Variables

Although the immediate environment was sampled to be as constant as possible, factors such as temperature and weather could not be controlled. Records were kept of the weather conditions at the time of each observation period and the play behaviour of children from the same social group were contrasted under poor or good weather conditions. No significant differences were found to emerge. Observations were carried out in the morning and afternoon but it was difficult to contrast morning and afternoon behaviour as all the play sessions involving English children, with two exceptions, took place in the mornings and most of the ones involving Asian children in the

afternoons. Comparing the play behaviour of Asian children who met in the morning with those in the afternoon the only significant difference which arose was gluing ($p = 0.02$). Since there is no obvious reason why time of day should affect children's preference for gluing, and since this is only one behaviour out of 27, it is possibly a spurious result.

THE SAMPLE AND THE PLAY ENVIRONMENT

It was intended that the sample of children in the study would be representative of the population of English and Asian preschool children living in Birmingham. The sample of English children was representative in so far as families living on council estates are representative of the working class and families living in owner occupier houses are representative of the middle class. Though in addition as a check most of the jobs of the fathers of middle class children were ascertained and about half those of working class fathers. Asian children in the sample are representative of the areas of origin of ethnic minority groups in Birmingham. The sample also seemed representative of the areas in Birmingham where the ethnic minorities lived. The type of houses the children lived in seemed representative of the types of houses lived in by other families of the same ethnic group. The sample was stratified and so no attempt was made to take a representative age grouping of the parent population. Sex was representative. All the Asian children who played on the playbuses Sam and George between November 1979 and March 1980 were included in the study. 60 per cent of English children playing on Suzie, Sam and

George between September 1979 and July 1980 were included in the study.

Children were observed from fifteen different playgroups. Three of these were predominantly English middle class, three English working class, three Muslim, three Sikh, two Hindu and one West Indian. The Muslims lived in the poorest areas which were close to the city centre. The Hindu areas were further from the city centre and slightly more prosperous. The Sikh houses were of better quality and situated in tree-lined avenues in Handsworth. Children from two of the English working class playgroups lived in flats or terraced houses in poor run-down areas close to the city centre. The third group came from a council estate in the suburbs, on the edge of the city boundary. The three groups of English middle class children came from suburbs some distance from the centre of the city. The West Indian children came from large terraced houses in Perry Bar, about 1½ miles from the city centre.

1. English Working Class Children

Children were observed from the two poorest working class playgroups visited by the playbuses and from one playgroup which was considered by play supervisors to be typically working class. Corroborative opinion was sought from play supervisors before it was decided which groups to observe.

The first poor working class area from which children came (area 1) was situated in a run-down industrial area of Nechells, close to the city centre. The children in the sample lived in poorly constructed, low-rise council flats. Mothers would come on the playbus and complain that these were badly insulated, let in the damp and were poorly sound-proofed. On one occasion when the playbus visited this site the mothers came on the playbus late as they

had been taking part in a protest outside the council offices to complain about their poor living accommodation. The styles of life of these working class children seemed to differ from those of the middle class children in the sample. For example, the working class children did not seem to be subject to such strict time schedules and routines. They were apt to watch television late into the night and did not have regular bed-times. Often meals were served at irregular hours, or else children were just given food when they complained of hunger. Mothers recounted stories in my presence which indicated loneliness and depression. Mothers' resignation and passivity seemed to be transmitted to their children. Many of them seemed too apathetic to play spontaneously and on occasions had to be coaxed into play by the supervisors.

Mothers' behaviour towards their children often seemed to swing like a pendulum between extreme passivity and sudden violent actions, depending it seemed on their mood of the moment. For example these mothers would sometimes sit apathetically and watch their children misbehave and do nothing about it. While on another occasion they might suddenly get up and sharply rebuke or slap their children for misbehaving. In a similar way children's behaviour seemed also to move between extremes of passivity and sudden outbursts of activity. For example on one occasion I observed a three and a half^{Year} old boy sit passively looking around for ten minutes and then suddenly jump up and go to the brick box and throw bricks round the bus. On another occasion I watched a child quietly painting at an easel and then all of a sudden start to paint the curtains and walls of the playbus with great zest.

About half the fathers of the children in this sample were unemployed and the remainder were in low-paid manual jobs in the local factories.

The second working class playgroup was also situated in Nechells and was close to the city centre (area 2). The children in this sample mainly lived in flats, some of which were seven storeys high. These had been built during the nineteen fifties and sixties to re-house people from the surrounding poor districts. The tower blocks were built on a green grassed area, which though it looked quite picturesque, was, so the mothers informed me, the preserve of local hooligans. As a consequence mothers were afraid to let their children out to play on their own. In contrast to the mothers in area 1 the mothers living in this area were not well acquainted with each other. Most of these mothers also expressed a wish to move from the tower blocks as soon as it was feasible. Most of the fathers of the children in this sample were in employment which was usually of an unskilled manual type. The mothers and their children seemed less apathetic and passive than was the case in area 1. Many mothers in area 2 showed an interest in their children's play and some of the imaginative play of these children was complex and original.

The third working class playgroup (area 3) was situated in very different surroundings from the previous two just described. The children attending the playgroup came from a newly built council estate in Northfields, on the fringes of the city boundary. The estate was still in the process of being built and was surrounded on three sides by green fields. The mothers were all new to the district and

had moved usually from poor inner city areas so that their husbands could obtain work in a nearby car factory. Most of the husbands had skilled or semi-skilled jobs there. Mothers and children appeared considerably more affluent than those living in areas 1 and 2. Mothers seemed to have a different conception of children's play and many said they sent them to the playbus because they considered that the experience might be of some benefit to them, rather than to "keep them quiet" or to "get them out of the way". Mothers living here seemed more relaxed and to have time on their hands. They sometimes stayed for a little while with their children on the playbus and participated in their play, and did not just passively observe their children at play like some mothers in area 1.

2. English Middle Class Children

Two of the middle class play sessions were also held in Northfields (areas 4 and 5) about half a mile away from the working class area just described. Some of these children lived in semi-detached houses and, according to their fathers' occupation would be classified as coming from lower-middle class families. Some of the fathers were supervisors and clerical workers, two were teachers and three were managers. The mothers in both of these play groups formed cohesive groups. Many had been to the same anti and post natal clinics. Mothers seemed to be concerned that their children's experience on the playbus should be a happy one and were anxious to stay on the playbus until they were sure that their children had settled in. This attitude of concern and responsibility for their children's welfare was in contrast to the attitude shown by many working class mothers who sometimes seemed to consider that

they had relinquished responsibility for their children once they had delivered them into the play supervisor's hands. The children in these playgroups were well-dressed, lively and vocal.

The third middle class playgroup (area 6) was situated in a very different area from the other two. It was set in a working class housing estate which was on the fringes of more prosperous areas. The play session attracted some children from the immediate working class housing estate and rather more from the more prosperous areas outside the immediate vicinity. These latter children (who were the ones studied) lived in detached owner-occupied houses and their fathers were employed in the professions. One father was a university lecturer, one a solicitor, another a barristor and two were teachers. These middle class children formed a cohesive group and hardly ever mixed in their play with the local working class children. They were particularly articulate, dominant and self assertive and knew exactly what they wanted to play with.

3. Asian Children

The mothers of all the Asian children in the sample were first generation immigrants and had been born and brought up on the Indian Sub-continent. Most of them had come over to England as young brides and had given birth to their children in this country. The areas of origin from which these mothers came is a follows:-

<u>Social Group and Area of Origin</u>	<u>Number of Children</u>
<u>Sikh</u>	
Punjab	30
<u>Muslim</u>	
Sind	13
Mirpur	9
North West Frontier	2
Punjab	7
Bangladesh	2
<u>Hindu</u>	
Punjab	19
Gujarat	5
Nepal	2
Total	89

MannWhitney U tests were run to examine whether Muslims and Hindu children from different areas showed within group variations in their play behaviour. The tests showed that Muslim children who originated from Sind differed from the other groups of Muslim children . They were less playful ($p = 0.08$), engaged less often in active play ($p = 0.06$), and more frequently in play in a group size of four ($p = 0.01$) and in parallel passive play ($p = 0.08$). Hindu children from the Punjab differed from children from Gujarat in having longer average attention spans ($p = 0.05$), playing less frequently on their own ($p = 0.01$), more frequently in a group of

two ($p = 0.01$) and in a group of four ($p = 0.06$) and in engaging less frequently in solitary active play ($p = 0.01$) and more often in parallel active play ($p = 0.01$). In short these results suggest that Hindu children from the Punjab are more sociable than those from Gujarat. Muslim children display within group variations along the active/passive dimension. The Sindhis as a group are more passive than the other Muslim children both when playing on their own and in a group situation.

The Asian families in this sample came from lower-caste rural backgrounds. They had usually come over to England because they had been economically powerless to improve their socio-economic position on the Indian Sub-continent. On the Indian Sub-continent people are differentiated socially and religiously into castes. The caste system is a hierarchical structure of hereditary groups, ascription into which is at birth. It originated in Hindu society and the theory can be traced back more than two thousand years to the Rigveda, where the four original castes are described as coming from Brahman the creator, with the Brahmins or priests coming from his head, the Kshatriyas or warriors from his arms, the Vaisyas or peasants from his thighs and the Sudras or serfs from his feet. From these four original castes many more occupational and subcastes have developed. Social taboos and the curse of untouchability grew up around the caste system and it became stratified according to a hierarchy of ritual purity

"Fear of pollution underlies the whole Hindu concept of life. Each caste is more or less pure, and all of a man's social relations are affected by the amount of ritual purity he possesses. The higher are defiled by the lower. There is no escape, except possibly through death and rebirth."
(Smith, 1963: 56)

The caste system provides the Hindu with a social framework within which he will spend his social life, unless he disgraces his caste and is expelled from it. It prescribes the range of people with whom the Hindu is expected to mix, his mode of behaviour and his social standing, and sets limits to his choice of marriage partner and occupation.

The Muslim caste system has similar structural features but not the same degree of ego involvement. It also lacks the concept of ritual purity. Muslims are not subject to the Hindu commensality rules which direct them with whom they can eat and drink, and they are not considered to be polluted if they come into contact with someone from a lower ranking caste. Like the Hindu child, the Muslim child learns early in life that he belongs to a particular caste (quom) and to identify those people with whom he can mix socially. Sikhism, though officially classless, does in effect have a number of castes. The Sikh caste system usually operates mainly in the occupational sphere and Sikhs from different castes seldom come into contact with each other except on Sundays when they pray and interact socially in the Gurdwara.

In general in England it appears that caste still operates as a basis of social organization and determines the circle of friends with whom Asians from the Indian Sub-continent are allowed to mix. In addition it would seem that ethnic minority families still have some of the attitudes typical of their caste in India, Pakistan and Bangladesh. For instance, in general, they are conservative and place great value on religious observances. Many

of these lower caste parents from rural areas on the Indian Sub-continent come from a strata of society where it is expected that children will adopt an adult role early in life. Often children from these backgrounds act as additional bread winners from the time they are six or seven years old, usually on a part-time basis. Although this will not be the case in England, Indian and Pakistani parents brought up in this tradition might well be expected to treat and regard their children with the attitude that children should work not play. It is perhaps not unconnected with this that Indian and Pakistani children can be seen sometimes from an early age helping out in their parent's shops. Shop-keeping is not an activity usually practised by those from higher castes.

In the present study mothers were asked for how long they had lived in England and t tests were carried out to see if children whose mothers had lived in England for less than eight years differed in their play behaviour from children whose mothers had been living in England for longer. Eight years was the point which divided the Asian sample into two equal parts. The tests suggested that there were few differences between the play behaviours of the two groups of children. The only variable on which the two groups showed a significant difference was talking to the supervisor, children whose mothers had been over here longer, spoke to the supervisor more frequently ($p = 0.04$).

Play supervisors filled in a questionnaire on how well Asian children spoke and understood English. The results from this are given in Table 7.3.

Table 7.3 Muslim, Hindu and Sikh Children's Command of English

1. GOOD COMMAND OF ENGLISH

	Muslims. (No.)	Origin	Hindu. (No.)	Origin	Sikh. (No.)	Origin
	3.	Sind	6.	Punjab	9.	Punjab
	1.	Punjab	1.	Gujarat		
	1.	Mirpur				
	1.	N.W.Frontier				
<u>Total Number</u>	6.		7.		9.	
<u>Total Percentage</u>	18.18%		26.92%		30%	

2. SOME COMMAND OF ENGLISH

	Muslims. (No.)	Origin	Hindu. (No.)	Origin	Sikh. (No.)	Origin
	6.	Sind	10.	Punjab	15.	Punjab
	3.	Punjab	4.	Gujarat		
	8.	Mirpur	2.	Nepal		
	1.	N.W.Frontier				
	2.	Bangladesh				
<u>Total Number</u>	20.		16.		15.	
<u>Total Percentage</u>	60.60%		61.54%		50%	

3. NO COMMAND OF ENGLISH

	Muslims. (No.)	Origin	Hindu. (No.)	Origin	Sikh. (No.)	Origin
	4.	Sind	3.	Punjab	6.	Punjab
	3.	Punjab				
<u>Total Number</u>	7.		3.		6.	
<u>Total Percentage</u>	21.21%		11.54%		20%	

Table 7.3 suggests that the Hindu and Sikh children had a better command of English than the Muslim children. Within the Asian groups the Punjabi Muslims and Hindus spoke slightly less English than their peers from other areas of India or Pakistan. A Kruskal Wallis one-way-analysis of variance was carried out to see if children from these three speech groupings differed in their play behaviour. The Kruskal Wallis test suggested that children who had a good command of English were more playful ($p = 0.00$),* more active ($p = 0.01$), engaged more frequently in unstructured physical play ($p = 0.00$), were less frequently passive, both when in contact with materials ($p = 0.01$) and when not in contact with materials ($p = 0.00$), spoke more frequently to supervisors ($p = 0.00$) and were spoken to more frequently by them ($p = 0.02$). They also engaged less frequently in solitary passive play ($p = 0.00$) and in parallel passive play ($p = 0.03$). In short the results suggest that the better the Asian child's grasp of English the more likely it is that he will engage in conversations with play supervisors and be lively, active and not passive in his mode of play. The results of this language study suggest that when interpreting the results it should be borne in mind that as a group Muslims may appear passive because their command of English is not as good as that of the Sikhs and Hindus. The fact that there was little difference in the play behaviours of children whose mothers had been living in England for shorter and longer periods of time indicates the powerful influence of social factors, and the fact that Asian mothers were little influenced by the cultural values of the host society.

*where the value of p is given as zero, this signifies that $p < 0.005$

It was difficult to observe many West Indian children as most of their mothers were out at work and the children were in day nurseries. The West Indian children in the sample all spoke good English, had been born in England and had grandparents who originated from Jamaica. I still feel it is valid to go ahead and compare the six cultural groups although I have shown there is some heterogeneity within them, since this heterogeneity is usually confined to a single dimension of play in each case. However, the presence of heterogeneity will be borne in mind when interpreting the findings from the main study.

4 Relationship between Play Supervisors and Children

The ratio of play supervisors to children was nearly constant between play sessions and between play buses. The mean number of supervisors per play session was 2.5, with a median of 2.5 and a range of 3.0. The style of supervision was constant across the three playbuses in an absolute sense, though not necessarily constant relative to the children. The leaders all had democratic styles of leadership and assumed non-directive roles, they responded to children's requests and needs rather than directing them into activities. The leaders were all permissive and there was little they did not allow. However they took a firm stand on certain matters, and were consistent on the stand that they took. Therefore the children knew where they stood with them and the precise limits to which they could take their behaviour. This combination of permissiveness with firmness allowed the children to respect the supervisors as persons and to combine this respect in some instances with genuine friendship. Play supervisors never allowed children to

interfere with each other's play and the first signs of any bullying were immediately suppressed. Children were also not allowed to leave the bus without informing the play supervisors first. They were expected to respect the play materials and equipment and not damage them in any way. Play supervisors were non-judgmental in their attitudes to children, and did not reprimand them when they spilt things or got covered in paint or sand. In fact, on all three buses few limits were set on the level of noise and mess. In general the supervisors observed, rather than participated in the children's play, although they did join in their games when asked specifically by the children to do so.

The play supervisors had received a similar training. They had regular meetings and training sessions together, and had rotated round the playbuses. The play supervisors made no special efforts to cultivate close relationships with the local communities as the playbuses were continually moving to different areas. They tended instead to regard the playbuses as self-contained entities. Sometimes the relationships of supervisors with some of the children were fairly superficial at an individual level as the purpose of the playbuses was to serve as many children as possible in the limited time available. The play supervisors did, however attempt to form some contact with mothers and in general had good relations with them. Mothers were allowed to come on the playbuses when they wished and not just for purposes of leaving and collecting their children; they could stay and have cups of coffee. In some cases mothers made the play

supervisors cups of tea in their homes and brought these on to the playbuses. Play supervisors made attempts to stimulate the mothers into thinking of ways in which they could provide permanent pre-school play provision for their children or encouraged them to use any existing provisions that there were in the area.

5. Location of Fieldwork

The fieldwork study was located in three playbuses. These were obsolete double-decker buses which had been converted to mobile play centres. The purpose of the playbuses was to provide facilities for preschool children's play in areas where none existed or else where mothers were not making use of them. Play supervisors involved the local mothers in their work so that they could hand over the running of the playgroup to them once it had been set up. About every six months the buses moved to new sites. In particular there was a lack of provision for preschool children's play on large housing estates and in the inner city ring area and the playbuses concentrated their efforts in these areas. The buses were identical in size, and had similar equipment and layout, as Figures 7.3 and 7.4 illustrate.

Most of the play materials were in sight on working surfaces or in appropriate containers. Due to lack of space some jigsaws and construction toys were in cupboards under a working surface but children were usually free to take these out if they wanted to. The buses all had sand, paint, books, soft toys and dolls, plastic farm animals, a toy telephone, dressing up clothes, push

carts, jigsaw puzzles, building and construction toys, lego, scissors, crayons and chinks, dough, playdoh and plasticine, musical instruments, hobby horses and zipper toys and junk material for making models. Although the equipment was similar on all three buses it was not identical as Suzie, unlike the other buses, did not have a climbing frame. George, unlike Sam and Suzie, had a slide and also in contrast did not have water during the mid-winter as the Asian mothers complained that it was too cold for their children to play with. In most other respects the playbuses were similarly equipped.

Observations took place during the first half of each play session. This was a free-play situation and play supervisors on all three buses interfered with the children's play and choice of materials as little as possible. A more structured play session occurred on all the playbuses shortly after the mid-morning or mid-afternoon break for refreshments, this often took the form of telling stories or group singing.

The Asian mothers expressed a preference for their children playing on the playbuses as distinct from nursery schools or playgroups as they felt playbuses were homely places with no smack of institutionalism about them. They felt free to pop in and out of them during play sessions to see how their children were progressing. The design and layout of the buses facilitated this as mothers visiting the buses could do so without having to make an obvious entry, as might be the case if they visited their children in a playgroup or nursery school. Mothers stated that their children

Figure 7.3 Schematic Plan of Playbus Lower Deck "George" - not to scale

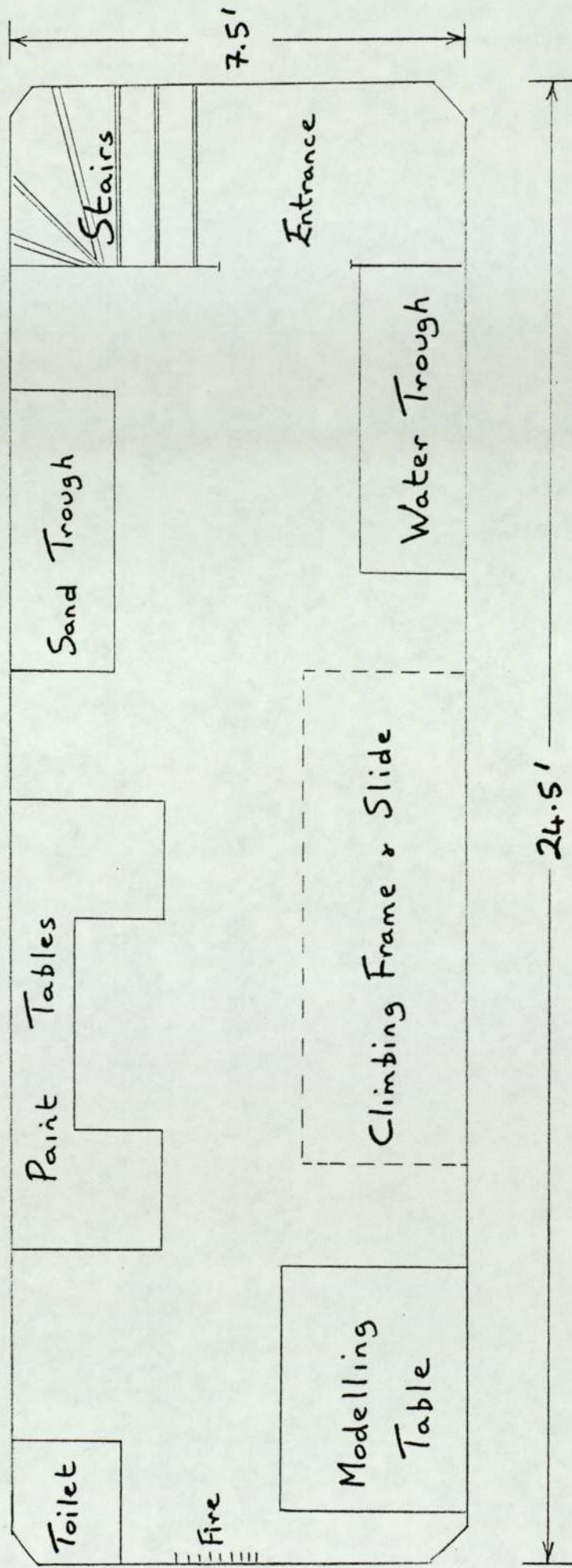
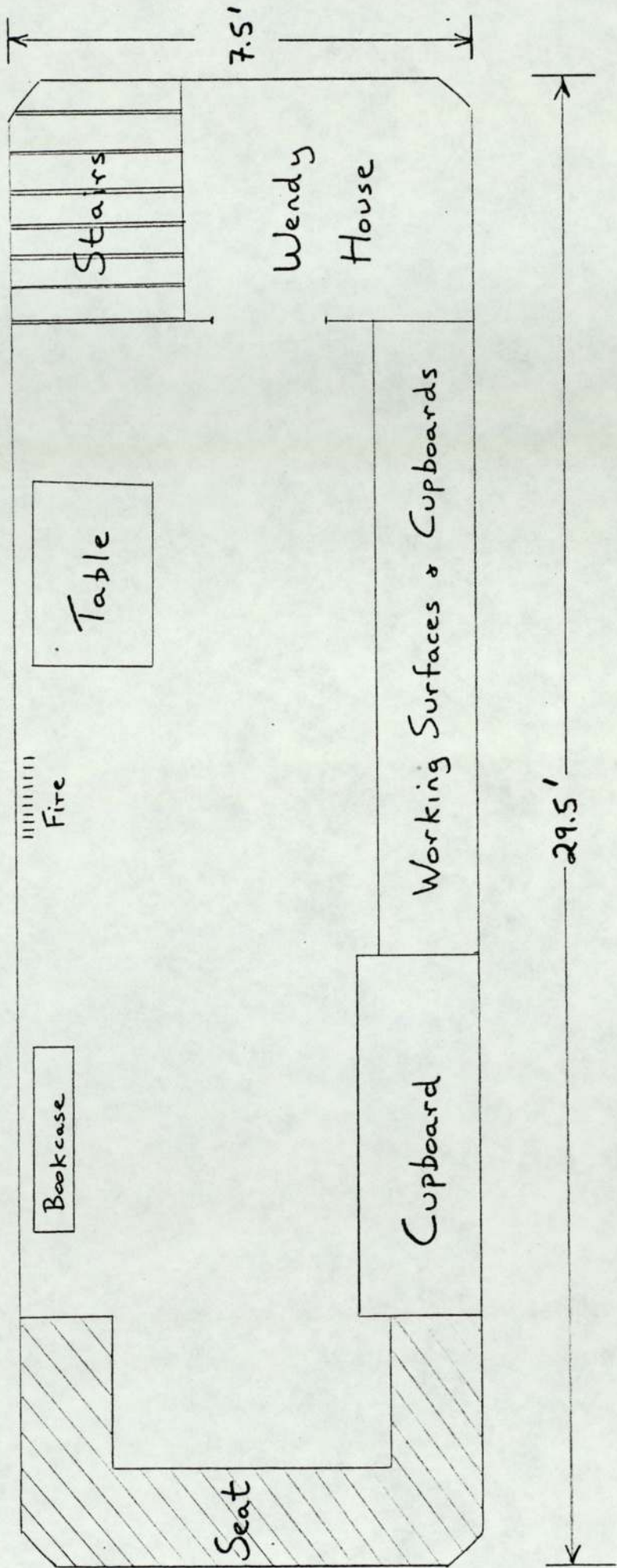


Figure 7.4 Schematic Plan of Playbus Upper Deck "George" - not to scale



liked to be able to play so close to their homes.

Children from the same ethnic group who attended play sessions on different buses were compared to see if their play behaviours differed in any way. The only difference to emerge was play with the supervisor ($p = 0.04$) which was more frequent on George.

5.1 Spatial density

The Playbus measurements are as follows;-

Upper deck

Length	:	29.5 ft.
Width	:	7.5 ft.
Area	:	221.25 sq. ft.

Lower deck

Length	:	24.5 ft.
Width	:	7.5 ft.
Area	:	183.75 sq. ft.

Total Play area : 405 sq. ft.

Total play area per child (at average of 10 children per play session) : 40.5 sq ft.

The local authority regulations for playgroups recommend a minimum floor space of 25 sq. ft. per child, and so the amount of

play space afforded by the buses falls within this limit. However, the reduced space inside the playbuses probably did put a curb on certain activities such as running about and rough and tumble, and fighting play. Smith and Connolly (1977 and 1980) observed the play behaviour of children in three different spatial densities of 25, 50 and 75 sq. ft. per child. They found that

"Space per se does not seem important to preschool children...Even in large space conditions children often crowd into close contact, for example to watch an adult, or around a sandpit. Thus close contact does not seem to predispose to conflict, unless access to a resource (e.g. an adult or sandpit) is thereby threatened." (Smith and Connolly, 1977: 612)

Smith and Connolly did, however, observe that rough and tumble play begins to be suppressed below about 50 sq. ft. /child (1977). At around this density they also noted that the climbing frame was used more often and seemed to provide an outlet for forms of gross motor activity which were inhibited by the lack of play space. They considered that children's play was not adversely affected by spatially crowded conditions until the density of play space per child was 15 sq. ft. or less. They maintained that the amount of play equipment per child and the access which children had to it to be more important influences on their play than the amount of play space provided. They concluded that

"The amount of space available mainly affected the amount and kind of physical activity. In a larger space there was more running, chasing, and vigorous or unusual uses of apparatus. In a smaller space there was more use of the climbing-frame and slide. A smaller space also meant more physical contacts between children, but no substantial change in social or aggressive behaviour." (Smith and Connolly, 1980: 309)

It is likely that the play milieu of the buses encouraged children to substitute structured physical play on the climbing frame and slide for unstructured physical play. Children, in the present study, did not often engage in rough and tumble play or in running and chasing games, but they did make frequent use of the climbing frame and slide. Suzie did not have either a climbing frame or slide and children were observed to use the stairs for climbing and swinging games. It is highly likely that the frequency count in the present study for unstructured physical play is lower than it would have been if children had been observed at play in a different setting.

The playbuses provided a wide variety of play activities for a large number of children from a wide geographical area. The main purpose of the playbuses seemed to be to serve as a bridge between home and school, introducing children to the materials they would meet with in school and providing a setting in which children could meet each other. The main disadvantages of a mobile play centre seemed to be that it had to act in isolation from other social services operating in the areas it visited, and built up few local contacts with the various local communities. The playbuses did, however, seem to attract children because of their novelty value. They also had the advantage of having a clear identity. It was obvious to mothers and children that the buses were made for children to play in. Play facilities held in buildings not designed for this purpose, such as church halls and schools, suffer a disadvantage in not having such an obvious identity and as a result supervisors often have to recreate an atmosphere of play each time they start a fresh play session.

The advantages, from my point of view, of locating research in the playbuses was that the immediate environment was held relatively constant. The disadvantages were that the buses were unreliable mechanically and were apt to break down or not reach their sites on time. For example on one occasion Suzie failed her MOT and was off the road for six weeks being repaired. On another occasion Sam's radiator developed a leak and he was off the road for over a month while Social Services debated where the money should come from for repairs needed. On a further occasion Sam's clutch failed and he was off the road for a couple of weeks. George had great difficulty starting on cold and wet winter mornings. Due to these mechanical failings I had to discard incomplete data sheets for forty children. Another disadvantage was that the buses changed their routes about every six months, which made research planning difficult. After the buses had started at a new site I had to wait a few weeks before starting my observations to ensure that the children had all settled in. I also had to take care to finish my observations before the buses moved on to fresh sites. In the end I was left with incomplete data for ten children because the buses had moved on to new areas before I had finished my observations.

RELIABILITY AND VALIDITY OF OBSERVATION MEASURES

1. Reliability

"The aim of observation is to describe a behaviour sequence in such a way that a maximum of convergence of reiterated observations of one observer as well as an

agreement between different observers observing the same sequence is reached. The convergence of their information can be called reality;" (Friedrichs and Ludtke, 1975: 4-5)

As Friedrichs and Ludtke indicated the question of reliability hinges upon the question of whether, if the same measuring instrument was used again, the same or similar results would be obtained. The greater the probability of this happening the more reliable the measures obtained from the instrument. Reliability, in the context of direct observation of children's behaviour, is a property of measures obtained through the application of a taxonomy. Kerlinger (1964) took a broader look at the concept of reliability and considered that it derived from two separate components - accuracy and stability. Accuracy he defined as precision, or the extent to which the measurements obtained were a true representation of what was actually observed. Stability he defined as whether the same results would be obtained after repeated measurements using similar instruments in a similar situation. Statisticians sometimes define reliability through error. The lower the error variance the greater the reliability of the measures obtained in the taxonomy.

In many studies of children's play reliability has been assessed by comparing the results of the main observer with those of an independent observer. In this connection Kerlinger (1964) noted

"practically speaking...the reliability of observations can be estimated by correlating the observations of two or more observers." (Kerlinger, 1964: 507)

In some studies reliability has been expressed as a correlation or percentage of agreement between two observers and where they have occurred zero scores have been included in the results. This method of estimating reliability is unsuitable in cases where the coding schedule has a large number of categories as there are bound to be a high number of cases when both observers have zero scores.

In the present study two reliability studies were carried out. In the first study, an independent observer recorded children's behaviour along with the writer, and their results were compared. In this exercise, nine children were observed for fifteen minutes on six different occasions. The children came from Sam and Suzie. Two of the children were West Indian and the rest were English. Four children were boys and five were girls. The independent observer and the writer observed the same child simultaneously but worked independently. They kept some distance both from each other and the focal child so that his rhythm of play would not be interfered with.

It was difficult to decide what sort of background the observer should come from and how much training and practice she should be given. The observer chosen was a university research officer who was untrained in the sense of not having previously observed children in her work. In some reliability studies (Arrington 1943) observers were given periods of intensive training. However, as Smith (1970) indicated

"It is only to be expected that after sufficient training two observers can come to share each other's interpretations and schemata. As far as communication with later readers is concerned, agreement with an untrained observer or observers might well be considered of greater interest. This would give an indication of how well the verbal category definitions can be understood by someone who does not have the benefit of the author's personal training in their interpretation."
(Smith, 1970: 19)

The procedure recommended by Smith was adopted in the present study. The observer was given no practice session on the playbus and I spent two hours on two separate mornings explaining the coding categories to her. The results of this reliability study are presented in Table 7.4. Reliability was assessed by the formula used by Jersild and Markey (1935) and Roper and Hinde (1978). The totals in Table 7.4 represent a tally of all items on which the two observers agreed, divided by the total of agreed occurrences.

^{PLUS OCCURRENCES}
k recorded by only one observer, the measure then being expressed as a percentage of the total number of observed occurrences.

Omissions and time faults, which showed up in different rates of sequencing, were counted in the present study as faults. In line with Smith (1970) the concordances presented in Table 7.4 were only calculated for categories where the denominator in the formula used for calculating observer agreement was at least ten.

The overall level of observer agreement, as Table 7.4 indicates is 81.0 per cent. This figure is in line with those of other studies. Smith (1970) remarked that

"In the case of more precisely defined or finer categories however, one might tentatively expect concordances in the range of 0.6 to 0.9. Without individual training, it may

well prove difficult to improve inter-observer agreements beyond this, even for the finer ethological categories of posture or facial expression defined entirely in physical terms." (Smith, 1970: 20)

The concordances obtained in the present reliability study will now be considered. The quantitative play count in Table 7.4 refers to a child's choice of play materials or equipment and is concerned with what a child is playing with. The qualitative play count in Table 7.4 refers to how the child was using that material or equipment. For example, the qualitative sand categories indicate whether the child was digging in the sand, raking it, putting it in a bucket and so on. The behavioural categories in Table 7.4 refer to the child's social behaviour on the playbus. These categories include the size and structure of the group the child was in and instances of positive social interactions such as touching and smiling and negative social interactions such as hitting, biting and taking toys from other children. There are also coding categories for vocalisations. These include crying, talking, laughing and play noises. The record sheets and coding categories used in the main study are presented in Appendix 1.

Table 7.4 indicates that agreement for the quantitative play count is higher than for the qualitative play count. This was because it was easy to see from a distance what the child was playing with, but not so easy to see how he was using it, as some of his fine manipulative movements were not visible to one of the observers. The concordances for the behavioural categories are lower, as Table 7.4 indicates than for the two play categories.

Table 7.4 Reliability Study No.1.*

Categories	Percentage of Inter-Observer Agreement	Nos. of Agreements of 01 and 02.	Total Nos. of Occurrences	Range of Agreements between Observers (Percentage)
1. GENERAL PLAY EQUIPMENT				
<u>Mean Quantitative Play Count</u>	97.9	331	338	100-86.7
2. QUALITATIVE PLAY				
Lego & Construction	90.5	19	21	100-86.7
Plasticine & Dough	70	28	40	100-33.3
Glue	87.5	14	16	100-80
Sand	76.5	26	34	100-50
Water	77.9	53	68	100-66.7
Imaginative Play	90.1	64	71	100-66.7
<u>Mean Qualitative Play Count</u>	81.6			
3. BEHAVIOURAL CATEGORIES				
Group Size	82.1	271	330	100-46.7
Laugh	71	15	21	100-33.3
Cry	93.3	28	30	100-83.3
Talks to other Child	73.6	67	91	100-0
Spoken to by other Child	59.2	42	71	100-0
Talks to Supervisor	62.8	59	94	100-0
Supervisor talks to Child	68.3	69	101	100-11.1
Talks to Self	40	12	30	100-0
<u>Mean Behavioural Count</u>	73.3			
GENERAL PERCENTAGE OF INTER-OBSERVER AGREEMENT				
	81.0			

*Agreement in recording categories of children's play behaviour over 9 play periods on 6 different occasions.



This lower percentage of inter-observer agreement was due to lack of visibility. Usually one or both of the observers was some distance from the child and this meant that some of the child's facial expressions were only visible to one observer and his utterances were likewise often only audible to the observer nearest him. In other words differences between the two observers were due in the main to lack of visibility rather than to disagreements over which categories to record play behaviours in.

Although the general percentage of inter-observer agreement in the first reliability study, just described, was reasonably high, I decided to carry out a second reliability study designed on different lines. Eleven observers were used in this second study. They came from different backgrounds, two were psychology lecturers, two sociology lecturers, one a research assistant, two postgraduate students and finally four were playleaders. For this reliability study I made a video-tape of four children at play, and each child was recorded for fifteen minutes. The observed children were an English boy and girl and a Sikh boy and girl. The formula used to estimate concordances was the same as in the first reliability study. The eleven observers were divided into four groups and each group viewed the video-tape on a separate occasion. I analysed the video-tape and compared my results with those of the eleven observers. Each group came to the University television room one hour before they were due to take part in the reliability study. During this one hour session they were given an explanation of the categories and a ten minute practice session

during which they attempted to record children's play behaviour from a practice video-tape. The exact instructions which I gave to the observers and the difficulties they encountered in taking part in this study and the problems it raised are illustrated on a video-tape which was made of this reliability study and which is presented in Appendix 4. The use of a camera to record a reliability study illustrates to other researchers the exact amount and kind of explanations that were given to observers and the precise time they were allowed for practice. Information such as this may afford some measure of comparability between different reliability studies, which is at the moment sorely lacking.

The results of the second reliability study are presented in Table 7.5. The results for this reliability study are very similar to those obtained in the first study. The average percentage of inter-observer agreement only varies by 3.6 in the two studies. The quantitative play count, which measures what the child was playing with remained constant between the two studies. The mean qualitative play count which measures how the child was playing with materials or equipment is lower in the second study. This was due mainly to differences in the recording rhythm of the eleven observers. For example if one observer records a child's use of equipment a few seconds later than another observer the child might well have changed the manner of his play in the meantime. The percentage of observer agreement for behaviour is higher in the second study as all the observers had the same visibility and could see exactly what the focal child was doing.

Table 7.5 Reliability Study No.2*

Categories	Percentage of Inter-Observer Agreement	Nos. of Agreements of 01 and other Observers	Total Nos. of Occurrences	Range of Agreements between Observers (Percentage)
MEAN AGREEMENT FOR THE FOUR CHILDREN				
1. <u>Mean Quantitative Play Count for General Play Equipment</u>	97.3	661	679	100-81
2. <u>Mean Qualitative Play Count</u>	76.2	551	723	100-0
3. MEAN BEHAVIOURAL COUNT FOR:-				
Group Size	89.5	603	674	100-57
Type of Play	76.8	479	624	100-35.7
Supervisor talks to Child	85.8	182	212	100-0
<u>Mean Behavioural Count</u>	83.2	1451	1744	100-0
MEAN PERCENTAGE OF INTER-OBSERVER AGREEMENT				
	84.6	2663	3146	88.6-79.5

*Agreement between main observer and 11 other observers in recording categories of children's play from a video-tape of 4 children's play behaviour over a one hour period.

The results of these two reliability studies are similar to those obtained by Smith and Connolly (1980). Their concordance figures were 95 per cent for a general activity category, 82 per cent for companion categories and 74 per cent for behaviour categories. They

"considered that a concordance of 60 per cent or over to be satisfactory, given that observers were not trained to reach higher agreement." (Smith and Connolly, 1980: 41)

The results of the two reliability studies suggest that the data obtained in the main fieldwork study is reasonably accurate. Tests were now carried out to see how internally reliable it was, that is how stable it was from one watch to another. The greater the stability of behaviour over time the greater its reliability and the more able researchers are to make predictions from it.

Measures of internal reliability were first obtained by splitting the data for each child into two equal halves, each containing frequencies from two different watches. The frequencies from the two halves were then correlated. Since the correlation coefficient obtained is representative of the reliability of a half sample, it was thought appropriate to correct it using the Spearman-Brown "prophecy formula" of

$$r_{\text{whole-sample}} = \frac{2 \times r_{\text{half-sample}}}{1 + r_{\text{half-sample}}}$$

The Spearman Brown split-half reliability coefficients are presented in Table 7.6. The data indicates how stable the

frequencies are for different categories of play behaviour.

In order to assess the stability of play behaviour over the four watches alpha coefficients were also obtained. These are also presented in Table 7.6.

Table 7.6 suggests that behaviours which tend to rely more on psychological properties inherent to children than on the presence of external phenomena such as play materials and other children, are more constant over watch periods. Two watches of fifteen minutes would have been sufficient to ascertain children's diversity of play and how playful, passive, active and talkative children "normally" are and how often they usually engage in object oriented imaginative play. However four watches of fifteen minutes were insufficient to get a reliable picture of how often children "normally" engage in paint play and in group play. Paint play is concerned with choice of play material and, as well, has a wide range of substitutes, such as pencils, crayons and chalk. In group play children are dependent on other children.

A closer examination of the data suggested that play with paint and group play tended to occur in phases. Play with paint decreased in frequency over the four watch periods. This was probably because the paints often became mixed together and somewhat messy. Children tended to engage more frequently in group play during the second and third watch periods. They probably needed a period of time to settle down in the playbuses before engaging in play with

Table 7. 6 Alpha Coefficients and Spearman Brown split-half
Reliability Coefficients. (N=163)

	Alpha Coefficients	Spearman Brown Corrected split-half Reliability Coefficients
Sand	0.46	0.58
Paint	0.29	0.17
Person. Or. Imag. Play	0.50	0.65
Object. Or. Imag. Play	0.76	0.79
Unstruc. Phys. Play	0.35	0.45
Glue	0.49	0.53
Average. Att. Span	0.48	0.64
Longest. Att. Span	0.49	0.61
Div. Play Activities	0.61	0.75
Passivity	0.73	0.87
Activity	0.73	0.83
Playfulness	0.88	0.92
Solitary	0.52	0.64
Group of Two	0.40	0.47
Group of Three	0.20	0.29
Group of Four	0.19	0.17
Talks to other Child	0.66	0.84
Spoken to by other Child	0.59	0.77
Talks to self	0.56	0.66
Talks to Supervisor	0.66	0.80
Supervisor talks to Child	0.60	0.80
Plays with Supervisor	0.54	0.82

other children. There was a less marked phasic content to other play activities. For instance children engaged more frequently in both forms of imaginative play during the second and third watch periods. However, children were most playful and active during the first watch period. Children's attention spans also decreased after the first watch period. The differences in the reliability coefficients for object and person oriented imaginative play suggest that these are two separate activities and should not be treated as a composite measure.

In short, the greater the choice of play activities and the more dependent children are on other people for meeting a play need the less stable over time those behaviours are likely to be. In converse, those play behaviours which are inherent in children and not subject to the influence of choice and other children are more stable over time.

2. Validity

In general the more an observer has to interpret actions the greater the problem of validity. The main types of validity problems posed by the direct observation of behaviour are those of content and construct validity. Content validity is concerned with sampling adequacy and whether the items in the taxonomy are representative of the universe of contents being measured. In this study there was no selection or sample of play items, all the pieces of play equipment and materials and toys on the playbuses were included in the taxonomy. Efforts were also

made to employ measures not only of what children played with but also of how they played with them. Focal children's vocalisations were recorded, the group size they were in and their positive and negative social interactions. In these instances the aim was not to take a sample of children's most typical behaviours, but instead to act as a camera recording the onset and termination of as many behaviours of focal children as possible. Direct observation sometimes runs up against the problem of construct validity. This aspect of validity is concerned with how adequately the measures obtained from the taxonomy represent the "true" measures of the property examined. In other words construct validity is concerned with validating the theory or rationale behind the taxonomy. In the present study the emphasis is on measuring what is directly observed rather than relating it back to a prior theoretical construct. In other words behaviour on a play bus is viewed and regarded in its own right without taking it as a measure of cognitive growth, intelligence or peer group socialization. For these reasons questions relating to construct validity in this sense do not arise in the present study.

2.1 Factor analysis

Factor analysis was used to validate my *à priori* scheme. I attempted to see whether the data approximated to the *à priori* categories, especially in the case of multiple indicators. I intended to see whether the indicators of play behaviour were formed in the combinations that I had postulated. There was no reason to expect the single items relating to different play materials to

form part of composite factors.

Only 23 indicators were entered into the factor analysis. The multi-dimensional group indicators were excluded as they were not independent of other indicator variables and would have given spuriously high correlations. Active/Materials and Active/No Contact Materials are the two categories of activity of play. Active/No Contact Materials covers three categories of play; object and person oriented imaginative play and unstructured physical play. Active/No Contact Materials is not entered into the factor analysis, nor into the discriminant analyses described later in Chapter 10, as it duplicates the categories for physical and imaginative play. Active/Materials is included as it refers to twenty four other categories besides sand, paint and glue and its correlation with sand, paint and glue in each instance is not higher than 0.40, which only accounts for sixteen per cent of shared variance.

A Principal Component Analysis was run using the PAI factoring method in the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner and Bent 1975) to see if there was a main dimension of individual difference in children, based on the frequencies of their observed play behaviour, rather than a number of different aspects or dimensions. Table 7.7 indicates that there was not one main single dimension underlying play behaviour, instead the results indicated that there were several underlying dimensions. In this direct solution the eigen values of the first eight components were greater than 1.0 and accounted for

74.6 per cent of total variance. As Table 7.7 indicates the first component is termed Active Sociability and has high loadings for playfulness, talking and attention span and high negative loadings for the two indicators of passivity and for solitary behaviour. With the exception of the oldest group of children these loadings are consistent across the different social, sex and age groupings. This main component, active sociability, resembles the main component found by Smith and Connolly (1972), Blurton Jones (1972), Smith (1973) and Roper and Hinde (1978), all of whom found a main factor of social maturity which differentiated between children who talked and engaged in group play, from those who preferred to be on their own and who were usually passive as well.

Varimax and Oblique rotations were carried out. No appreciable differences emerged between the oblique and varimax rotations, indicating that the factors were largely independent. Table 7.8 indicates how the main components were broken down in the rotated solution. I tried a range of factor solutions. The most economic number that appeared satisfactorily to discriminate among the variables was five. Factors 1, 4 and 5 in the rotated solution presented in Table 7.8 represent a breakdown of the first component. The first factor had high loadings for talking to and being spoken to by other children and these were orthogonally related to solitary behaviour. This grouping of variables was constant across all social, sex and age groupings. Factor 2 was concerned with scope of play and had high loadings for the two indicators of attention span and lower loadings for sand and active play with materials.

Table 7.7 Principle Component Analysis of data from 163
Children using 23 Indicators of Aspects of Play
Behaviour

Factor	1
% of Variance	20.0
	Active Sociability
Sand	-0.05
Paint	0.00
Person Or. Imag. Play	0.54
Object Or. Imag. Play	0.44
Unstruc. Phys. Play	0.28
Glue	0.23
Average Att. Span	0.33
Longest Att. Span	0.42
Div. Play Activities	0.21
Playfulness	0.83
Passive/Materials	-0.41
Pas/No Con. Materials	-0.70
Active/Materials	0.33
Solitary	-0.50
Group of Two	0.23
Group of Three	0.26
Group of Four	0.31
Talks to other Child	0.66
Spoken to by other Child	0.53
Talks to Self	0.42
Talks to Supervisor	0.58
Supervisor talks to Child	0.38
Plays with Supervisor	0.13

The two measures of attention span are negatively related to diversity of play activities. The loadings for attention spans and diversity of play activities are constant across all the different groupings of children. The third factor is concerned with social behaviour directed towards the play supervisors. Two variables, talk to the supervisor and supervisor talks to child have high loadings and are constant across all groupings of children. Talks to self and play with the supervisor had low positive loadings. It would appear from Table 7.8 that there are two distinct forms of social play, one directed to other children and one to play supervisors. I should, therefore, have broken down sociability of play into orientation towards peers and orientations towards adults in the playground situation. In the analyses in Chapters 8 and 9 the results are presented for separate indicators.

Factor 4 is concerned with passivity/activity of play. There are high positive loadings for playfulness, active play with materials and diversity of play activities and high negative loadings for passive in no contact with materials. These factor loadings showed only small variations between the different groups of children. Factor 5 indicates that the two indicators of imaginative play are highly correlated. This grouping of the two variables was constant over the different groupings of children.

Factor analysis has been employed as a method of enquiry to ascertain how many discrete clusterings of behaviour there were

among the indicators and whether they corresponded to the modes of play and imaginative play which I extrapolated from the literature. The results in Table 7.8 show that the multiple indicators and the categories they refer to are close to those which emerged from the literature. Factor analysis separates out passivity and activity of play from scope, social orientation to peers, social orientation to supervisors and imaginative play. It must, nevertheless, be borne in mind that a

"positive correlation between items is not a necessary condition for them to be regarded as indicators of the same quality" (Hinde, 1979: 71: emphasis in original)

For instance in Table 7.8 sand is grouped with attention span but is not indicative of the same underlying dimension, it just happens that the activity which commanded a long attention span was sand ($r = 0.36$ with average attention span). Table 7.8 also shows that there is some overlap between the indicators. Active in contact with materials is shown as contributing to two factors, to scope and to activity/passivity. Diversity of play activities relates likewise to scope and to activity/passivity. When a solution involving eight factors was obtained, sand was separated from scope of play, which was conceptually more satisfactory, and social orientation was broken down into talking with peers and group size. These results suggest that sociability of play can be divided into three separate dimensions, group size, talking and communication with peers and orientation towards supervisors.

Table 7.8 Varimax Rotated Factor Matrix of data from 163

Children using 23 Indicators of Aspects of Play Behaviour

Factor	1	2	3	4	5
% of Variance	35	25.7	17.6	12.3	8.7
	Social Orientation	Scope	Adult Orientation	Activity/ Passivity	Imaginative Play
Sand	0.02	0.45	0.22	0.09	0.22
Paint	-0.10	0.22	0.03	0.09	0.04
Person Or. Imag. Play	0.16	-0.06	0.24	0.02	0.93
Object Or. Imag. Play	0.04	-0.15	0.24	0.13	0.71
Unstruc. Phys. Play	0.18	-0.21	0.30	0.13	-0.00
Glue	0.14	0.04	0.23	-0.00	0.10
Average Att. Span	0.17	0.86	0.10	0.03	0.09
Longest Att. Span	0.21	0.64	0.04	0.27	0.09
Div. Play Activities	-0.13	-0.66	0.09	0.57	0.08
Playfulness	0.37	0.07	0.36	0.67	0.20
Passive/Materials	-0.09	-0.02	-0.22	0.40	0.09
Pas/No Con. Materials	-0.17	-0.23	-0.16	-0.76	-0.18
Active/Materials	0.01	0.49	-0.10	0.76	0.39
Solitary	-0.70	-0.34	0.08	-0.06	-0.18
Group of Two	0.43	0.28	-0.02	-0.01	-0.11
Group of Three	0.30	0.05	-0.06	0.07	0.21
Group of Four	0.29	0.13	0.08	0.12	0.31
Talks to other Child	0.86	-0.16	0.18	0.20	0.03
Spoken to by other Child	0.80	-0.12	0.04	0.08	0.12
Talks to Self	0.12	-0.14	0.48	0.17	0.13
Talks to Supervisor	0.03	-0.06	0.84	0.27	0.04
Supervisor talks to Child	-0.19	0.02	0.82	0.16	-0.00
Plays with Supervisor	-0.16	0.02	0.46	-0.08	0.10

I next examined the correlations for variables with loadings of over 0.5 to examine the internal clusterings and to see how tight their fit was. The two indicators of imaginative play, person and object oriented, were shown to be highly related with a correlation of 0.77. In the correlation matrix for scope of play presented in Table 7.9 diversity of play activities, average and longest attention spans cluster quite strongly together.

Table 7.9 Correlation Matrix for Indicators of Scope of Play

	Diversity of Play Activities	Average Attention Span	Longest Attention Span
Diversity of Play Activities			
Average Attention Span	-0.60		
Longest Attention Span	-0.34	0.64	

The correlation matrix in Table 7.10 shows the degree of clustering of the indicators for passivity/activity of play. Passive/materials appears to have the lowest degree of association with the other indicators.

Table 7.10 Correlation Matrix for Indicators of Passivity/Activity

	Passive/ Materials	Passive/No Contact Materials	Playfulness	Active/ Materials
Passive/Materials				
Passive/No Contact Materials	0.21			
Playfulness	-0.46	-0.70		
Active/Materials	-0.28	-0.63	0.40	

The two indicators of orientation towards Supervisor , talking to supervisor and supervisor talks to child, were shown to be highly related with a correlation of 0.79. In the correlation matrix Table 7.11 it is apparent that the two talking variables are closely related and have moderate negative associations with solitary behaviour.

Table 7.11 Correlation Matrix for Indicators of Social Orientation

	Talks to other Child	Spoken to by other Child	Solitary
Talks to other Child			
Spoken to by other Child	0.83		
Solitary	-0.45	-0.46	

I next considered whether I could simplify the data by reducing the number of individual indicators by employing composite measures. I constructed a scale for Scope of play. Table 7.12 indicates that the average attention span is contributing the most to this dimension and the diversity of play activities the least. I decided not to form a composite from these measures as this would obscure subgroup differences. The West Indian children, for example, had a high score for longest attention span but a relatively low one for average attention span. This patterning would be lost if the two measures were combined. No other social group showed this discrepancy in scores for the two measures of attention span.

Table 7.12 Scale for Scope of Play

	Item-Total Correlation	Alpha if Item Deleted
Diversity of Play Activities	0.46	0.66
Average Attention Span	0.70	0.21
Longest Attention Span	0.61	0.57

Alpha Coefficient 0.77

I examined the alpha coefficient for passivity/activity of play as a composite measure. First of all I computed a scale in which the two measures of passivity were considered separately.

Table 7.13 Scale (1) for Passivity/Activity of Play

	Item-total Correlation	Alpha if Item Deleted
Passive/Materials	0.35	0.90
Passive/No Contact Materials	0.78	0.72
Activity	0.92	0.64
Active/Materials	0.71	0.77
<u>Alpha Coefficient</u>	<u>0.82</u>	

I then constructed a passivity/activity scale in which I included playfulness and combined the two passivity indicators.

Table 7.14 Scale (2) for Passivity/Activity of Play

	Item-total Correlation	Alpha if Item Deleted
Playfulness	0.76	0.96
Activity	0.92	0.59
Passivity	0.94	0.56
<u>Alpha Coefficient</u>	<u>0.93</u>	

I attempted to compute two composite measures for sociability of play. One of these was concerned with orientation towards peers and the other with orientation towards play supervisors. I decided not to use a composite measure for orientation to peers as the factor analysis had suggested that talking and group size were separate activities. In other words the children who liked to play in a large group were not necessarily the most sociable children. Children who talked the most were not necessarily found in large groups, in fact they were often found in a group with one other child.

Table 7.15 Scale for Orientation towards Peers

	Item-total Correlation	Alpha if Item Deleted
Talks to other Child	0.53	0.68
Spoken to by other Child	0.59	0.70
Solitary (NON)	0.68	0.60
Group of Two	0.58	0.63
<u>Alpha Coefficient</u>		<u>0.80</u>

Table 7.16 shows the alpha coefficient and scale for orientation towards play supervisors. It suggests that talking to the supervisor and being spoken to by the supervisor are closely related and that playing with the supervisor does not hang tightly together

with either of them. In other words the supervisors do not necessarily play with those children they speak to most frequently. Because of this difference it was thought more accurate to present results for orientation to supervisor separately for each indicator.

Table 7.16 Scale for Orientation towards Play Supervisors

	Item-total Correlation	Alpha if Item Deleted
Plays with Supervisor	0.40	0.88
Talks to Supervisor	0.71	0.57
Supervisor talks to Child	0.80	0.44
<u>Alpha Coefficient</u>	<u>0.76</u>	

Although these Alpha Coefficients suggest that satisfactory aggregate measures would have been possible I decided not to use them because, as will become clear in subsequent chapters, they would have obscured certain differences between categories of children which I wanted to bring out. These results also suggest that the multiple indicators are measuring the same construct.

This chapter has described the methods of data collection used in the fieldwork study. It has discussed why observation was selected as the main method of data collection and the form that this took. It described the structure of the taxonomy and the method of time sampling adopted. In the second part of the

chapter the independent, dependent and nuisance variables were considered and their role in the main study. The background of the children in the sample was described in Part 3, together with the play environment in which they were observed. The concern of Part 4 of the chapter was reliability and validity. The reliability and validity tests carried out in the present study were described in full.

The following three chapters are concerned with the findings of the field work study. Chapters 8 and 9 are concerned with hypotheses testing and Chapter 10 uses discriminant analysis to distinguish various subgroups in the sample.

CHAPTER 8

TYPES OF PLAY

THE PROCEDURE ADOPTED IN THIS AND THE FOLLOWING CHAPTER

The purpose of Chapters 8 and 9 is to test hypotheses concerning the contribution of variations in age, sex, ethnic group and social class to differences in children's play behaviour. Univariate F and t-tests are employed to examine specific hypotheses where sex and social group are predictors. These tests indicate the specific contribution which the predictors make to distinguishing between the sexes and social groups. A one-way analysis of variance is followed by a t-test in instances where it is necessary to pull out differences in the F-test relevant to the hypotheses. If the F-test suggests significant differences within the Asian group these are commented on but no further analyses are presented as these variations are not relevant to the hypotheses. When testing hypotheses a one-tailed t-test is used as they postulated a particular direction of relationship. Three-way analyses of variance are used to test simultaneously the effects of age, sex and social group on each indicator variable. When these analyses indicate the presence of interactions among the predictors, they are examined in greater detail by means of univariate analyses performed on the relevant indicators of play. When age is treated as a continuous variable Pearson Product Moment Correlations are used. This coefficient gives a measure of the strength of a linear relationship between age and the relevant indicator variable. In

the multivariate analyses of variance, because the other predictor variables are category variables and also because of the need to have adequate numbers in each cell, age is treated as a dichotomous variable and is divided into two at the median, 3 years 2 months.

In this study $P = 0.05$ is taken as indicating for normal purposes a level of threshold for significant relationships. The word "tendency" is used to describe findings with levels of probability between 0.05 and 0.10. When the skew in the distribution is over three, the relevant Mann Whitney U value or the Kruskal Wallis statistic will be given at the bottom of the appropriate table. Ethnic group and social class both constitute social groups to which children belong and some analyses will consider them jointly in terms of the children's "social group".

The main analysis reported in the following two chapters refers to the sample as a whole, that is to 163 children (the two Asian Christians are excluded). Any subgroup differences in relationships being analysed and which qualify the evaluation of hypotheses, are reported, with the exception of the West Indian subgroup where small numbers make such detailed analyses unreliable. The relationship between age, sex and the indicators of children's play behaviour were examined for West Indian children using non-parametric tests and few statistically significant findings emerged. A Mann Whitney U test is employed to examine specific hypotheses comparing the play behaviour of West Indian and English children where differences

are not clearly discernible in the one-way analysis of variance. When attempting to assess the combined effects of age, sex and social group in a multiple analysis of variance only English and Asian children are compared since otherwise the cell sizes would become too small. This grouping into two main social categories can be further justified since, as will be seen in this chapter and the following, the English and Asian children normally contrasted the most in their play, with West Indian children coming in between.

In this chapter and in Chapter 9, the analysis of findings is structured in terms of the indicators of play behaviour. This procedure is adopted with a progression towards multivariate analysis in mind which will be undertaken for each aspect of play behaviour in turn, after completion of univariate analyses. A further consideration is that the treatment of each aspect of play behaviour in turn should provide a somewhat more integrated and interesting review for the reader. Chapter 10, however, will re-analyse the data to explore the extent to which children can be differentiated in terms of each independent variable by reference to clusters of aspects of play behaviour*.

This chapter considers the association of age, sex and social group with each of the five main types of play. The hypotheses which were developed in Chapters 3 to 6 are examined for each type of play in turn. The findings of the present study are

*In addition, Appendix 2 provides the reader with an alternative organization of results by listing these according to each independent variable in turn.

compared at the close of the chapter with those of other researchers, following which there is a brief summary. The variables included in this analysis and the statistical tests employed are as follows:-

Table 8.1 Types of Play:- Variables and Statistical Tests Employed

Types of Play and Indicators

<u>Types of Play</u>	<u>Indicator Variables</u>
1. Tactile Play	Sand
2. Artistic Play	Paint
3. Imaginative Play	Person Oriented Imaginative Play Object Oriented Imaginative Play
4. Physical Play	Unstructured Physical Play
5. Constructive Play	Glue

Analyses Performed for each Type of Play

<u>Predictor Variables</u>	<u>Statistical Tests</u>
1. Age	Pearson Product Moment Correlation (for age as a continuous variable)
2. Sex	T-Test
3. Social Group	One-way Analysis of Variance, T-Test Mann-Whitney U Test and Kruskal-Wallis Test
4. Social Class	T-Test

1. Tactile Play

For purposes of this study tactile play was described in Chapter 2 as play with raw materials. The three playbuses all provided the children with such raw materials as sand and clay or clay substitutes such as playdoh, dough or plasticine. Water was always present on Suzie and Sam but the water trough on George was not filled during the two coldest winter months following a request from some of the Asian mothers. Although play in the water trough was in general very popular with the children it is not used in this study for comparative purposes as the children did not all have equal access to it. It is possible that the frequency counts for sand and clay may be higher for the children on George during the winter months of December and January than would normally have been the case if water had been provided, as these two materials could to some extent have been substituting for it. Clay was popular with the children, however sand was more popular and clay was eliminated as an indicator as it just failed to satisfy the criterion in terms of skew.

The hypotheses which were formulated for tactile play are that:

- A1 the incidence of tactile play will decrease with age (Chapter 3)
- S1 the incidence of tactile play will be the same for boys and girls (Chapter 4)
- E1 the incidence of tactile play will be greater for Asian children (Chapter 5)
- E2 the incidence of tactile play will be the same for West Indian and English children (Chapter 5)
- C1 the incidence of tactile play will be the same for middle and working class children (Chapter 6)

There appear to be three distinct patterns of play with sand on

the playbuses. Younger* children and Asian children who were unfamiliar with sand tended to go through an initial period of examining the intrinsic qualities of sand. This period was preliminary to any actual play with it. The form this examination took included staring at the sand, smelling it, eating it, running hands through it and throwing it. On average children engaged in this form of sand play 20.9 per cent of the time they were observed playing with sand. Having come to terms with the unique properties of sand children tended to pass onto a second phase during which they manipulated the sand. During this phase children were not concerned with making anything in the sand but rather they poured sand in and out of different containers or buckets, dug in it, raked it, smoothed it, patted it, drew in it with the tips of fingers and shovelled it. This was the most frequent type of sand play observed in the playbuses and occupied 70.1 per cent of the time children spent at play in the sand trough. Between the ages of three and four years when children had seemingly exhausted the manipulatory possibilities of sand, they tended to use it as a setting for other play pursuits. This use of sand as a setting seemed to assume three forms. Children used the sand trough to play games in with equipment such as toy cars and animals. The games, rather than the sand was the focus of the child's attention. In this context children were observed hiding and finding toys in the sand. This type of games is illustrated in the accompanying video-tape: (No 1, counter Nos. 265-287). Games with toys in the sand occupied 4.6 per cent of children's time in the sand

The second type of sand play in which sand was secondary to the activity carried on in it, was constructive play, children on

* In the following analyses the point of division between "younger" and "older" children is 3 years 2 months, which is the median age for the sample as a whole.

occasions made sand pies, roads for their toy cars and homes for plastic toy animals. In this study constructive play accounted for only 1.6 per cent of children's total time at play with sand. Clearly children were using other materials for constructive play, such as paper and glue, and clay. Sand may only be used for constructive purposes when there is a lack of other suitable materials. In this study sand was being used predominantly for manipulatory purposes and when children wanted to play imaginatively or constructively they found other play materials suited these purposes better. Children only spent on average 0.4 per cent of their time at play with sand in imaginative sand play. Sand, may therefore, be considered to be a good indicator of tactile play as 91 per cent of sand play is tactile; that is children are concerned with the feel of sand rather than constructing objects with it.

1.1 Incidence of sand play

Table 8.2 indicates that sand play was a popular activity. For ease of interpretation the frequencies of 120 observations per child have been converted into a percentage.

On average children engaged in play with sand 14.9 per cent of the time during which they were observed. They played with sand more often than they played with any other play material. The popularity of sand can also be gauged by looking at the proportion of children for whom it attracted their longest spell of attention. When recording the children's longest attentions spans, sand was the most important in quantitative terms providing the longest attention spans for 26 per cent of the children.

Table 8.2 Incidence of Sand Play (percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Sand	14.9	16.7	10.00	0-95	1.59

1.2 Age and sand play

There was no linear relationship between age and frequency of sand play. The Pearson correlation between the two variables was -0.02. Closer inspection, however, revealed that there was a tendency for the popularity of sand play to decline after about the age of 3½ years, though this tendency was small and statistically non-significant. Age, then, in the range of years sampled, had little bearing upon the popularity of sand play, but as was remarked earlier it was relevant to the way in which children tended to play with sand.

1.3 Sex and sand play

Taking the sample as a whole, there was no significant difference in the frequency of play with sand between boys and girls as the following table indicates.

Table 8.3 The Relationship between Sex and Sand Play (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Sand	15.75	14.08	0.64	0.26

It is observable though, that while there were no sex differences between Asian children in their preferences for sand play, among English children sand was significantly more popular among boys as Table 8.4 indicates

Table 8.4 The Relationship between Sex and Sand Play
among English Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Sand	14.94	8.78	1.98	0.03

1.4 Social group and sand play

Table 8.5 indicates that there were some significant differences in the frequency of sand play between social groups. Sikhs and Hindus tended to play most often with sand while in contrast West Indian and working class children were observed to play with sand less frequently. However it has to be borne in mind that for the West Indian subgroup the number of children was low. A t-test for social group differences between Asian and English children indicated that Asian children played significantly more frequently in the sand, the difference in means reaching a probability level of 0.007. A Mann Whitney U test for social group differences between West Indian and English children revealed no significant differences.

Table 8.5 The Relationship between Social Group and Sand Play
(percentage of all observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Sand	9.53	14.44	17.44	12.65	25.64	8.21

$$F = 3.84; p = 0.003$$

A t-test for social class differences among English children indicated that the variation in sand play between the social classes was not all that likely to have occurred by chance, the difference in means reaching a probability level of 0.06.

1.5 Multivariate analysis

The discriminatory effects of age, sex and social group were examined together. Age was divided into two categories and social group was divided into English and Asian. As Table 8.6 indicates, social group was the only independent variable predicting variance in sand play. Table 8.6 suggests a small degree of interaction between social group and age. A visual examination using scattergrams of sand play for Asian and English children separately reveals that the peak popularity of sand play was approximately six months later with Asian children than for the English children. The peak period of popularity for English children is at age three and for Asians at three and a half. In conclusion, among the independent variables examined social group membership was the only factor accounting significantly for differences in sand play. As can be seen from Table 8.6 only a modest percentage of variance in sand play was explained by the independent variables.

Table 8.6 The Relationship Between Age, Sex, Social Group and Sand Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	1.95	0.13
Social Group	4.98	0.03
Age	0.00	0.96
Sex	0.81	0.37
2 - Way Interactions	1.61	0.19
Social Group x Age	3.06	0.08
Social Group x Sex	0.36	0.36
Age x Sex	0.52	0.47
3 - Way Interactions	0.70	0.40
Social Group x Age x Sex	0.70	0.40

Percentage of Explained Variance 7.46%

The hypotheses which were formulated for tactile play will now be examined. The results do not support hypothesis A1 which stated that tactile play should decrease in frequency with age. There was, however, the beginnings of a decline in the popularity of tactile play after the age of 3½ and it is possible that if the age range had extended for another year this decline would have been more marked. These results do lend some support to hypotheses S1 and C1 which stated that tactile play would be as frequent among boys as girls and as frequent among middle class

as among working class children. The results are broadly consistent with hypothesis E1, however there are subcultural differences among the Asian group. The evidence is consistent with hypothesis E2 which stated that the incidence of sand play would not be significantly different for West Indian and English children.

Bearing in mind that tactile play, which is generally considered to fall into the sensory motor category, has been strongly associated by many psychologists as a concomitant of a stage of development (a certain age for the "normal" child) it is particularly interesting that its popularity is much more closely associated with social group membership than with age within the ranges sampled.

2. Artistic Play

The concept of artistic play, as mentioned in Chapter 2, refers to painting, drawing, crayoning and chalking. All three playbuses provided children with facilities for carrying out these activities. Crayoning was more popular than drawing with pencils or chalking on blackboards but not as popular as painting and was eliminated as an indicator as it failed to satisfy the criterion in terms of skew.

The hypotheses which were formulated for artistic play are that:

- A2 the incidence of artistic play will be greater for older children (Chapter 3)
- S2 the incidence of artistic play will be the same for boys and girls (Chapter 4)

- E3 the incidence of artistic play will be the same for Asian and English children (Chapter 5)
- E4 the incidence of artistic play will be the same for West Indian and English children (Chapter 5)
- C2 the incidence of artistic play will be the same for middle and working class children (Chapter 6)

2.1 Incidence of paint play

Paint was the third most frequently engaged in play activity, and as Table 8.7 shows its popularity was over half that of sand. Paint ranked second in attracting children's longest attention spans. 11.5 per cent of the children spent their longest periods of time in play with paint.

Table 8.7 Incidence of Paint Play (percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Paint	8.0	10.32	3.65	0-60	1.70

2.2 Age and paint play

There is a weak tendency for the frequency of play with paint to rise with age and on closer examination it was evident that there was a particular upturn in its frequency at four years of age. The Pearson

correlation between the two variables was 0.12 demonstrating a very weak linear relationship. Although the frequency of paint does not change markedly across the age range the way in which children tended to play with paint varied and appeared to accord with the conclusions of most psychologists that play with paint depends on a number of stages, the same material being used in different ways. Painting starts first as largely motor movement and then assumes an expressive and later a creative form. An additional form of paint play was also noted in this study, among Asian children. Between the motor and expressive play stages Asian children spent a long period of time investigating the nature of the painting materials. They would dip their hands in them, paint their hands, faces and other children in the playbus. An example of this is given in the accompanying videotape (No 1, counter Nos. 543-548).

2.3 Sex and paint play

Taking the sample as a whole, there was a small significant difference in the frequency of play with paint between boys and girls as the following table indicates, girls playing more frequently with paint than boys.

Table 8.8 The Relationship between Sex and Paint Play (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Paint	6.59	9.36	-1.73	0.04

2.4 Social group and paint play

As indicated by Table 8.9 with the exception of the Muslims, there are no significant differences in paint play between different social groups. The Muslims played less often with paint than any other social group, but they played less often than other social groups with most play materials, spending much of their time in passive observation.

Table 8.9 The Relationship between Social Group and Paint Play (percentage of all observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Paint	8.99	9.00	9.28	5.13	7.98	7.69

F = 0.72; p = 0.61

2.5 Multivariate analysis

Table 8.10 indicates that there was no single discriminatory factor accounting for significant differences in paint play. There was, however, a 3-way interaction between social group, age and sex which is nearly at the 95 per cent level of significance. What lies behind this interaction is the different relationship between paint and age and paint and sex in the English and Asian groups. Among English children there was a Pearson correlation of 0.33 between the popularity of painting and age ($p < 0.001$) while among the Asian children there was no correlation. Table 8.11 and Table 8.12 indicate the different preferences for paint play among boys and girls in the Asian and English samples.

Table 8.10 The Relationship between Age, Sex, Social Group and Paint Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	1.65	0.18
Social Group	0.77	0.38
Age	1.14	0.29
Sex	2.41	0.12
2 - way Interactions	1.41	0.24
Social Group x Age	2.02	0.16
Social Group x Sex	2.74	0.10
Age x Sex	0.01	0.93
3 - way Interactions	3.57	0.06
Social Group x Age x Sex	3.57	0.06

Percentage of Explained Variance 9.03%

Table 8.11 The Relationship between Sex and Paint Play among English Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Paint	9.05	8.96	0.04	0.97

Table 8.12 The Relationship between Sex and Paint Play among Asian Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Asian Boys (N=44)	Asian Girls (N=45)		
Paint	5.00	9.67	-2.10	0.02

The accompanying video-tape (No 1, counter Nos. 524-558) illustrates how the content and style of Asian children's paint play does not change with age as in the English case. Asian children may mature more slowly in this play preference because they do not play

with paint in their own homes. Perhaps the novelty of the play materials in the playbus encourages these children to spend more time examining their intrinsic qualities rather than progressing through the qualitative play stage where they experiment with the materials and use them for imaginative and constructive purposes. Most of the children on the playbuses only attended one play session per-week which, in the case of the Asian children, meant they had little exposure to such play materials as paint, sand and clay.

The hypotheses which were formulated for artistic play will now be examined. It was found that the popularity of artistic play increased slowly after the age of four years. Age was perceived as being more relevant to the way in which children used paint than to the frequency with which they engaged in play with it. The results indicate, however, subgroup differences among the sample, there being differences in the relationship between age and frequency of paint play in the English and Asian groups. Among English children paint was significantly more popular with older children, while it showed no age-related pattern with Asian children. Therefore hypothesis A2 does not gain general support but receives some support among English children but none among the Asian.

The results are consistent with hypothesis E3 which stated that there would be no differences between English and Asian children in the popularity of artistic play. There were, however, differences within the Asian group, Muslim children, engaging less frequently in paint play than Sikh and Hindu children. As is indicated in the accompanying video-tape (No 1, counter Nos. 524-621) there were also

qualitative differences in the manner in which Asian and English children engaged in play with paint. In short Asian children were more concerned with the process of painting and English children, in particular middle class children, with the product.

The results are consistent with hypothesis C2 which stated that there were no social class differences in frequency of play with paint. Hypothesis S2 does not gain general support but receives some support among English children and none among the Asian. Taking the sample as a whole girls were found to play significantly more frequently with paint than boys. However it was found that the relationship between sex and paint was different for Asian and English children. English boys and girls engaged in play with paint for nearly equal amounts of time, whereas the mean percentage of time spent by Asian girls in paint play was nearly double that of Asian boys.

3. Imaginative Play

Imaginative play is defined in the present study as 'pretend play' that is the 'pretend use of objects and people'. In this present study imaginative play was divided into two main categories: the pretend use of objects and the pretend use of people. In object oriented imaginative play the child's interest is focussed primarily on objects. For instance children were observed to make spiders out of clay and to chase each other round the room with them. And again children were observed making cakes from clay and 'baking' them in the 'oven' and offering them to other children as real cakes.

There were 27 coding categories for object oriented imaginative play.

In person oriented imaginative play objects assume less importance. This form of imaginative play is also called dramatic role play. Its main distinguishing feature is the shared enactment of roles. Instances of person oriented imaginative play were only categorised as such when it was clear from children's speech or actions that they had assumed identities different from their normal ones. There were no coding categories for person oriented imaginative play in the taxonomy and when it occurred it was recorded in long-hand and later content analysed in terms of its thematic content. Examples of both forms of imaginative play are given in the accompanying video-tape (No 1, counter Nos. 675-783).

Most of the roles assumed in person oriented imaginative play were domestic ones and the scenes acted out were domestic too. Children spent 15.9 per cent of the time they were engaged in person-oriented imaginative play in enacting roles which were not related to the home. These included such roles as nurses, doctors, cowboys and batman. Children spent 84.1 per cent of the time they were engaged in person-oriented imaginative play in acting out domestic roles. Much of the object-oriented imaginative play centred round domestic objects. 22.7 percent of object-oriented imaginative play centred round the pretend use of objects, such as tea-pots and cups, which had direct connotations with eating and drinking. Children often made themselves pretend cups of tea and sometimes offered these to playleaders and other children.

18.6 per cent of children's object oriented imaginative play was concerned with washing and ironing clothes; 31.2 per cent with dolls, children most commonly dressing, feeding and putting dolls to bed; 22.0 per cent was concerned with transformations, unrelated to eating or drinking and lastly 4.9 per cent of time spent in object oriented imaginative play was concerned with playing with objects used in cleaning and repairing a house.

The hypotheses which were formulated for imaginative play are that:

- A3 the incidence of imaginative play will be greater for older children (Chapter 3)
- S3 the incidence of imaginative play will be greater for girls (Chapter 4)
- E5 the incidence of imaginative play will be greater for English children (Chapter 5)
- E6 the incidence of imaginative play will be smaller for West Indian children (Chapter 5)
- C3 the incidence of imaginative play will be greater for middle class children (Chapter 6)

3.1 Incidence of imaginative play

Table 8.13 indicates that imaginative play was a popular activity. On average children engaged in imaginative play 12.31 per cent of the time during which they were observed. Imaginative play was the second most frequently engaged in play activity. When recording children's longest attention spans, imaginative play was the third most important in quantitative terms providing the longest attention spans for 7.7 per-

cent of the children.

Table 8.13 Incidence of Imaginative Play (percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Person. Or. Imag. Play	6.41	10.55	1.55	0-73	2.81
Object. Or. Imag. Play	5.90	9.86	1.00	0-62	2.75

3.2 Age and imaginative play

There was a modest linear correlation between age and frequency of imaginative play. The correlation coefficients of person oriented and object oriented imaginative play were 0.18 and 0.22 and were significant at the 0.01 level. A closer examination of the data showed that the relationship between age and imaginative play varied between Asian and English children. The correlation coefficients of person and object oriented imaginative play for English children were 0.22 and 0.30 whilst for Asian children they were -0.01 and 0.13. There was thus a positive relationship between the frequency of Imaginative play and age for English children, but none at all among Asian children in the case of object oriented imaginative play and person oriented imaginative play.

3.3 Sex_and_imaginative_play

Taking the sample as a whole, there were significant differences in the frequency of imaginative play between boys and girls. Girls spent significantly more time than boys in person oriented imaginative play and had a tendency to engage more frequently in object oriented imaginative play, as Table 8.14 indicates.

Table 8.14. The Relationship between Sex and Imaginative Play
(percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Person. Or. Imag. Play	4.38	8.38	-2.44	0.01
Object. Or. Imag. Play	4.78	7.00	-1.44	0.08

3.4 Social_group_and_imaginative_play

Table 8.15 indicates that the differences between the Asian and English groups were considerable. Asian frequencies were low for both sexes. West Indian children engaged more frequently in imaginative play than Asian children but on average less than English children. West Indian children did not vary significantly from English children on either indicator of imaginative play.

Table 8.15 The Relationship between Social Group and Imaginative Play
(percentage of all observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Person. Or. Imag. Play	10.48	13.06	2.39	3.28	3.37	5.52 ^a
Object. Or. Imag. Play	8.21	9.23	2.31	3.36	4.55	10.38 ^b

a. $F=5.77$, $p < 0.001$ b. $F=3.04$, $P=0.01$

A t-test between social class groups indicated that the differences in the frequency of imaginative play did not reach significance level.

3.5 Multivariate analysis

When the discriminatory effects of age, sex and social group were examined together it was apparent that social group was the main independent variable predicting variance in imaginative play as Tables 8.16 and 8.17 indicate. There was also some degree of interaction between social group and sex, which was more significant in the case of person oriented imaginative play. The discriminatory powers of social group and social group and sex interacting together explain a larger proportion of variance in the case of person oriented imaginative play than object oriented imaginative play. The two-way interaction between sex and imaginative play suggests that the relationship between sex and imaginative play is different in the English and Asian samples. Tables 8.18 and 8.19 show that whereas imaginative play was found significantly more frequently among English girls there was no such sex-related preference for Asian children

Table 8.16 The Relationship between Age, Sex, Social Group and Person Oriented Imaginative Play

Person Oriented Imag. Play	F Ratio	Level of Confidence (p)
Main Effects	11.28	0.00*
Social Group	27.01	0.00
Age	0.33	0.57
Sex	5.18	0.02
2 - Way Interactions	2.06	0.11
Social Group x Age	0.43	0.51
Social Group x Sex	5.00	0.03
Age x Sex	0.10	0.76
3 - Way Interactions	0.55	0.46
Social Group x Age x Sex	0.55	0.46

Percentage of Explained Variance 22.34%

*In this and following tables where levels of confidence are rounded to two places of decimals, any value of p which is less than 0.005 will be shown as 0.00

Table 8.17 The Relationship between Age, Sex Social Group and Object Oriented Imaginative Play

Object. Or. Imag. Play	F Ratio	Level of Confidence (p)
Main Effects	6.91	0.00
Social Group	11.86	0.00
Age	3.34	0.07
Sex	3.44	0.07
2 - Way Interactions	1.97	0.12
Social Group x Age	0.71	0.40
Social Group x Sex	4.54	0.04
Age x Sex	0.30	0.58
3 - Way Interactions	0.82	0.37
Social Group x Age x Sex	0.82	0.37

Percentage of Explained Variance 16.21%

Table 8.18 The Relationship between Sex and Imaginative Play among English Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Person. Or. Imag. Play	7.27	15.73	-2.31	0.01
Object. Or. Imag. Play	5.03	11.95	-2.33	0.01

Mann Whitney U = 278.5 p = 0.01
 U = 312.5 p = 0.02

Table 8.19 The Relationship between Sex and Imaginative Play among Asian Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Asian Boys (N=44)	Asian Girls (N=45)		
Person. Or. Imag. Play	2.69	3.32	-0.63	0.27
Object. Or. Imag. Play	3.22	3.48	-0.19	0.42

Mann Whitney U = 847.5 p = 0.22
 U = 839.0 p = 0.17

Hypothesis A3 stated that imaginative play would increase with age. While for the sample as a whole the hypothesis appeared to be supported, it was subject to intercultural differences. Imaginative play was significantly more popular with older English children. Among Asian children person oriented imaginative play had no relationship to age while object oriented imaginative play was actually negatively related to age.

The results are broadly consistent with hypothesis S3 which stated that girls will engage more frequently in imaginative play than boys. Girls engaged significantly more often in person oriented imaginative play and they also tended to engage in object oriented imaginative play more frequently than boys. There were, however, again intercultural variations within the sample between English and Asian groups. English girls engaged significantly more than boys in both forms of imaginative play while among the Asian groups there was

no substantial difference in this respect.

Hypothesis E5 stated that the frequency of imaginative play would be higher among English than among Asian children, and this hypothesis is supported. There were greater social group differences in the popularity of person oriented imaginative play than in object oriented imaginative play. English children engaged in person oriented imaginative play often and Asian and West Indian children infrequently. West Indian children, however, engaged more frequently in object oriented imaginative play than any other social group. Hypothesis E6 which stated that West Indian children would engage in imaginative play less frequently than English children gained no support. The results lend no support to hypothesis C3 which stated that middle class children would engage more frequently in imaginative play than working class children.

It is interesting to note that imaginative play, which has been considered by many psychologists as a concomitant of a stage of cognitive development, is more closely associated with social group membership than with age within the ranges sampled. This conclusion was confirmed by a three-way analysis of variance in which the association between age, sex and social group membership was examined together.

4. Physical Play

In the present study physical play refers to all "gross motor play". This type of play involves the active use and co-ordination of the larger muscles. Chapter 3 described how the preschool years are a

period of rapid physical growth. During the years from two to five the child's muscles and muscular co-ordination develop at a fast rate enabling him to practise newly acquired physical skills in play. The three playbuses provided for children's physical play needs in different ways. George provided a climbing frame and slide, Sam a climbing frame, while Suzie offered no fixed physical play equipment. Because there was no standard fixed physical play equipment on all three playbuses there was no indicator for structured physical play in the present study. Instead, unstructured physical play, that is gross motor play which does not involve the use of equipment, is taken as an indicator of physical play. Rough and tumble play, chasing, running, hopping and jumping are included in this category. Walking and going up and down stairs are excluded. Chapter 7 indicated that unstructured physical play did not meet the criterion of at least 50 per cent occurrence but it was included because it discriminated certain defined groups of children.

The hypotheses which were formulated for physical play are that:

- A4 the incidence of physical play will be greater for older children (Chapter 3)
- S4 the incidence of physical play will be greater for boys (Chapter 4)
- E7 the incidence of physical play will be greater for English children (Chapter 5)
- E8 the incidence of physical play will be greater for West Indian and English children (Chapter 5)
- C4 the incidence of physical play will be the same for middle and working class children (Chapter 6)

4.1 Incidence of unstructured physical play

Table 8.20 indicates that unstructured physical play was not a very popular activity. Children engaged in it only 2.78 per cent of the time during which they were observed and it accounted for the longest attention span of only 0.6 per cent of the children. This low frequency may be explained in part by the limited space in the buses which made running around and chasing difficult.

Table 8.20 Incidence of Unstructured Physical Play (percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Unstruc. Phys. Play	2.78	5.94	0.28	0-37	3.44

4.2 Age and Unstructured physical play

There was no relationship between age and frequency of unstructured physical play. The Pearson correlation between the two variables was 0.02, and no non linear relationship was apparent either.

4.3 Sex and unstructured physical play

Taking the sample as a whole, there was a small non-significant

difference in the frequency of unstructured physical play between boys and girls as the following table indicates.

Table 8.21 The Relationship between Sex and Unstructured Physical Play (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Unstruc. Phys. Play	3.46	2.13	1.42	0.08

Mann Whitney U =2976.5 p = 0.20

On closer inspection of the data it was observable that there were significant sex differences among the Asian sample in their frequency of unstructured physical play as Table 8.22 indicates, but there was no differences between English boys and girls as Table 8.23 indicates.

Table 8.22 The Relationship between Sex and Unstructured Physical Play among Asian Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Asian Boys (N=44)	Asian Girls (N=45)		
Unstruc. Phys. Play	2.03	0.59	2.31	0.01

Mann Whitney U = 1243.5 p = 0.007

Table 8.23 The Relationship between Sex and Unstructured Physical Play among English Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Unstruc. Phys. Play	5.29	3.88	0.67	0.13

Mann Whitney U =426.5 p = 0.57

4.4. Social group and unstructured physical play

Table 8.24 indicates that there were some significant differences in the frequency of unstructured physical play between social groups. English middle class and West Indian children tended to engage most often in unstructured physical play while, Hindu, Sikh and Muslim children were observed to engage in unstructured physical play less frequently. A Mann Whitney U test between English and West Indian children showed no significant differences.

Table 8.24 The Relationship between Social Group and Unstructured Physical Play (percentage of all observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Unstruc. Phys. Play	4.02	5.25	1.42	1.44	0.99	4.55

$$F = 2.72; p = 0.02$$

A Kruskal Wallis one way Anova produced similar results to those shown in Table 8.24.

Table 8.25 The Association between Social Group and Unstructured Physical Play

	Rank Order			Chi-Squared	Level of Confidence (p)
	English (N=61)	Asians (N=89)	West Indians (N=13)		
Unstruc. Phys. Play	94.4	69.8	107.7	17.97	0.00

A t-test for social class differences among English children indicated that there were no significant differences in unstructured physical play among middle and working class children.

As Table 8.26 indicates social group was the main independent

variable predicting variance in unstructured physical play. Sex was also a discriminating factor and there was a 2-way interaction between social group and age which is a little higher than the 95 per cent of significance. This indicates that there was a different relationship between unstructured physical play and age in the English and Asian groups. A closer inspection of the data indicated that in the English sample unstructured physical play tended to increase with age, whereas for Asian children it reached a peak at between three and three and a half years, after which it tended to decline in frequency. However, as the relationship between age and frequency of unstructured physical play never reached statistically significant levels it was not investigated further.

Table 8.26 The Relationship between Age, Sex, Social Group and Unstructured Physical Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	6.12	0.00
Social Group	11.23	0.00
Age	2.55	0.11
Sex	4.55	0.04
2 - Way Interactions	1.88	0.14
Social Group x Age	4.34	0.04
Social Group x Sex	0.41	0.52
Age x Sex	1.08	0.30
3 - Way Interactions	1.94	0.17
Social Group x Age x Sex	1.94	0.17
Percentage of Explained Variance 13.80%		

These results do not lend any support to hypothesis A4 which stated that older preschool children would engage more frequently in physical play than younger children. Hypothesis S4 stated that boys would engage more frequently in physical play than girls. While for the sample as a whole there was a tendency for boys to engage more frequently in unstructured physical play, the hypothesis was subject to intercultural differences. Unstructured physical play was significantly more popular with Asian boys but it bore no significant relationship to sex among English children.

The results are consistent with hypothesis E7 which stated that Asian children would engage less frequently in physical play than English children. The results lend no support to hypothesis E8 which stated that the incidence of physical play would be greater for West Indian children. The results are consistent with hypothesis C5 which stated that there would not be any social class differences in the incidence of physical play.

5. Constructive Play

In Chapter 2 constructive play was defined as an activity in which the child purposefully makes something. Chapter 3 indicated that constructive play involves having an image of the finished product in mind either before starting or during the course of the play activity (Bühler, 1956). Children need to have attained a certain level of cognitive maturity before they can plan the necessary sequence of actions and perceive which means will result

in the completion of their constructive play goal.

The indicator for constructive play is making an object out of paper or cardboard and glue; for the sake of brevity this indicator is called "glue". All three playbuses had a "junk" table where children could make objects with these materials. It was observed that younger and older children seemed to be engaged in two different activities at the junk table. Younger children seemed to be interested in just cutting out pieces of paper and cardboard while older children were concerned with making something out of junk materials. In order to distinguish these two activities there were two coding categories in the taxonomy for play at the junk table. Constructive play is only identified when a child is observed to glue junk items together. Any prior processes, such as cutting out and selecting appropriate junk objects, are not included in this constructive play category. As a result constructive play in this present study may have a lower frequency count than it actually merited.

Other indicators of constructive play in this study were constructing an object with building blocks or lego, making an object with clay, painting a recognisable picture and building an object in the sand. Chapter 7 indicated that constructing an object with building blocks or lego was eliminated as an indicator as it was difficult to observe when the building activity of three year olds was predominantly a manipulatory or constructive activity. Ambiguity in interpretation also caused making an object with clay to be eliminated as an indicator. Painting a recognisable picture and building an object in the sand were both eliminated as indicators on grounds of low frequency. As a consequence

glue was left as the only indicator of constructive play. As mentioned in Chapter 7 although glue had a moderate level of skew and did not meet the criterion of at least 50 per cent occurrence it was, nevertheless, retained as an indicator since it discriminated certain defined groups of children.

The hypotheses which were formulated for constructive play are that:

- A5 the incidence of constructive play will be greater for older children (Chapter 3)
- S5 the incidence of constructive play will be the same for boys and girls (Chapter 4)
- E9 the incidence of constructive play will be smaller for Asian children (Chapter 5)
- E10 the incidence of constructive play will be the same for West Indian and English children (Chapter 5)
- C5 the incidence of constructive play will be greater for middle class children (Chapter 6)

5.1 Incidence of Glue Play

As Table 8.27 indicates glue play was not a very popular activity overall, children played with paper, cardboard and glue for 4.65 per cent of the time during which they were observed. When gauging its popularity in terms of longest attention span, glue play was seen to attract the longest attention spans of 9.7 per cent of the children.

Table 8.27 Incidence of Glue Play (percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Glue	4.65	9.18	0.08	0-60	2.52

5.2 Age and glue play

There was a weak tendency for the frequency of glue play to rise with age. The Pearson correlation between the two variables was 0.13. A visual inspection of the data showed that there was little glue play under the age of three and a marked rise in its frequency after this age suggesting some evidence of non linearity.

5.3 Sex and glue play

Taking the sample as a whole there was a significant difference in the frequency of play with glue between boys and girls as the following table shows.

Table 8.28 The Relationship between Sex and Glue Play (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Glue	3.43	5.83	-1.68	0.05

5.4 Social_group_and_glue_play

Table 8.29 indicates that there were no significant differences in the frequency of glue play between social groups.

Table 8.29 The Relationship between Social Group and Glue Play
(percentage of all observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Glue	7.79	6.54	3.22	3.08	2.24	4.62

$$F = 1.76; \quad p = 0.12$$

However a t-test comparing the frequency of glue play between Asian and English children showed that there were significant differences between these two groups as Table 8.30 illustrates. A Mann Whitney U test between West Indian and English children revealed no significant differences between the two groups.

Table 8.30 The Relationship between Social Group and Glue Play among English and Asian Children (percentage of all observations)

	Mean Percentage English Children (N=61)	Mean Percentage Asian Children (N=89)	Value of T	Level of Confidence (p)
Glue	7.24	2.88	2.89	0.00

The results of the t-test were confirmed by a Kruskal Wallis 1-Way Anova as is indicated by Table 8.31

Table 8.31 The Association between Social Group and Glue Play among English and Asian Children

	Rank Order			
	English Children (N=61)	Asian Children (N=89)	Chi-Squared	Level of Confidence (p)
Glue	88.2	66.8	12.42	0.00

A t-test for social class differences among English children indicated that there were no significant differences in Glue play among middle and working class children.

5.5 Multivariate analysis

As Table 8.32 indicates the main discriminatory factor accounting for significant differences in Glue play was social group. There was also a significant 2-Way interaction between social group and sex. What lies behind this interaction is the different relationship between glue and sex in the English and Asian groups. Table 8.33 and Table 8.34 illustrates the different preferences for glue play among boys and girls in the English and Asian samples. There is no difference among Asian boys and girls in their preference for Glue play, but very

marked differences between the sexes in the English sample with girls playing nearly three times more frequently with glue than boys.

Table 8.32 The Relationship between Age, Sex, Social Group and Glue Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	4.67	0.00
Social Group	8.48	0.00
Age	1.08	0.30
Sex	3.25	0.07
2 - Way Interactions	2.79	0.04
Social Group x Age	0.81	0.37
Social Group x Sex	7.02	0.01
Age x Sex	1.50	0.22
3 - Way Interactions	0.21	0.65
Social Group x Age x Sex	0.21	0.65

Percentage of Explained Variance 13.79%

Table 8.33 The Relationship between Sex and Glue Play among English Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Glue	3.62	10.53	-2.45	0.01

Table 8.34 The Relationship between Sex and Glue Play among Asian Children (percentage of all observations)

	Mean Percentage	Mean Percentage	Value of T	Level of Confidence (p)
	Asian Boys (N=44)	Asian Girls (N=45)		
Glue	2.98	2.80	0.12	0.45

The hypotheses which examine the association between age, sex and social group with constructive play will now be considered. Hypothesis A5 stated that older children would engage more frequently in constructive play than younger children. While for the sample as a whole the hypothesis appeared to be supported, there were intercultural variations between English and Asian children. Glue

play was significantly more popular with older Asian children but there was only a tendency for older English children to play with it more frequently.

Hypothesis S5 which stated that the incidence of constructive play would not vary significantly between boys and girls, does not gain general support, but receives some support among Asian children. Asian boys and girls did not vary significantly in the frequency with which they engaged in constructive play but English girls engaged significantly more frequently than boys in it.

Hypothesis E9 which stated that English children would engage more frequently in constructive play than Asian children was supported. The results for West Indian children's constructive play are consistent with hypothesis E10 which stated that West Indian and English children would engage as frequently in constructive play. The results lend no support to hypothesis C4 which stated that middle class children would engage more frequently in constructive play than middle class children.

The main findings of the present study concerning the association of age, sex and social group with types of play are now compared with those of other researchers. The findings of the present study regarding the association of tactile play and age are, in the case of English children, in accord with the observations of Piaget (1967), Sheridan (1977), Mannwell and Mengert (1934), Parten (1933), Bühler (1933 and 1956) and Gesell (1976) who considered that tactile play was more popular with younger preschool children. However, the

present study found that the popularity of sand play did not decrease with age for Asian children. Parten (1933) and Fagot and Patterson (1969) studied the association between sex and paint play and observed girls to play more frequently with paint than boys. This present study found that Asian girls preferred paint to Asian boys but found no sex preference for this type of play among English children.

A number of research studies have investigated the imaginative play of preschool children. Researchers concerned with the association of imaginative play and age, such as Manwell and Mengert (1934), Markey (1935) and Tizard et al (1976) have found older children to engage more frequently in this type of play. These findings are confirmed in the present study for English, but not for Asian children. Research findings are inconsistent over the relative popularity of imaginative play with boys and girls. On the one hand Sisson (1903), Hartely et al (1952), Smilansky (1968) and Child and Child (1973) have found imaginative play to be more popular with girls. On the other hand Singer (1973) found it to be more popular with boys; while Freyburg (1970) found no difference either way. In the present study English girls were observed to engage significantly more frequently in both person and object oriented imaginative play. There were however no sex related preferences for either form of this type of play among Asian children.

Manwell and Mengert observed sex differences in frequency of physical play. They found boys to engage more frequently in physical play activities than girls. This results of this study are more or less in line with those of Manwell and Mengert. Asian girls engaged

significantly less frequently than boys in this type of play and there was a tendency for English girls to do likewise. Concerning constructive play, the findings of the present study are in accord with those of Tizard et al (1975) who found younger children to engage less frequently than older children in constructive play.

In general the associations found in the present study between age, sex and social group with types of play are, in the case of English children, in accord with those found by most other researchers. However, Asian children do not seem to progress through the age related play stages delineated by such child psychologists as Gesell, Sheridan and Bühler, in the manner and at the rate described by them.

The main findings of the present study concerning the association of the independent variables with types of play are summarised in Table 8.35. This table indicates that sand is much more popular with two year old English children than it is with three and four year olds. These children show a gradual preference after the age of three years for constructive play with paper and glue, for imaginative play and for paint play. In contrast Asian children did not play with different play materials at different ages like the English children. For them sand was as popular with four year olds as with two year olds. Bearing in mind the lower activity rate of Asian children, compared to English children, their higher frequency of sand play demonstrates an even greater preference for it than the figure in Table 8.5 suggests. The older Asian children did not show any preference for imaginative play or play with paint.

Table 8.35 The Association of Age, Sex and Social Group with Types of Play

Types of Play	Age		Sex		Ethnic Group	Social Class
	English	Asian	English	Asian		
1. Tactile Play						
Sand	**		*		**	
2. Artistic Play						
Paint	**			*		
3. Imaginative Play						
Person. Or.	*		**		***	
Object. Or.	**		**		**	
4. Physical Play						
Unstruc. Phys.				**	*	
5. Constructive Play						
Glue		*	**			

* $p < 0.05$
 ** $p < 0.01$
 *** $p < 0.001$

The relevance of culture is apparent in Asian and English children's sex related preferences for different types of play. English girls engaged more frequently than boys in imaginative and constructive play. While English boys engaged more frequently in tactile play. In contrast to English children, Asian boys and girls played as often in tactile, imaginative and constructive activities. While Asian girls engaged more frequently than boys in artistic play and Asian boys more frequently than girls in physical play. Sex does appear from this study to have different meanings and expectations attached to it among the Asian and English groups. In their play preferences West Indian children seem to lie on a continuum somewhere between English and Asian children. There were no social class differences among English children in preferences for types of play.

Many reasons could be put forward to try and account for the lack of difference in the play preferences of older and younger Asian pre-school children. Asian children may contrast to British children in this respect because they are, in effect, silent spectators of the adult world, as was suggested in Chapter 5 and do not inhabit a separate world of childhood which is cut off and distinct from the adult world, as is the case with English children. Asian children are expected to help round the house and participate in the world around them, almost as soon as they can walk. Asian mothers teach their daughters how to sew, wash clothes and clean the house, while Asian fathers teach their sons how to repair and mend things around the house. Play and toys are viewed more as luxuries than as necessities of childhood. Asian mothers on the playbuses said their children had toys which were usually looked after very carefully. These were

usually locked away to be brought out on special occasions or at specific times of day. Asian children on the playbuses may, therefore, show no changing preferences for different play materials with age because all the equipment retains its novelty and presents a challenge. English children, in contrast, are usually familiar with most of the materials and toys on the playbuses and so these quickly lose their novelty and challenge. With regard to imaginative play and in particular dramatic role playing, following the argument set out in Chapter 5 it is possible that Asian children do not have the same need as English children to act out the mother's household role as they participate directly in it and such play would teach them nothing new. Muslim children may play less frequently in the sand than any other group of children as, according to the play leaders, they were often reprimanded by their mothers for getting dirty and it was noticeable that some Muslim children were sent to the playbuses in their best clothes.

CHAPTER 9

MODES OF PLAY

The purpose of this chapter is to test hypotheses concerning the contribution of variations in the independent variables to differences in children's modes of play. This chapter considers the association of age, sex and social group with each of the main modes of play. The hypotheses are examined for each mode of play in turn and the findings of the present study are compared where relevant with those of other research, following which there is a summary of the main results. At the close of the chapter there is a summary representation of the degree of support or disconfirmation received by the hypotheses. The variables included in the analysis and the statistical tests employed are shown in Table 9.1 on the following page.

Table 9.1 Modes of Play:- Variables and Statistical Tests Employed

Modes of Play and Indicators

<u>Modes of Play</u>	<u>Indicator Variables</u>
1. Scope of Play	Average Attention Span, Longest Attention Span, Diversity of Play Activities.
2. Passivity/Activity of Play	Passivity (= Passive/Materials + Passive/No Contact Materials), Activity (= Active/Materials + Active/No Contact Materials), Playfulness.
3. Sociability of Play	Solitary, Group of Two, Three and Four Solitary/Passive, Solitary/Active, Parallel/Passive, Parallel/Active, Talks to other Child, Spoken to by other Child, Talks to Self, Talks to Supervisor, Supervisor Talks to Child, Plays with Supervisor.

Analyses Performed for each Mode of Play

<u>Predictor Variables</u>	<u>Statistical Tests</u>
1. Age	Pearson Product Moment Correlation (for age as a continuous variable)
2. Sex	T-Test
3. Social Group	One-way Analysis of Variance, T-Test, Mann-Whitney U Test and Kruskal-Wallis Test.
4. Social Class	T-Test.

1. Scope of Play

The scope of play refers to the length and breadth of play, that is to a child's attention span and his diversity or range of play interests. The child's attention span is measured in two different ways : (1) longest attention span (2) average attention span. The reasons for employing two measures are, that both measures are employed in previous research with which it is desired to compare results from the present study and, second, two measures afford some indication of internal validity.

1.1 Longest attention span

Bridges (1927 and 1929), Bott (1928), Lunzer (1955) and Sylva et al (1980) took as a measure of attention span the longest spell of time children were occupied in one play activity during the period of time they were observed. Brief interruptions of one minute or less were not considered to have broken the child's attention span. The definition of play activity varied between these researchers. Bridges, Bott, Gutteridge and Van Alstyne conceptualised play activity in terms of the materials and equipment used. If a child changed play materials or items of play equipment he was considered to have changed his play activity. In contrast, Sylva and Lunzer conceived of play activity in terms of play bout or the thematic content of play. A child was considered by Sylva and Lunzer to have changed his play activity if the theme of his play changed. Lunzer (1955: 59) identified a play theme as a sequence of behaviour that was largely independent of what followed

and preceded it, while at the same time its constituent parts were inter-related. A play theme might therefore continue while the materials used in play changed. For example, a child might construct an object at the junk table and then carry it over to the paint table to decorate it. Lunzer did, however, indicate that in practice a change of materials was usually indicative of a change in play theme. Lunzer considered that longest attention span was a more accurate measure of concentration than average attention span since it measured the degree of concentration that a child was capable of, whereas average attention span measured the amount of distraction present in the play period during which the child was observed.

1.2 Average attention span

Bridges (1927 and 1929), Bott (1928) Herring and Koch (1930) and Stodolsky (1974) measured attention span according to the average amount of time children spent at play in any one play activity. Play activity was defined by these researchers in terms of play materials or equipment.

In the present study both of these two measures of attention span were used. The longest uninterrupted duration of time children spent at play with any one material or item of equipment during the course of four fifteen minute watches during which they were observed was termed their longest attention span. In line with other researchers brief interruptions were not taken into account. Van Alstyne, Gutteridge and Lunzer ignored interruptions of one minute or less. This present study ignored interruptions of under thirty seconds as thirty seconds was the length of the sampling unit. Play activity was defined as play with a single material or item of play equipment. The average

attention span of children was measured according to the average time children spent at play in a single activity. Play activity was measured in terms of play theme or bout. Brief interruptions of under thirty seconds were again not considered to have broken a child's span of attention. Play material is considered to be a more objective measure of play activity than play theme since it involves no observer inference. It was therefore used in combination with longest attention span which was thought to be the more accurate measure of concentration.

The third indicator of scope of play is the diversity of children's play activities or the number of different materials and items of equipment played with during an observation period. The range of materials played with by children depends on how long they are observed, and this varies from one research study to another. For example, Van Alstyne observed how many different materials and items of equipment children played with during a forty five minute observation period. Tizard (1975) recorded children's use of equipment and toys during a ten minute period; while Smith (1970) selected forty minutes as his observation period. In the present study the number of different materials and items of equipment played with during each of the four fifteen minute observation periods was calculated and the four totals were added together. Separate incidents of imaginative play and unstructured physical play were also included in the total. This composite figure is presented as the child's diversity of play activities. It is intended that this total be divided into four where necessary in order to compare the results of the present study with those of Tizard.

The hypotheses which were formulated for scope of play are that:

- A6 the average and longest attention spans of older children will be greater than those for younger children. Older children will engage in fewer play activities (Chapter 3)
- S6 there will be no difference in the length of the average and longest attention spans of boys and girls (Chapter 4)
- S7 boys will engage in fewer play activities (Chapter 4)
- E11 there will be no difference in the length of the average and longest attention spans of Asian and English children. Asian and English children will engage in the same number of play activities (Chapter 5)
- E12 there will be no difference in the length of the average and longest attention spans of West Indian and English children. West Indian and English children will engage in the same number of play activities (Chapter 5)
- C6 the average and longest attention spans of middle class children will be greater than those for working class children. middle class children will engage in fewer play activities. (Chapter 6)

1.3 Incidence of scope of play

The mean length of the average and longest attention spans is given in Table 9.2, together with the child's diversity of play activities. There was a considerable difference in the length of the average and the longest time children spend at play in an activity.

Longest attention span has a very low skew value and may be the more reliable indicator.

Table 9.2 Incidence of the Average and Longest Attention Spans and the Diversity of Play Activities

	Mean amount of time (minutes)	s.d	Median	Range	Skewness
Average. Att. Apan	3.43	1.65	3.06	0-9	1.12
Longest. Att. Span	10.52	3.51	10.44	0-14	-0.38
Div. Play Activities	13.18 (absolute nos.)	4.99	12.66	0-28	0.60

1.4 Age and scope of play

Table 9.3 indicates that there is a linear relationship between average and longest attention spans and age. When average values for scope of play are computed for half-yearly ages, it becomes clear that attention span rises steadily with age but that there is no consistent association between age and the diversity of play activities.

Table 9.3 The Relationship between Age and Scope of Play (N=163)

(i) Pearson product-moment correlations

Incidence of	Age of Child
Average. Att. Span	0.40***
Longest. Att. Span	0.35***
Div. Play Activities	-0.11

*** $p < 0.001$

(ii) Analysis of variance

Play Behaviour	2 years (N=22)	2½ years (N=26)	3 years (N=40)	3½ years (N=44)	4 years (N=22)
Average. Att. Span (Minutes)	2.48	2.77	3.40	3.60	4.32 ^a
Longest. Att. Span (Minutes)	8.23	8.87	11.29	11.00	11.98 ^b
Div. Play Activities (Total Nos.)	13.44	13.84	13.20	13.28	12.92 ^c

a. $F=5.51, p < 0.001$ b. $F=5.99, p < 0.001$ c. $F=0.12, p=0.98$

1.5 Sex and scope of play

Table 9.4 indicates that there was no difference in length of attention spans between boys and girls. Boys had a greater diversity of play interests, playing with significantly more materials than girls.

Table 9.4 The Relationship between Sex and Scope of Play

	Mean	Mean	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Average. Att. Span (Minutes)	3.33	3.53	-0.79	0.21
Longest. Att. Span (Minutes)	10.48	10.56	-0.15	0.44
Div. Play Activities (Total Nos.)	13.90	12.48	1.82	0.04

1.6 Social group and scope of play

There was relatively little variation among the social groups on the two measures of attention span. Middle class children had the longest attention spans, with West Indian children having particularly low scores for the mean attention span and working class children for the longest attention span. West Indian children played with the greatest number of play materials and equipment during play sessions

and Muslim children and middle class children with the least. The scores for West Indian children indicate that they are very susceptible to distractions, but have the ability to concentrate once they are immersed in an activity. A t-test between Asian and English children revealed no significant differences in scope of play between the two groups. A Mann Whitney U test between West Indian and English children, presented in Table 9.6, indicated that there was no significant difference in the longest attention span between the two groups. However, there was a tendency for English children's average attention spans to be greater and West Indian children engaged in significantly more play activities.

Table 9.5 The Relationship between Social Group and Scope of Play

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Average. Att. Span (Minutes)	3.22	4.11	3.55	3.17	3.52	2.77 ^a
Longest. Att. Span (Minutes)	9.75	12.34	10.03	10.02	10.71	10.77 ^b
Div. Play Activities (Total Nos.)	14.24	12.16	13.60	11.15	13.08	16.92 ^c

a. F=1.70, p = 0.14 b. F=2.13, p = 0.07 c. F=3.37, p=0.01

Table 9.6 The Relationship between West Indian and English Children and Scope of Play

	Mean Rank English Children (N=61)	Mean Rank West Indian Children (N=13)	Value of U	Value of Confidence (p)
Average. Att. Span	39.51	28.08	274.0	0.08
Longest. Att. Span	37.40	37.96	390.5	0.93
Div. Play Activities	35.02	49.12	245.5	0.02

A t-test for social class differences among English children indicated that the variation in scope of play between the social classes was not likely to have occurred by chance, as Table 9.7 indicates.

Table 9.7 The Relationship between Social Class and Scope of Play

	Working Class Children (N=34)	Middle Class Children (N=27)	Value of T	Level of Confidence (p)
Average. Att. Span (Minutes)	3.22	4.11	-2.37	0.01
Longest. Att. Span (Minutes)	9.75	12.34	-3.25	0.00
Div. Play Activities (Total Nos.)	14.24	12.16	2.15	0.02

1.7 Multivariate analysis

Table 9.8 indicates that age was the single discriminatory factor accounting for significant differences in average attention span.

Table 9.9 indicates that age was the main independent variable predicting variance in children's longest attention span. Table 9.9 also suggests a small degree of interaction between social group and age and social group and sex. Table 9.10 indicates that there was no single discriminatory factor accounting for significant differences in the number of play activities children engaged in. There was, however, a significant 2-way interaction between social group and sex. What seems to lie behind these 2-way interactions in Table 9.9 and Table 9.10 is the different relationship between attention span, number of activities engaged in and sex in the English and Asian groups. Table 9.9 also suggests that the relationship between age and longest attention span also varies between these groups. T-tests were carried out to see how attention spans and diversity of play activities varied between boys and girls in the Asian and English groups. Tables 9.11 and 9.12 indicate that Asian girls played with fewer materials and items of equipment than Asian boys, whereas this was not the case with English children. The attention spans showed no difference between the sexes for both social groups.

Table 9.8 The Relationship between Age, Sex, Social Group and Average Attention Span

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	5.68	0.00
Social Group	0.25	0.62
Age	15.76	0.00
Sex	0.13	0.72
2 - Way Interactions	0.51	0.68
Social Group x Age	0.00	0.99
Social Group x Sex	0.95	0.33
Age x Sex	0.66	0.42
3 - Way Interactions	0.47	0.49
Social Group x Age x Sex	0.47	0.49

Percentage of Explained Variance 11.81%

Table 9.9 The Relationship between Age, Sex, Social Group and Longest Attention Span

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	3.80	0.01
Social Group	0.88	0.35
Age	10.00	0.00
Sex	0.04	0.84
2 - Way Interactions	2.65	0.05
Social Group x Age	3.43	0.07
Social Group x Sex	3.52	0.06
Age x Sex	0.00	0.95
3 - Way Interactions	0.27	0.60
Social Group x Age x Sex	0.27	0.60

Percentage of Explained Variance 12.13%

Table 9.10 The Relationship between Age, Sex, Social Group and Diversity of Play Activities

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	1.82	0.15
Social Group	1.20	0.28
Age	0.83	0.36
Sex	3.22	0.08
2 - Way Interactions	3.39	0.02
Social Group x Age	0.01	0.91
Social Group x Sex	9.94	0.00
Age x Sex	0.03	0.88
3 - Way Interactions	1.31	0.25
Social Group x Age x Sex	1.31	0.25

Percentage of Explained Variance 10.65%

Table 9.11 The Relationship between Sex and Scope of Play among Asian Children

Play Behaviour	Mean	Mean	Value of T	Level of Confidence (p)
	Asian Boys (N=44)	Asian Girls (N=45)		
Average. Att. Span (Minutes)	3.20	3.59	-1.01	0.32
Longest. Att. Span (Minutes)	9.72	10.72	-1.28	0.20
Div. Play Activities (Total Nos.)	14.00	10.84	2.99	0.00

Table 9.12 The Relationship between Sex and Scope of Play among English Children

Play Behaviour	Mean	Mean	Value of T	Level of Confidence (p)
	English Boys (N=29)	English Girls (N=32)		
Average. Att. Span (Minutes)	3.64	3.59	0.11	0.91
Longest. Att. Span (Minutes)	11.57	10.28	1.53	0.13
Div. Play Activities (Total Nos.)	12.55	14.00	-1.41	0.16

The hypotheses for scope of play will now be examined.

Hypothesis A6 stated that attention spans would increase with age and that older children would engage in fewer play activities than younger children. This hypothesis gains partial support. Both measures of attention span increased with age for the sample as a whole, but for English children the longest attention span only showed a tendency in this direction. The results did not support that part of the hypothesis concerning diversity of play activities. The results lend no support to hypothesis S6 which stated that girls and boys would engage in the same number of play activities. Within the sample intercultural differences emerged. Asian girls played significantly more often with fewer items of play equipment than boys while English girls only tended to play with fewer. The results are

consistent with hypothesis S7 which stated that boys and girls would have attention spans of the same length. The results are consistent with hypothesis E11 which stated that the attention spans of English and Asian children would show little variation and that English and Asian children would engage in the same number of play activities. The results lend partial support to hypothesis E12 which stated that the attention spans and play diversity of West Indian and English children would show little variation. There were no significant differences between the two groups in the length of the longest attention span. There was, however, a tendency for English children to have a greater average attention span and West Indian children played significantly more frequently with more materials and items of play equipment. Hypothesis C7 stated that middle class children would have longer attention spans than working class children and would engage in a smaller range of play activities and the results support this hypothesis.

The assumption among many child psychologists is the older the child the longer the span of attention. The results of the present study support this view, although it should be pointed out that children as young as two years showed remarkable powers of concentration once they were involved in a play activity. In fact the longest attention span for two year olds is only about three and a half minutes shorter than that for four year olds.

Longest attention span

The average duration of the longest attention span varies from one investigation to another. Bridges (1927 and 1929) for example, found children to have very long attention spans. She estimated the median length of the longest attention span for three year olds to be thirty five minutes and for four year olds to be thirty seven minutes. Van Alstyne (1932) on the other hand, observed children to have much shorter attention spans, She found the mean duration of the longest attention span to be 6.9 minutes for two year olds, 8.9 minutes for three year olds and 11.4 minutes for four year olds. The findings of Gutteridge (1935) come between those of Bridges and Van Alstyne. She found two year olds to have attention spans of 9.40 minutes, three year olds of 13.3 minutes and four year olds of 18.97 minutes. The results of the present study come between those of Van Alstyne and Gutteridge. Children two to two and a half years old had longest attentions spans of 8.23 minutes, three to three and a half year olds of 11.29 minutes, three and a half to four years olds of 11 minutes and four to four and a half year olds of 11.98 minutes. The slight drop in length of attention span for three and a half to four year olds may be due to a shift in children's play preferences. Many English children of this age were finding less challenge than before from tactile play pursuits and were changing from these to constructive play activities.

Average attention span

Research findings for length of the average attention span also exhibit variation between investigations. On the one hand Bridges

(1927 and 1929) found children to have relatively long attention spans. She estimated the average length of attention span for three year olds as eight minutes and for four year olds to be 6.2 minutes. She attributed the decrease in duration of attention span for four year olds to their boredom with the play materials in the nursery school. On the other hand, Herring and Koch (1930) found children to have relatively short attention spans. They calculated two year olds to have average attention spans of 1.9 minutes and four year olds of 2.2 minutes. The findings of most other research studies fall somewhere between those of Bridges and Herring and Koch. For instance Bott (1928) found the average attention spans for two year olds to be 2.7 minutes, for three year olds to be 4.4 minutes and for four year olds to be 5.3 minutes. While more recently Stodolsky (1974) estimated the average attention spans to be 4.6 minutes for three year olds and 5.4 minutes for four year olds. The results of the present study also come between those of Bridges and Herring and Koch and support those of Bott. The average attention span was found to be 2.48 minutes for children aged two to two and a half years, 3.40 minutes, for children aged three to three and a half years, 3.60 minutes for three and a half to four year olds and 4.32 minutes for four to four and a half year olds.

Diversity of play activities

In common with other studies (Tizard 1975, Van Alstyne 1932 and Smith 1980) the present study found that diversity of play decreased with age, although the figure did not reach significance level. Two year old children played with 13.68 different play materials over the

course of one hour, while four year olds played with 12.12 materials. Van Alstyne found that in a 45 minute period her sample of two year olds played with 6.9 different materials, the three year olds with 6.3 and the four year olds with 6.2 different materials. Smith found that during a 40 minutes observation period his sample of children played with five or six different activities, while Tizard found that her children played with between 2.4 and 2.6 different materials during a 10 minute period.

In general the attention spans exhibited by boys and girls were very similar. Asian girls differed from boys in playing with significantly fewer items of play equipment. A trend which was not followed in the case of English girls, who played with slightly more. Attention span has been taken as an indicator both of a child's ability to concentrate and also of his intelligence. It is therefore of importance since it is a gauge of how well a child is likely to perform in school. The results for the longest attention span show no substantial differences among children from different ethnic groups and their attention span is somewhat greater than that exhibited by English working class children though not as high as that of English middle class children. This suggests that Asian and West Indian children's innate potential to perform well in school may not be significantly inferior to that of most English children. The results also illustrate the power of the class system in Britain to influence the performance potential of children at a tender age.

2. Passivity/Activity of Play

2.1 Passivity

Passivity or passive behaviour is when a child is not engaged in a type of play, that is when a child is quiescent. Two main forms of passivity were distinguished. The first, was when a child was in contact with materials or equipment but was not actually playing with them. The second, was when the child was in no contact with any materials or equipment. The child could in both cases either be in a group of children or solitary. The two categories, like the categories of active play, are mutually exclusive. The following table will clarify the forms which passivity can assume.

1. Passive/No Contact Materials

No contact with materials or equipment

PASSIVITY

2. Passive/Materials

Some contact with materials or equipment

If children were talking and this did not involve a game or imaginative activity it was counted as passive behaviour. Similarly if a child talked to the supervisor his behaviour was classified as Passive/No Contact Materials. Indication was made that the children were talking by entries in the appropriate talking categories. If a child was taking his apron off or washing his hands or going to the toilet, in other words if he was not engaged in either passive or active play behaviour as defined here, then the behaviour was entered

in a separate category domestic, which will not be used in this analysis.

For purposes of analysis it was decided to use a composite measure for passivity and activity. However, passivity is divided into its two components when there is variation in results between them. In Factor and Discriminant Analysis passivity and activity are not treated as composites as it was found that among Asian children passive/no contact materials assumed particular significance.

2.2 Activity

Active play is when a child can be observed to be engaged in a type of play. The child will either be playing with a piece of play equipment or else he will be engaged in physically unstructured play or imaginative play. The following figure will illustrate the forms active play can take.

1. Active/No Materials or Equipment

either

(a) Active/Physical

ACTIVITY

or

(b) Active/Imaginative

2. Active/Materials or Equipment

Some contact with materials or equipment

In other words Activity or Active play assumes two main forms in this study. The child is either playing with equipment or else he is

playing without equipment. If he is playing without equipment he will either be engaged in imaginative play or in physically unstructured play. The child in all instances could be either solitary or in a group. In other words in the present study

ACTIVITY + PASSIVITY + DOMESTIC = 120 FREQUENCIES
(not coded)

ACTIVITY = TOTAL OF INCIDENCE OF TYPES OF PLAY RECORDED (but not just the five types coded)

2.3 Playfulness

The third indicator, playfulness, aimed at obtaining a measure of this behaviour, which has been termed "affect" by Pulaski (1971) and "joy" by Piaget (1967) and Groos (1901). In the present study playfulness is conceived of as the exuberance shown by a child at play. Pulaski (1971) and Lieberman (1965 and 1966) maintained that there were different degrees of playfulness which could be measured on a rating scale. However, in practice it is difficult to recognise whether a child is expressing "joy" or "affect" and even more difficult to assess how much of this elusive behaviour he is manifesting. Pulaski attempted to measure the intensity of playfulness on a five point rating scale which ranged from "no interest or pleasure in the toys or play activities" to "shows extreme delight in play". This rating scale is very difficult to operationalize as the five points are not clearly distinguished from each other. For instance it is difficult to differentiate the fourth point which includes "deep

pleasure and interest in play activity" from the fifth point, "shows extreme delight in play".

Lieberman's rating scales for playfulness are also difficult to operationalize but are subject to less ambiguity in their interpretation. Lieberman used five rating scales, each of which was divided into two parts. She considered that there were five aspects of playfulness, physical, social and cognitive spontaneity, manifest joy and sense of humour, as described earlier in Chapter 3. Each rating scale was designed to obtain a quantitative and qualitative measure of each aspect. For example, to take manifest joy - the first scale questions "how often does the child show joy" and the second "with what freedom of expression".

The present study did not use rating scales because their implementation depends to a greater or lesser extent on observer inference. This present study is concerned only with directly observable play behaviours and not with subjective interpretations of children's moods or behaviour traits. Because children are apt to express their joy by smiling broadly and making some physical movement at the same time (Smith 1974) the incidence of playfulness was recorded in the present study when children were observed to smile and at the same time jumped up and down, hopped, ran or walked fast. By operationalizing the concept of playfulness in a simpler way and in physical terms, it is intended that the findings of this present study can be replicated and extended by future researchers.

The hypotheses which were formulated for passivity/activity of play are that:

- A7 older children will be passive less frequently and active more frequently (Chapter 3)
- A8 older children will engage in playful behaviour more frequently (Chapter 3)
- S8 boys will be passive less frequently, active and playful more frequently (Chapter 4)
- E13 Asian children will be passive more frequently, active and playful less frequently (Chapter 5)
- E14 West Indian children will be as passive, active and playful as English children (Chapter 5)
- C7 middle class children will be less passive, more active and playful (Chapter 6)

2.4 Incidence of passivity/activity of play

The incidence of passivity and activity are given in Table 9.13. The scores for passivity and activity do not add up to 60 as children spent nearly five minutes of the observation period in domestic activities which are not coded. Table 9.13 shows playfulness to have a very low skew value.

Table 9.13 The Incidence of Passivity/Activity of Play (measured in minutes)

	Mean	s.d	Median	Range	Skewness
Passivity	8.06	9.96	5.04	0-55	2.09
Activity	47.0	10.26	49.88	0-57	-1.88
Playfulness	19.63	5.95	12.01	0-13	-0.32

(percentage out of 120 observations)

2.5 Age and passivity/activity of play

Table 9.14 indicates that active play and playfulness increase with age and passivity declines with age. The correlations are of moderate strength indicating that it is very unlikely that the results occurred by chance. Closer examination of the data indicated that these relationships were consistent over the age ranges sampled.

Table 9.14 The Relationship between Age and Passivity/Activity of Play (N=163)

Pearson product-moment correlations

Incidence of	Age of Child
Passivity	-0.34 ***
Activity	0.38 ***
Playfulness	0.42 ***

*** $p < 0.001$

2.6 Sex and passivity/activity of play

Table 9.15 indicates that there is no relationship between sex and passivity and sex and activity. The association between sex and playfulness is unlikely to have occurred by chance. Boys show a tendency to exhibit playful behaviour more frequently than girls. When passivity is broken down into passive in contact with materials, and passive no contact with materials it was found that girls were significantly more passive than boys when they were in contact with play materials ($p = 0.004$) but there was no difference in passivity between boys and girls when they were not in contact with materials.

Table 9.15 The Relationship between Sex and Passivity/Activity of Play

	Mean	Mean	Value of T	Level of Confidence (p)
	Boys (N=80)	Girls (N=83)		
Passivity (Minutes)	7.89	9.30	-0.90	0.37
Activity (Minutes)	47.73	46.31	0.88	0.19
Playfulness (percentage of all observations)	20.15	19.07	1.40	0.08

2.7 Social_group_and_passivity/activity_of_play

There were significant differences between the social groups on all three indicators of passivity/activity of play. Asian children were more passive than any other social group, with middle class English children and West Indian children the least passive. When passivity was broken down into passive when in contact with material and passive when in contact with no material it was found that Asian children were significantly more passive when they were not in contact with play materials than when they were in contact with them. Middle class English children were significantly less passive than any other social group. Sikh and Muslim children spent significantly less time in actively engaging in play than other social groups, while at the other end of the continuum middle class English children spent significantly more time actively engaged in play than any other social group. Middle class English children also exhibited playful behaviour more frequently than other groups of children. Muslim and Sikh children were the least playful. There were no significant differences in scores for passivity, activity and playfulness between West Indian and English children. The relationship between English and Asian children and passivity/activity of play is presented in Table 9.17. Table 9.18 indicates that there were significant differences between middle and working class children in activity of play and playfulness.

Table 9.16 The Relationship between Social Group and Passivity/Activity of Play

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindus (N=26)	West Indians (N=13)
Passivity (Minutes)	6.65	3.61	11.57	15.35	6.77	3.81 ^a
Activity (Minutes)	48.13	52.04	44.12	41.35	49.44	49.77 ^b
Playfulness (percentage of all observations)	20.52	24.07	17.03	16.90	19.55	20.77 ^c

a. F=7.01, p= 0.00 b. F=4.86, p= 0.00 c. F=10.92, p=0.00

Table 9.17 The Relationship between English and Asian Children and Passivity /Activity of Play

	English Children (N=61)	Asian Children (N=89)	Value of T	Level of Confidence (p)
Passivity (Minutes)	5.30	11.57	-3.86	0.00
Activity (Minutes)	49.86	45.67	2.58	0.01
Playfulness (percentage of all observations)	22.09	17.72	5.93	0.00

English working class children have lower activity and greater passivity scores and lower frequencies for playfulness than their middle class counterparts.

Table 9.18 The Relationship between Social Class and Passivity/
Activity of Play

	Working Class Children (N=34)	Middle Class Children (N=27)	Value of T	Level of Confidence (p)
Passivity (Minutes)	6.65	3.61	1.74	0.09
Activity (Minutes)	48.13	52.04	-2.19	0.02
Playfulness (percentage of all observations)	20.52	24.07	-3.56	0.00

2.8 Multivariate analysis

When the discriminatory effects of age, sex and social group were examined together it was apparent that social group and age were the main independent variables predicting variance in passivity, activity and playfulness. In the case of playfulness sex also had some discriminatory power. There were no significant interaction effects. Table 9.19 indicates that social group and age are the two main independent variables predicting variance in passivity of play. Table 9.16 indicated earlier that Asian children were significantly more passive than English children. There was a

significant negative correlation between age and passivity ($r = 0.34$), which indicated that it decreased with age in linear fashion. Table 9.20 indicates that all three main independent variables predicted variance in Passive/Materials. Younger children engaged in this behaviour significantly more frequently than older children. Girls adopted this passive mode more frequently than boys and Asian children adopted it more frequently than English children. There was a small non-significant two-way interaction between social group and sex which suggests that the incidence of Passive/Materials varied for boys and girls in the different social groups.

Table 9.21 indicates that the main independent variables predicting variance in Passive/No Contact Materials were social group and age. There was a significant negative correlation between the two variables indicating that the frequency of this behaviour decreased in linear fashion with age. Asian children engaged significantly more often in this mode of behaviour than English children.

Table 9.22 indicates that the main independent variables predicting variance in Activity of Play were social group and age. It may be recalled from Table 9.14 that the incidence of Activity increased significantly with age ($r = 0.38$). Table 9.16 indicated that the level of activity of Asian children was significantly lower than that for English children.

Table 9.23 indicates that all three main independent variables predicted variance in Playfulness. There was a significant correlation between age and playfulness ($r = 0.42$) indicating that it increased with age in linear fashion. It may be recalled from Table 9.16 that the incidence of playfulness was greater for English and West Indian children. Table 9.23 also indicates that there was a difference in the frequency of playfulness between boys and girls. Table 9.15 had suggested that there was a tendency for girls to be playful less frequently than boys.

T-tests were next carried out between Asian boys and girls and English boys and girls because a closer look at the data suggested that the incidence of passivity, activity and playfulness varied between boys and girls in these two main groups. Tables 9.24 and 9.25 indicate that there is a tendency for Asian girls to be playful less frequently than Asian boys. English girls were, however, not passive more frequently than boys. Passivity is presented both as a composite and as two separate components in the multivariate analysis as the two component measures show some variation. Table 9.26 indicates the different relationship between Passive/Materials and sex in the English and Asian contexts.

Table 9.19 The Relationship between Age, Sex, Social Group and Passivity

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	9.59	0.00
Social Group	13.85	0.00
Age	12.04	0.00
Sex	1.87	0.17
2 - Way Interactions	0.27	0.85
Social Group x Age	0.10	0.76
Social Group x Sex	0.00	0.97
Age x Sex	0.72	0.40
3 - Way Interactions	0.09	0.76
Social Group x Age x Sex	0.09	0.76

Percentage of Explained Variance 17.28%

Table 9.20 The Relationship between Age, Sex, Social group and
Passive/Materials

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	5.72	0.00
Social Group	5.10	0.03
Age	4.00	0.05
Sex	8.73	0.00
2 - Way Interactions	2.03	0.11
Social Group x Age	0.12	0.73
Social Group x Sex	3.71	0.06
Age x Sex	1.95	0.16
3 - Way Interactions	0.91	0.34
Social Group x Age x Sex	0.91	0.34

Percentage of Explained Variance 14.43%

Table 9.21 The Relationship between Age, Sex, Social Group and
Passive/No Contact Materials

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	7.45	0.00
Social Group	10.96	0.00
Age	9.76	0.00
Sex	0.22	0.64
2 - Way Interactions	0.25	0.86
Social Group x Age	0.05	0.82
Social Group x Sex	0.51	0.48
Age x Sex	0.20	0.66
3 - Way Interactions	0.45	0.50
Social Group x Age x Sex	0.45	0.50

Percentage of Explained Variance 14.22%

Table 9.22 The Relationship between Age, Sex, Social Group and Activity

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	9.09	0.00
Social Group	8.38	0.00
Age	15.92	0.00
Sex	2.44	0.12
2 - Way Interactions	0.48	0.70
Social Group x Age	0.07	0.79
Social Group x Sex	0.42	0.52
Age x Sex	0.98	0.32
3 - Way Interactions	0.01	0.91
Social Group x Age x Sex	0.01	0.91

Percentage of Explained Variance 16.83%

Table 9.23 The Relationship between Age, Sex, Social Group and Playfulness

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	22.59	0.00
Social Group	34.91	0.00
Age	25.66	0.00
Sex	5.04	0.03
2 - Way Interactions	0.23	0.88
Social Group x Age	0.01	0.94
Social Group x Sex	0.10	0.75
Age x Sex	0.54	0.46
3 - Way Interactions	0.13	0.72
Social Group x Age x Sex	0.13	0.72
Percentage of Explained Variance 32.57%		

Table 9.24 The Relationship between Sex and Passivity/Activity of Play for Asian Children

Play Behaviour	Asian Boys (N=44)	Asian Girls (N=45)	Value of T	Level of Confidence (p)
Passivity (Minutes)	10.72	12.40	-0.70	0.49
Activity (Minutes)	45.25	44.06	0.47	0.64
Playfulness (percentage of all observations)	18.47	16.98	1.50	0.14

Table 9.25 The Relationship between Sex and Passivity/Activity of Play for English Children

Play Behaviour	English Boys (N=29)	English Girls (N=32)	Value of T	Level of Confidence (p)
Passivity (Minutes)	4.59	5.95	-0.77	0.44
Activity (Minutes)	51.53	48.53	1.57	0.12
Playfulness (percentage of all observations)	22.48	21.74	0.67	0.50

Table 9.26 The Relationship between Sex and Passive/Materials for English and Asian Children

	Mean Rank			Value of U	(p)	Mean Rank			Value of U	(p)
	English Boys (N=29)	English Girls (N=32)	Asian Boys (N=44)			Asian Girls (N=45)				
Passive/ Materials	29.47	32.39	419.5	0.52	37.0	52.8	640.0	0.00		

The hypotheses for passivity/activity of play will now be examined.

Hypothesis A7 stated that older children would be passive less frequently and active more frequently than younger children and this hypothesis appears to be supported. The results are consistent with hypothesis A8 which stated that older preschool children would engage in playful behaviour more frequently than younger children. The results do not lend support to hypothesis S8 which stated that boys would be passive less frequently and active and playful more frequently. For the sample as a whole there was no association between sex and passivity and activity and only a tendency for boys to be playful more frequently.

Hypothesis E13 stated that Asian children would be passive more frequently and active and playful less frequently than English children and in the main this hypothesis is supported, though there are important intra-cultural variations within the Asian group, with Hindus engaging more frequently in active play than the Sikhs and Muslims. The results are consistent with hypothesis E14 which stated that the incidence of passivity, activity and playfulness would be the same for West Indian and English children.

The results do not support hypothesis C7(1) which stated that working class children would be more passive than middle class children, although there was a tendency for them to be so. The results are consistent with hypothesis C7 (2) which stated that working class children would engage less frequently in active play. Hypothesis C7 (3) which stated that working class children will be less playful gains support.

The results for passivity/activity of play are now compared with those of other researchers. Manwell and Mengert (1934), Smith (1970) and Blurton Jones (1972) studied the association of age with passivity of play. These researchers all found passivity to decrease in frequency with age. This study reached the same conclusion. An association was also found in the present study between age and an increase in the incidence of activity of play and playfulness. Lieberman (1965 and 1966) has also observed that playfulness was exhibited more often by older preschool children.

There were differences in the degree of activity/passivity both between children in different social groups and between children from the two English social classes. English middle class children spent most time in active play, followed by West Indian children. Sikh and Muslim children, on the other hand, tend to be particularly inactive and passive. It must be borne in mind that Muslim children had a poorer command of English than Sikhs and Hindus which may result in their having a higher passivity score. It is interesting also to note the lower activity and greater passivity scores for English working class children

as compared to their middle class counterparts.

3. Sociability of Play

Sociability of play indicates being in a group of children. A group was judged to have formed when children were in close physical proximity, not more than three feet apart, were engaged in similar activities and showed some awareness of each other. There are fourteen indicators of sociability of play. Five of these indicators are concerned with talking. Talking to other children is usually taken as the best indicator of sociability (Arrington 1939). However, while frequency of talking to other children would be the most satisfactory indicator of sociability for the English children in this study, it would be an unfair indicator of the degree of sociability for Asian children as in some cases their knowledge of English was weak and, in addition, they were sometimes reluctant to speak to each other in their native tongue. For these reasons intensive and extensive group structures were also used as indicators. Play with the supervisor and talking to the supervisor and talking to self were included as indicators as these are behaviours which are thought to be typical of younger preschool children. These children often prefer to interact socially with the supervisor before they enter into social play with other children. These last three indicators have not been used very often by other researchers as most studies of preschool children's play have concentrated on children over the age of three years.

Four indicators attempt to measure group extensity, the size of the group the child is in. These are (1) Solitary (2) Group of two (3) Group of three and (4) Group of four. There was an insufficient number of instances of larger group sizes to be included as indicators. There are four indicators of group intensity. These measures are multi-dimensional drawing on the active/passive dimension as well as on the social, and give a composite measure of group intensity. The first is solitary passive, when a child is on his own and not in an active category. The second is solitary active when a child is on his own and is in an active category. The third is parallel passive when a child is in a group and in a passive category and the last is parallel active when a child is on his own and is in an active category. If children combined in a group activity it was classified as associative play, but it was not used in the analysis as an indicator as it did not meet the criterion of more than fifty per cent occurrence. Children were considered to be playing in parallel when they were playing alongside other children in similar activities. Multiple categories were employed to distinguish solitary passive from solitary active play and to make comparisons between the results of this present study and those of others where researchers have used a range of indicators.

During the first few months of this study records were kept of physical contacts received and initiated by children as it was thought that these too might act as social indicators,

especially in the case of Asian children, who often sought physical contact with other children and supervisors more often than English children. This behaviour is illustrated on the accompanying video tape (No. 1, counter nos. 879-883). However, because of the lack of physical space in the playbuses it became difficult to distinguish between purposive and accidental physical contacts, as children kept brushing up against each other and so this coding category was abandoned.

The hypotheses which were formulated for sociability of play are presented in Table 9.27.

3.1 Incidence of sociability of play

The incidence of sociability of play is given in Table 9.28. Play with the supervisor had a high skew value, in contrast to solitary behaviour, group of two, group of three, solitary active, parallel active and supervisor talks to child, which all had low skew values. Solitary behaviour, group of two, solitary active and parallel active were frequently occurring behaviours, in contrast to playing with the supervisor and talking to self which occurred infrequently.

Table 9.27 Summary of Main Associations Hypothesized for Sociability
of Play

Indicators of Sociability	Categories of Children			
	AGE	SEX	ETHNIC GROUP	SOCIAL CLASS
	OLDER (compared with YOUNGER)	BOYS (compared with GIRLS)	ASIAN (compared with ENGLISH)	WEST INDIAN (compared with ENGLISH)
				MIDDLE CLASS (compared with WORKING CLASS)
Solitary	+	-	+	0
Group of Two	-	+	-	0
Group of Three	-	+	-	0
Group of Four	-	+	-	0
Solitary/Passive	-	-	+	0
Solitary/Active	+	+	-	0
Parallel/Passive	-	-	+	0
Parallel/Active	-	+	-	0
Talks to other Child	-	+	-	0
Spoken to by other Child	-	+	-	0
Talks to Self	+	-	+	0
Talks to Supervisor	-	-	-	0
Supervisor Talks to Child	-	-	-	0
Plays with Supervisor	-	-	-	0

Code + = greater frequency hypothesized
 - = lesser frequency hypothesized
 0 = no difference hypothesized

Table 9.28 The Incidence of Sociability of Play
(percentage of total observations)

Play Behaviour	Mean	s.d	Median	Range	Skewness
Solitary	45.21	19.68	45.77	0-89	0.07
Group of Two	33.76	15.36	32.50	0-75	0.29
Group of Three	12.69	9.73	12.00	0-45	0.64
Group of Four	5.9	7.03	3.33	0-29	1.23
Solitary/Passive	9.16	12.10	4.76	0-75	2.20
Solitary/Active	32.90	17.90	29.90	0-78	0.40
Parallel/Passive	6.28	8.30	3.40	0-42	2.00
Parallel/Active	41.42	18.87	41.00	0-92	0.17
Talks to other Child	7.91	8.88	4.63	0-36	1.49
Spoken to by other Child	5.96	6.34	4.22	0-32	1.62
Talks to Self	3.43	4.36	1.80	0-20	1.87
Talks to Supervisor	10.64	11.11	7.19	0-45	1.10
Supervisor Talks to Child	15.21	10.66	13.06	0-46	0.75
Plays with Supervisor	3.35	6.53	0.83	0-45	3.78

3.2 Age and sociability of play

Table 9.29 indicates that there is a relationship between age and sociability of play such that older children were less solitary, and less passive. The older children were somewhat more inclined to play with another child and to play in parallel active mode and also more likely to engage in conversation with another child and more likely to talk to the supervisor. These associations were examined in greater detail by a breakdown of age into five divisions and by a one-way analysis of variance between the indicators and different age categories. Children over four and a half years were excluded as there were only nine of them.

Table 9.29 The Relationship between Age and Sociability of Play (N=163)

Pearson product-moment correlations	
Incidence of	Age of Child
Solitary	-0.23 **
Group of Two	0.22 **
Group of Three	0.07
Group of Four	0.08
Solitary/Passive	-0.32 ***
Solitary/Active	-0.03
Parallel/Passive	-0.23 ***
Parallel/Active	0.26 ***
Talks to other Child	0.29 ***
Spoken to by other Child	0.24 ***
Talks to Self	0.03
Talks to Supervisor	0.22 **
Supervisor Talks to Child	0.09
Plays with Supervisor	0.07

** p= 0.01 *** p<0.001

Table 9.30 indicates that solitary play behaviour goes down steadily and that being in a group of two takes off after three and a half years. This closer examination also suggested that the tendency to talk with another child rose in frequency after the age of two and a half years, and that the tendency to talk to the supervisor likewise rose in frequency after this age. Solitary passive and parallel passive play decrease steadily with age.

Table 9.30 The Association between Age and Sociability of Play
(percentage of total observations)

Play Behaviour	2 years (N=22)	2½ years (N=26)	3 years (N=40)	3½ years (N=44)	4 years (N=22)
Solitary	66.14	56.08	53.83	53.75	49.41 ^a
Group of Two	34.14	39.42	37.10	41.48	48.14 ^b
Solitary/Passive	20.73	13.69	11.10	9.25	3.36 ^c
Parallel/Passive	11.73	10.81	7.00	5.73	5.41 ^d
Parallel/Active	37.50	46.54	49.75	52.25	55.18 ^e
Talks to other Child	2.09	7.23	10.73	10.11	13.36 ^f
Spoken to by other Child	3.36	4.96	8.15	7.25	10.09 ^g
Talks to Supervisor	5.77	10.85	13.65	13.95	14.95 ^h

a. F=1.67, p= 0.16 b. F=2.18, p= 0.07 c. F=4.77, p<0.001

d. F=2.31, p= 0.06 e. F=2.29, p= 0.06 f. F=4.18, p= 0.003

g. F=2.94, p= 0.02 h. F=1.94, p= 0.12

3.3 Sex and sociability of play

Table 9.31 indicates that there were few differences between boys and girls in their social play. Boys differed significantly from girls in playing on their own more often, while girls showed a significant preference for play in groups of two. Boys engaged significantly more often in solitary/active play, while in contrast girls engaged more often in parallel/passive play pursuits. With regard to talking there was little difference between boys and girls and both played nearly as frequently with the supervisor. In short girls tended to be more sociable than boys.

Table 9.31 The Relationship between Sex and Sociability of Play
(percentage of total observations)

Play Behaviour	Mean Percentage Boys (N=80)	Mean Percentage Girls (N=83)	Value of T	Level of Confidence (p)
Solitary	47.95	42.56	1.75	0.04
Group of Two	31.25	36.17	-2.07	0.02
Group of Three	13.22	12.16	0.69	0.24
Group of Four	5.84	5.95	-0.10	0.46
Solitary/Passive	8.85	9.46	-0.32	0.38
Solitary/Active	36.02	29.89	2.21	0.01
Parallel/Passive	5.01	7.51	-1.94	0.03
Parallel/Active	40.72	42.09	-0.46	0.32
Talks to other Child	8.26	7.56	0.50	0.31
Spoken to by other Child	5.47	6.44	-0.97	0.50
Talks to Self	3.60	3.25	0.51	0.30
Talks to Supervisor	10.86	10.42	0.25	0.40
Supervisor Talks to Child	15.15	15.27	-0.07	0.47
Plays with Supervisor	3.67	3.04	0.61	0.27

Plays with Supervisor Mann Whitney U value=3091.0 P= 0.43

3.4 Social_group_and_sociability_of_play

Tables 9.32 and 9.33 indicate that English and Asian children vary both in the amount of talking they did and whom they addressed it to. English children spoke to each other, themselves and the supervisors significantly more often. Asian children spoke infrequently to supervisors, although the supervisors spoke to them nearly twice as often as they were addressed. Table 9.32 suggests that Asians are not a homogeneous group and exhibit intra-cultural variations along the talking dimension. Muslim children, in contrast to Sikh and Hindu children, spoke relatively frequently to each other, but very infrequently to supervisors. Tables 9.32 and 9.33 also suggest that Asian children were significantly more passive than English children both in a group situation and when on their own. Again there would appear to be wide intra-cultural variations within the Asian group. Hindu children appear to be less passive than Sikh and Muslim children. Muslim children seem to be very passive when they are on their own. Table 9.32 indicates that there were few inter-cultural variations in group size until it reached four children. Table 9.33 suggests that English children played significantly more frequently in a large group, that is a group of three or more children, while Asian children, in contrast, played significantly more frequently on their own.

Table 9.34 suggests that the findings for West Indian children are similar to those for English children. West Indian children were as active as English children and enjoyed similar group

structures. However, they talked significantly less frequently to supervisors.

In general supervisors spoke most to those children who spoke most frequently to them. They spoke most often to English children and least of all to Muslim children. They played and interacted most with West Indian and English children and least of all with Muslim children.

Table 9.32 The Relationship between Social Group and Sociability of Play (percentage of total observations)

Play Behaviour	English Working Class (N=34)	English Middle Class (N=27)	Sikhs (N=30)	Muslims (N=33)	Hindu (N=26)	West Indians (N=13)
Solitary	45.96	37.59	53.28	45.38	44.04	42.30 ^a
Group of Two	33.12	31.85	28.28	38.38	38.27	31.28 ^b
Group of Three	14.32	15.93	11.67	10.61	9.84	14.93 ^c
Group of Four	4.85	10.80	4.08	4.44	5.16	7.82 ^d
Solitary/Passive	6.20	3.98	13.17	16.79	6.83	3.72 ^e
Solitary/Active	36.49	30.99	36.48	25.73	34.97	33.27 ^f
Parallel/Passive	5.08	2.28	7.94	10.08	5.54	5.77 ^g
Parallel/Active	40.37	43.89	34.86	42.20	45.99	43.02 ^h
Talks to other Child	7.01	14.42	4.31	10.33	4.10	6.48 ⁱ
Spoken to by other Child	5.39	9.48	3.50	8.53	2.95	5.32 ^j
Talks to Self	5.20	6.02	1.33	2.30	2.08	3.78 ^k
Talks to Supervisor	16.84	20.43	7.89	2.38	5.64	11.41 ^l
Supervisor Talks to Child	23.58	20.37	13.78	5.61	10.35	20.00 ^m
Plays with Supervisor	4.83	3.68	3.67	0.61	2.50	6.73 ⁿ

a. F=1.96, p= 0.09 b. F=2.04, p= 0.08 c. F= 1.78, p= 0.12
d. F=4.07, p= 0.00 e. F=6.28, p= 0.00 f. F= 1.74, p= 0.13
g. F=3.28, p= 0.01 h. F=1.18, p= 0.32 i. F= 6.38, p= 0.00
j. F=5.60, p= 0.00 k. F=6.22, p= 0.00 l. F=17.08, p= 0.00
m. F=19.80, p= 0.00 n. F=2.43, p= 0.04

Table 9.33 The Relationship between Sociability of Play and English and Asian Children

	English Children (N=61)	Asian Children (N=89)	Value of T	Level of Confidence (p)
Solitary	50.70	57.18	-1.64	0.05
Group of Two	39.07	41.93	-0.93	0.18
Group of Three	18.03	12.89	2.74	0.00
Group of Four	8.98	5.44	2.63	0.01
Solitary/Passive	6.26	15.19	-4.12	0.00
Solitary/Active	40.87	38.46	0.67	0.25
Parallel/Passive	4.61	9.64	-3.34	0.00
Parallel/Active	50.31	49.00	0.30	0.36
Talks to other Child	12.34	7.75	2.62	0.01
Spoken to by other Child	8.64	6.25	1.95	0.03
Talks to Self	6.67	2.29	5.52	0.00
Talks to Supervisor	22.11	6.22	8.76	0.00
Supervisor Talks to Child	26.59	11.70	8.29	0.00
Plays with Supervisor	5.18	2.63	1.83	0.07

Plays with Supervisor Mann Whitney U value=2922.0 p= 0.41

Table 9.34 The Relationship between West Indian and English Children and Sociability of Play

	Mean Rank English Children (N=61)	Mean Rank West Indian Children (N=13)	Value of U	Level of Confidence (p)
Solitary	37.64	36.85	388.0	0.90
Group of Two	37.80	36.08	378.0	0.79
Group of Three	37.44	37.77	393.0	0.96
Group of Four	37.64	36.85	388.0	0.90
Solitary/Passive	37.23	38.77	380.0	0.81
Solitary/Active	37.91	35.58	371.5	0.72
Parallel/Passive	36.52	42.12	336.5	0.38
Parallel/Active	37.13	39.23	374.0	0.75
Talks to other Child	39.69	27.23	263.0	0.58
Spoken to by other Child	39.23	29.38	291.0	0.13
Talks to Self	39.14	29.81	296.5	0.15
Talks to Supervisor	40.17	24.96	233.5	0.02
Supervisor Talks to Child	38.37	33.42	343.5	0.45
Plays with Supervisor	36.75	41.00	351.0	0.50

A t-test for social class differences, presented as Table 9.35, indicates that some of the means for these two groups are significantly different. Middle class children seem more gregarious as they spent significantly less time on their own and played twice as frequently as working class children in a group of four. Middle class

children were more vocal and spoke twice as frequently to other children and were spoken to by peers much more frequently than working class children. These results suggest that middle class children may display a greater facility for forming social relationships.

Table 9.35 The Relationship between Social Class and Sociability of Play (percentage of total observations)

	Working Class Children (N=34)	Middle Class Children (N=27)	Value of T	Level of Confidence (p)
Solitary	45.96	37.59	2.00	0.03
Group of Two	33.12	31.85	0.41	0.34
Group of Three	14.32	15.93	-0.67	0.25
Group of Four	4.85	10.80	-3.13	0.00
Solitary/Passive	6.20	3.98	1.12	0.13
Solitary/Active	36.49	30.99	1.33	0.09
Parallel/Passive	5.08	2.28	1.75	0.04
Parallel/Active	40.37	43.89	-0.95	0.17
Talks to other Child	7.01	14.42	-3.44	0.00
Spoken to by other Child	5.39	9.48	-2.90	0.00
Talks to Self	5.20	6.02	-0.63	0.27
Talks to Supervisor	16.84	20.43	-1.29	0.10
Supervisor Talks to Child	23.58	20.37	1.32	0.10
Plays with Supervisor	4.83	3.68	0.52	0.30

Plays with Supervisor Mann Whitney U value= 474.0 p= 0.82

3.5 Multivariate Analysis

Solitary (Table 9.36)

When the discriminatory effects of age, sex and social group were examined together it was apparent that age was the main independent variable predicting variance in solitary play. There was also a 2-way interaction between social group and age which is nearly at the 95 per cent level of significance. What lies behind this interaction is the different relationship between age and solitary play in the English and Asian groups. Among Asian children there was a negative Pearson correlation of -0.32 ($p = 0.001$) between the two variables indicating that the incidence of playing alone decreased significantly with age in a linear fashion, while in contrast among the English children there was a non-significant negative correlation of 0.09 , suggesting that solitary play did not decline appreciably with age.

Group of Two (Table 9.37)

The main independent variables predicting variance in group size of two are age, and to a lesser extent, sex. In addition there was a small 2-way interaction between social group and age which is at the 91 per cent level of significance. Again what lies behind this interaction is the different relationship between group size of two and age in the English and Asian samples. Among Asian children there was a Pearson correlation of 0.37 ($p = 0.001$) indicating that the incidence of being in a group size of two increased steadily with age.

Group of Three (Table 9.38)

In this study the main independent variable predicting variance in group size of three was social group. English children played significantly more often in a group of this size than Asian children.

Group of Four (Table 9.39)

In this study only a small percentage of total variance was explained by the main independent variables. Of these social group was the main predictor of variance. English middle class children played about twice as frequently in this size of group than Asian and working class English children.

Solitary/Passive (Table 9.40)

The main independent variables predicting variance in solitary/passive play were social group and age. Sikhs and Muslims played nearly four times more frequently in this type of group structure than middle class English children. There was also a significant negative correlation between age and this variable, indicating that this type of group structure was also a function of age.

Solitary/Active (Table 9.41)

In this study a very small per cent of variance was explained by the main independent variables. Of these sex explained the largest per cent, boys preferring to play in this type of group significantly more often than girls.

Parallel/Passive (Table 9.42)

Table 9.42 indicates that all three main independent variables predicted variance in parallel/passive play. There was a significant negative correlation between age and parallel/passive play, indicating that it decreased with age in linear fashion. Girls were found to play significantly more often in this type of group than boys. Sikhs and Muslims played significantly more often in this group structure than any other social group. Working class children played nearly twice as frequently in it compared to middle class children.

Parallel/Active (Table 9.43)

Table 9.43 indicates that the main independent variable predicting variance in parallel/active play was age. There was also a 2-way interaction between age and social group indicating that the incidence of parallel active play varied for different social groups. Table 9.32 indicated that parallel/active play was relatively low for Sikh children compared to other social groups. It may be recalled from Table 9.29 that the incidence of parallel play increased significantly with age ($r = 0.26$). The summary table on page 309 indicates that parallel/active play only increased significantly with age for Asian children ($r = 0.32$). In the case of English children there was no relationship between age and parallel/active play.

Talks to other Child (Table 9.44)

The main independent variables predicting variance in talks to other child were social group and age. Sikh and Hindu children addressed significantly fewer remarks to other children than other

social groups. Middle class children spoke to other children nearly twice as often as working class children. There was a significant correlation between the two variables indicating that the frequency of addressing remarks to other children increased in linear fashion with age.

Spoken to by other Child (Table 9.45)

Only a small per cent of variance in this variable is explained by the main independent variables. Of these, social group and age explain nearly equal amounts of variance but with low levels of confidence. It may be recalled from Table 9.29 that the incidence of a focal child being spoken to by another child increased significantly with age ($r = 0.24$). Sikh and Hindu children were spoken to little by other children in the playbus, in contrast to other social groups. Middle class children were addressed by other children on the playbuses nearly twice as frequently as working class children.

Talks to Self (Table 9.46)

Social group was the main variable predicting variance in talks to self. There was also a 2-way interaction between social group and sex, indicating that the incidence of talking to self varied for different social groups. Table 9.32 showed that English children were much more inclined to talk to themselves than Asian or West Indian children, and Sikh children, in particular, spoke very infrequently aloud to themselves.

Talks to Supervisor (Table 9.47)

Social group was the only variable predicting variance in talks to Supervisor and it accounted for a large percentage of the total variance as Table 9.47 indicates. English children spoke more than twice as frequently to the supervisors than Asian children. Muslim children, though they spoke frequently to each other, addressed few remarks to the Supervisor speaking to them ten times less often than middle class children, and twice as infrequently as Hindu children and three times less often than Sikh children, however, it must be borne in mind that Muslim children's command of English was poorer than that for Sikh and Hindu children, as was indicated earlier in Chapter 7. Talks to Supervisor has a much bigger discrimination by social group than any other variable. Thirty five per cent of the variance is explained by social group which is a very large percentage.

Supervisor Talks to Child (Table 9.48)

Social group was the main and only variable predicting variance in Supervisor talks to child and it accounted for the large percentage of total variance indicated in Table 9.48. The Supervisors spoke more frequently to English and West Indian children than to Asian ones. They spoke four times less frequently to Muslim than to English children, and nearly twice as frequently to English and West Indian children than to Hindu children. In short the Supervisors spoke most to those children who spoke most often to them, with the exception of middle class children who were the one group who spoke to them more often than they to them. This germane finding suggests that in so far as the Supervisors interact with children they are better geared up to

do so with West Indian and English children.

Plays with Supervisor (Table 9.49)

In this study only a very small percentage of total variance was explained by the main independent variables. Of these social group predicted the largest amount of total variance. English children played more frequently with the Supervisor than Asian children. Muslim children in particular played very infrequently with the Supervisor. Sikh children played six times more frequently with the Supervisor than Muslims and nearly as often as middle class children.

Table 9.36 The Relationship between Age, Sex, Social Group and Solitary Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	3.32	0.02
Social Group	2.19	0.14
Age	4.70	0.03
Sex	1.78	0.19
2 - Way Interactions	1.29	0.28
Social Group x Age	3.44	0.07
Social Group x Sex	0.09	0.76
Age x Sex	0.13	0.72
3 - Way Interactions	0.42	0.52
Social Group x Age x Sex	0.42	0.52

Percentage of Explained Variance 9.13%

Table 9.37 The Relationship between Age, Sex, Social Group and Group of Two

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	5.68	0.00
Social Group	1.53	0.22
Age	9.20	0.00
Sex	5.23	0.02
2 - Way Interactions	1.64	0.18
Social Group x Age	2.98	0.09
Social Group x Sex	0.51	0.48
Age x Sex	0.92	0.34
3 - Way Interactions	0.13	0.72
Soical Group x Age x Sex	0.13	0.72
Percentage of Explained Variance 13.46%		

Table 9.38 The Relationship between Age, Sex, Social Group and Group of Three

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	3.29	0.02
Social Group	7.56	0.01
Age	0.03	0.88
Sex	2.37	0.13
2 - Way Interactions	1.05	0.37
Social Group x Age	2.17	0.14
Social Group x Sex	0.18	0.67
Age x Sex	0.88	0.35
3 - Way Interactions	0.80	0.37
Social Group x Age x Sex	0.80	0.37
Percentage of Explained Variance 8.87%		

Table 9.39 The Relationship between Age, Sex, Social Group and Group of Four

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	2.56	0.08
Social Group	6.75	0.01
Age	0.8	0.77
Sex	0.01	0.92
2 - Way Interactions	0.37	0.77
Social Group x Age	0.15	0.70
Social Group x Sex	0.50	0.48
Age x Sex	0.45	0.51
3 - Way Interactions	0.10	0.76
Social Group x Age x Sex	0.10	0.76
Percentage of Explained Variance 5.32%		

Table 9.40 The Relationship between Age, Sex, Social Group and Solitary/Passive Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	8.84	0.00
Social Group	12.94	0.00
Age	11.59	0.00
Sex	0.54	0.46
2 - Way Interactions	0.66	0.58
Social Group x Age	0.10	0.32
Social Group x Sex	0.09	0.76
Age x Sex	0.92	0.34
3 - Way Interactions	0.09	0.76
Social Group x Age x Sex	0.09	0.76
Percentage of Explained Variance 16.76%		

Table 9.41 The Relationship between Age, Sex, Social Group and Solitary/Active Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	1.52	0.21
Social Group	0.50	0.48
Age	0.00	0.97
Sex	4.05	0.05
2 - Way Interactions	1.08	0.36
Social Group x Age	1.84	0.18
Social Group x Sex	0.03	0.86
Age x Sex	1.21	0.27
3 - Way Interactions	0.69	0.41
Social Group x Age x Sex	0.69	0.41
Percentage of Explained Variance 5.65%		

Table 9.42 The Relationship between Age, Sex, Social Group and Parallel/Passive Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	7.77	0.00
Social Group	9.31	0.01
Age	7.22	0.01
Sex	7.16	0.01
2 - Way Interactions	0.29	0.83
Social Group x Age	0.05	0.83
Social Group x Sex	0.65	0.42
Age x Sex	0.08	0.78
3 - Way Interactions	0.02	0.90
Social Group x Age x Sex	0.02	0.90
Percentage of Explained Variance 14.55%		

Table 9.43 The Relationship between Age, Sex, Social Group and Parallel/Active Play

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	2.91	0.04
Social Group	0.02	0.89
Age	8.51	0.00
Sex	0.00	0.99
2 - Way Interactions	1.69	0.17
Social Group x Age	4.23	0.04
Social Group x Sex	0.29	0.59
Age x Sex	0.17	0.68
3 - Way Interactions	0.93	0.34
Social Group x Age x Sex	0.93	0.34
Percentage of Explained Variance 9.40%		

Table 9.44 The Relationship between Age, Sex, Social Group and Talks to other Child

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	4.75	0.00
Social Group	6.16	0.01
Age	6.14	0.01
Sex	1.68	0.10
2 - Way Interactions	0.53	0.67
Social Group x Age	0.12	0.73
Social Group x Sex	0.93	0.34
Age x Sex	0.69	0.41
3 - Way Interactions	0.66	0.42
Social Group x Age x Sex	0.66	0.42
Percentage of Explained Variance 10.39%		

Table 9.45 The Relationship between Age, Sex, Social Group and Spoken to by other Child

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	2.34	0.08
Social Group	3.13	0.08
Age	3.19	0.08
Sex	0.05	0.82
2 - Way Interactions	0.52	0.67
Social Group x Age	0.00	0.97
Social Group x Sex	0.97	0.33
Age x Sex	0.66	0.42
3 - Way Interactions	1.81	0.18
Social Group x Age x Sex	1.81	0.18
Percentage of Explained Variance 6.81%		

Table 9.46 The Relationship between Age, Sex, Social Group and Talks to Self

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	10.39	0.00
Social Group	30.83	0.00
Age	0.31	0.58
Sex	0.37	0.54
2 - Way Interactions	1.43	0.24
Social Group x Age	0.00	0.96
Social Group x Sex	4.18	0.04
Age x Sex	0.00	0.98
3 - Way Interactions	0.55	0.46
Social Group x Age x Sex	0.55	0.46
Percentage of Explained Variance 20.23%		

Table 9.47 The Relationship between Age, Sex, Social Group and Talks to Supervisor

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	26.86	0.00
Social Group	75.50	0.00
Age	2.62	0.11
Sex	0.10	0.75
2 - Way Interactions	1.00	0.39
Social Group x Age	0.27	0.61
Social Group x Sex	0.06	0.80
Age x Sex	2.73	0.10
3 - Way Interactions	2.52	0.12
Social Group x Age x Sex	2.52	0.12
Percentage of Explained Variance 37.75%		

Table 9.48 The Relationship between Age, Sex, Social Group and Supervisor Talks to Child

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	24.19	0.00
Social Group	70.72	0.00
Age	0.31	0.58
Sex	0.24	0.62
2 - Way Interactions	0.98	0.41
Social Group x Age	0.01	0.92
Social Group x Sex	0.39	0.53
Age x Sex	2.67	0.11
3 - Way Interactions	1.27	0.26
Social Group x Age x Sex	1.27	0.26
Percentage of Explained Variance 35.09%		

Table 9.49 The Relationship between Age, Sex, Social Group and Plays with Supervisor

Source of Variance	F Ratio	Level of Confidence (p)
Main Effects	1.84	0.14
Social Group	4.60	0.03
Age	1.05	0.31
Sex	0.23	0.63
2 - Way Interactions	0.35	0.79
Social Group x Age	0.23	0.63
Social Group x Sex	0.25	0.62
Age Sex	0.56	0.46
3 - Way Interactions	1.58	0.21
Social Group x Age x Sex	1.58	0.21
Percentage of Explained Variance 5.43%		

Several major hypotheses were shown earlier on to have been drawn from the literature on sociability of play and I am now going to examine these.

Hypothesis A9 (1) stated that older children would play less frequently on their own. While for the sample as a whole the hypothesis appeared to be supported, it was subject to intercultural differences. Younger Asian children played significantly more often on their own compared with older Asian children but this age-related pattern was not found to any appreciable extent among English children. Hypothesis A9 (2) stated that older children would play more frequently in a group of two than younger children. While for the sample as a whole the hypothesis appeared to be supported, it was subject to intercultural differences. Being in a group of two was significantly more popular with older Asian children but it bore no relationship to age among English children for the range of ages sampled. Hypothesis A9 (3) stated that older children would play in a group of three more frequently than younger children. This hypothesis was not supported. The findings lend no support to hypothesis A9 (4) which stated that older children would play more frequently in a group of four. Hypothesis A9 (5) stated that older children would talk less often to themselves than younger children. The results do not support this hypothesis.

Hypothesis A10 (1) stated that older children would engage less frequently in solitary passive behaviour and this hypothesis is supported. Hypothesis A10 (2) stated that older children would

engage less frequently in parallel passive behaviour. While for the sample as a whole the hypothesis appeared to be supported, it was subject to intercultural differences. Parallel passive behaviour was significantly more often engaged in by younger Asian children but it bore no relationship to age among English children. Hypothesis A10 (3) stated that older children would engage more often in solitary active play. The results do not lend support to this hypothesis. The results are consistent with hypothesis A10 (4) which stated that older children would engage more frequently in parallel active play.

Hypothesis A11 (1) stated that older children would talk more frequently to peers than younger children, and this hypothesis is supported for the sample as a whole. Hypothesis A11 (2) stated that older children would be spoken to more frequently by peers than younger children. This hypothesis is supported. Hypothesis A12 (1) stated that younger children would speak more frequently to the supervisors than older children. This hypothesis receives no support from the results, in fact, the converse applies as there is a modest correlation between age and talking to the supervisor. The results are not consistent with hypothesis A12 (2) which stated that older children would be spoken to less frequently by supervisors than younger children. The results do not support hypothesis A12 (3) which stated that older children would play with supervisors less frequently than younger children.

Hypothesis S9 (1) stated that girls would play less frequently on their own than boys. For the sample as a whole the hypothesis appeared to be supported, however it was subject to intercultural differences. Asian girls showed a tendency to play more frequently on their own but there was no such tendency among English girls.

The results are broadly consistent with hypothesis S9 (2) which stated that girls would engage significantly more often in a group of two than boys. There were, however, again intercultural variations within the sample between English and Asian groups. Asian girls engaged significantly more than boys in this type of group but English girls only showed a tendency to do so. The results do not lend support to hypothesis S9 (3) which stated that girls would play more frequently in a group of three than boys. The results also do not lend support to hypothesis S9 (4) which stated that girls would play more frequently in a group of four than boys. The results also do not lend support to hypothesis S9 (5) which stated that girls would talk to themselves less than boys.

Hypothesis S9 (6) stated that girls would engage more frequently in parallel active play and the results do not lend any support to this hypothesis. Hypothesis S10 (1) which stated that girls would engage more frequently in solitary passive behaviour also gains no support. The results are broadly consistent with hypothesis S10 (2) which stated that girls would engage more frequently in parallel passive behaviour. The results are broadly consistent with hypothesis S10 (3) which stated that girls will engage less frequently in solitary active play. While for the sample as a whole the hypothesis appeared to be supported, it was subject to intercultural differences. Solitary active play was significantly more popular with Asian boys but it bore no relationship to sex among English children. The results do not support hypothesis S11 (1) which stated that girls would talk more frequently to other

children than boys, and in the case of the Asian children there was a tendency in the opposite direction with boys talking more frequently to other children than girls. The results do not, however support hypothesis S11 (2) which stated that girls would be spoken to more frequently than boys. Hypothesis S12 (1) which stated that girls would speak more frequently to the supervisors than boys was not supported by the results. Hypothesis S12 (2) which stated that the supervisors would speak more frequently to girls rather than boys was also not supported. The results do not support hypothesis S12 (3) which stated that girls would play with the supervisors more frequently than boys.

The results do not support hypothesis E15 (1) which stated that Asian children would play more often on their own; there was only a slight tendency for this to happen. The results are not consistent with hypothesis E15 (2) which stated that Asian children would play less frequently in a group of two than English children. Hypothesis E15 (3) stated that Asian children would play less frequently in a group of three than English children and this hypothesis is not supported. Hypothesis E15 (4) stated that Asian children would play less frequently in a group of four than English children and this hypothesis appears to be supported. Hypothesis E15 (5) stated that Asian children would talk more frequently to themselves than English children and this hypothesis gains support.

The results are consistent with hypothesis E16 (1) which stated that West Indian children would play on their own as often as English children. The results also support hypothesis E16 (2) which stated that West Indian children would play in a group of two as frequently as English children. The results are consistent with hypothesis E16 (3) which stated that West Indian children would play in a group of three as frequently as English children. The results also support hypothesis E16 (4) which stated that West Indian children would play in a group of four as often as English children. The results are consistent with hypothesis E16 (5) which stated that West Indian children would talk to themselves as frequently as English children.

Hypothesis E17 (1) stated that Asian children would engage more frequently in solitary passive behaviour than English children. While for the Asian sample as a whole the hypothesis appears to be supported, it is subject to intracultural differences. Sikh and Muslim children engaged much more frequently in this mode of play than Hindu children. Hypothesis E17 (2) stated that Asian children would engage more frequently in parallel passive behaviour than English children. While again for the Asian sample as a whole the hypothesis appears to be supported, it is subject again to intracultural differences. Parallel passive behaviour was engaged in much more frequently by Sikh and Muslim children than by the Hindus. Hypothesis E17 (3) stated that Asian children would engage less frequently in solitary active play than English children. The results do not lend support to this hypothesis.

The results do not support hypothesis E17 (4) which stated that Asian children would engage significantly less frequently in parallel active play than English children.

The results are consistent with hypothesis E18 (1) which stated that West Indian children would engage in solitary passive behaviour as frequently as English children. The results also support hypothesis E18 (2) which stated that West Indian children would engage in parallel passive behaviour as frequently as English children. The results are also consistent with hypothesis E18 (3) which stated that West Indian children would engage in solitary active play as frequently as English children. Hypothesis E18 (4) which stated that West Indian children would engage in parallel active play as frequently as English children also gains support.

Hypothesis E19 (1) stated that Asian children would talk to other children less frequently than English children. While for the Asian sample as a whole the hypothesis appears to be supported, it is subject to intra-cultural variations. Talking to other children was engaged in much more frequently by Muslim than by Sikh or Hindu children. Hypothesis E19 (2) stated that Asian children would be spoken to by peers less frequently than English children. While for the Asian sample as a whole the hypothesis appears to be supported, it is subject to intra-cultural differences. Muslim children were spoken to much more frequently than Sikh and Hindu children.

Hypothesis E20 (1) which stated that West Indian children would talk to other children as frequently as English children gains support. Hypothesis E20 (2) which stated that West Indian children would be addressed by other children as frequently as English children is supported.

Hypothesis E21 (1) stated that Asian children would talk to the supervisors less frequently than English children. For the Asian sample as a whole the hypothesis is supported, though it is subject to intra-cultural differences, Muslim children talked to the supervisors less frequently than Sikh and Hindu children. Hypothesis E21 (2) stated that Asian children would be spoken to less frequently by the supervisors than English children and this hypothesis is supported, though it is subject to intra-cultural variations ; Muslim children were spoken to less frequently by the supervisors than Sikh and Hindu children. The results are consistent with hypothesis E21 (3) which stated that Asian children would play with the supervisors less frequently than English children, though there are intra-cultural variations within the Asian group with Muslim children playing less frequently with supervisors than Sikh and Hindu children.

Hypothesis E22 (1) stated that West Indian children would talk to the supervisors as frequently as English children and this hypothesis gains no support. Hypothesis E22 (2) which stated that West Indian children would be spoken to as frequently by the supervisors as English children gains support. Hypothesis E22 (3) which stated that West Indian children would play with the supervisors as frequently as English children is supported.

The results are consistent with hypothesis C8 (1) which stated that middle class children would play less frequently on their own than working class children. Hypothesis C8 (2) which stated that middle class children would play more often in a group of two than working class children is not supported by the results. The results also do not lend support to hypothesis C8 (3) which stated that middle class children would play more frequently in a group of three than working class children. The results are, however, consistent with hypothesis C8 (4) which stated that middle class children would play more frequently in a group of four than working class children. The results do not lend support to hypothesis C9 (1) which stated that working class children would engage more frequently in solitary passive behaviour than middle class children. The results are consistent with hypothesis C9 (2) which stated that working class children would engage more frequently in parallel passive behaviour than middle class children. The results do not lend support to hypothesis C9 (3) which stated that working class children would engage less frequently in solitary active play than middle class children, although they showed a tendency to do so. Hypothesis C9 (4) which stated that working class children would engage significantly less frequently than middle class children in parallel active play also gains no support.

The results are consistent with hypothesis C10 (1) which stated that middle class children would talk more frequently to other children than working class children. The results are

consistent with hypothesis C10 (2) which stated that middle class children would be spoken to more frequently by other children than working class children. Hypothesis C10 (3) stated that middle class children would speak less frequently to themselves than working class children and this hypothesis is not supported. Hypothesis C11 (1) which stated that working class children would speak to the supervisors less frequently than middle class children is not supported. Hypothesis C11 (2) which stated that the supervisors would speak less frequently to working class children than middle class children is not supported. Hypothesis C11 (3) which stated that working class children would play with the supervisors less frequently than middle class children is also not supported.

The main findings of the present study for sociability of play will now be compared with those of other investigations. Arrington (1931), Blurton Jones (1972) and Smith (1970) studied the association of age with the incidence of talking. Their findings, together with those of the present study, suggest that frequency of talking increases with age.

Smith (1970), Smith and Connolly (1972), Goodenough (1930) and Brackett (1933) examined the association of sex with frequency of talking. Smith, and Smith and Connolly found girls to talk more often than boys, in contrast to Goodenough and Brackett who found no difference between boys and girls in this respect. The findings of the present study are in line with those of

Goodenough and Brackett and suggest no difference in the frequency of talking between boys and girls.

Blurton Jones (1972) studied the association of age and sex with frequency of talking. He found that as boys grew older they spoke more frequently to peers and less frequently to adults. Girls, however, spoke more frequently both to peers and adults as they grew older. The present study found that while children spoke more often to each other with increase in age, both boys and girls talked more frequently to supervisors as well.

Berne (1930) and Beaver (1932) found social contacts with adults to decrease, in a preschool setting, while those of children increased, as children grew older. In the present study social contacts with other children were found to increase with age. Older children spoke more frequently to each other and engaged less often in solitary behaviour. There was also a modest relationship between age and group size of two. However, in contrast to the findings of both Berne and Beaver, the present study found no association between age and frequency of play with supervisors.

Green (1933) and Iwanga (1973) studied the association of sex with solitary behaviour. Their results indicate that boys play on their own more often than girls. The present study had a similar finding.

Parten (1932), Parten and Newhall (1943), Barnes (1971)

Rubin (1976) and Rubin et al (1976) studied the association of age with group intensity. Parten and Newhall considered that the modal play preference of children aged from two to two and a half was for solitary play; from two and a half to three for parallel play and from three and a half to four and a half for associative play. Barnes estimated the mean score for children in solitary behaviour to be 30.47 and for children in parallel play to be 14.29 and for children in associative and co-operative play to be 15.25. Van Alstyne (1932) found children to be much less gregarious. She found that her sample of two to five year olds spent only 40 per cent of the time during which they were observed playing in a group. The findings of the present study are in line with those of Van Alstyne and found children spent 45.2 per cent of the time during which they were observed playing in a group. In contrast to the findings of Parten and Newhall and Barnes the present study also found that the modal size of group was one for two and three year olds and two for four year old children. The present study also found the mean for parallel active play to rise progressively with age. However, in common with the findings of Parten and Newhall and Barnes, the present study found that solitary active, solitary passive and parallel passive play declined in frequency with age.

Rubin et al (1976) attempted to test Parten and Newhall's proposition that children progressed in linear fashion from solitary

through parallel and thence to associative group structures. They related the incidence of role playing skills, which are mature play forms, with solitary, parallel and associative play. They found that children's role playing skills were negatively related to the incidence of parallel play and positively related to associative play and not related either way to solitary play. The present study extended the work of Rubin et al in this area and found imaginative play to be negatively related to parallel play, weakly associated with associative play and to bear no relationship with solitary play. The present study then correlated solitary active play with indicators of socially mature and socially immature play behaviours. If solitary active play was indicative of social immaturity then it was likely to be correlated with other indicators of this behaviour. However the reverse proved to be the case. Solitary active play had a negative relationship with passive play in contact with materials ($r=0.19$) and passive in contact with no materials ($r=0.30$) and with solitary passive ($r = 0.24$) and parallel passive ($r = 0.16$) and was on the other hand positively related to indicators of socially mature behaviours. It was correlated with activity ($r = 0.31$) and with playfulness ($r = 0.16$). Solitary active play was negatively associated with parallel active play ($r = 0.56$) which suggests that those children who engage in solitary active play are distinctive from those who engage in parallel active play. Children most probably engage in solitary active play because they are interested in a type of play which can not be engaged in in a group context. It is therefore most likely to be an indicator of play interest rather than of social maturity or immaturity.

Some of the main findings of the present study for modes of play behaviour will now be discussed. It was suggested earlier in this chapter that increase in age was positively related to increase in length of attention spans. Children also seem to be playful more often as they grow older, to talk more, both to each other and to play supervisors and to spend less time on their own.

Girls and boys were found to differ little in their styles of play. Girls seem slightly more gregarious than boys. They played less frequently on their own and more often than boys in a group size of two. There was no difference between boys and girls in frequency of talking, passivity, length of attention spans and large group size. Boys showed a tendency to be more playful and they played with a wider range of play materials.

Asian and English children varied in the style of their play. Asian children on average showed a level of activity which remained lower throughout the preschool years than that for the English sample. My interpretation of this difference is that play is, to a large extent, a social and cultural product. Hinduism, Sikhism and Islam, as was described in Chapter 5, all emphasise the value of passive behaviours such as meditation and resignation. The concept of submission to the will of Allah permeates the Muslim's total attitude to life. Sikhism and Hinduism emphasise the concept of the deserved state, the state into which a person is born being the result of the accumulation of merits from past existences. Moreover, the extended family system in India and Pakistan tends to sacrifice individuality and the pursuit of individual goals of fulfillment

to collectivism and the welfare of the family as a whole. Kakar illustrated how the collectivist ethos of the joint family, which is endorsed in turn by religious precepts, can lead to individual passivity

"Subordinating one's individual needs to the interest of the group, be it family, a kinship group, a clan or a class, is upheld as a virtue...Thus, self-assertion becomes selfishness, independent decision making is perceived as disobedience...under such circumstances it is easier to play safe. The only way this can be accomplished is by passive aggressive behaviour or regression into total passivity" (quoted in Kakar, 1978 : 25)

On the other hand writers such as Aldrich and Feit (1975), de Vos (1973) and Maehr and Nicholls (1980) have suggested that the joint family structure is instrumental in the pursuit of collective family goals and that although individuals may be passive in pursuit of individual goals they are active in pursuit of family ones. Maehr and Nicholls suggested that achievement behaviour in the West and East is realised in different contexts. In the Western world it tends to be realised in expressions of individual excellence and task mastery, whereas in the East it is an expression more of the successful accomplishment of family goals.

In the present study Asian children sought a different relationship with the supervisors to English children (see accompanying video-tape no 1, counter nos. 855-910) which is reflected in their different incidence of talking to them. According to their mothers Asian children tended to treat the supervisors in the same way that they would their aunts. They,

therefore, treated the supervisors with respect, responding to conversation made by them but not initiating it with them. Asian children were often unwilling to take the initiative in asking for different items of play equipment and for play overalls if they wished to play with sand or paint. Supervisors would often engage in a type of parallel play with the Asian children. They would encourage the children to participate in certain play activities by engaging in them first themselves, in this way they left the initiative for participating in the play activity in the hands of the children. On occasions the relationship between supervisors and Asian children took on a more direct tutoring role as the children tended to look to them for guidance and advice (see accompanying video-tape no 1, counter nos.890-910 for illustration of this). Asian children, in particular, seemed to gain reassurance from the mere presence of supervisors and welcomed them playing alongside. They showed reluctance to go upstairs on the playbus if a supervisor was not up there.

On indicators of intellectual development, such as attention span, English, Asian and West Indian children showed little difference. However, English middle class children are somewhat more advanced than working class children on indicators of personal and intellectual development. Middle class children are more socially accomplished, assertive, vocal and active; they also exhibited greater powers of concentration. This study reveals that social background is already shaping children's behaviour at the tender age of two, with likely consequences for their chances of success in later life. The degree of support found for the hypotheses is now presented in summary form.

Summary Representation of the Degree of Support or Disconfirmation
Received by the Hypotheses

HYPOTHESES SUPPORTED

Findings

tactile_play

- S1 girls and boys played as frequently with sand
- E1 Asian children played more often in the sand than English children
- E2 West Indian and English children played as frequently with sand
- C1 middle and working class children played as frequently with sand

artistic_play

- E3 the incidence of paint play was the same for Asian and English children
- E4 the incidence of paint play was the same for West Indian and English children
- C2 the incidence of paint play was the same for middle and working class children

imaginative_play

- E5 Asian children engaged less frequently in imaginative play than English children

HYPOTHESES SUPPORTED (2)

physical_play

- E7 Asian children engaged less often in unstructured physical play than English children
- C4 no social class differences in the incidence of unstructured physical play

constructive_play

- E9 Asian children played less often with glue than English children
- E10 West Indian children played as often with glue as English children

scope_of_play

- S6 no difference in the length of attention spans of boys and girls
- E11 no difference in scope of play for Asian and English children
- C6 middle class children had longer attention spans and engaged in fewer play activities than working class children

passivity/activity_of_play

- A7 passivity decreased and activity increased with age

HYPOTHESES SUPPORTED (3)

- A8 the incidence of playfulness increased
- E13 Asian children were more passive, less active and playful than English children
- E14 the incidence of passivity, activity and playfulness was the same for West Indian and English children
- C7 (2) middle class children were active more frequently than working class children
- C7 (3) middle class children engaged in playful behaviour more frequently than working class children

sociability_of_play

- A10 (1) older children engaged in solitary/passive behaviour less frequently than younger children
- A10 (4) older children engaged more often in parallel/active play than younger children
- A11 (1) older children spoke more frequently to other children than younger children
- A11 (2) older children were spoken to by other children more frequently than younger children
- A10 (2) boys engaged less often in parallel/passive behaviour than girls
- E15 (5) Asian children talked to themselves *less* frequently
- E15 (4) Asian children played less frequently in a group of four than English children
- E16 (1) West Indian children played on their own as frequently as English children

HYPOTHESES SUPPORTED (4)

- E16 (2) West Indian children played in a group of two as frequently as English children
- E16 (3) West Indian children played in a group of three as frequently as English children
- E16 (4) West Indian children played in a group of four as frequently as English children
- E16 (5) West Indian children talked to themselves as frequently as English children
- E17 (1) Asian children engaged in solitary passive behaviour more frequently than English children
- E17 (2) Asian children engaged in parallel passive behaviour more frequently than English children
- E18 (1) West Indian children engaged in solitary passive behaviour as frequently as English children
- E18 (2) West Indian children engaged in parallel passive behaviour as frequently as English children
- E18 (3) West Indian children engaged in solitary active play as frequently as English children
- E18 (4) West Indian children engaged in parallel active play as frequently as English children
- E19 (1) Asian children spoke to other children less frequently than English children
- E19 (2) Asian children were spoken to less often by peers than English children

HYPOTHESES SUPPORTED (5)

- E20 (1) West Indian children spoke to other children as frequently as English children
- E20 (2) West Indian children were addressed by other children as frequently as English children
- E21 (1) Asian children spoke to the supervisors less frequently than children from other social groups
- E21 (2) Asian children were spoken to less often by the supervisors than English children
- E21 (3) Asian children played with the supervisors less frequently than English children
- E22 (2) West Indian children were spoken to by supervisors as frequently as English children
- E22 (3) West Indian children played with the supervisors as frequently as English children
- C8 (1) middle class children played on their own less often than working class children
- C8 (4) middle class children played more frequently in a group of four than working class children
- C9 (2) middle class children engaged more often in parallel passive behaviour
- C10 (1) middle class children talked more frequently to other children than working class children
- C10 (2) middle class children were spoken to more often by other children than working class children

HYPOTHESES PARTIALLY SUPPORTED

Findings

tactile_play

A1 incidence of sand play decreased with age among English children but not among Asian children

artistic_play

A2 incidence of paint play increased with age among English children but not among Asian children

S2 incidence of paint play was the same for English girls and boys but not for Asian girls and boys

imaginative_play

A3 incidence of imaginative play increased with age among English children but not among Asian children

S3 English but not Asian girls engaged more frequently in imaginative play

physical_play

S4 Asian but not English boys engaged in unstructured physical play more often than girls

HYPOTHESES PARTIALLY SUPPORTED (2)

constructive_play

- A5 incidence of glue play increased with age among Asian children but only showed a tendency to do so among English children
- S5 incidence of glue play was the same for Asian boys and girls but not for English boys and girls

scope_of_play

- A6 both measures of attention span increased with age for the sample as a whole, but for English children the longest attention span only showed a tendency in this direction. Diversity of play activities did not increase with age
- S7 Asian girls played with fewer items of play equipment than boys
- E12 there was no significant difference in the length of the longest attention span of West Indian and English children. there was a tendency for English children to have a greater average attention span and West Indian children played significantly more frequently with more play materials and equipment

HYPOTHESES PARTIALLY SUPPORTED (3)

sociability_of_play

- A9 (1) incidence of solitary play decreased with age for Asian children but showed only a tendency to do so for English children
- A9 (2) incidence of being in a group of two increased with age for Asian but not for English children
- A10 (2) the incidence of parallel passive behaviour decreased with age for Asian but not for English children
- A12 (3) incidence of playing with the supervisors decreased with age among Asian children but not among English children
- S9 (1) girls played less frequently on their own. When examined for intercultural differences, only Asian girls had a tendency to play on their own more.
- S9 (2) Asian girls engaged more often in a group of two than boys but there was only a tendency for English girls to do so
- S10 (3) incidence of solitary active play was greater for Asian but not for English girls than boys

HYPOTHESES UNSUPPORTED

Hypotheses

imaginative_play

- E6 West Indian children will engage in imaginative play less frequently than English children
- C3 middle class children will engage in imaginative play more frequently than working class children

physical_play

- A4 incidence of physical play would increase with age
- E8 incidence of physical play would be greater for West Indian children

constructive_play

- C5 middle class children will engage more frequently in constructive play

passivity/activity_of_play

- S8 boys will be passive less frequently, active and playful more frequently than girls
- C7 (1) middle class children will be passive less frequently than working class children

sociability_of_play

- A9 (3) older children will play in a group of three more frequently than younger children

HYPOTHESES UNSUPPORTED (2)

- A9 (4) older children will play in a group of four more frequently than younger children
- A9 (5) older children will talk to themselves less frequently
- A10 (3) older children will engage in solitary active play more frequently than younger children
- A12 (1) older children will talk to supervisors less often than younger children
- A12 (2) older children will be addressed less often by supervisors than younger children
- S9 (3) boys will play less often in a group of three than girls
- S9 (4) boys will play less often in a group of four than girls
- S9 (5) boys will talk to themselves more frequently than girls
- S9 (6) boys will engage in parallel active play less frequently than girls
- S10 (1) boys will engage in solitary passive behaviour less frequently than girls
- S11 (1) boys will talk to other children less often than girls
- S11 (2) boys will be spoken to by other children less often than girls
- S12 (1) boys will talk to supervisors less often than girls
- S12 (2) boys will be addressed by supervisors less often than girls
- S12 (3) boys will play with supervisors less often than girls
- E15 (1) Asian children will play on their own more often than English children

HYPOTHESES UNSUPPORTED (3)

- E15 (2) Asian children will play in a group of two less often than English children
- E15 (3) Asian children will play in a group of three less often than English children
- E17 (3) Asian children will engage in solitary active play less frequently than English children
- E17 (4) Asian children will engage in parallel active play less frequently than English children
- E22 (1) West Indian children will talk to supervisors as often as English children
- C8 (2) middle class children will play in a group of two more often than working class children
- C8 (3) middle class children will play in a group of three more often than working class children
- C9 (1) middle class children will engage in solitary passive behaviour less often than working class children
- C9 (3) middle class children will engage in solitary active behaviour more frequently than working class children
- C9 (4) middle class children will engage in parallel active play more frequently than working class children
- C10 (3) middle class children will talk to themselves more often than working class children
- C11 (1) middle class children will talk to supervisors more often than working class children
- C11 (2) middle class children will be spoken to more often by supervisors than working class children
- C11 (3) middle class children will play with supervisors more often than working class children

This chapter and the previous one have sought to demonstrate the association of age, sex, ethnic group and social class with types and modes of play. The findings have generally supported the proposition that children's play behaviour is associated with a combination of these independent variables. For instance social group and sex in combination were shown to be associated with the incidence of imaginative and constructive play, diversity of play and talking to self. While social group in combination with age were shown to be associated with the incidence of unstructured physical play and parallel active play.

The results presented in these two chapters suggest that while age may impose some boundary conditions on play behaviour, the structure of these is flexible enough to admit variations in play behaviour, the expression of which is in harmony with the cultures of the different social groups from which the children in the sample come. The nature of the association between the independent variables and play behaviour will now be approached in a different way to see whether or not the indicators of play behaviour can be put together in some way to discriminate between the various sub-groups in my sample.

CHAPTER 10

COMPOSITE PROFILES

Chapters 8 and 9 examined hypotheses concerning the contribution of independent variables to the prediction of differences in children's play behaviours. Univariate F and T tests were employed to examine children's sex and social group membership as predictors, and Pearson Product Moment correlations for age as a predictor. The three main predictors were examined together by means of three-way analyses of variance. If these analyses indicated the presence of interactions between the independent variables, these were examined more closely by means of univariate analysis of variance performed on the relevant variables for appropriate sub-samples. Such additional examination was particularly necessary in the case of variables having J-shaped distributions since once the main effects has been drawn out in the multivariate analyses cell sizes were reduced with the result that less reliance could be placed on multiple interactions. The use of multivariate analyses of variance indicated the contribution of the independent variables to assessing differences in play behaviours by the simultaneous assessment of the effects of age, sex and social grouping on the indicator variables. These analyses were limited, however, in only being able to assess the predictive power of the independent variables for only one indicator of play at a time. They did not allow for the possibility that children of different ages, sex and social groups tended to exhibit different patterns (that is, combinations) of play. Whereas the main analysis in Chapters 8 and 9 had examined the contribution of independent variables to the

frequency of single play behaviours, in the present chapter discriminant analysis will be employed in order to examine combinations of play behaviour to see if these discriminate between age, sex and social group categories. Discriminant analysis, by classifying children into discrete groupings, will also help in ascertaining how many distinctive groupings there are. It can indicate how many distinct age, sex and social groupings there are among the children.

This chapter examines how play behaviour profiles differentiate sex, age and social groupings over the sample of children as a whole. These groupings can be broken down further but for present purposes this further refinement will be confined to social group sub-divisions in order to illustrate the extent of sub-group differences within Asian and English groups.

Fisher (1936) was one of the earliest researchers to use discriminant analysis as a tool for the multivariate classification of people into groups. Since then applied psychologists such as Tatsuoka (1970), Borgen and Selig (1978) and Gondek (1981), have extended Fisher's work using discriminant analysis as an exploratory tool for gaining greater insights into the nature of the underlying behavioural dimensions which separate groups from one another.

This chapter employs discriminant analysis in the same vein to examine the relative efficiency of the 23 indicator variables for discriminating between different groupings of children. The indicators will serve as the discriminating variables. Their efficiency for predicting differences between children of different ages, sexes and from

different social groupings, will be ascertained statistically by a process whereby they are weighted and combined in linear fashion in such a way that will make the groups being discriminated as distinct as possible. This implies that the weightings attached to individual variables will not necessarily reflect that variable's discriminating power, since the discriminant coefficients form part of the discriminant function as a whole. A variable which might on its own make a substantive contribution to explaining variance might in this instance be eliminated by a correlated variable.

The 23 indicators are first entered into the discriminant analysis using the direct method and if 70 per cent or more cases have been correctly classified they are entered again into the analysis using Rao V stepwise method in the Statistical Package for the Social Sciences (Nie, Hull, Jenkins, Steinbrenner and Bent 1975). The intention is to try and select the best set of discriminating variables for each different grouping of children. With this purpose in mind a stringent "F to avoid removal" of 1.5 is used. This procedure will inevitably result in about 10 per cent fewer children being classified than in the Direct Method. The set of discriminant coefficients which were selected for performing the classificatory function will be presented. The canonical correlations, which relate the nearness of the observations to the group centroids, will also be presented, together with the prediction tables. Where refinements are made within social groupings which are not readily explicable they will be followed by univariate analysis in order to investigate the single play indicators for which significant group differences were shown in the discriminant analysis.

1. Age Profiles

Age was divided at the median and the two age groupings for the whole sample were examined to see if younger and older children* could be identified as two discrete groups in terms of play behaviour. Table 10.1 indicates the number of children falling within each separate age grouping. The tables indicate that there are two distinct age groupings. These cut across differences in sex and social group.

Further analysis showed that 73 per cent of children could be correctly classified by reference to a profile of play behaviour as belonging to the younger or older group. The sample was then divided into two according to whether the children were Asian or English. Age differences within each of these two main cultural groups were examined. This appeared to expose a culturally specific social meaning attached to age. In the first instance, a higher percentage of children within each cultural group were classified as belonging to the younger or older age group. 76 per cent of Asian children were correctly classified and 80 per cent of English children. In the second instance, different sets of discriminant coefficients were selected for each group. For classifying younger and older Asian children the following set of discriminant coefficients were selected:- Playfulness, sand, gluing, passive/materials, longest attention span, talks to self, object oriented imaginative play, group of two and group of four. In contrast, English children were best classified as younger or older according to the following group of discriminant coefficients:- Playfulness, sand, paint, person oriented imaginative play, average attention span, longest attention span, spoken to by other child, talks to self, solitary and group of two. Five of the discriminant

*In this and the following analysis the point of division between "younger" and "older" children is 3 years 2 months which is the median age for the sample as a whole.

coefficients selected were the same and five were different. If social expectations accruing to different ages of children in different cultures were not intervening between maturational levels and play behaviour then one would expect children of the same age to play in the same way whatever their social group. This has been shown to be clearly not the case. Despite some similarities, Asian and English children of the same age do not play in identical ways. Where differences occur the reason would seem to be the different societal expectations of how a child of a certain age should behave. This interpretation is consistent with the contrast noted in Chapter 5, whereby Asian children have a longer period of dependent childhood than English children who are, in many instances, expected to act independently of the mother as soon as possible. The prediction results for younger and older children are given below.

Table 10.1 Prediction Results for Younger and Older Children

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1.	Group 2.
		Younger Children	Older Children
Group 1. Younger Children	86	62 72.1%	24 27.9%
Group 2. Older Children	76	19 25%	57 75%

73% of children correctly classified

Chi Square = 35.65

Significance (p) < 0.001

Canonical Correlation = 0.53

2. Sex Profiles

Boys and girls in the sample as a whole were compared to see if their play behaviour indicated that they formed two distinct groups. Table 10.2 shows that the groupings for boys and girls are not quite so discrete as those for age. Just under 70 per cent of the children were correctly classified as being boys or girls from their play behaviours. Boys and girls were looked at within their cultural groups to see if the social meanings attached to sex roles varied between the Asian and English groups. Boys and girls were more often correctly classified as such when their play behaviours were contrasted within their own social group. 79.8 per cent of Asian children were correctly classified as boys or girls and 75 per cent of English children. In the case of the English group, more boys than girls were correctly classified. For the sample as a whole 64.6 per cent of girls were correctly classified, and 71 per cent for the sub-group of English children. However the case was reversed among the Asian children. Here 82.2 per cent of girls were correctly classified and 77 per cent of the boys.

The relevance of culture for the study of gender differences was apparent in the different sets of discriminant coefficients selected for looking at boys' and girls' behaviour within the Asian and English groups. For the Asian group the combination chosen consisted of playfulness, paint, person oriented imaginative play, passive/no contact materials, diversity of play activities, mean attention span, talks to other child, supervisor talks, group of two and group of three. In contrast, for the English group the set was much smaller consisting of playfulness, gluing, passive/no contact materials, longest attention span and object

oriented imaginative play. The two social groups had only two indicators in common in their group of discriminant coefficients. Results such as these would seem to indicate the influence of culture on sex typing within societies. Sex at the early age of two and three does appear from this study to have culturally specific social meaning attached to it. The greater accuracy obtained for classifying boys and girls as such within their own cultural groupings rather than classifying them across social groups, points to the inadequacy of treating children's behaviour simply as a bio-psychological universal without consideration of the different meanings attached to sex roles in the different social groups being studied. The prediction results for boys and girls is given below.

Table 10.2 Prediction Results for Boys and Girls

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1.	Group 2.
		Boys	Girls
Group 1. Boys	80	57 71.3%	23 28.8%
Group 2. Girls	82	29 35.4%	53 64.6%

69% of children correctly classified

Chi Square = 20.77

Significance (p) < 0.001

Canonical Correlation = 0.44

3. Social Group Profiles

A discriminant analysis was carried out on the play behaviour of the two largest social groupings of children, the English and the Asian, to see how discrete they were. The discriminant function coefficients are given below in Table 10.3. Supervisor talks to child is a highly weighted coefficient and discriminates to an important extent between these two groups of children.

Table 10.3 Standardized Discriminant Function Coefficients for English and Asian Children

	Function
Playfulness	-0.21
Sand	0.10
Person Oriented Imaginative Play	-0.40
Unstructured Physical Play	-0.21
Diversity of Play Activities	0.23
Plays with Supervisor	0.21
Supervisor Talks to Child	-1.00
Talks to Self	-0.27
Group of Three	-0.27
Group of Four	-0.19

Table 10.4 indicates that English and Asian children form two distinct groups. These groups are more distinctive than the sex and age groupings since they have a larger proportion of children correctly

classified.

Table 10.4 Prediction Results for English and Asian Children

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1. English Children	Group 2. Asian Children
Group 1. English Children	60	50 83%	10 16.7%
Group 2. Asian Children	89	9 10.1%	80 89.9%

87.2% of children correctly classified

Chi Square = 82.69

Significance (p) < 0.001

Canonical Correlation = 0.72

The multivariate analysis in Chapters 8 and 9 indicated the importance of the social dimension in accounting for variance in children's play behaviour. It was decided to refine further the social groupings and to see whether Asian children formed one homogeneous group. The Asian group was divided into the three main subgroups of Sikh, Hindu and Muslim and a discriminant analysis was run to see if these subgroups were distinctive.

Eleven best discriminating variable were selected as discriminant

function coefficients. Table 10.5 indicates that two coefficients in function one make an important contribution to discriminating between these three groups of children; these are the number of play activities engaged in and the average attention span. On the second function average attention span also has high discriminating power, together with the variable other child talks to focal child.

Table 10.5 Standardized Discriminant Function Coefficients for Muslim, Sikh and Hindu Children

	Function 1.	Function 2.
Playfulness	-0.28	0.68
Sand	0.17	0.39
Diversity of Play Activities	1.30	-0.63
Average Attention Span	1.16	-1.02
Active/Materials	-0.38	0.59
Plays with Supervisor	0.35	0.13
Spoken to by other Child	-0.25	-0.99
Supervisor Talks to Child	0.52	-0.33
Talks to Self	-0.44	-0.07
Object Oriented Imaginative Play	-0.25	0.22
Group of Two	-0.36	0.52

The prediction Table 10.6 indicates that the Muslims form a distinct group and vary in their play behaviour from Sikh and Hindu children. Hindu and Sikh children do not form very distinctive groups

and bear similarities to each other in their play behaviour.

Table 10.6 Prediction Results for Sikh, Muslim and Hindu Children

Actual Group	Nos. of Cases	Predicted Group Membership		
		Group 1.	Group 2.	Group 3.
		Sikh Children	Muslim Children	Hindu Children
Group 1. Sikhs	30	19 63.3%	5 16.7%	6 20.0%
Group 2. Muslims	33	2 6.1%	26 78.8%	5 15.2%
Group 3. Hindus	26	5 19.2%	3 11.5%	18 69.2%

70.8% of children correctly classified

Chi Squared = 56.18

Significance (p) < 0.001

Canonical Correlations = 0.68 and = 0.54

The influence of age on social group classification was next examined to see if Sikh, Muslim and Hindu preschool children become more differentiated as social groups as they grow older. In Table 10.7 talking to other children, active play with materials and painting differentiate younger Sikh, Muslim and Hindu children from each other in function one. In function two these three groups of children are distinguished in the main by the two coefficients, playfulness and supervisor talks to child.

Table 10.7 Standardized Discriminant Function Coefficients for
Younger Sikh, Muslim and Hindu Children

	Function 1.	Function 2.
Playfulness	-0.17	-1.08
Sand	0.04	-0.12
Paint	0.60	-0.51
Talks to other Child	-0.55	0.70
Talks to Supervisor	0.53	0.70
Supervisor Talks to Child	0.19	1.47
Object Oriented Imaginative Play	-0.43	-0.55
Group of Two	-0.45	-0.45
Active/Materials	0.50	0.42

In the prediction Tables 10.8 and 10.10 different profiles of play behaviour are indicated for younger and older Sikh, Hindu and Muslim children. These social groupings become more distinctive as the children grow older. For instance, Table 10.8 indicates that only 68.8 per cent of younger Sikh children were correctly classified as Sikh by their play behaviour, whereas Table 10.10 indicates that 100 per cent of older Sikh children were correctly identified. These results suggest the power of cultural influences on shaping children's behaviour. The impact of culture on children's play behaviour is very apparent between the ages of 3 years 2 months, the median age in the range sampled, and five years.

Table 10.8 Prediction Results for Younger Sikh, Muslim and Hindu Children

Actual Group	Nos. of Cases	Predicted Group Membership		
		Group 1.	Group 2.	Group 3.
		Sikh Children	Muslim Children	Hindu Children
Group 1. Sikhs	16	11 68.8%	2 12.5%	3 18.8%
Group 2. Muslims	18	3 16.7%	13 72.2%	2 11.1%
Group 3. Hindus	15	3 20%	1 6.7%	11 73.3%

71.4% of younger children correctly classified

Chi Square = 32.00

Significance (p) < 0.001

Canonical Correlations= 0.71 and 0.56

Table 10.9 indicates that in function one the coefficient, average attention span, discriminates to a large extent between older Hindu, Sikh and Muslim children. There are also a number of other highly weighted coefficients in this function. These are the number of play activities children engage in, playfulness, talking to other children and play with the supervisor. In Function 2 there are not any highly weighted coefficients, the variable, talks to other child, has the greatest discriminating power.

Table 10.9 Standardized Discriminant Function Coefficients for
Older Sikh, Muslim and Hindu Children

	Function 1.	Function 2.
Playfulness	-1.31	0.66
Sand	-0.19	0.60
Paint	-0.35	-0.27
Diversity of Play Activities	1.91	0.42
Average Attention Span	2.04	0.01
Longest Attention Span	0.73	-0.32
Plays with Supervisor	1.19	-0.03
Talks to other Child	1.24	-0.83
Spoken to by other Child	-0.68	-0.69
Supervisor Talks to Child	0.45	0.11
Talks to Self	-0.89	0.08
Group to Two	-0.80	0.67
Group of Four	-0.37	0.13

Table 10.10 Prediction Results for Older Sikh, Muslim and Hindu Children

Actual Group	Nos. of cases	Predicted Group Membership		
		Group 1.	Group 2.	Group 3.
		Sikh Children	Muslim Children	Hindu Children
Group 1. Sikhs	14	14 100%	0 0.0%	0 0.0%
Group 2. Muslims	15	0 0.0%	14 93.3%	1 6.7%
Group 3. Hindus	11	0 0.0%	1 9.1%	10 90.9%

95% of Children correctly classified

Chi Square = 68.45

Significance (p) < 0.001

Canonical Correlations= 0.90 and 0.76

A discriminant analysis was carried out on Sikh, Hindu and Muslim boys and then on the girls from these three social groups, to see to what extent boys and girls formed distinctive groupings across the three social groups. Table 10.11 indicates that in function one the coefficients supervisor talks to child and sand play differentiate between the three social groups of boys. In function two, three variables, talks to other children, playfulness and supervisor talks to child, have discriminating power.

Table 10.11 Standardized Discriminant Function Coefficients for Sikh, Muslim and Hindu Boys

	Function 1.	Function 2.
Playfulness	-0.05	0.68
Sand	0.78	0.16
Unstructured Physical Play	0.33	-0.25
Diversity of Play Activities	0.15	-0.14
Talks to other Child	-0.60	-0.88
Supervisor Talks to Child	0.83	-0.63

Table 10.12 indicates that only the Muslim boys form a discrete group. Sikh and Hindu boys are not clearly differentiated by their play behaviour from each other.

Table 10.12 Prediction Results for Sikh, Muslim and Hindu Boys

Actual Group	Nos. of Cases	Predicted Group Membership		
		Group 1.	Group 2.	Group 3.
		Sikh Boys	Muslim Boys	Hindu Boys
Group 1. Sikhs	16	8 50.0%	2 12.5%	6 37.5%
Group 2. Muslims	16	1 6.3%	12 75.0%	3 18.8%
Group 3. Hindus	12	4 33.3%	1 8.3%	7 58.3%

61.4% of Boys correctly classified

Chi Square = 15.56

Significance (p) < 0.001

Canonical Correlations = 0.66 and 0.32

A discriminant analysis was next carried out on Sikh, Hindu and Muslim girls to see how distinct these three groups of girls were from each other. Table 10.13 indicates that the coefficient supervisor talks to child is a powerful discriminator between the three social groups of girls. Playfulness also has high discriminatory power, together with the coefficient other child talks to focal child.

Table 10.13 Standardized Discriminant Function Coefficients for Asian Girls

	Function 1.	Function 2.
Playfulness	1.66	-0.08
Sand	0.29	-0.13
Paint	-0.35	-0.30
Passive/Materials	0.61	0.26
Spoken to by other Child	-0.94	0.52
Talks to Supervisor	1.31	0.28
Supervisor Talks to Child	-2.14	-0.87
Object Oriented Imaginative Play	0.42	0.25

Table 10.14 indicates that the three groupings of girls do not follow the same patterning as the corresponding three groupings of boys. The girls form three distinct groups, according to their social group origin. In contrast to the boys Hindu girls form the most distinctive group, followed by the Muslims and then by the Sikhs.

Table 10.14 Prediction Results for Sikh, Muslim and Hindu Girls

Actual Group	Nos. of Cases	Predicted Group Membership		
		Group 1.	Group 2	Group 3.
		Sikh Girls	Muslim Girls	Hindu Girls
Group 1. Sikhs	14	9 64.3%	3 21.4%	3 14.3%
Group 2. Muslims	17	3 17.6%	13 76.5%	1 5.9%
Group 3. Hindus	14	1 7.1%	0 0.0%	13 92.9%

77.8% of Girls correctly classified

Chi Squared = 40.000

Significance (p) < 0.001

Canonical Correlations = 0.75 and 0.56

This section of the chapter has suggested some subgroup differences in the Asian sample of children in the present study. It has been suggested that profiles of Sikh, Muslim and Hindu preschool children become more discrete as they grow older. When the three social groups of children were compared, Muslims formed the most distinctive grouping. This was more pronounced in the case of the boys. Among the Asian girls the Hindus have the most distinctive profile. Hindu and Sikh boys, in contrast to girls share

similarities in their play behaviour.

The distinctive play behaviour profiles of Muslim children may result in part from religious values held by their parents which have been transmitted to them during the very early years. The prescriptions of behaviour found in the Koran, which were described in Chapter 5, correspond to values which are reflected in the play behaviour of Muslim children on the Birmingham playbuses. Muslim children have been observed to be more passive, less playful and to interact less frequently with the supervisors than any other social group. Muslim children may feel unable to initiate conversation with the supervisors because they are aware of the big gap between their own powerless status and the powerful status of the supervisors. They may feel inhibited about playing with supervisors since play implies some form of egalitarianism among the players. Part of the patterning of authority relationships in Muslim families in Birmingham may be traced back to features in the religious teaching of Islam. For instance, the teachings of Islam maintain that man on his own is unable to differentiate between good and evil, right and wrong, and must, as a consequence, rely on Islam and its religious leaders for definitions of correct behaviour. This in turn may induce Muslims to become dependent on their religious leaders for advice and guidance (Hajimirzatayeb, 1981).

Another aspect of Islam which helps to induce a feeling of subservience to powerful personages and authority in general is the religious prescription that man should submit with resignation and lack of questioning to whatever conditions in life Allah has

seen appropriate to burden him with

"This belief, through passage of ages, has resulted in a passive acceptance of the conditions of status quo: his physical environment, his political predicament, his social conditions, and the broad economic forces surrounding him. Unlike Western man, he does not seek power and mastery over his environment; he submits to his powerful environment." (Hajimirzatayeb, 1981: 18)

Hofstede (1980) in a study of organisations in forty different countries, has suggested those aspects of authority relationships which vary between Britain, Pakistan and India. He classified India and Pakistan as having a large "power distance" and Britain a small one. Hofstede ranked Pakistan as having strong "uncertainty avoidance" and Britain as low on it. Hofstede considered that power distance indicates the extent to which a society accepts hierarchical inequalities as just and reasonable, with a few holding power and the rest powerless and dependent on them. High power distance countries believe that "there should be an order of inequality in the world in which everybody has a rightful place" and that "a few people should be independent: most should be dependent", that "power-holders are entitled to privileges" and that "latent conflict exists between the powerful and the powerless" (Hofstede, 1980: 46) . This macroscopic structure of power relationships prevalent in high power distance countries such as Pakistan, corresponds to the microscopic structure of power relationships in the typical Muslim family which was described in Chapter 5. Typically the father is head of the family and wields power and authority over the children who in turn are expected to be powerless, dependent, submissive and respectful to him.

Countries, like Britain, with low power distance tend to believe, according to Hofstede, in equality and equal rights for all citizens, democratic institutions and that subordinates and superiors are fundamentally equal as people. This outlook is at variance with that common in high power distance countries, such as India and Pakistan, where there is a belief in centralisation, top-down communication, control from above and a belief that there is a fundamental difference between subordinates and superiors.

Hofstede considered that the dimension, uncertainty avoidance, indicates the extent to which a society feels threatened by uncertain and ambiguous situations and tries to avoid them. Countries high in uncertainty avoidance believe that "conflict and competition can unleash aggression and should therefore be avoided", and that "a strong need for consensus is involved"; there is a "search for ultimate, absolute truths and values" a "belief is placed in experts and their knowledge" and it is believed that "ordinary citizens are incompetent compared with the authorities" (Hofstede, 1980: 47).

Countries which are able to cope with uncertainty, such as Britain and India, Hofstede maintains, are characterised as nations by a willingness to take risks, a dislike of rules, a tolerance of nonconformity and a tendency to exert social sanctions against displays of aggressive behaviour. In contrast, countries such as Pakistan, which have a low tolerance for uncertainty, prefer in the main to accept commands unquestioningly from the few at the top and in general show a preference for being directed and organised and told what to do. It has been suggested (Hajimirzatayeb 1981) that attitudes connected with uncertainty avoidance are conveyed by parents to children during the socialisation process. As a result children tend

to grow up to fear the uncertainty of life outside the home and instead cling tenaciously to the known and familiar and look to their parents for advice and protection from hostile forces in the world outside.

In conclusion, while age may, as Piaget suggested, impose some boundary conditions on play behaviours, these are sufficiently fluid to admit of different play forms, the expression of which is in harmony with the culture of different social groups. As a result explanations of play behaviour in terms of only one set of variables alone are unlikely to be sufficient. In Chapter 5 some attention was given to specifying which subcomponents of culture might influence play behaviour and in this present chapter some indication has been given of those aspects of play behaviour which are involved in this postulated relationship.

4. Social Class Profiles

Social class differences within the English group of children were examined using discriminant analysis to see if middle and working class children form two discrete groupings.

Table 10.15 indicates that the coefficients in general are not highly weighted. Playfulness is the most highly weighted coefficient and discriminates most within the function between the two groups of children.

Table 10.15 Standardised Discriminant Function Coefficients for
Middle and Working Class Children

	Function
Playfulness	0.69
Sand	0.33
Paint	0.18
Passive/Materials	0.43
Longest Attention Span	0.48
Talks to other Child	0.41
Object Oriented Imaginative Play	-0.24
Group of Four	0.40

The prediction Table 10.16 suggests that working and middle class children form two discrete groupings and that the working class is more distinctive as a group than the middle class.

Table 10.16 Prediction Results for Middle and Working Class Children

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1. Working Class Children	Group 2. Middle Class Children
Group 1. Working Class	33	30 90.9%	3 9.1%
Group 2. Middle Class	27	5 18.5%	22 81.5%

86.7% of children were correctly classified

Chi Square = 32.27

Significance (p) < 0.001

Canonical Correlation = 0.76

A comparison is now made of prediction tables obtained for 1. younger middle and working class children and 2. for older middle and working class children. The assumption is that differences between these two groups emerge more clearly as the children grow older, as was the case with the Asian children, and it is therefore assumed that discrimination between middle and working class children will be more distinct and complete among the older children.

In Table 10.17 talking to the supervisor is a highly weighted coefficient. It is, therefore, making a very important contribution to discriminating between these two groups of children. Sand play

is also highly weighted and is, therefore, a variable on which the two groups of children differ. Supervisor talks to child is negatively related to child talks to the supervisor and also makes an important discriminatory contribution. Active play with materials and group of three are also highly weighted.

Table 10.17 Standardized Discriminant Function Coefficients for Younger, Middle and Working Class Children

	Function
Playfulness	0.31
Sand	-1.71
Unstructured Physical Play	0.33
Paper & Glue	-0.70
Diversity of Play Activities	0.54
Longest Attention Span	-0.57
Spoken to by other Child	0.82
Talks to Supervisor	-2.95
Supervisor Talks to Child	1.88
Group of Three	1.08
Group of Four	-0.99
Active/Materials	1.50

The prediction Table 10.18 indicates that working and middle class children are very different from each other.

Table 10.18 Prediction Results for Younger Working and Middle Class Children

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1. Working Class Children	Group 2. Middle Class Children
Group 1. Working Class	16	16 100.0%	0 0.0%
Group 2. Middle Class	12	0 0.0%	12 100.0%

100.0% of the children were correctly classified

Chi Square = 28.000

Significance (p) < 0.001

Canonical Correlation = 0.90

In Table 10.19 the coefficients in general are not so highly

weighted as in Table 10.17. Talking to the supervisor is no longer a discriminant coefficient. Playfulness is the most highly weighted coefficient and serves to discriminate most within the function between the two groups of children. Sand does not discriminate very much among older children and longest attention span is no longer a discriminant coefficient. There is, however, discrimination still with talking.

Table 10.19 Standardized Discriminant Function Coefficients for Older Working and Middle Class Children

	Function
Playfulness	-1.10
Sand	-0.28
Passive/Materials	-0.58
Passive/No Contact	0.42
Diversity of Play Activities	0.45
Plays with Supervisor	0.52
Talks to other Child	-0.53
Talks to Self	0.68

The results in Tables 10.18 and 10.20 show that my assumption about the differences between middle and working class children becoming more pronounced as the children grow older, does not gain

support. In order to investigate further why this should be I compared the discriminant function coefficients for the two groups with the results from Mann Whitney U tests for the two groups. The prediction table is followed by the two Mann Whitney U tests.

Table 10.20 Prediction Results for Older Working and Middle Class Children

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1. Working Class Children	Group 2. Middle Class Children
Group 1. Working Class	17	14 82.4%	3 17.6%
Group 2. Middle Class	15	2 13.3%	13 86.7%

84.4% of children were correctly classified

Chi Square = 15.13

Significance (p) < 0.001

Canonical Correlation = 0.73

Table 10.21 The Incidence of Different Play Behaviours among Younger Working and Middle Class Children

Play Behaviour	Mean Ranks*		Value of U	Significance (p)
	Working Class (N=17)	Middle Class (N=12)		
Playfulness	11.8	19.5	47.5	0.02
Sand	11.5	20.0	42.0	0.01
Average Attention Span	11.6	19.8	44.0	0.01
Longest Attention Span	11.9	19.4	49.0	0.02
Group of Four	12.0	19.3	50.5	0.02

* A higher mean rank reflects a higher original score

Table 10.22 The Incidence of Different Play Behaviours among Older Working and Middle Class Children

Play Behaviour	Mean Ranks		Value of U	Significance (p)
	Working Class (N=17)	Middle Class (N=15)		
Playfulness	12.4	21.1	58.0	0.01
Passive/No Contact Mat.	19.9	12.6	185.5	0.03
Longest Attention Span	13.0	20.5	67.5	0.02
Talks to other Child	12.7	20.8	63.0	0.01
Spoken to by other Child	12.9	20.6	66.0	0.02
Solitary	19.8	12.8	183.5	0.03
Group of Three	12.7	20.8	62.5	0.01
Solitary/Active	20.1	12.4	189.0	0.02

Working and middle class boys were compared to see if they formed two discrete groups. None of the coefficients is highly weighted in Table 10.23. Middle class boys vary from working class boys along the dimensions of concentration, playfulness, talking and large group size.

Table 10.23 Standardized Discriminant Function Coefficients for Working and Middle Class Boys

	Function
Playfulness	-0.26
Average Attention Span	-0.48
Longest Attention Span	-0.52
Talks to other Child	-0.48
Group of Four	-0.20

In Table 10.24 working and middle class boys form two discrete groupings.

Table 10.24 Prediction Results for Working and Middle Class Boys

Actual Group	Nos. of Cases	Predicted Group Membership	
		Group 1.	Group 2.
		Working Class Boys	Middle Class Boys
Group 1. Working Class	15	13 86.7%	2 13.3%
Group 2. Middle Class	14	2 14.3%	12 85.7%

86.2% of children were correctly classified

Chi Square = 15.21

Significance (p) < 0.001

Canonical Correlation = 0.68

Working and middle class girls were compared next to see if they formed two discrete groups. None of the coefficients in Table 10.25 is highly weighted. Middle class girls can be discriminated from working class girls along the dimensions of playfulness, talking, large group size, sand play and unstructured physical play.

Table 10.25 Standardized Discriminant Function Coefficients for English Working and Middle Class Girls

	Function
Playfulness	0.29
Sand	0.68
Unstructured Physical Play	-0.39
Talks to Supervisor	0.53
Group of Four	1.24

Table 10.26 indicated that English girls form two discrete groupings based on their social class origins. Middle class girls form a slightly more distinctive group than working class girls.

Table 10.26 Prediction Results for Working and Middle Class Girls

Actual Group	No. of Cases	Predicted Group Membership	
		Group 1. Working Class Girls	Group 2. Middle Class Girls
Group 1. Working Class	18	16 88.9%	2 11.1%
Group 2. Middle Class	13	1 7.7%	12 92.3%

90.3% of Girls were correctly classified

Chi Square = 20.16

Significance (p) < 0.001

Canonical Correlation = 0.71

When the results of the discriminant analyses and the Mann Whitney U tests are compared for younger and older working and middle class children it is apparent that there is a different pattern of play behaviour for these two different age groups of children. In some respects three and four year old working class children have caught up with their middle class counterparts. For instance sand does not discriminate among older children and there is less discrimination with average attention span. However, there is still discrimination with talking and middle class children also demonstrate a consistently higher level of playfulness. Tables 10.21 and 10.22 indicate that there are nearly double the number of variables which discriminate between older, as compared to younger, middle and working class children. These new features relate to sociability. Older working class children are more inclined to play on their own and older middle class children are more apt to play in large groups.

These results suggest that there are slightly different patterns of development between middle and working class children. It would appear that working class children play with sand later on in development than middle class children. The average attention span of working class children would appear to go up later than with middle class children. However, middle class children have a consistent advantage with regard to longest attention span. These findings suggest a complicated picture. Not everything on which middle and working class children differ, increases. In some respects older working class children have caught up but in other respects they have drawn further apart. They have

caught up with sand and average attention span but not with talking, longest attention span and playfulness. Older middle and working class children show significant differences in sociability which did not appear when they were younger.

In conclusion, this chapter has shown how children of the same age and sex do not play in identical fashion: rather, their play behaviour appears to reflect the prevailing norms of the social group to which they belong. Examination of the different patterns of play behaviour exhibited by children of the same age and sex from different social groupings has provided some clues as to how psychologically universal needs and situationally relative social influences act together dynamically to shape the development of play behaviour among children in their preschool years. Clearly then an adequate analysis of children's play must take account of the interaction between psychological motivators to play and the social influences on the forms of behaviour which ensue. This is the assertion with which this thesis opened and it will close with an assessment of some of the theoretical and practical implications which stem from an appreciation of the importance of social reference points for the content and style of play behaviour.

PART 4

CONCLUSION

CHAPTER 11

GENERAL CONCLUSION

This chapter will first comment on the purpose and findings of the research study. It will then speculate on the practical and theoretical implications which stem from it and make suggestions for extending this field of research.

1. Purpose and Findings of the Research Study

The central theoretical issue in this thesis was expressed by the proposition, advanced in Chapter 1, that a child's predisposition to engage in particular forms of play behaviour will be influenced by a combination of bio-psychological and social variables. This study was undertaken because a disproportionate amount of attention had been given in the literature to one set of variables, namely the bio-psychological. With this imbalance in mind the thesis has attempted to consider and assess a social perspective on play behaviour in comparison with the well developed biological and psychological approaches which view children's play behaviour in individualistic terms. It has examined the contributions offered by these different perspectives, namely the relevance of age, sex and social influences emanating from class and ethnic groups for variations in children's play behaviour. In considering all these factors together through an observational study conducted under controlled conditions, an attempt has been made to discern the discriminating power of each factor and the extent of interaction between them.

This study focussed attention on the importance of an adequate understanding of a child's home and cultural background for an appreciation of his play behaviour rather than on structural aspects of the play situation itself. Children were viewed as absorbing the norms, values and beliefs of their society through the process of socialisation. This acquired set of values and norms was then assumed to influence their general orientation to play. The study identified cultural variables which were hypothesized as influences on particular patterns of play for specified groups of children. English, Asian and West Indian children were selected for study as each had distinct and contrasting cultural characteristics. By locating the study on playbuses where the influence of extraneous variables was at a minimum, it was possible to identify specific cultural correlates of aspects of play, particularly when contrasting the largest social groups: English and Asian.

A necessary limitation of the study was to hold constant the immediate play environment in order to isolate more clearly the relevance of age, sex and social background. It was therefore not possible to take into account the relationship of proximal play environment to the child's orientation to play and to assess its likely influence. It may be that the playbus arrangements positively reinforced certain groups of children's orientations to play, such as encouraging them to play without inhibition. On the other hand, they may have inhibited the play of other groups of children by, for instance, providing play supervisors from different social or ethnic backgrounds to their own.

Chapter 3 emphasised the importance of the preschool years from a maturational viewpoint. Many psychologists have stressed how the basic foundations of many behaviours are laid during this period. Some have gone so far as to suggest that for each behavioural phenomenon there is a different critical period in development. Such critical periods differ from other developmental growth stages in that their effects, if not irreversible, are at best difficult to modify in later life. Chapter 3 described the crucial role of play in meeting the demands of each maturational level. Through practice in play children assimilate each newly acquired skill.

Chapter 3 emphasised that much of the development that takes place during the early years is physical and consequently the child in his play is intent on exercising those parts of his body where development is underway. During the preschool years muscle control and co-ordination sweep over the body from head to feet, with the muscles in the head region coming under control first and those in the leg region last. Once maturation of muscles, bones and nerve structures in a certain part of the body has occurred the young child is ready to learn and practice a new skill, provided that the opportunity is present at this "critical" period in the environment for him to do so. For this reason young children enjoy games which involve pushing, pulling and climbing in order to practise skills which have resulted from rapidly developing muscles and muscular co-ordination. Climbing frames, climbing walls, play ladders and slides are therefore popular items of equipment in preschool playgroups provided that they are of a suitable design and size.

During the years two and a half to six there is a critical growth period in the development of the sensory system (Van de Eyken 1973) as a result of which the child is especially sensitive to colour, shape and texture. This may account in part for the fascination of sand and water for preschool children. Children from different social groupings all engaged frequently in sand play and it was the most popular activity on all the buses with all groups of children. Although Asian and English children played in a similar way with sand the Asian children never forsook it for other types of play as did the English children. Artistic play was a popular play activity and was engaged in more frequently by older children.

Piaget has described the optimum growth periods in cognition and how these relate to children's desire to come to terms with the world around them. Piaget considered that children master their social world through symbolic play. Children first imitate in play those people they meet in their daily lives and later act out their roles. Piaget's contribution to the theory of play is important in that it relates changes in dominant play over time to individual stages of development. However it was noted in Chapter 10 that while age might impose some boundary conditions on play behaviour these are sufficiently fluid to admit of different play forms, the expression of which is in harmony with the cultures of different social groups. The present study also demonstrated that Asian children come to learn about their social world through direct participation in adult society rather than through mere imitation of it in play.

The following review of evidence from the study leads me towards the view that certain types of play, such as physical, manipulative and artistic play follow almost universal patterns, while other types, most notably imaginative, appear to be very largely a product of particular social environments. The present study illustrated how imaginative play varied in frequency between English, Asian and West Indian children, and was more often engaged in by English children. Chapter 5 suggested that the explanation for this could be found primarily in different socialisation requirements. It is a popular type of play for English children who live in a society characterised by complex adult roles in which children do not participate and where it receives direct adult encouragement. Imaginative play is infrequent among Asian children as they grasp the nature of adult roles through observation and direct participation in adult life. Asian children have little need to copy adult activities in play because at an early age they engage in similar pursuits themselves.

Chapter 5 also suggested that the content of imaginative play would tend to be more varied reflecting the degree to which those adult roles are complex. Asian children have plenty of opportunity to observe the family life around them and there is little complexity in the roles of their parents. This is different in the case of English children as there is some ambiguity about the role of the mother on account of the dual nature of her role since in some

instances she is both breadwinner and housewife, and girls were found to engage significantly more often in imaginative play than boys.

In line with the Opies' study of children's games the present study found that unstructured physical play varied little in content between the different social groups. However, although there were few inter and intra-cultural differences in the content of unstructured physical play, there were some differences in the degree to which children from different social groups engaged in it. Among English and West Indian children it was a popular play activity and would probably have proved even more popular if there had been more space in the playbuses. Among Asian children in general it was far less popular. In addition there were marked differences between the sexes in the degree to which they engaged in unstructured physical play; it was relatively infrequent among Asian girls. Asian children seemed to prefer games of manual dexterity which involved the use of finer hand muscles, such as lego and building blocks. These results are in line with the Roberts and Sutton-Smith hypothesis advanced in Chapter 2 that in societies where achievement is stressed children will engage in games of physical skill as relief from inner tension which the socialisation process had engendered.

There was a great difference in noise between the English and Asian playbuses. The English children spoke to each other, themselves and play supervisors much more often. This difference in the incidence of talking was considered to be a reflection of the greater respect in which play supervisors are held by the Asian children. Asian children engaged significantly more frequently in

passive behaviours than English children and this was attributed to the more authoritarian structure of the typical Asian family and to religious tenets. Islam emphasises the value of submission to the will of Allah, while Sikhism and Hinduism stress the importance of meditation as a means to obtaining Moksha. Chapter 5 illustrated how Indians are apt to value knowledge gained from the inner world through meditation while Western cultures emphasise, in contrast, knowledge gained from outside the self through a process of logical deductive reasoning.

It is difficult to reach definite conclusions about West Indian children as my sample was very small. The West Indian children displayed many emotional peaks and troughs and the girls among them were particularly dominant in their behaviour. The origin of West Indian children's volatile temperament may lie, as Chapter 5 suggested, in their mothers' child-rearing practices which tend to oscillate between a high degree of permissiveness and strictness. The dominant behaviour of the girls may be traced back to the way that the West Indian family structure is heavily dependent on the mother. In other respects, such as taking the initiative and the frequency of constructive, artistic, imaginative and manipulative play the West Indian children came between the English and Asian children.

On indicators of intellectual development English, Asian and West Indian children showed little difference; attention spans increased steadily with age in all social groups. Passivity in all groups decreased with age, though the level of activity of

Asian children remained constantly lower than that for English children. It was found that the ages at which particular pursuits became popular varied between Asian and English children. Sand was much more popular among two year old English children than it was among three and four year olds. Children showed a gradual preference after the age of three for play with paint, imaginative play and for constructive play, with for example paper and glue. Older children still maintained contact with sand at most play sessions but spent little time playing with it. In contrast, the use of different play materials by Asian children did not progress with age as was the case with English children. In other words, sand, paint and imaginative play were as popular with four year olds as with two year olds. Though constructive play with paper and glue showed some age-related shift, there was no comparable shift in Asian children's play preferences for artistic and imaginative play and no shift away from tactile play in the sand.

The main difference between the play of Asian boys and girls lay not so much in different activities as in different styles of play. From an early age boys were found to be more boisterous, lively, active and noisy and they engaged in a wider range of play activities. Asian girls were more restrained, quieter and more passive and enjoyed less varied and more sedentary activities. So even at the early age of two and three Asian girls do seem to be the gentler sex, though how far they have already been trained to this remains an open question. Their English counterparts were less demure. In contrast to Asian boys and girls, English boys and girls varied more in their choice of play activities and less in styles of play. English boys played more frequently with sand and engaged less often in imaginative play and constructive play with paper

and glue. Though it remains uncertain how far this was due, as Chapter 3 suggested, to a developmental lag rather than to a sex preference for different types of play. The different play choices of boys and girls in the two cultural groups appears to demonstrate again how the social roles ascribed to boys and girls influence their play behaviour.

Middle and working class English children were found to vary significantly on certain indicators of play behaviour. On a discriminant analysis for younger children there was 100 per cent correct classification of English children as belonging to either the middle or working class. It is well appreciated that Britain is one of the most socially divided among modern industrial nations. It used to be hoped, and in some quarters still is, that reforms of education into a single state comprehensive system would redress a substantial part of social disadvantage. Family influence on educational attainment and on motivation to secure qualifications and achievement in general is recognised, as Chapter 6 illustrated, but many have believed that there is the chance to offset this during the school years of five to sixteen if only all children are given a similar and socially mixed education.

This study suggests that even these hopes of reducing social divisions in Britain by what are very substantial educational changes may come too late. For significant differences between children of working and middle class backgrounds have been found to emerge in children as young as two years. These differences are precisely those which will bear very much upon the child's chances of success later in life. Middle class children were found to be problem-solvers

in the manner described by Klein in Chapter 6. Klein described problem solvers as being willing to experiment and react positively to novelty, as being able to postpone immediate gratification for the sake of longterm goals; as seeking the logic behind apparently disconnected events and analysing events and looking for causes and reasons for actions. Middle class children on the playbuses displayed such qualities which relate directly to the ability to make decisions later in life and for success in work organizations. These children displayed self-confidence and initiative. They decided what they wanted to play with and asked the play supervisors for the materials they needed.

Working class children were much more passive and often waited for the play supervisor to tell them what to play with next rather than deciding for themselves. Whereas middle class children resented adult interference in their play and had clear intentions as to what they planned to do, working class children often seemed more at ease if they were given directions from play supervisors rather than being left to their own devices. They often tended to congregate in large groups where they showed little initiative and innovation, simply following what everyone else was doing. Middle class children, in contrast, showed greater complexity and sophistication in their social play. For instance there were no instances of working class children getting together in a co-operative effort in which each child would have to arrange to make a different contribution, such as making a collage, whereas middle class children were advanced in spontaneous group organisation and were able to do this from about the age of three and a half years.

Middle class children were less dependent on play supervisors and when they played with them they tended to take the initiative and suggested to them how they should play. They took the initiative in talking to play supervisors more often than working class children and often questioned them about their feelings and thoughts. Middle class children in general had greater powers of articulation and spoke nearly twice as frequently to other children in the playbus as working class children. They were more concerned with finishing play tasks, which was measured by their rate of completion of jigsaw puzzles. Middle class children showed a significantly greater capacity to concentrate on play activities, their longest attention span was nearly three minutes longer than that of working class children. They also spent more time in actively playing and less in passive behaviours and displayed playful behaviour significantly more often.

The difference between children of middle and working class origin are a set of resources which will lay the foundations of success for them later in life, particularly in the context of higher education and organizations where social skills, the capacity to see things through to completion, the ability to take a longer time perspective, a positive attitude to authority and the power to concentrate and work on one's own are important. Middle class children on the playbuses with their greater powers of concentration, articulation and group skills are geared more to future success than working class children who are more conformist, passive, deferential to authority and possess fewer vocal and social group skills. This study illustrates how, between the ages of two and five years the

main outlines of social discrimination are being laid down, making it more difficult for working class children later in life to pick up the skills and attitudes typical of the middle class. Comprehensive education comes too late and amounts to a mere tinkering with the social system. This study emphasises that the age to concentrate on is the years two to five when the seeds of social inequality are being sown.

Assuming that the relationships which have been found between independent variables and play behaviour are not spurious, the question arises whether these results can be said to indicate that age, sex and social membership "influence" children's play behaviour. If a process of influence or causation were involved then its direction would be in no doubt. The age and sex of the children are given and that is true even if one interprets these in purely sociological terms as the designation of certain roles children are expected to perform. Similarly, social group membership is given for the children.

As in most social science research it is not possible to demonstrate that the independent variables influence or cause children's behaviour. The most one can hope to do is to provide evidence which identifies reasons why the independent variables relate to play and are likely to exert an influence. For example age is linked to the frequency of talking "because of" natural processes of development; or Muslim children exhibit a relatively greater degree of passive behaviour "because of" social norms which are known to characterise Muslim society.

Part 2 of the thesis brought together sources which point to linkages and rationales of this kind relevant to the aspects of children's play that have been investigated. Although a lack of refutation of the hypotheses set out in Part 2 does not actually substantiate them or their rationales, it would seem to be foolish to go to the other extreme and to discount these rationales with the imputations of influence that they contain. My own position on this matter therefore is that while strictly speaking my study has not been able, or indeed concerned, to demonstrate the existence of "influences" on children's play, it is reasonable to suggest that the relationships which the independent variables have been shown to have with play are in fact likely to be relationships of influence.

2. Implications of the Study

The conclusions arrived at in this study have practical and policy implications for the management and planning of preschool play provision. Such provision is planned within a total concept of the role that children have within society. Chapter 5 described how in many societies one finds attitudes towards children and play which differ from those prevalent in Western society both past and present. In Western society until about the turn of the century work was largely viewed as a Christian virtue and play as its antithesis. Play was seen at worst as a sign of moral laxness and at best as frivolous and therefore a behaviour which should be relegated to childhood. However, in other societies where there is no such

dichotomy between play and work, and between childhood and adulthood, play has a different role in the total life of the community.

Gradually during the course of the century in the Western world and especially during the last twenty years there has been a commitment to promote the development of preschool children. This concern seems to have been born out of a desire to further children's development by compensating through play provision for environmental deficiencies, many of which have been brought about by urbanisation, the effects of technology and the increased mobility of labour. The industrialisation and urbanisation of the nineteenth century was accompanied by an enormous growth in the population. As a result in our cities today space is at a premium and each year more people have to be housed in less space. As a result architects and planners have designed cities and created an urban environment which is in many ways inimical to children's welfare. Van der Eyken considers that

"The modern environments that we are creating ...are not the friends of children; indeed, the architects who are creating them have scarcely thought about the needs of the young who will live their first, impressionable years in these hollow towers, deprived of the chance of raising pets, or rushing outside at the first fall of snow, of dancing around a bonfire...Most of all they deprive a child of what is probably the most important and single influence in his young years - the informal and casual contact not only with other children of their own age, but with adults and older children... In the end the indictment of these environments is simply that they are anti-child; that they demand of the young a type of behaviour - acquiescent, silent, estranged - that is the very antithesis of the inherent nature of childhood." (Van de Eyken, 1973: 22-23)

Both on new housing estates and in tower blocks children have

frequently little space in which to play at the very time in their lives when they need to be vigorous, boisterous and adventurous. Although as a nation we are better housed than at the turn of the century when many urban children lived in back to back slums, those children at least had the streets as their natural playground whereas today's children have the problem of traffic to contend with. During the sixties there was a considerable increase in car ownership. In 1950 there were 5 million cars on our roads but by 1971 there were 15½ million. On average 800 children are killed each year on the roads and a further 50,000 are injured. As a result preschool children increasingly play in their homes as mothers are fearful of letting them play outside.

As well as restricted freedom outside the home there is restricted freedom within the home. The main danger zone inside the home are chemical cleaners and medicines. To take Birmingham; nearly a thousand children a year are admitted to hospital after accidental poisoning with drugs, medicines or household chemicals. Poisoning in the home is now the largest cause of city hospital admissions for children under five. People are also more mobile now than ever before. The 1966 census showed that 30 per cent of people questioned had moved home in the last five years. As a result the preschool child is often no longer part of an extended family network secure in the knowledge that he has a number of adults to fall back on if necessary. Instead, as the rising figure for battered babies indicates, the preschool child is often drawn into a suffocating relationship with his parents, with the attendant frustrations and misery this all too often brings. Owing to increased

mobility many families with young children are socially isolated and the children in some cases grow up during their early years without playmates and a variety of caring adults.

Urbanisation has meant that fewer children are able to play with natural play materials and to study the natural world in detail. Children in cities are unable to climb trees, roam through fields and woods and experiment with fire and water. As so many practical and social experiences have been taken away from the urban child during the last quarter of a century it follows that he must somehow be helped to replace them in order for his successful personal and social development to take place. This is where play schemes come in. Children need to play in certain ways at certain stages of their development, as was indicated in Chapter 3, and if their environment militates against their play needs then play schemes must endeavour to meet these needs in a more formal setting. This present study has outlined some of the play needs of preschool children and it is the task of future research to explore ways in which preschool play provision can meet these developmental needs and to suggest ways in which the philosophy of play can be linked to the practice of playleadership. In an earlier paper (Child, 1969 - submitted as supporting paper No.1) I suggested one approach for linking theory with practice, which related children's critical growth periods to appropriate designs of play equipment.

If preschool playgroups aim at covering those aspects of a child's development which can not be provided for in his immediate

home environment then to be successful their goals must be in harmony with those of the child's home. This study, in common with the research studies of Weikart et al (1978) on successful Headstart programmes, has indicated that the most important context for learning in the early years is the home. To be effective preschool playgroups must build on the work of the home. This raises certain practical issues for play supervisors. For instance how far should play supervisors emphasise the importance of children being independent, vocal and creative if their homes reward them for being passive, quiet and obedient? Questions such as these are very pertinent in the case of Asian preschool children where a discrepancy in adult expectations could lead to role conflict and stress in children. Considerations such as these lead on to the issue of whether Asian children should attend playgroups in their own language and culture so as to ensure continuity between the values of home and playgroup or whether, instead, they should attend playgroups run by English play supervisors who aim at their assimilation as quickly as possible into the culture of the host society so as to enable them to compete on equal terms in primary school with English children. Neither of these options is wholly satisfactory. On the one hand, if preschool Asian children are given no opportunity to mix in the culture of the host society, they may receive a severe culture shock when they eventually go to primary school. On the other hand, if they are assimilated at an early age into English culture a wedge might be driven between them and their parents and relatives on the Indian Sub-continent.

Playbus George provided an acceptable solution between these two extremes. It tried to establish a link between the playbus and the mothers of the children on the bus by appointing a Muslim play supervisor with whom the mothers could identify and communicate. This leader could also speak Punjabi and communicate with most of the Sikh and Hindu mothers as well. This leader visited mothers in their homes before their children attended play sessions to explain the purpose of the playbus to them. She also collected those children whose mothers felt unable to leave the home to bring them. As a result of first gaining the confidence and support of the mothers the Asian children felt more secure in the new, strange environment of the playbus. The fact that they could hear their native tongue on the playbus also helped them to settle down. The playbus aimed to reflect the culture both of the host society and of the children's homes. For instance English music, often in the form of nursery rhymes, and Indian music was played on a tape recorder. Dressing up clothes familiar both to English and Asian children were available. There were, however, few familiar books or pictures. By keeping a balance between the cultures of the children on the playbus and English culture Playbus George was enabling these Asian children to integrate into English society while retaining their own cultural distinctiveness. As a result parents did not view the playbus as a threat to their cultural identity and feel that it was separating their children from them.

The present study needs to be replicated in other settings in order to evaluate the validity of its findings. In particular

the play behaviour of Muslim, Sikh, Hindu and West Indian children needs to be observed in ethnically mixed playgroups. It would be interesting to observe each social group when it is the predominant group and when it is a minority group in a playgroup to see to what extent their typical play behaviours, as indicated by this present study, are modified in different social settings.

It is hoped that the taxonomy used in the present study will be of use to researchers conducting similar investigations. The main disadvantage of a standard comparative taxonomy for studying play behaviour is likely to be that different cultural groups vary in the types of play they encourage. Researchers on play behaviour need, therefore, to observe and describe the different ways in which children play before applying any coding structure. It is important, in the view of the writer, that taxonomies of play reflect actual observed behaviour rather than theory-generated ones.

A further problem in the field of comparative research on children's play behaviour is that the same play materials have different meanings for children from different social and ethnic groups because of those cultural variables, such as passivity and authority relationships, outlined in Chapter 5. This dimension of meaning, as Chapter 2 indicated, remains obscure, and can only be gleaned from observation. The present study defined play in terms of overt behaviours occurring within a defined setting. A further development would be to consider the purpose and meaning of play for the different groups of children on the playbuses. It would be interesting to discover whether different ethnic groups

have different images of the world or whether children's ideas of the world are similar and to what extent they are isolated from those of adults. Adults in general tend to compartmentalise their lives, fitting different aspects into separate categories, whereas the Opies have shown that children from six to twelve have an "open-ended" view of life and do not sharply distinguish between reality and fiction. Through an enquiry into the world view of different groups of children some understanding might be obtained of the meaning that play activities have in their lives. It might well be that Asian and English children are using play as a context for developing different sets of skills. Asian children may be using play as a setting for developing empathic skills, helpful to success in intimate personal relationships, whereas English children and more especially middle class children are using play groups as an environment to develop competitive and social skills which will be of future use in the public world of work organisations.

One of the main contributions of the present study is that it illustrates the vital role of culture in shaping children's play behaviour. Hitherto most researchers into play behaviour have tended to ignore or underestimate the role of ethnic culture as a factor making for differences in the play behaviour of children. The present study has indicated some specific cultural factors which might influence particular aspects of play behaviour. The conclusions which emerge might form a starting point for further related studies. For example, one study might adopt a longitudinal research design, following children from a playbus into primary

school settings in order to see how persistent are differences in play behaviour observed between children from different social groups. A study of this kind would document age, gender and socio/cultural differences in play behaviour through a descriptive analysis of children's behaviour in a school playground. A video-camera could well be used as it would enable a large amount of data on a large number of children to be speedily collected. Conclusions could then be arrived at as to whether there were any consistent play characteristics associated with particular social groups of children, which remained constant from one school setting to another.

In the Introduction it was noted how the cultural approach to the study of play behaviour was much less well developed than the bio/psychological one. The implications of the present study for research design are that attention to any one perspective must at the very least involve a recognition of the others and as a result control for or take into account the independent variables articulated in the other perspectives. To ignore the influence of culture in comparative studies of children's play implies either that bio/psychological factors such as age and gender operate to similar effect whatever the cultural setting, which this present study has shown is not the case; or that different cultural values have the same effect on play behaviour, which this study indicates is not so either; or that cultural values have no effect on play behaviour, which this study suggests is absurd. Chapter 10 illustrated the increasing importance that social group membership comes to have for the content and style of play behaviour as children grow older. It was noted at various points how the particular

content of play behaviour was explicable by reference to the socio-cultural context, and how in terms of the socialization process the detailed formulation of play pursuits was attuned to the learning of adult roles and rules. The contribution of play to development can not therefore be fully assessed without an appreciation of social variables, and in this lies the justification for attempting this present study.

APPENDIX 1
CODING SCHEDULES

CODING SCHEDULE Sheet 1. (yellow)

Categories for Play Materials	Code
Sand	S
Water	W
Paint	P
Climbing Frame	CF
Book	B
Soft Toy	ST
Doll	D
Plastic Animal	PA
Telephone	T
Modelling	M
Dressing up Clothes	DC
Push Cart	PC
Swinging	SW
Jigsaw Puzzle	JP
Building Blocks	BB
Construction Toys	CT
Lego	L
Hollow Large Blocks	HLB
Cutting Out	CO

Categories for Play Materials

Code

Crayoning	CR
Chalking	CH
Wendy House	WH
Plasticine	P
Dough	D
Playdoh	PD
Musical Instrument	MI
Hobby Horse	HH
Glue	GL
Playfulness Points	PP
Zipper Toy	ZT

NAME

AGE	WEATHER	TIME	Nos. of Supervisors	Nos. of Mothers	Nos. of Children	L. COURT	NO OF WPTCH	CHILD CODE NO.	Play materials - QUANTITATIVE COUNT	WHOT	Passive = P											
5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80							
SWPCE	BST	DPA	TMDC	PL	SW	STP	BB	CT	L	NLB	CO	CR	CH	WH	PD	PD	MI	HH	GL	PP	TT	
1 0																						
30																						
2 0																						
2 30																						
3 0																						
3 30																						
4 0																						
4 30																						
5 0																						
5 30																						
6 0																						
6 30																						
7 0																						
7 30																						
8 0																						
8 30																						
9 0																						
9 30																						
10 0																						
10 30																						
11 0																						
11 30																						
12 0																						
12 30																						
13 0																						
13 30																						
14 0																						
14 30																						
15 0																						
15 30																						
15 30																						

THE UNIVERSITY OF ASTON IN BIRMINGHAM

PAPER TAPE OR CARD DATA LAYOUT SHEET

CODING SCHEDULE Sheet 2. (green)

Categories of Sand Play	Code
Wash Hands	WH
Dry Hands	DH
Rub Hands	RH
Fill Bucket	FB
Empty Bucket	EB
Fill Container	FC
Empty Containter	EC
Feels	F
Water Wheel	WW
Toy	T
Sieve	SV
Hose	H
Sand Funnel	SF
Sprinkles	SPR
Digs	D
Pats	P
Pushes Down	PU
Smooths	SM
Shapes	SH

Categories of Sand Play

Code

Rakes

R

Molds

M

Makes Pie

MP

Makes Object

MO

Hides Toy in Sand

HTS

Finds Toy in Sand

FTS

CODING SCHEDULE Sheet 3. (white)

Categories of Water Play	Code
Washes Hands	WH
Dries Hands	DH
Rubs Hands	RH
Fills Bucket	FB
Empties Bucket	EB
Fills Container	FC
Empties Container	EC
Feels	F
Water Wheel	WW
Toy	T
Sieve	SV
Hose	H
Water Funnel	WF
Sprinkles	SPR
Pours	PR
Pours into Container	PRC
Swirls	SW
Floats	FL
Blows Bubbles	BB
Water Pump	WP
Sprinkler	SPL

NAME	CODE NO	SHEET NO.	WATCH NO.	QUALITATIVE SHEET NO. 2
	5	10	15	20
				25
				30
				35
				40
				45
				50
				55
				60
				65
				70
				75
				80
10				
130				
20				
230				
30				
330				
40				
430				
50				
530				
60				
630				
70				
730				
80				
830				
90				
930				
100				
1030				
110				
1130				
120				
1230				
130				
1330				
140				
1430				
150				
1530				
160				
1630				
170				
1730				
180				
1830				
190				
1930				
200				
2030				
210				
2130				
220				
2230				
230				
2330				
240				
2430				
250				
2530				
260				
2630				
270				
2730				
280				
2830				
290				
2930				
300				
3030				
310				
3130				
320				
3230				
330				
3330				
340				
3430				
350				
3530				
360				
3630				
370				
3730				
380				
3830				
390				
3930				
400				
4030				
410				
4130				
420				
4230				
430				
4330				
440				
4430				
450				
4530				
460				
4630				
470				
4730				
480				
4830				
490				
4930				
500				
5030				
510				
5130				
520				
5230				
530				
5330				
540				
5430				
550				
5530				
560				
5630				
570				
5730				
580				
5830				
590				
5930				
600				
6030				
610				
6130				
620				
6230				
630				
6330				
640				
6430				
650				
6530				
660				
6630				
670				
6730				
680				
6830				
690				
6930				
700				
7030				
710				
7130				
720				
7230				
730				
7330				
740				
7430				
750				
7530				
760				
7630				
770				
7730				
780				
7830				
790				
7930				
800				
8030				

THE UNIVERSITY OF ASTON IN BIRMINGHAM

PAPER TAPE OR CARD DATA LAYOUT SHEET

CODING SCHEDULE Sheet 4. (pink)

Categories for Painting	Code
Paint Object (made)	POM
Paint Object	PO
Paint Strokes	PS
Paint Picture	PP
Design	D
Design Balanced	DB
Design Irregular	DI
Mass Effect	ME
Finger Paint	FP
Picture Unrecognisable	PU
Picture Recognisable	PR

Categories for Play on Climbing Frame

Climb	C
Slide	S
Climb Underneath	CU
Sit Underneath	SU
Climb up Slide	CS
Swing	SW

NAME	CODE NO	SHEET NO	PATCH NO	QUALITATIVE SHEET NO. 3													
				PAWT	PO	PS	PP	D	DB	DI	NE	FP	PV	PR	CLIMBING	FRAME	CS
110																	
130																	
20																	
230																	
30																	
330																	
40																	
430																	
50																	
530																	
60																	
630																	
70																	
730																	
80																	
830																	
90																	
930																	
100																	
1030																	
110																	
1130																	
120																	
1230																	
130																	
1330																	
140																	
1430																	
150																	
1530																	

CCD

THE UNIVERSITY OF ASTON IN BIRMINGHAM

PAPER TAPE OR CARD DATA LAYOUT SHEET

CODING SCHEDULE Sheet 5. (orange)

Categories for Clay/Plasticine/Playdoh/Dough	Code
Holds	H
Pokes	FK
Squeezes	SQ
Presses	PR
Rolls	R
Feels	F
Pounds	PO
Rolls with Hands	RLH
Constructs Objects	CO
Constructs Shape	CS
Cuts out Shape with Pastry c. etc	COS
Shapes	SH
Plays with Clay Toy	P
Smells	SM
Flattens	FL
Makes a Toy with Dough	TWD

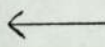
Categories for Building Blocks/Construction Toys


Mass Motor Movements	MMM
Constructs Object	CO

CODING SCHEDULE Sheet 6. (blue)

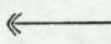
Categories for Social Interaction	Code
Solitary	1
Group of 2	2
Group of 3	3
Group of 4	4
Group of more than 4	4+
Solitary Behaviour	0
Parallel Play	P
Associative Play	A
Co-operative Play	C
With (role, passivity, activity)	W
Touch	T
Smile	S
Help Child	HC
Play with the supervisor	PS
Touch supervisor	TS
Hit	H
bite	B
Try to take toy	TTT
Try to keep toy	TKT
Laugh	L
Scream	SC
Cry	C
Sing	S
Play Noise	PN
Car Noise	CN

Talks to Other Child 

Spoken to by Other Child 

Talks to self 

Talks to Supervisor 

Supervisor talks to Child 

NAME	CODE NO	SHEET NO	WRTCH NO	SOCIAL	INTERACTION	SHEET	VOCALISATIONS
10	123	AWOP	A	CWT	S	H	L
130							
20							
230							
30							
230							
40							
430							
50							
530							
60							
630							
70							
730							
80							
830							
90							
930							
100							
1030							
110							
1130							
120							
1230							
130							
1330							
140							
1430							
150							
1530							

CC/D

THE UNIVERSITY OF ASTON IN BIRMINGHAM

PAPER TAPE OR CARD DATA LAYOUT SHEET

CODING SCHEDULE Sheet 7. (purple)

Categories for Imaginative Play	Code
Theme of Imaginative Play	NORM
Number of other children	NOUC
Material attributions	MBS
Dramatic Role Play	DRP
Play Instruments and Objects	PIO
Name	NAME
Initiator	I
Players and Evaluated child form	M & E FORM

These categories are for guidance only and the coding record sheets were filled out in longhand.

APPENDIX 2

ADDITIONAL TABLES

Table A2.1 Frequency Distribution of Play Behaviours

Play Behaviour	Mean	s.d	Median	Range	Skewness
<u>Tactile Play</u>					
Sand	14.9	16.7	10.00	0-95	1.59
<u>Artistic Play</u>					
Paint	8.0	10.32	3.65	0-60	1.70
<u>Imaginative Play</u>					
Person Or. Imag. Play	6.41	10.55	1.55	0-73	2.81
Object Or. Imag. Play	5.90	9.86	1.00	0-62	2.75
<u>Physical Play</u>					
Unstruc. Phys. Play	2.78	5.94	0.28	0-37	3.44
<u>Constructive Play</u>					
Glue	4.65	9.18	0.08	0-60	2.52
<u>Scope of Play</u>					
Average Att. Span (mins.)	3.43	1.65	3.06	0-9	1.12
Longest Att. Span (mins.)	10.52	3.51	10.44	0-14	-0.38
Div. Play Activ. (total nos.)	13.18	4.99	12.66	0-28	0.60
<u>Passivity/Activity of Play</u>					
Passivity (mins.)	8.06	9.96	5.04	0-55	2.09
Activity (mins.)	47.0	10.26	49.88	0-57	-1.88
Playfulness (percentage)	19.63	5.95	12.01	0-13	-0.32

Play Behaviour	Mean	s.d	Median	Range	Skewness
<u>Sociability of Play</u>					
Solitary	45.21	19.68	45.77	0-89	0.07
Group of Two	33.76	15.36	32.50	0-75	0.29
Group of Three	12.69	9.73	12.00	0-45	0.64
Group of Four	5.9	7.03	3.33	0-29	1.23
Solitary/Passive	9.16	12.10	4.76	0-75	2.20
Solitary/Active	32.90	17.90	29.90	0-78	0.40
Parallel/Passive	6.28	8.30	3.40	0-42	2.00
Parallel/Active	41.42	18.87	41.00	0-92	0.17
Talks to other Child	7.91	8.88	4.63	0-36	1.49
Spoken to by other Child	5.96	6.34	4.22	0-32	1.62
Talks to Self	3.43	4.36	1.80	0-20	1.87
Talks to Supervisor	10.64	11.11	7.19	0-45	1.10
Supervisor Talks to Child	15.21	10.66	13.06	0-46	0.75
Plays with Supervisor	3.35	6.53	0.83	0-45	3.78

Table A2.2 The Relationship of Aspects of Play Behaviour to Age
(Pearson product-moment correlations)

PLAY BEHAVIOUR	AGE OF CHILD		
	Total Sample (N=163)	English Sample (N=61)	Asian Sample (N=89)
<u>Tactile Play</u> Sand	-0.02	-0.29**	0.09
<u>Artistic Play</u> Paint	0.12*	0.36**	-0.01
<u>Imaginative Play</u> Person Oriented Imaginative Play	0.18**	0.22**	-0.01
Object Oriented Imaginative Play	0.22**	0.30**	1.13
<u>Physical Play</u> Unstructured Physical Play	0.02	0.08	-0.07
<u>Constructive Play</u> Paper & Glue	0.13*	0.11	0.17
<u>Scope of Play</u> Average Attention Span	0.40***	0.39***	0.41***
Longest Attention Span	0.35***	0.19	0.46***
Diversity of Play Activities	-0.11	-0.13	-0.11
<u>Passivity/Activity of Play</u> Passivity	-0.34***	-0.34***	-0.34***
Activity	0.38**	0.41***	0.39***
Playfulness	0.42***	0.37***	0.46***
<u>Sociability of Play</u> Solitary	-0.23***	-0.09	-0.32***
Group of Two	0.22**	0.12	0.37***
Group of Three	0.07	-0.18	0.11
Group of Four	0.08	0.17	-0.05
Solitary/Passive	-0.32***	-0.21*	-0.36***
Solitary/Active	-0.03	0.04	-0.07
Parallel/Passive	-0.23***	-0.28*	-0.23**
Parallel/Active	0.25***	0.06	0.39***
Talks to other Child	0.29***	0.21*	0.32***
Spoken to by other Child	0.24***	0.27**	0.19*
Talks to Self	0.03	-0.04	0.01
Talks to Supervisor	0.22**	0.10	0.00
Supervisor Talks to Child	0.09	0.09	0.02
Plays with Supervisor	0.07	-0.01	-0.21*

*p= 0.05 **p= 0.01 ***p= 0.001

Table A2.3 The Relationship between Sex and Aspects of Play
(% of all observations)

PLAY BEHAVIOUR	Mean % Boys (N=80)	Mean % Girls (N=83)	Value of T	Level of Confidence (p)
<u>Tactile Play</u> Sand	15.75	14.08	0.64	0.26
<u>Artistic Play</u> Paint	6.59	9.36	-1.73	0.04
<u>Imaginative Play</u> Person Oriented Imaginative Play	4.38	8.38	-2.44	0.01
Object Oriented Imaginative Play	4.78	7.00	-1.44	0.08
<u>Physical Play</u> Unstructured Physical Play	3.46	2.13	1.42	0.08
<u>Constructive Play</u> Paper & Glue	3.43	5.83	-1.68	0.05
<u>Scope of Play</u> Average Attention Span (mins)	3.33	3.53	-0.79	0.21
Longest Attention Span (mins)	10.48	10.56	-0.15	0.44
Diversity of Play Activities (Nos)	13.90	12.48	1.82	0.04
<u>Passivity/Activity of Play</u> Passivity (mins)	7.89	9.30	-0.90	0.37
Activity (mins)	47.73	46.31	0.88	0.19
Playfulness (percentage)	20.15	19.07	1.40	0.08
<u>Sociability of Play</u> Solitary	47.95	42.56	1.75	0.04
Group of Two	31.25	36.17	-2.07	0.02
Group of Three	13.22	12.16	0.69	0.24
Group of Four	5.84	5.95	-0.10	0.46
Solitary/Passive	8.85	9.46	-0.32	0.38
Solitary/Active	36.02	29.89	2.21	0.01
Parallel/Passive	5.01	7.51	-1.94	0.03
Parallel/Active	40.72	42.09	-0.46	0.32
Talks to other Child	8.26	7.56	0.50	0.31
Spoken to by other Child	5.47	6.44	-0.97	0.50
Talks to Self	3.60	3.25	0.51	0.30
Talks to Supervisor	10.86	10.42	0.25	0.40
Supervisor Talks to Child	15.15	15.27	-0.07	0.40
Plays with Supervisor	3.67	3.04	0.61	0.27

Table A2.4 The Relationship between Social Group and Aspects of Play (% of all observations)

PLAY BEHAVIOUR	English Working (N=34)	English Middle (N=27)	Sikh (N=30)	Muslim (N=33)	Hindu (N=26)	West Ind. (N=13)	F Ratio	(p)
<u>Tactile Play</u> Sand	9.53	14.44	17.44	12.65	25.64	8.21	3.84	0.00
<u>Artistic Play</u> Paint	8.99	9.00	9.28	5.13	7.98	7.69	0.72	0.61
<u>Imaginative Play</u> Person Oriented Imaginative Play	10.48	13.06	2.39	3.28	3.37	5.52	5.77	0.00
Object Oriented Imaginative Play	8.21	9.23	2.31	3.36	4.55	10.38	3.04	0.01
<u>Physical Play</u> Unstructured Physical Play	4.02	5.25	1.42	1.44	0.99	4.55	2.72	0.02
<u>Constructive Play</u> Paper & Glue	7.79	6.54	3.22	3.08	2.24	4.62	1.76	0.12
<u>Scope of Play</u> Average Attention Span (mins)	3.22	4.11	3.55	3.17	3.52	2.77	1.70	0.14
Longest Attention Span (mins)	9.75	12.34	10.03	10.02	10.71	10.77	2.13	0.07
Diversity of Play Activities (Nos)	14.24	12.16	13.60	11.15	13.08	16.92	3.37	0.01
<u>Passivity/Activity of Play</u> Passivity (mins)	6.65	3.61	11.57	15.35	6.77	3.81	7.01	0.00
Activity (mins)	48.13	52.04	44.12	41.35	49.44	49.77	4.86	0.00
Playfulness (percentage)	20.52	24.07	10.22	10.14	11.73	12.46	10.92	0.00
<u>Sociability of Play</u> Solitary	45.96	37.59	53.28	45.38	44.04	42.30	1.96	0.09
Group of Two	33.12	31.85	28.28	38.38	38.27	31.28	2.04	0.08
Group of Three	14.32	15.93	11.67	10.61	9.84	14.93	1.78	0.12
Group of Four	4.85	10.80	4.08	4.44	5.16	7.82	4.07	0.00
Solitary/Passive	6.20	3.98	13.17	16.79	6.83	3.72	6.28	0.00
Solitary/Active	36.49	30.99	36.48	25.73	34.97	33.27	1.74	0.13
Parallel/Passive	5.08	2.28	7.94	10.08	5.54	5.77	3.28	0.01
Parallel/Active	40.37	43.89	34.86	42.20	45.99	43.02	1.18	0.32
Talks to other Child	7.01	14.42	4.31	10.33	4.10	6.48	6.38	0.00
Spoken to by other Child	5.39	9.48	3.50	8.53	2.95	5.32	5.60	0.00
Talks to Self	5.20	6.02	1.33	2.30	2.08	3.78	6.22	0.00
Talks to Supervisor	16.84	20.43	7.89	2.38	5.64	11.41	17.08	0.00
Supervisor Talks to Child	23.58	20.37	13.78	5.61	10.35	20.00	19.80	0.00
Plays with Supervisor	4.83	33.68	3.67	0.61	2.50	6.73	2.43	0.00

Table A2.5 The Relationship between Social Class and Aspects of

<u>Play</u> (% of all observations)				
PLAY BEHAVIOUR	Mean % Working Class (N=34)	Mean % Middle Class (N=27)	Value of T	Level of Confidence (p)
<u>Tactile Play</u>				
Sand	9.53	14.44	-1.55	0.06
<u>Artistic Play</u>				
Paint	8.99	9.00	-0.01	0.50
<u>Imaginative Play</u>				
Person Oriented Imaginative Play	10.48	13.06	-0.67	0.25
Object Oriented Imaginative Play	8.21	9.23	-0.33	0.37
<u>Physical Play</u>				
Unstructured Physical Play	4.02	5.25	-0.55	0.29
<u>Constructive Play</u>				
Paper & Glue	7.79	6.54	0.42	0.34
<u>Scope of Play</u>				
Average Attention Span (mins)	3.22	4.11	-2.37	0.01
Longest Attention Span (mins)	9.75	12.34	-3.25	0.00
Diversity of Play Activities (Nos)	14.24	12.16	2.15	0.02
<u>Passivity/Activity of Play</u>				
Passivity (mins)	6.65	3.61	1.74	0.09
Activity (mins)	48.13	52.04	-2.19	0.02
Playfulness (percentage)	20.52	24.07	-3.56	0.00
<u>Sociability of Play</u>				
Solitary	45.96	37.59	2.00	0.03
Group of Two	33.12	31.85	0.41	0.34
Group of Three	14.32	15.93	-0.67	0.25
Group of Four	4.85	10.80	-3.13	0.00
Solitary/Passive	6.20	3.98	1.12	0.13
Solitary/Active	36.49	30.99	1.33	0.09
Parallel/Passive	5.08	2.28	1.75	0.04
Parallel/Active	40.37	43.89	-0.95	0.17
Talks to other Child	7.01	14.42	-3.44	0.00
Spoken to by other Child	5.39	9.48	-2.90	0.00
Talks to Self	5.20	6.02	-0.63	0.27
Talks to Supervisor	16.84	20.43	-1.29	0.10
Supervisor Talks to Child	23.58	20.37	1.32	0.10
Plays with Supervisor	4.83	3.68	0.52	0.30

APPENDIX 3

PHOTOGRAPHS OF HOUSING AREAS IN WHICH WORKING

AND

MIDDLE CLASS ENGLISH CHILDREN LIVED

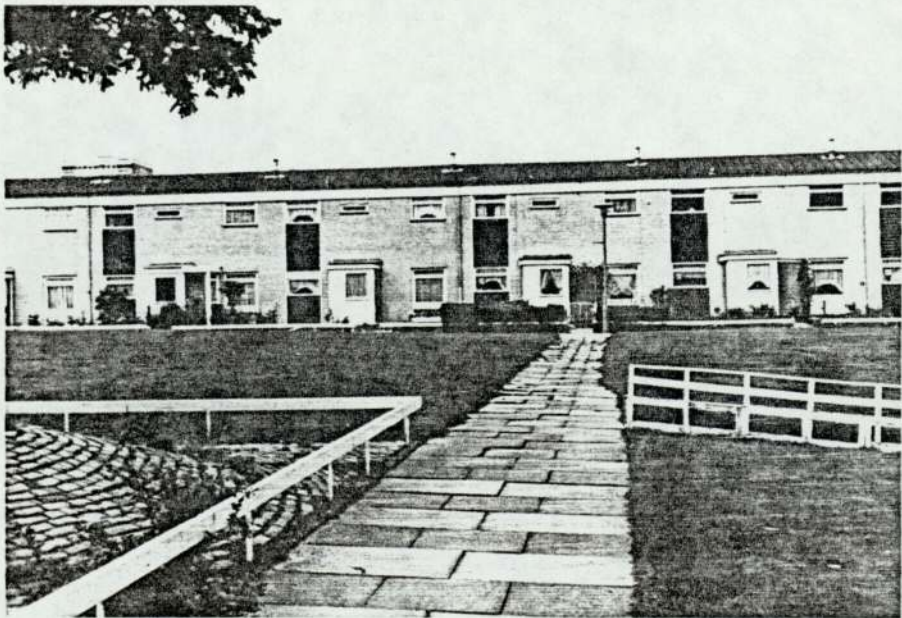
Housing Areas in which Working Class Children Lived



Area 1.



Area 2.



Area 3.

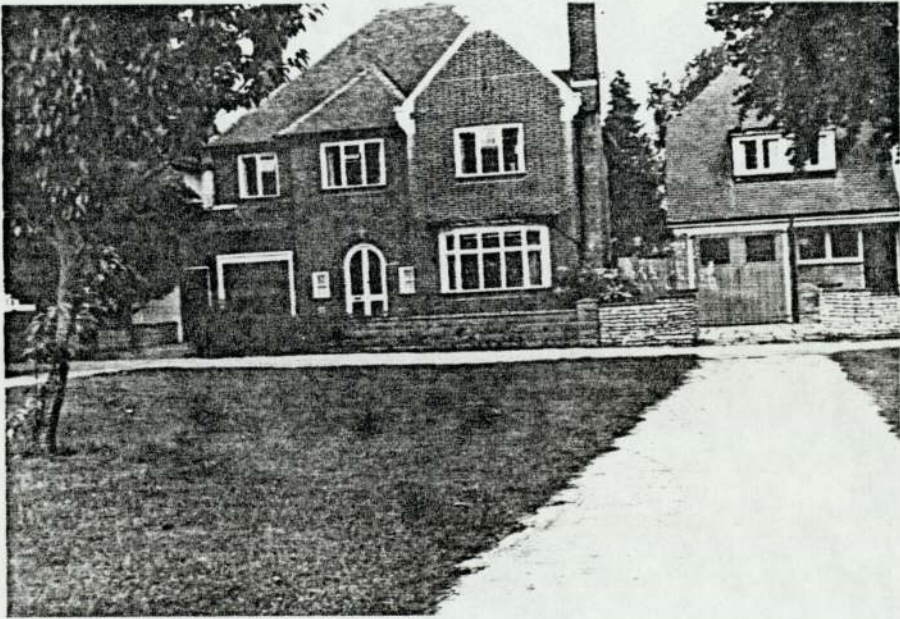
Housing Areas in which Middle Class Children Lived



Area 4.



Area 5.



Area 6.

APPENDIX 4

VIDEO-TAPED STUDIES

ENGLISH AND ASIAN PRESCHOOL PLAY ON

SAM, SUZIE AND GEORGE

Counter Nos.	Duration	Remarks
019	10 secs.	Shot of <u>Sam</u>
022	10 secs.	Shot of <u>Suzie</u>
027	20 secs.	Shot of <u>George</u>

This video-tape is edited from 14 tapes which were filmed between May 1979 and January 1980 on three Birmingham Playbuses called Sam, Suzie and George. Sam and Suzie catered mainly for English children and George mainly for Asian. George received a fresh coat of paint while the films were being made. The buses were all the same size and inside had similar equipment and layouts. This tape records examples of English and Asian children's play behaviour.

SAND PLAY
038-415

English and Asian children vary from each other in their handling of certain play materials. The video-tapes illustrate the nature of some of these differences. English and Asian

children, matched for age and sex are filmed at play with sand, water, paint and at imaginative play. The main difference in the use of play materials is that in general Asian children are more concerned with the process of play, in feeling and handling materials, and English children in the product of play, in making something out of the materials.

The shots taken of sand play illustrate how Asian children differ from English children in their apparent need for less physical space. English and Asian children from two different playgroups are shown at play with sand. English children do not co-operate with each other to the same extent as Asian children and tend to draw invisible territorial boundaries around themselves, beyond which nobody should trespass. The Asian children, in contrast, show more social interactions and often seem more concerned with social contacts than with the sand. They, in contrast to English children, do not appear upset if their spades cross in the sand or if another child takes sand from a pile they had dug. Such concepts as "mine" and "thine" seem little developed.

The parents of the Asian children were all from the Indian Sub-continent; some were Muslim,

some Hindu and some Sikh.

- 039 10 mins. This play session is at Roland Road, Lozells. A Punjabi Hindu boy also attended this play session. He is 3 yrs. 6 mths. old and is shown furthest from the camera. On his left is a Pathan Muslim boy of 3 yrs. 4 mths.
- 265 30 secs. Sikh play session at Victoria Road, Handsworth. A Gujarati Hindu girl also attended this play session. She is furthest from the camera. Closest to the camera is a Sikh girl of 3 yrs. 6 mths. The film illustrates the readiness of Asian children to engage in physical contact with each other.
- 288 3 mins. Sikh play session at Victoria Road, Handsworth. The Sikh boy in the centre is aged 3 years and the Sikh girl is 4 yrs. 7 mths. This film sequence illustrates the way in which Asian children typically settle disputes over toys. The girl and the boy both want the same toy and pull at it until the weaker of the two children gives way quietly to the stronger.
- 306 6 mins. English play session on Suzie at Rednal Road, West Heath. The boy furthest from the camera is aged 3½ years. The boy nearest to the camera is 4 yrs. 3 mths. old. The boy in the middle is 2½ years old.

This play session is attended mainly by middle class children who live in owner occupied houses nearby. This sequence of sand play illustrates how English children take their sand play more seriously than the Asian children, and are more concerned with making things. The film suggests that these children seem to know what their own allotted digging areas are and which areas of the sand trough and items of sand equipment are "mine" and "thine". In general it would seem that the child who has been at the sand trough longest has the most important ownership rights, and other children coming later to play in the sand seem to respect these.

WATER PLAY
416-523

The different shots of water play illustrate how the same play material can be used in varied ways by children of different ages and from different social groups.

416 3 mins. Hindu play session at York Road, Handsworth. The boy playing with water is a Gujarati Hindu of 3 yrs. 3 mths. He is using water for tactile purposes.

- 465 2 mins. Sikh play session at Victoria Road,
Handsworth. The Sikh boy blowing bubbles is 3½
years old and the Sikh girl, furthest from the
camera is 4 yrs. 7 mths old. The film suggests
that the Sikh boy is trying to obtain a
challenge from the water by blowing bubbles.
The Sikh girl, it seems, is using the water as a
context for a game of manual dexterity.
- 491 30 secs. Sikh play session at Victoria Road,
Handsworth. The Sikh girl at the water trough
is 3½ years old. She would seem to be using
water as a context for role play.
- 497 30 secs. English play session on Suzie at Rednal
Road, West Heath. The boy at the water trough
is 3½ years old. It seems as though he is using
water for tactile purposes.
- 511 30 secs. English play session on Suzie at Rednal
Road, West Heath. The boy at the water trough
is 4 yrs. 3 mths. old. He is using water, it
appears, as a context for constructing an
object.

PAINT PLAY
524-622

This sequence of shots of paint play
illustrates how Asian and English children are

using paint in different ways. Asian children seem more concerned with the process of painting, in its feel and texture and English children in the product of that play, with actually producing a picture. The recordings also illustrate differences between English and Asian children in their orientations towards play supervisors. English children take the initiative in starting conversations with them, while the Asian children only respond verbally to them.

- 524 1 min. Muslim play session at Roland Road, Lozells. The boy shown painting is a Punjabi Hindu boy aged 3½ years. The Asian children shown at paint play usually start their pictures by a mass effect which starts off in one corner of the paper and gradually spreads over most of the sheet. They seem to be more concerned with mass and line effect than actual representation.
- 543 30 secs. Sikh play session at Victoria Road, Handsworth. The girl painting is a Gujarati Hindu aged 2 yrs. 11 mths.
- 555 1 min. Sikh play session at Victoria Road, Handsworth. The girl furthest from the camera finger painting is a Sikh aged 3½ years. The

girls nearest to the camera is a Gujarati Hindu aged 2 yrs. 11 mths.

574 1½ mins. English play session on Sam at Howford Grove, Nechells. The girl nearest to the camera painting at an easel is 3 yrs. 3 mths. old. The boy further from the camera is aged 2 yrs. 10 mths. The film sequence suggests that the English girl is just beginning to become concerned with actual representation. She names her objects during and after she has painted them. This film shot also illustrates how this girl is anxious to start a conversation with the play supervisor and to involve her in the picture she is painting.

614 30 secs. English play session on Sam at Howford Grove, Nechells. The boy shown finger painting is 4 yrs. 9 mths. old. He seems to be concerned with portraying a person and to have a conception of the finished product in his mind before he starts to paint.

CONSTRUCTIVE AND MANIPULATIVE PLAY

623-675

This sequence of film was included to illustrate the manipulative skill of Asian children. Those children have considerable manual dexterity and play more frequently and with

greater skill with toys such as lego than English children.

- 623 3 mins. Sikh play session at Victoria Road, Handsworth. The Sikh boy playing with lego is 3 years old. He seems more concerned with the process of actually fixing pieces together than with the construction of an object.
- 654 1 min. Sikh play session at Victoria Road, Handsworth. The Sikh girl threading string is 3½ years old.
- 661 1 min. Sikh play session at Victoria Road, Handsworth. The Sikh girl playing with lego is 3½ years old. This shot suggests that the manipulative element is beginning to merge into the constructive.

IMAGINATIVE PLAY
676-783

Unlike English older preschool children, Asian children of the same age did not show a marked preference for imaginative play. There were few instances of this type of play engaged in by Asian children during the 15 months that I observed them, while in contrast in nearly every play session on the English bus there were instances of children grouping together to "play houses".

- 676 2 mins. Muslim play session at Roland Road, Lozells. The boy nearest to the camera is a Pathan Muslim aged 3 yrs. 4 mths. Seated behind him is a West Indian boy and then an English girl. The West Indian boy is aged 2 yrs. 11 mths. and the English girl is 3½. In these shots imaginative play merges now and again with rough and tumble play and seems generally to lack a coherent thread.
- 705 1 min. Sikh play session at Victoria Road, Handsworth. Playing in the Wendy House is a Sikh girl of 3½ years. She is using doll's house materials for what appears to be an imaginative game. However, in the absence of verbalization, it is difficult to know whether a child is engaged predominantly in imaginative or manipulatory play.
- 729 1 min. English play session on Suzie at Rednal Road, West Heath. Nearest to the camera is a boy of 3½ years. Furthest from the camera is a boy of 3 years. The girl is aged 2 yrs. 11 mths. and seated at the table is a play supervisor. Imaginative play themes in both the English play sessions shown on this film seem to centre round the eating and serving of food. In the first play session a girl serves food and drink

which they all "eat" and "drink" and in the second play session both boys and girls serve the food. Both film sequences, in contrast to the Asian ones, illustrate the make-believe use of materials, children drink from empty cups and in the last film sequence a brick is termed a sausage.

758 2 mins. English play session at Howford Grove, Nechells. Playing in the wendy house is a boy of 2 yrs. 11 mths., a boy of 4 yrs. 9 mths. and a girl of 3 yrs. 3 mths.

OLDER ASIAN CHILDREN CARING FOR YOUNGER RELATIVES

784-853

Authority in the extended family from which these Asian children come is allocated according to sex and age, elders having more authority than younger people and respect is closely linked to authority, those in positions of authority commanding respect from those beneath them in the family hierarchy. These play sessions were filmed to illustrate how this structure of authority is mirrored in the play behaviour of preschool Asian children. In the absence of their mothers on the playbus older children assume responsibility for younger related children, who in turn obey and respect them.

784	1½ mins.	Sikh play sessions at Victoria Road,
800	10 secs.	Handsworth. The girl being looked after by her elder sister is aged 2 years.
801	4½ mins.	Muslim play sessions at Roland Road,
847	15 secs.	Lozells. A Mirpuri Muslim girl of 3 yrs. 11
849	1 min.	mths. is looking after her cousin aged 2 yrs. 3 mths.

RELATIONSHIPS BETWEEN PLAY SUPERVISORS AND ASIAN CHILDREN
854-910

The video-camera was employed to illustrate three features in the relationship between Asian children and play supervisors. The first of these is the respect which these children give to play supervisors. This, as the film sequence shows, is displayed in an avoidance of eye contact, a general reluctance to initiate verbal and play contacts and a reluctance to ask for needed play materials. The second feature in this relationship is the tendency of Asian children to seek physical rather than verbal contact with supervisors and lastly the third feature is the desire shown by many Asian children to be directed in their play by supervisors rather than being left to their own devices.

- 854 25 secs. Sikh play session at Victoria Road, Handsworth. The child crying is a 2 yrs. 5 mths. old Sikh girl. This shot illustrates the way she turns when distressed to the play supervisor for physical comfort.
- 857 1 min. Sikh play session at Victoria Road Handsworth. Nearest to the camera and being encouraged to play is a 4 yrs. 7 mths. old Sikh girl. Further from the camera is a 2 yrs. 5 mths. old Sikh girl. This shot illustrates the difficulty Asian children sometimes have in deciding what to play with. Often they tend to stand around, as is shown on the film, and expect to be told what to play with rather than making their own choices.
- 872 ½ min. Sikh play session at Victoria Road, Handsworth. The Sikh girl at the water trough is 3½ years old. This film sequence shows the play supervisor taking the initiative and encouraging her to play with water.
- 879 10 secs. Hindu play sessions at Thornhill Road, Handsworth. The boy holding the play supervisor's hand is a 3 yr. 3 mth. old Gujarati Hindu. Right on the screen in the second shot is a 3 year old Sikh boy. These shots illustrate how Asian children initiate and respond to physical
- 881 10 secs. Handsworth. The boy holding the play supervisor's hand is a 3 yr. 3 mth. old Gujarati Hindu. Right on the screen in the second shot is a 3 year old Sikh boy. These shots illustrate how Asian children initiate and respond to physical

contacts with the play supervisors.

883-910 1½ mins.

Muslim play session at Roland Road, Lozells. Furthest from the screen at the end of the table is a Mirpuri Muslim girl of 3 yrs. 11 mths. The other girl is English and is 3½ years old. The West Indian boy nearest to the screen is aged 2 yrs. 11 mths. On the left of the screen is a play supervisor. This film sequence illustrates the dependence of Asian children on adults. The girl does not start drawing a picture until she is assisted in this by the play supervisor. This sequence also illustrates the respect in which this Asian girl holds the play supervisor and her lack of initiative since she does not ask the supervisor for a pen when she needs it.

THE RELIABILITY STUDY

The second video-tape is concerned with a reliability study. This reliability study was described in Chapter 7, Part 4. The purpose of filming the reliability study was to provide researchers into play behaviour with exact information on the amount of practice and instruction given to observers prior to the execution of the reliability study. Researchers it is hoped will, as a result, be in a better position to judge how much weight to attach to the percentages of inter-observer agreement arrived at and will be better able to compare the findings of this reliability study with those of other comparable studies.

BIBLIOGRAPHY

Aberle, D.K. and Naegele, D. (1952)

"Middle-class fathers' occupational role and attitudes toward children." *American Journal of Orthopsychiatry*, 22: 366-378.

Adlam, D.S. (with Turner, G. and Lineker, L.) (1977)

Code in Context. London: Routledge and Kegan Paul.

Ager Price, L. (1976)

"The reflection of cultural values in Eskimo children's games." In D.F.Lancy and B.Tindall (eds.), *The Anthropological Study of Play: Problems and Prospects*. New York: Academic Press.

Ainsworth, M. and Bell, S. (1969)

"Some contemporary patterns of mother-infant interactions in the feeding situation." In A.Ambrose (ed.), *Stimulation in Early Infancy*, London: Academic Press.

Ainsworth, M. and Bell, S. (1974)

"Mother-infant interaction and the development of competence." In K.Connolly and J.Bruner, (eds.), *The Growth of Competence*. London: Academic Press.

Aldrich, H. and Feit, S. (1975)

Black Entrepreneurs in England: A Summary of the Literature and some Suggestions for Further Research. Cornell University

Aldrich, H. Cater, J. Jones, T. and McEvoy, D. (March 1980)

"Business development and self-segregation: Asian enterprise in three British cities." *Symposium on Ethnic Segregation in Cities*, St Anthony's College: Oxford University.

Alexander, F. (1932)

The Medical Value of Psychoanalysis. New York: The Norton Press.

Alexander, F. (1958)

"A contribution to a theory of play." *Psychoanalytic Quarterly*, 27: 175-193.

Allen, S. (1970)

New Minorities, Old Conflicts: Asian and West Indian Migrants in Britain. New York: Random House.

Alstyne, D. van. (1932)

Play Behavior and Choice of Play Materials of Preschool Children. Chicago: University of Chicago Press.

Altmann, J. (1974)

"Observational study of behavior: Sampling methods."
Behaviour, 49: 227-65.

Appleton, L.E. (1910)

*A Comparative Study of the Play Activities of Adult Savages
and Civilized Children.* Chicago: The University of Chicago
Press.

Argyle, M. and Robinson, P. (1962)

"Two origins of achievement motivation." *British Journal of
Social and Clinical Psychology*, 1: 107-117.

Aries, P. (1973)

Centuries of Childhood. Harmondsworth, Middx.: Penguin.

Aron, R. (1957)

German Sociology. Translated by M and T Bottomore.
London: Heineman.

Aronoff, J. (1967)

Psychological Needs and Cultural Systems. Princeton:
Van Nostrand.

Aronoff, J. (1970)

"Psychological needs as a determination in the formation of
economic structures: A confirmation." *Human Relations*,
23: 123-138.

Arrington, R.E. (1931)

Interrelations in the Behavior of Young Children. New York: Teachers' College, Columbia University.

Arrington, R.E. (1939)

"Time-sampling studies of child behavior." *Psychological Monographs*, 51: No.228.

Arrington, R.E. (1943)

"Time sampling in studies of social behavior: A critical review of techniques and results with research suggestions." *Psychological Bulletin*, 40: 81-124.

Atharvaveda. (1971)

Translated by W.D.Whitney in *Harvard Oriental Series*, Vol. 7-8. Cambridge, Mass.: Harvard University Press, 1905.
Reprinted by Delhi: Harvard University Press, 1971.

Axline, V.M. (1947)

Play Therapy. Boston: Houghton Mifflin.

Bagley, C. and Coard, B. (1975)

"Cultural knowledge and rejection of ethnic identity in West Indian children in London." In V.G.Bagley and C.Bagley (eds.). *Race and Education Across Cultures.* London: Heinemann.

Bagley, C. and Young, L. (1979)

"Identity, self-esteem and the evaluation of colour and ethnicity in young children in London and Jamaica." *New Community*, 7: 154-69.

Bailey, K.D. (1982)

Methods of Social Research. New York: The Free Press.

Baldwin, A.L. (1948)

"Socialisation and the parent-child relationship." *Child Development*, 19: 127-136.

Baldwin, A.L. (1949)

"The effect of home environment on nursery school behaviour." *Child Development*, 20: 49-62.

Baldwin, A.L. (1967)

Theories of Child Development. New York: Wiley.

Baldwin, J.M. (1900)

Mental Development in the Child and the Race. New York: Macmillan.

Ballard, R. and Ballard, C. (1977)

"The Sikhs: The development of South Asian settlements in Britain." In J.Watson (ed.). *Between Two Cultures*. Oxford: Blackwell.

- Bamber, R.T. (1973)
"Play, interest, domestication and creativity." *Unpublished Ph.D Thesis*. Missouri University.
- Bandura, A. and Walters, R. (1963)
Social Learning and Personality Development. New York: Holt, Rinehart and Winston.
- Barker, R. (ed.). (1943)
Child Behavior and Development: A Course of Representative Studies. New York: McGraw-Hill.
- Barker, R. Dembo, T. and Lewin, K. (1976)
"Frustration and regression." In J.S. Bruner, A. Jolly and K. Sylva (eds.), *Play its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.
- Barker, R. and Wright, H. (1949)
"Psychological ecology and the problem of psychosocial development." *Child Development*, 20: 131-143.
- Barnes, K.E. (1971)
"Preschool play norms: A replication." *Developmental Psychology*, 5: 99-103.
- Barrett, G. and Bass, B. (1976)
"Cross-cultural issues in industrial and organizational psychology." In M. Dunnette, *Handbook of Industrial and Organizational Psychology*. Chicago: Rand McNally.

Barry, H. Bacon, M.K. and Child, I.L. (1957)

"A cross-cultural survey of some sex differences in socialization." *Journal of Abnormal and Social Psychology*, 55: 327-332.

Barry, H. Child, I.L. and Bacon, K. (1959)

"Relation of child training to subsistence economy." *American Anthropologist*, 61: 51-63.

Bastide, R. (1971)

African Civilisation in the New World. New York: Hurst and Co.

Baumrind, D. and Black, A.E. (1967)

"Socialization practices associated with dimensions of competence in preschool boys and girls." *Child Development*, 38: 291-327.

Beach, F.A. (1945)

"Current concepts of play in mammals." *American Naturalist*, 79: 523-541.

Beach, F.A. (1978)

"Human sexuality and evolution." In S.L.Washburn and E.R.McCown, *Human Evolution: Biosocial Perspectives*, Vol. 4. California: Benjamin Cummings.

Beauvoir, S. de. (1972)

The Second Sex. Harmondsworth, Middx.: Penguin.

Beaver, A.P. (1932)

"The initiation of social contacts by preschool children."
Child Development Monographs, 7: (whole No.).

Bell, S.M. (1970)

"The development of the concept of object as related to infant-mother attachment." *Child Development*, 41: 291-311.

Bell, S.M. (1971)

"Early cognitive development and its relationship to infant-mother attachment: A study of disadvantaged Negro infants."
Report prepared for the *U.S. Office of Education*, project
Np. 00542.

Benjamin, H. (1932)

"Age and sex differences in the toy preferences of young children." *Journal of Genetic Psychology*, 41: 417-429.

Berger, P. and Berger, B. (1975)

Sociology: A Biographical Approach. New York: Basic Books.

Berlyne, D.C. (1960)

Conflict, Arousal and Curiosity. New York: McGraw-Hill.

Berne, E. van, Cleave. (1930)

"An experimental investigation of social behavior patterns in young children." *University of Iowa Studies in Child Welfare*, 4: 3.

Bernstein, B. (1973a)

Class, Codes and Control. London: Granada.

Bernstein, B. (1973b)

"A brief account of the theory of codes." In P. Dreitzel (ed.), *Childhood and Socialization*. New York: Macmillan.

Bernstein, B. (1974)

Class, Codes and Control. Vol. 1. London: Routledge and Kegan Paul.

Bernstein, B. and Henderson, D. (1969)

"Social class differences in the relevance of language to socialization." *Sociology*, 3: 1-20

Bernstein, B. and Young, D. (1967)

"Social class differences in conceptions of the uses of toys." *Sociology*, 1: 131-140.

Bettleheim, B. (1972)

"Play and education." *School Review*, 81: 1-13.

The Bhagavad Gita. (1978)

Translated by J.Mascaro, Harmondsworth, Middx.: Penguin

Bible Society. (1980)

Prospects for the Eighties. London: Bible Society.

Biblow, E. (1973)

"Imaginative play and the control of aggressive behaviour."

In J.L.Singer (ed.), *The Child's World of Make-Believe.*

New York: Academic Press.

Bishop. M.B. (1951)

"Mother-child interaction and the social behaviour of children." *Psychological Monographs*, 65: (whole No.)

Blake, J. (1961)

Family Structure in Jamaica: The Social Context of Reproduction,
New York: The Free Press of Glencoe.

Block, J.H. (1972)

"Conceptions of sex role: Some cross-cultural and longitudinal perspectives." Unpublished manuscript cited by E.E.Maccoby and C.N.Jacklin in *The Psychology of Sex Differences*, Stanford, California: Stanford University Press, 1974: 415, and cited in "Why William doesn't want a doll: Pre-schooler expectations of adult behaviour toward girls and boys," by R.Muller and S.Goldberg, *Merrill-Palmer Quarterly*, 1974: 26, 3: 261.

Bloom, B. (1964)

Stability and Change in Human Characteristics. New York: Wiley.

Blumenfeld, W. (1941)

"Observations concerning the phenomenon and origin of play."
Philosophy and Phenomenological Research, 1: 470-478.

Blurton Jones, N.G. (1967)

"An ethological study of some aspects of social behaviour of children in nursery school." In D.Morris (ed.), *Primate Ethology*. London: Weidenfeld and Nicholson.

Blurton Jones, N.G. (ed.). (1972)

Ethological Studies of Child Behaviour. Cambridge: Cambridge University Press.

Boneau, C.A. (1960)

"The effects of violations of assumptions underlying the t test." *Psychological Bulletin*, 57,1: 49-57.

Borgen F. and Seling, M. (1978)

"Uses of discriminant analysis following Manova: Multivariate statistics for multivariate purposes." *Journal of Applied Psychology*, 63, 6: 689-697.

Bossard, J.H.S. (1951)

"A spatial index for family interaction." *American Sociological Review*, 16: 243-246.

Bott, E. (1957)

Family and Social Network. London: Tavistock Press.

Bott, H. (1928)

"Observation of play activities in a nursery school."

Genetic Psychology Monographs, 4: 44-88

Bottomore, T. (1972)

Sociology: A Guide to Problems and Literature. London:

Allen and Unwin.

Bourdieu, P. and Passeron, J.C. (1977)

Reproduction in Education Society and Culture. Chicago:

University of Chicago Press.

Bowlby, J. (1961)

Child Care and the Growth of Love. Harmondsworth, Middx.:

Penguin.

Bowlby, J. (1971)

Attachment and Loss, Vol. 1. *Attachment.* Harmondsworth,

Middx.: Penguin.

Bowlby, J. (1978)

Attachment and Loss, Vol. 2. *Separation.* Harmondsworth,

Middx.: Penguin.

Boynton, P.L. and Ford, F.A. (1933)

"The relationship between play and intelligence." *Journal of Applied Psychology*, 17: 294-301.

Brackett, C.W.. (1933)

"Laughing and crying of preschool children." *Journal of Experimental Education*, 2: 119-126.

Brahmavaivarta Purana. (1912-1922)

Translated by Rajendra Nath Sen, in *Sacred Books of the Hindus* Vol.24. Allahabad: Panina Office.

Brannigan, C.R. and Humphries, D.A. (1972)

"Human non-verbal behaviour, a means of communication." In N.Blurton Jones, (ed.), *Ethological Studies of Child Behaviour*. Cambridge: Cambridge University Press.

Brewster, P.G. (1944)

"Two games from Africa." *American Anthropologist*, 46: 268-269.

Brewster, P.G. (1945a)

"Johnny on the pony: A New York State game." *New York Folklore Quarterly*, 1: 239-240.

Brewster, P.G. (1945b)

"Some unusual forms of hopscotch." *Southern Folklore Quarterly*, 9: 229-231.

Brewster, P.G. (1948)

"Forfeit games from Greece and Czechoslovakia." *Hoosier Folklore*, 8: 76-83.

Brewster, P.G. (1949a)

"Some Hungarian games." *Southern Folklore Quarterly*,
13: 175-179.

Brewster, P.G. (1949b)

"Some traditional games from Roumania." *Journal of American Folklore*, 59: 114-124.

Brewster, P.G. (1951)

"Four games of tag from India." *Midwest Folklore*, 1: 239-241.

Brewster, P.G. (1959)

"Three Russian games and their Western and other parallels." *Southern Folklore Quarterly*, 23: 126-131.

Brewster, P.G. (1960)

"A sampling of games from Turkey." *East and West*, Rome.
11: 15-20.

Bridges, K.M.B. (1927)

"Occupational interests of three-year-old children." *Journal of Genetic Psychology*, 34: 415-423.

Bridges, K.M.B. (1929)

"Occupational interests of four-year-old children." *Journal of Genetic Psychology*, 36: 551-570.

Bridges, K.M.B. (1931)

Social and Emotional Development of the Pre-School Child.

London: Routledge and Kegan Paul.

Bridges, K.M.B. (1932)

"Emotional development in early infancy." *Child*

Development, 3: 324-341.

Bridges, K.M.B. (1933)

"A study of social development in early infancy." *Child*

Development, 4: 36-49.

Brihadaranyaka Upanishad. (1968)

Translated by R.Hume, in *The Thirteen Principal Upanishads.*

London: Oxford University Press, 1877. Reprinted Madras:

Oxford University Press, 1968.

Bronfenbrenner, U. (1976)

"Is early intervention effective? Facts and principles of

early intervention: A summary." In A.M.Clarke and A.D.B.Clarke,

Early Experience: Myth and Evidence. New York: Free Press.

Brown, D.G. (1957)

"Masculinity-femininity development in children." *Journal*

of Consulting Psychology, 21: 197-202.

Bruner, J.S. (1972)

The Relevance of Education. London: Allen and Unwin.

Bruner, J.S. (1973)

"Organization of early skilled action." *Child Development*,
44: 92-96.

Bruner, J.S. (1974)

"Nature and uses of immaturity." In K.J.Connolly and
J.S. Bruner, *The Growth of Competence.* London: Academic
Press.

Bruner, J.S. (1976)

"Nature and uses of immaturity." In J.S.Bruner, A.Jolly and
K.Sylva, *Play: Its Role in Development and Evolution.*
Harmondsworth, Middx.: Penguin.

Bruner, J.S. Jolly, A. and Sylva, K. (1976)

Play: Its Role in Development and Evolution. Harmondsworth,
Middx.: Penguin.

Bühler, C. (1933a)

"Social development of the child." In C.Murchison (ed.),
Handbook of Child Psychology.

Bühler, C. (1933b)

"The child and its activity with practical material."
British Journal of Educational Psychology, 3: 27-41.

Bühler, C. (1956)

*From Birth to Maturity: An Outline of the Psychological
Development of the Child.* London: Routledge and Kegan Paul.

Bühler, K. (1930)

The Mental Development of the Child: Functional Pleasure.
New York: Harcourt.

Burt, C. (1921)

Mental and Scholastic Tests. London: P.S.King and Son.

Caille, R.K. (1933)

"Resistent behavior of preschool children." *Child
Development Monographs.* New York: Teachers College,
Columbia University, 11: (whole No.).

Caillois, R. (1961)

Man, Play, and Games. New York: Free Press.

Carey, S. (1974)

"Cognitive competence." In J.K.Connolly and J.S.Bruner,
The Growth of Competence. London: Academic Press.

Carmichael, S. and Hamilton, C. (1967)

Black Power: The Politics of Liberation. New York:
Vintage Books.

Carr, H.A. (1902)

"The survival value of play." *Investigations of the
Department of Psychology and Education of the University of
Colorado*, 1: 1-47.

Carstairs, G.M. (1975)

The Twice Born: A Study of a Community of High-Caste Hindus.
Bloomington: Indiana University Press.

Cattell, R.B. and Peterson, D.R. (1958)

"Personality structure in 4-5 year olds, by factoring
observed, time-sampled behaviour." *Ras. Psico. Gen. Clin.*,
3: 1-21.

Centner, T. (1962)

L'enfant africain et ses jeux. Elisabethville: Cepsi.

Challman, R.C. (1932)

"Factors influencing friendships among preschool children."
Child Development, 3: 146-158.

Child, E. (1969)

"Provision for pre-school children's play with special reference
to toddlers' play spaces." *Housing Review*, 18, 4: 138-140

Child, E. (1981)

"Play as a social product." *Leisure Studies Association Quarterly*, 2, 4: 2-4.

Child, E. and Child, J. (May 1972)

"The study of children's play - towards an integrated perspective." *London Graduate School of Business Studies Working Paper Series*.

Child, E. and Child, J. (1973)

"Children and leisure." In M. Smith, S. Parker and C. Smith (eds.). *Leisure and Society in Britain*. London: Allen Lane, The Penguin Press.

Claparede, E. (1911)

Psychology of the Child. New York: Longmans, Green.

Clark, A.H. Wyon, S.M. and Richards, M.P. (1969)

"Free-play in nursery school children." *Journal of Child Psychology and Psychiatry*, 10: 205-216.

Clark, K.B. and Clark, M.P. (1947)

"Racial identification and preference in Negro children." In T.M. Newcomb and E.L. Hartley (eds.). *Readings in Social Psychology*. New York: Holt.

Clarke, E. (1974)

My Mother who Fathered Me. London: Allen and Unwin.

Cockrell, D.L. (1935)

"A study of the play of children of preschool age by an unobserved observer." *Genetic Psychology Monographs*, 17: 377-469.

Cohen, E. (1965)

"Parental factors in educational mobility." *Sociology of Education*, 38, 5: 404-425.

Cohen-Portheim, P. (1930)

England the Unknown Isle. London: Duckworth.

Connolly, K. and Bruner, J.S. (1974)

"Competence: Its nature and nurture." In K.J.Connolly and J.S.Bruner (eds.), *The Growth of Competence.* London: Academic Press.

Connolly, K. and Bruner, J.S. (eds.). (1974)

The Growth of Competence. London: Academic Press.

Connor, J.M. and Serbin, L.A. (1977)

"Behaviourally based masculine - and feminine - activity - preference scales for preschoolers: Correlates with other classroom behaviours and cognitive tests." *Child Development*, 48: 1411-1416.

Cook-Gumperz, J. (1973)

Social Control and Socialization: A Study of Class Differences in the Language of Maternal Control. London: Routledge and Kegan Paul.

Crandall, V.J. Preston, A. and Rabson, A. (1960)

"Maternal reactions and the development of independence and achievement behavior in young children." *Child Development*, 31: 243-51.

Crutchfield, R.S. (1955)

"Conformity and character." *American Psychologist*, 10: 191-198.

Dahya, B. (1973)

"Pakistanis in Britain: Transients or settlers?" *Race*, 14, 3: 241-277.

Darwin, C.R. (1959)

The Origin of Species by Means of Natural Selection.

London: Murray.

Das, V. (1979)

"Reflections on the social construction of adulthood." In S.Kakar, (ed.), *Identity and Adulthood.* Delhi: Oxford University Press.

Davenport, W. (1965)

"Sexual patterns and their regulation in a society of the South West Pacific." In F.A.Beach (ed.), *Sex and Behaviour*. New York: John Wiley.

Davis, A. (1943)

"Child training and social class." In R.Barker (ed.), *Child Behavior and Development: A Course of Representative Studies*. New York: McGraw Hill.

Davison, R.B. (1966)

Black British. London: Oxford University Press.

Dawe, H.C. (1934)

"An analysis of two hundred quarrels of preschool children." *Child Development*, 5: 139-157.

Dearden, R.F. (1967)

"The concept of play." In R.S.Peters (ed.), *Concept of Education*. London: Routledge.

Deci, E. (1975)

Intrinsic Motivation. New York: Plenum Press.

DeLucia, L.A. (1963)

"The toy preference test: A measure of sex-role identification." *Child Development*, 34: 107-117.

Dennis, W. (1972)

The Hopi Child. New York: Appleton-Century, 1940.

Reprinted by New York: Arno Press, 1972.

Denzin, N.K. (1977)

Childhood Socialization. San Francisco: Jossey-Bass

Derrick, J. (1970)

"School - the meeting place." In R.Oakley (ed.), *New Backgrounds: The Immigrant Child at Home and at School*.

London: Oxford University Press.

Desai, R. (1963)

Indian Immigrants in Britain. London: Oxford University Press.

Dewey, J. (1909)

School and Society. Chicago: University of Chicago Press.

Dix, K.W. (1912)

"Körperliche und geistige entwicklung eines kindes."

Die Sinne. Leipzig: 2: 67.

Dollard, J. (1939)

Frustration and Aggression. London: Yale University Press.

Donaldson, M. (1979)

Children's Minds. Glasgow: Fontana, Collins.

Dotson, Floyd and Dotson. (1968)

The Indian Minority of Zambia, Rhodesia, and Malawi. New Haven: Yale University Press.

Douglas, J.W.B. (1964)

The Home and the School. London: McGibbon and Kee.

Douglas, J.W.B. Ross, J.M. and Simpson, H.R. (1968)

All our Future. London: Davies.

Douvan, E. and Adelson, J. (1958)

"The psychodynamics of social mobility in adolescent boys."
Journal of Abnormal and Social Psychology, 56: 31-44.

Dreitzel, H.P. (1973)

Childhood and Socialisation. New York: Macmillan.

Drever, J. and Drummond, M. (1929)

The Psychology of the Pre-school Child. King, Home and School Library.

Dube, S.C. (1955)

Indian Village. London: Routledge and Kegan Paul.

Dubois, W. (1980)

The Souls of Black Folk. New York: McChung.

Dunn, J. and Wooding, C. (1977)

"Play in the home and its implications for learning." In
B.Tizard and D.Harvey (eds.), *The Biology of Play.* London:
Heinemann.

Duvall, E. (1946)

"Conceptions of parenthood." *American Journal of Sociology,*
52: 193-203.

Eckerman, C.O. Whatley, J.L. and Kutz, S.L. (1975)

"Growth of social play with peers during the second year
of life." *Developmental Psychology,* 11: 42-49.

Eifermann, R. (1970)

"Level of children's play as expressed in group size."
British Journal of Educational Psychology, 40: 161-170

El'Konin, D. (1971)

"Symbolics and its functions in the play of children."
In R.Herron and B.Sutton-Smith (eds.), *Child's Play.* New
York: Wiley.

Elliott, J.M. and Connolly, K. (1974)

"Hierarchical structure in skill development." In K. Connolly and J.S. Bruner (eds.), *The Growth of Competence*. London: Academic Press.

Ember, C.R. (1973)

"Feminine task assignment and the social behavior of boys." *Ethos*, 1: 424-439.

Emmerich, W. (November 1971)

"Structure and development of personal-social behaviors in preschool settings." *Educational Testing Service: Head Start Longitudinal Study*.

Eng, H. (1970)

The Psychology of Children's Drawings from the First Stroke to the Coloured Drawing. London: Routledge and Kegan Paul.

Erikson, E.H. (1959)

"Identity and the life cycle." *Psychological Issues*, Vol. 1, No. 1. New York: International University Press.

Erikson, E.H. (1963)

Childhood and Society. New York: The Norton Press.

Erikson, E.H. (1965)

Childhood and Society. Harmondsworth, Middx.: Penguin.

Eyken, W. van der. (1973)

The Pre-school Years. Harmondsworth, Middx.: Penguin

Fagot, B.I. and Patterson, G.R. (1969)

"An in vivo analysis of reinforcement contingencies for sex role behaviors in the preschool child." *Developmental Psychology*, 1: 563-568.

Fales, E. (1937)

"A comparison of the vigorousness of play activities of preschool boys and girls." *Child Development*, 8: 144-158.

Farrell, M. (1957)

"Sex differences in block play in early childhood education." *Journal of Educational Research*, 51: 279-84.

Farwell, L. (1930)

"Reactions of kindergarten, first-and second-grade children to constructive play materials." *Genetic Psychology Monographs*, 8: 431-562.

Fein, G.G. (1981)

"Pretend play in childhood: An integrative review." *Child Development*, 52: 10095-1118.

Fein, G.G. Johnson, D. Kosson, N. Stork, L. and Wasserman, L.
(1975)

"Sex stereotypes and preferences in the toy choices of
20-month old boys and girls." *Developmental Psychology*,
11: 527-528.

Feitelson, D. (1959)

"Some aspects of the social life of Kurdish Jews." *Jewish
Journal of Sociology*, 1: 201-216.

Feitelson, D. (1972)

"Developing imaginative play in pre-school children as a
possible approach to fostering creativity." *Early Child
Development Care*, 1: 181-195.

Feitelson, D. (1977)

"Cross-cultural studies of representational play." In
B.Tizard and D.Harvey (eds.), *Biology of Play*. London:
Heinemann.

Feitelson, D. and Ross, G. (1973)

"The neglected factor-play." *Human Development*,
16: 202-223.

Feitelson, D. Weintraub, S. and Mimichaeli, O. (1972)

"Social interactions in heterogeneous preschools in Israel."
Child Development. 43: 1249-1259.

Fink, R. (1976)

"Role of imaginative play in cognitive development."

Psychological Reports, 39: 895-906.

Fisher, R.A. (1936)

"The use of multiple measurements in taxonomic problems."

Annals of Eugenics, 7: 179-188.

Fisher, R.L. (1967)

"The social scheme of normal and disturbed school children."

Journal of Educational Psychology, 58: 88-92.

Fitzherbert, K. (1967)

West Indian Children in London. London: Bell.

Fitzherbert, K. (1970)

"The West Indian background." In R.Oakley (ed.), *New Backgrounds: The Immigrant Child at Home and at School*.

London: Oxford University Press.

Fling, S. and Manosevitz, M. (1972)

"Sex typing in nursery school children's play interests."

Developmental Psychology, 7: 146-152.

Foner, N. (1977)

"The Jamaicans: Cultural and social change among migrants in Britain." In J.L.Watson (ed.), *Between Two Cultures: Migrants and Minorities in Britain*. Oxford: Blackwell.

Foner, N. (1975)

"The meaning of education to Jamaicans at Home and in London."

New Community, 4: 195-202.

Fortes, M. (1976)

"Social and psychological aspects of education in Taleland."

In J.S.Bruner, A.Jolly and K.Sylva (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Freud, A. (1946)

Psychoanalytical Treatment of Children. London: Imago.

Freud, S. (1907)

"Creative writers and daydreaming." In J.Strachey (ed.), *The Complete Works of Sigmund Freud*. London: Hogarth Press.

Freud, S. (1950)

Beyond the Pleasure Principle. New York: Liveright.

Freud, S. (1974)

Beyond the Pleasure Principle. London: Hogarth Press.

Freyburg, J.T. (1970)

"Experimental enhancement of imaginative play of kindergarten children." *Unpublished Ph.D. thesis*. New York: The City University.

Freyberg, J.T. (1973)

"Increasing the imaginative play of urban disadvantaged kindergarten children through systematic training." In J.L.Singer (ed.), *The Child's World of Make-believe*. New York: Academic Press.

Friedrichs, J. and Lüdtke, H. (1975)

Participant Observation: Theory and Practice.
Farnborough, Hants.: Saxon House.

Froebel, F. (1895)

Pedogogics of the Kindergarten. London: Appleton.

Gallagher, J. (1964)

"Productive thinking." In L.Hoffman and M.Hoffman (eds.), *Review of Child Development Research*. New York: Russell Sage.

Garai, J.W. and Scheinfeld, A. (1968)

"Sex differences in mental and behavioural traits."
Genetic Psychology Monographs, 77: 169-299.

Garvey, C. (1977)

Play. Cambridge, Mass.: Harvard University Press.

Geber, R. (1958)

"The psycho-motor development of African children in the first year and the influence of maternal behaviour."

Journal of Social Psychology, 47: Cited in V.P.Houghton,

"The abilities of West Indian and English infant school children: A comparative study." *Unpublished M.Ed Thesis*.

University of Nottingham, October, 1966.

Georges, R.A. (1969)

"The relevance of models for analyses of traditional play activities." *Southern Folklore Quarterly*, 33: 1-23.

Gesell, A. (1925)

Mental Growth of the Pre-school Child. London: Macmillan.

Gesell, A. (with Amatruda, C.S. Bates Ames, L. Castner, B.M.

Halverson, H.M. Ilg, F.L. and Thompson, H.) (1976)

The First Five Years of Life: A Guide to the Study of the Pre-School Child. London: Methuen.

Ghuman, P. (1980)

"Bhattra Sikhs in Cardiff: Family and kinship organisation."

New Community, 8, 3: 308-316.

Gilmore, J.B. (1966)

"Play a special behaviour." In R.N.Haber (ed.), *Current Research in Motivation*. New York: Holt, Rinehart and Winston.

Goldberg, S. and Lewis, M. (1969)

"Play behavior in the year-old infant: Early sex differences." *Child Development*, 40: 21-31.

Goldthorpe, J.H. (with Llewellyn, C. and Payne, C.) (1980)

Social Mobility and Class Structure in Modern Britain.

Oxford: Clarendon Press.

Goldthorpe, J.H. Lockwood, D. Bechofer, F. and Platt, J. (1968)

The Affluent Worker: Industrial Attitudes and Behaviour.

Cambridge: Cambridge University Press.

Gondek, P. (1981)

"What you see may not be what you think you get: Discriminant analysis in statistical packages." *Educational and Psychological Measurement*, 41: 267-281.

Goodall, J. (1970)

"The Pakistani background." In R.Oakley (ed.), *New Backgrounds: The Immigrant Child at Home and at School.*

London: Oxford University Press.

Goodenough, F.L. (1928)

"Measuring behavior traits by means of repeated short samples." *Journal of Juvenile Research*, 12: 230-235.

Goodenough, F.L. (1930)

"Inter-relationships in the behavior of young children."

Child Development, 1: 29-47.

Goodenough, F.L. (1934)

Developmental Psychology. New York: Appleton-Century.

Goodman, M.E. (1966)

Race Awareness in Young Children. New York: Collier-Macmillan

Gorer, G. (1955)

Exploring the English Character. London: Cresset.

Gottlieb, S. (1973)

"Modeling effects upon fantasy." In J.L.Singer (ed.),

The Child's World of Make-believe. New York: Academic Press.

Grant, E.C. (1969)

"Human facial expression." *Man*, 4: 525-36.

Green, E. (1933)

"Friendships and quarrels among preschool children."

Child Development, 4: 237-252.

Greenfield, P.M. (15th November 1969)

"Goal as environmental variable in the development of intelligence." Presented at *The Conference on Contributions to Intelligence*. University of Illinois, Urbana.

Grief, E.B. (1976)

"Sex role playing in pre-school children." In J.S.Bruner, A.Jolly and K.Sylva (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Griffiths, R. (1935)

A Study of Imagination in Early Childhood. London: Routledge and Kegan Paul.

Groos, K. (1898)

The Play of Animals. New York: Appleton.

Groos, K. (1901)

The Play of Man. London: Heinemann.

Groos, K. (1976)

"The play of animals: Play and instinct." In J.S.Bruner, A.Jolly and K.Sylva (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Gulick, L. (1920)

A Philosophy of Play. New York: Scribner.

Gutteridge, M.V. (1935)

The Duration of Attention in Young Children. Melbourne: Melbourne, University Press.

Haavind, H. and Hartman, E. (1977)

"Mothers as teachers and their children as learners." Report No.1. *Institute of Psychology*, University of Bergen, Norway.

Hahlo, K. (1980)

"Profile of a Gujarati community in Bolton." *New Community*,
8, 3: 295-307.

Hajimirzatayeb, M. (1979)

"Cultural determinants of organizational behaviour and
response to environmental demands: An empirical test in
Iranian culture and organization." *Unpublished M.Lit.thesis*,
St. Anne's College, University of Oxford.

Hajimirzatayeb, M. (1981)

"Cultural influence in organizational response to
environmental demands: An empirical test in Iran."
Aston University Working Paper Series, No. 215.

Hall, E.T. (1969)

The Hidden Dimension. New York: Anchor.

Hall, G.S. (1906)

Youth: its Education, Regimen, and Hygiene. New York:
Appleton.

Hall, G.S. (1920)

Adolescence. New York: Appleton.

Halverson, C.F. and Waldrop, M.F. (1970)

"Maternal behavior toward own and other preschool children:
The problem of 'ownness'." *Child Development*, 41: 839-45.

Hartley, R.E. Frank, L. and Goldenson, R. (1952)

Understanding Children's Play. Columbia: Columbia University Press.

Hartup, W. and Zook, E. (1960)

"Sex-role preference in three-and four-year old children."
Journal of Consulting Psychology, 24: 420-426.

Helanko, R. (1958)

Theoretical Aspects of Play and Socialisation. Finland:
Turku University Press.

Helweg, A.W. (1979)

Sikhs in England: The Development of a Migrant Community.
Delhi: Oxford University Press.

Henriques, F.M. (1953)

Family and Colour in Jamaica. London: Eyre and Spottiswoode.

Herring, A. and Koch, H.L. (1930)

"A study of some factors influencing the interest span of preschool children." *Journal of Genetic Psychology*, 38: 249-79.

Herskovits, M. (1965)

"The ancestry of the American Negro." 1965, reprinted in *The New World Negro.* Indiana: Indiana University Press, 1966.

Hess, R.D. and Shipman, V.C. (1965)

"Early experience and the socialization of cognitive modes in children." *Child Development*, 36: 4, 869-886

Hetzer, H. (1929)

Kindheit und Armut. Hirzel: Leipzig.

Hetzer, H. (1931)

Experimente über Konstruktive Betätigungen im Kleinkindalter.
Quellen und Studien zur Jugendkunde: Heft 7. Jena:
Gustav Fischer.

Heylings, P.F.N. (14th April 1973)

"Personal view." *British Medical Journal*.

Hill, C. (1963)

West Indian Migrants and the London Churches, London: OUP.

Hill, C. (1970)

"Some aspects of race and religion in Britian." In D.Martin and M.Hill (eds.), *A Sociological Year Book of Religion in Britain*. London: SCM Press.

Hinde, R.A. (1974)

Biological Bases of Human Social Behaviour. New York:
McGraw-Hill.

Hinde, R.A. (1979)

Towards Understanding Relationships. London: Academic Press.

Hinde, R.A. (1982)

Ethology. London: Fontana.

Hiro, D. (1971)

Black British White British. London: Eyre and Spottiswoode.

Hoffman, M. (1970)

"Moral development." In P. Mussen (ed.), *Carmichael's Manual of Child Psychology*, Vol. 2. New York: Wiley.

Hofstede, G. (1980)

"Motivation, leadership and organization: Do American theories apply abroad?" *Organizational Dynamics*, 9, 1: 42-63.

Hoggart, R. (1960)

The Uses of Literacy. Harmondsworth, Middx.: Penguin.

Holland, J. (1981)

"Social class and changes in orientation to meaning." *Sociology*, 15: 1-18.

Hollingshead, A.B. and Redlich, F.C. (1958)

Social Class and Mental Illness: A Community Study. New York: Wiley.

Hollingworth, L.S. (1927)

Gifted Children. New York: Macmillan.

Hopkins, E. (1966)

"Racial minorities in British East Africa." In S. Diamond and F. Burke (eds.), *The Transformation of East Africa*. London: Basic Books.

Hovland, C. I and Janis, I.J. (1959)

Personality and Persuasibility. New Haven: Yale University Press.

Hughes, S.M. (1975)

"Egocentrism in pre-school children." *Unpublished Ph.D. thesis*. Edinburgh University.

Huizinga, J. (1949)

Homo Ludens: A Study of the Play Element in Culture. Routledge and Kegan Paul.

Hulson, E.L. (1930)

"An analysis of the freeplay of ten 4-year-old children through consecutive observations." *Journal of Juvenile Research*, 14, 3:188-208.

Hutt, C. (1971)

"Exploration and play in children." In R.E. Herron and B. Sutton-Smith (eds.), *Child's Play*. New York: Wiley.

Hutt, C. (1972)

Males and Females. Harmondsworth, Middx.: Penguin.

Hutt, C. (1976)

"Exploration and play in children." In J.S.Bruner, A.Jolly and K.Sylva, (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Hutt, C. and Bhavnani, R. (1976)

"Predictions from play." In J.S.Bruner, A.Jolly and K.Sylva, (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Hutt, C. and Hutt, S.J. (1970)

Direct Observation and Measurement of Behaviour. Springfield, Illinois: C.C.Thomas.

Hyman, H. (1953)

"The value systems of different classes." In R.Bendix and S.Lipset, (eds.), *Class Status and Power: A Reader in Social Stratification*. Glencoe: Ill.: The Free Press.

Isaacs, S. (1930)

Intellectual Growth in Young Children. New York: Harcourt Brace.

Isaacs, S. (1933)

Social Development in Young Children. London: Routledge.

Isaacs, S. (1948)

"The nature and function of phantasy." *The International Journal of Psycho-Analysis*, 29, 2: 73-79.

Israel, W. (1964)

Colour and Community. Slough: Slough Council of Social Service.

Iwanga, M. (1973)

"Development of interpersonal play structure in three, four and five year-old children." *Journal of Research and Development in Education*, 6, 3: 71-82.

Jacklin, C.N. and Maccoby, E.E. (1978)

"Social behavior at thirty three months in same-sex and mixed-sex dyads." *Child Development*, 49: 557-569.

James, A.G. (1974)

Sikh Children in Britain. London: Oxford University Press.

Jenkins, R. (1982)

"The reproduction of determinism." *Sociology*, 16, 2: 270-281.

Jersild, A.T. and Markey, F.V. (1935)

"Conflicts between preschool children." *Child Development Monographs*, 6: 56-68.

John, G. (1972)

"The social worker and the young Blacks " In J.P. Triseliotis (ed.), *Coloured Immigrants and Their Families*. London: Oxford University Press.

John, V. (1963)

"The intellectual development of slum children: Some preliminary findings." *American Journal of Orthopsychiatry*, 33: 813-822.

Johnson, M.W. (1935)

"The effect on behavior of variation in the amount of play equipment." *Child Development*, 6: 56-68.

Jones, G.R. (1979)

"Work, leisure and the genesis of action: A psycho-social explanation of behaviour." *Unpublished Ph.D Thesis, Lancaster University*.

Jones, J. (22nd December 1966)

"Social class and the under-fives." *New Society*, 935-936.

Kagan, J. (1964)

"Acquisition and significance of sex typing and sex role identity." In L.Hoffman and M.Hoffman, (eds.), *Review of Child Development Research*. New York: Russell Sage.

Kagan, J. and Moss, H.A. (1962)

Birth to Maturity. New York: Wiley.

Kakar, S. (1978)

The Inner World: A Psycho-Analytic Study of Childhood and Society in India. Delhi: Oxford University Press.

Kakar, S. (1979)

Identity and Adulthood. Delhi: Oxford University Press.

Kawin, E. (1965)

The Wise Choice of Toys. Chicago: Chicago University Press.

Kearsley, G.W. and Srivastava, S. (1974)

"The spatial evolution of Glasgow's Asian community."
Scottish Geographical Magazine, 90, 2: 110-124.

Kenyatta, J. (1939)

Facing Mount Kenya. London: Secker and Warburg.

Kerlinger, F.M. (1964)

Foundations of Behavioural Research: Educational and Psychological Enquiry. New York: Holt, Rinehart and Winston.

Kerr, M. (1952)

Personality and Conflict in Jamaica. Liverpool: Liverpool University Press.

Klapfer, P.H. and Hailman, J.P. (1967)

Introductions to Animal Behaviour. Englewood Cliffs, N.J.:
Prentice Hall.

Klaus, R. and Gray, S. (1968)

"The early training project for disadvantaged children: A
report after five years." *Monographs of the Society for
Research in Child Development*, 33: 4.

Klein, J. (1970)

Samples from English Cultures, Vols. 1 and 2. London:
Routledge and Kegan Paul.

Klein, M. (1937)

The Psycho-Analysis of Children. London: Hogarth Press.
(2nd Edition).

Klinger, E. (1971)

Structure and Function of Fantasy. New York: Wiley.

Koch, H.L. and Streit, H. (1932)

"A study in rating technique with special reference to
activity in pre-school children." *Journal of Genetic
Psychology*, 41: 330-57.

Kohlberg, L. (1966)

"A cognitive-developmental analysis of children's sex role concepts and attitudes." In E.Maccoby, (ed.), *The Development of Sex Differences*. Stanford California: Stanford University Press.

Kohlberg, L. (1969)

"Stage and sequence: The cognitive-developmental approach to socialisation." In D.Goslin, (ed.), *Handbook of Socialisation: Theory and Research*. New York: Rand McNally.

Kohn, M. (1959a)

"Social class and parental values." *The American Journal of Sociology*, 64, 4: 337-351.

Kohn, M. (1959b)

"Social class and the exercise of parental authority." *American Sociological Review*, 352-366.

Kohn, M. and Rosman, B. (1972)

"A social competence, scale and symptom checklist for the preschool child, factor dimensions, their cross and longitudinal persistence." *Developmental Psychology*, 6: 430-446.

Koran, (The). (1974)

Translated by N.J.Dawood. Harmondsworth, Middx.: Penguin.

Korchin, S.J. Mitchell, H.E. and Meltzoff, J. (1950)

"A critical evaluation of the Thompson thematic apperception test." *Journal of Projective Techniques*, 14: 445-452.

Kroeber, A.L. and Kluckhohn, C. (1952)

Culture: A Critical Review of Concepts and Definitions.
Cambridge, Mass.: Peabody Museum of American Archaeology
and Ethnology, Harvard University.

Kroeber, A.L. and Parsons, T. (1958)

"The concepts of culture and of social systems."
American Sociological Review, 23: 582-3.

Labov, W. (1970)

"The logic of non-standard English." In F.Williams (ed.),
Language and Poverty. Chicago: Markham.

Lancy, D.F. (1976)

"The play behaviour of Kpelle children during rapid cultural change," In D.F.Lancy and B.Allan Tindall (eds.), *The Anthropological Study of Play: Problems and Prospects*.
Cornwall, New York: Leisure Press,

Laws of Manu, (The). (1886)

Translated by G.Bühler in *The Sacred Books of the East*, Vol. 25.
Oxford: Clarendon Press.

Lazarus, M. (1883)

Über die Reize des Spiels. Berlin: Dümmler.

Leacock, E. (1971)

"At play in African villages." *Natural History*, December, Special Supplement on Play, 60-65.

Lee, C. (1973)

The Growth and Development of Children. London: Longman.

Lee, J. (1923)

Play in Education. New York: Macmillan.

Lehman, H.C. and Witty, P.A. (1928)

"A study of play in relation to intelligence." *Journal of Applied Psychology*. 369-398.

Lever, J. (1974)

"Games children play: Sex differences and the development of role skills." *Unpublished Ph.D Thesis*, Yale University, New Haven, Conn.

Lever, J. (1978)

"Sex differences in the complexity of children's play and games." *American Sociological Review*, 43: 471-483.

Levin, H. and Wardwell, E. (1962)

"The research uses of doll play." *Psychological Bulletin*,
59, 1: 27-56.

Levine, L. (1977)

Black Culture and Consciousness. London: Oxford University
Press.

LeVine, R. and LeVine, B. (1963)

"Nyansongo: A Gusii community in Kenya." In B. Whiting, (ed.),
Six Cultures: Studies of Child Rearing. New York: Wiley.

Lewis, O. (1965)

The Children of Sanchez. Harmondsworth, Middx.: Penguin.

Lichtenwalner, J. and Maxwell, J. (1969)

"The relationship of birth order and socioeconomic status to
the creativity of preschool children." *Child
Development*, 40: 1121-1247.

Lieberman, J.N. (1965)

"Playfulness and divergent thinking: An investigation of
their relationship at the kindergarten level." *Journal of
Genetic Psychology*, 107: 219-224.

Lieberman, J.N. (1966)

"Playfulness: An attempt to conceptualize a quality of play and of the player." *Psychological Report*, 19: 1278.

Lieberman, J.N. (1977)

Playfulness: Its Relationship to Imagination and Creativity.
New York: Academic Press.

Light, P. (1979)

The Development of Social Sensitivity: A Study of Social Aspects of Role-taking in Young Children. Cambridge:
Cambridge University Press.

Lindquist, E.F. (1953)

Design and Analysis of Experiments in Psychology and Education.
Boston: Houghton Mifflin.

Lindzey, G. and Goldberg, M. (1953)

"Motivational differences between male and females as measured by the TAT." *Journal of Personality*, 22: 101-117.

Lineker, L. (1977)

In A.Adlam (ed.), *Code in Context*. London: Routledge and Kegan Paul.

Lippitt, R. (1940)

"An experimental study of the effect of democratic and authoritarian group atmospheres." *University of Iowa Studies in Child Welfare*, 16: 43-195.

Lippitt, R. and White, R. (1943)

"The 'social climate' of children's groups." In R.G.Barker, J.Kounin and H.Wright, (eds.), *Child Behavior and Development*. New York: McGraw Hill.

Littig, L.W. (1968)

"Negro personality correlates of aspiration to traditionally open and closed occupations." *Journal of Negro Education*, 37: 31-36.

Little, K. (1965)

"Personal space." *Journal of Experimental Social Psychology*, 1: 237-247.

Lloyd, P. (1975)

"Communication in pre-school children." *Unpublished Ph.D Thesis*.
Edinburgh University.

Lobo, E.de, H. (1978)

Children of Immigrants to Britain: Their Health and Social Problems. London: Hodder and Stoughton.

Lodge, R.C. (1947)

Plato's Theory of Education. London: Kegan Paul, Trench, Trubner and Co, Ltd.

Lomax, P. (1977)

"The self-concept of girls in the context of a disadvantaged environment." *Educational Review*, 29: 107-19.

Lomranz, J. Shapira, A. Chores, H. and Gilat, Y. (1975)

"Children's personal space as a function of age and sex." *Developmental Psychology*, 5: 541-545.

Loomis, A.M. (1931)

"A technique for observing the social behavior of nursery school children." *Child Development Monographs*, 5: (whole No.).

Lorenz, K. (1950)

"The comparative method in studying innate behaviour patterns." *Symposia of the Society for Experimental Biology*, 4: 221-268.

Louden, D. (1977)

"A comparative study of self-esteem and locus of control in minority group adolescents." *Unpublished Ph.D Thesis.*
Bristol University.

Lowenfeld, M. (1935)

Play in Childhood. London: Gollancz.

Lucas, J. and McKennell, V. (1974)

The Penguin Book of Playgroups. Harmondsworth, Middx.:
Penguin.

Lunzer, E.A. (1955)

"Studies in the development of play behaviour in young children between the ages of two and six." *Unpublished Ph.D Thesis*, Birmingham University.

Lunzer, E.A. (1958)

"Intellectual development in the play of young children." *Educational Review*, 11: 205-217.

Luria, A.R. (1957)

"The role of language in the formation of temporary connections." In B.Simon, (ed.), *Psychology in the Soviet Union*, Stanford, California: Stanford University Press.

Lynn, D.B. (1959)

"A note on sex differences in the development of masculine and feminine identification." *Psychological Review*, 66: 126-135.

MacFarlane, A. (1978)

The Origins of English Individualism: The Family, Property and Social Transition. Oxford: Blackwell.

McCandless, B.R. Bilous, C.B. and Bennett, H.L. (1961)

"Peer popularity and dependence on adults in preschool age socialization." *Child Development*, 32: 511-518.

McCarthy, D.A. (1954)

"Language development in children." In L.Carmichael, (ed.), *Manual of Child Psychology.* New York: Wiley.

McClelland, D.C. (1961)

The Achieving Society. New York: Free Press.

McClelland, D.C. Atkinson, J.W. Clark, R.W. and Lowell, E.L. (1953)

The Achievement Motive. New York: Appleton-Century.

McDougall, W. (1919)

An Introduction to Social Psychology. (14th Edition).
London: Methuen.

McDowell, M.S. (1937)

"Frequency of choice of play materials by preschool children." *Child Development*, 8: 305-10.

McGrew, P.L. (1970)

"Social and spatial density effects on spacing behaviour in preschool children." *Journal of Child Psychology and Psychiatry*, 11: 197-205.

McGrew, W.C. (1972)

An Ethological Study of Children's Behaviour. New York:
Academic Press.

McKee, J.P. and Leader, F.B. (1955)

"The Relationship of socio-economic status and aggression to
the competitive behaviour of preschool children." *Child
Development*, 26: 135-142.

McLellan, J. (1970)

The Question of Play. New York: Pergamon Press.

Maccoby, E.E. (1959)

"Role-taking in childhood and its consequences for social
learning." *Child Development*, 30: 239-252.

Maccoby, E.E. and Jacklin, C.N. (1974)

The Psychology of Sex Differences. Stanford, California:
Stanford University Press.

Maccoby, E.E. and Jacklin, C.N. (1980)

"Sex differences in aggression: A rejoinder and reprise."
Child Development, 51: 964-980.

Maehr, M.L. and Nicholls, J.G. (1980)

"Culture and achievement motivation: A second look." In
N.Warran, (ed.), *Studies in Cross Cultural Psychology*, Vol. 2.
London: Academic Press.

Maehr, M.L. (1974)

"Culture and achievement motivation." *American Psychologist*, 29:887-96

Mahabharata, (The). (1884-1896)

Translated by R.C.Roy. Calcutta: Roy.

Mahabharata Anushasana Parvan,. (1884-1896)

Translated by R.C.Roy. In *The Mahabharata*. Calcutta: Roy.

Maillaud, P. (1945)

The English Way. London: Oxford University Press.

Major, D.R. (1906)

First Steps in Mental Growth. New York: 1906. cited in
H.Eng, *The Psychology of Children's Drawings from the First
Stroke to the Coloured Drawing*. London: Routledge and Kegan
Paul, 1970: 102.

Mallay, H. (1935)

"Growth in social behaviour and mental activity after six
months in nursery school." *Child Development* 6:303-309.

Manwell, E.M. and Mengert, I.G. (1934)

"A study of the development of two-and three-year-old children
with respect to play activities." *University of Iowa Studies
in Child Welfare*, 9: 69-11.

Maretzki, T. and Maretzki, H. (1963)

"Taira: An Okinawan village." In B.Whiting, (ed.), *Six
Cultures: Studies of Child Rearing*. New York: Wiley.

Markey, F. (1935)

"Imaginative behaviour of preschool children."

Child Development Monographs, 18: (whole No.).

Marshall, L. (1976)

The !Kung of Nyae Nyae.

Cambridge, Mass.: Harvard University

Press.

Masangkay, Z. McCluskey, K. McIntyre, C. Sims-Knight, J. Vaughan, B.
and Flavell, J. (1974)

"The early development of inferences about the visual percepts
of others." *Child Development*, 45: 357-66.

Maslow, A.H. (1943)

"A theory of human motivation." *Psychological Review*,
50: 370-396.

Matthews, W. (1975)

"The nature of fantasy in the spontaneous play of young
children." *Unpublished Ph.D Thesis.* Cornell University.

Matterson, E.M. (1965)

Play with a Purpose for Under-Sevens. Harmondsworth, Middx.:
Penguin.

- Maw, W.H. and Maw, E.W. (1965)
"Personal and social variables differentiating children with high and low curiosity." *Cooperative Research Project*, No.1511. Wilmington: University of Del.: 1-181
- Mead, G. (1934)
Mind, Self and Society. Chicago: University of Chicago Press.
- Mead, M. (1935)
Sex and Temperament in Three Primitive Societies. New York: Morrow.
- Mead, M. (1943)
Coming of Age in Samoa. Harmondsworth, Middx.: Penguin.
- Mead, M. (1963)
Growing Up in New Guinea. Harmondsworth, Middx.: Penguin.
- Medinnus, G.R. (1976)
Child Study and Observation Guide. New York: Wiley.
- Medinnus, G.R. and Johnson, R.C. (eds.). (1969)
Child and Adolescent Psychology. New York: Wiley.
- Menninger, K. (1942)
Love Against Hate. New York: Wiley.
- Mernissi, F. (1975)
Beyond the Veil: Male-female Dynamice in a Modern Muslim Society. New York: Wiley.

Michelman, S. (1974)

"Play and the deficit child." In M.Reilly, (ed.), *Play as Exploratory Learning: Studies of Curiosity Behavior*. Beverly Hills, Cal.: Sage Publications.

Midgett, D. (1975)

"West Indian ethnicity in Britain." In H.Safa and B. du Toit, (eds.), *Migration and Development*. The Hague: Mouton Publishers

Millar, S. (1968)

The Psychology of Play. Harmondsworth, Middx.: Penguin.

Milner, D. (1975)

Children and Race. Harmondsworth, Middx.: Penguin.

Minturn, L. and Hitchcock, J. (1963)

"The Rajputs of Khalapur, India." In B.Whiting, (ed.), *Six Cultures: Studies of Child Rearing*. New York: Wiley.

Mitchell, P.C. (1912)

The Childhood of Animals. New York: Stokes.

Moffett, J. (1968)

Teaching the Universe of Discourse. Boston: Houghton.

Moore, N.Evertson, C. and Brophy, J. (1974)

"Solitary play: Some functional reconsiderations." *Developmental Psychology*, 10, 6: 830-834.

Moreno, J.L. (1953)

Who Shall Survive. New York: Beacon.

Morland, J.K. (1958)

"Racial recognition by nursery school children in Lynchburg, Virginia." *Social Forces*, 37: 132-7.

Morland, J.K. (1963)

"Racial self-identification: A study of nursery-school children." *American Catholic Sociological Review*, 24: 231-42.

Morland, J.K. (1966)

"A comparison of race awareness in Northern and Southern children." *American Journal of Orthopsychiatry*, 36: 22-31.

Morrish, I. (1971)

The Background of Immigrant Children. London: Allen and Unwin.

Morrison, L. (1976)

As they see it: A Race Relations Study of Three Areas from a Black Viewpoint. London: Community Relations Commission.

Moustakes, C.E. (1953)

Children in Play Therapy. New York: McGraw-Hill.

Moyer, K.E. and Haller Gilmer, B von. (1955)

"Attention span for experimentally designed toys."

Journal of Genetic Psychology, 87: 187-201.

Mundaka Upanishad. (1968)

In *The Thirteen Principal Upanishads*, translated by R.Hume,

London: Oxford University Press, 1877. Reprinted Madras:

Oxford University Press, 1968.

Murdock, G.P. (1965)

Social Structure. New York: Macmillan.

Murphy, L.B. (1947)

"Social factors in child development." In T.M.Newcomb and

E.R.Hartly, (eds.), *Readings in Social Psychology*. New York:

Holt.

Murphy, L.B. (1972)

"Infants' play and cognitive development ." In M.Piers, (ed.),

Play and Development. New York: The Norton Press.

Mussen, P.H. Conger, J.J. and Kagan, J. (1969)

Child Development and Personality. New York: Harper and

Row.

Muste, M. and Sharpe, D. (1947)

"Some influential factors in the determination of aggressive

behavior in preschool children." *Child Development*, 18: 11-28

Neale, R.E. (1969)

In Praise of Play. New York: Harper and Row.

Neihoff, A. Neihoff, J. (1960)

East Indians in the West Indies. Milwaukee, Wisconsin:
Milwaukee Public Museum.

Neumeyer, M.H, and Neumeyer, E.S. (1958)

Leisure and Recreation. New York: Ronald Press.
(3rd Edition).

Newson, J. and Newson, E. (1968)

Four Years Old in an Urban Community. London: Allen and
Unwin.

Newson, J. and Newson, E. (1974)

"Cultural aspects of child rearing in the English-speaking
world." In M.Richards, (ed.), *The Integration of a Child
into a Social World.* Cambridge: Cambridge University Press.

Newson, J. and Newson, E. (1976)

Seven Years Old in the Home Environment. Harmondsworth, Middx.:
Penguin.

Nie, N. Hull, H. Jenkins, J. Steinbrenner, K. and Bent, D. (1975)

Statistical Package for the Social Sciences. New York:
McGraw-Hill.

Nobles, W. (1973)

"Psychological research and the Black self-concept: A critical review." *Journal of Social Issues*, 1973: 22: 1, cited in M.Stone, *The Education of the Black Child in Britain*. London: Fontana, 1981: 72.

Norton, D.W. (1952)

"An empirical investigation of some effects of non-normality and heterogeneity on the F-distribution." *Unpublished Ph.D Thesis*, Iowa, State University.

Nunn, P. (1920)

Education: Its Data and First Principles. London: Arnold.

Nydegger, W. and Nydegger, C. (1963)

"Tarong: An Ilocos Barrio in the Philippines." In B.Whiting, (ed.), *Six Cultures: Studies of Child Rearing*. New York Wiley.

Oakley, A. (1976)

Sex, Gender and Society. London: Temple Smith.

Oakley, R. (ed.). (1970)

New Backgrounds: The Immigrant Child at Home and at School. London: Oxford University Press.

Olson, W.C. (1929)

"The measurement of nervous habits in normal children."
Institute of Child Welfare Monographs. No. 3. Minnesota:
Minnesota University Press.

Olson, W.C. (1931b)

"A study of classroom behavior." *Journal of Educational Psychology*, 22: 449-54.

Opie, I. and Opie, P. (1959)

The Lore and Language of School Children. London: Oxford
University Press.

Opie, I. and Opie, P. (1969)

Children's Games in Street and Playground. London: Oxford
University Press.

Osborn, A. and Morris, T. (1970)

"The rationale for a composite index of social class and its
evaluation." *British Journal of Sociology*, 30, 1: 39-59.

Palmer, F. (1972)

Unpublished research cited in J.S.Bruner, *The Relevance of
Education*: 146.

Parekh, B. (ed.). (1974)

*Colour, Culture and Consciousness: Immigrant Intellectuals
in Britain*. London: Allen and Unwin.

Parsons, T. (1942)

"Age and sex in the social structure of the United States."

American Sociological Review, 7: 604-616.

Parsons, T. (1949)

"The social structure of the family." In R. Anshen, (ed.),

The Family: Its Function and Destiny. New York: Harper.

Parten, M.B. (1932)

"Social participation among pre-school children." *Journal of Abnormal and Social Psychology*, 27: 243-269.

Parten, M.B. (1933)

"Social play among preschool children." *Journal of Abnormal Social Psychology*, 28: 136-147.

Parten, M.B. and Newhall, S.M. (1943)

"Social behaviour of pre-school children." In R.G. Barker, J.S. Kounin and H.F. Wright, (eds.),

Child Behavior and Development. New York:

McGraw-Hill.

Pasamanick, B. (1946)

"A comparative study of the behavioural development of Negro infants." *Journal of Genetic Psychology*, No. 69, 1946, cited in V.P.Houghton. "The abilities of West Indian and English infant school children: A comparative study." *Unpublished M.Ed.Thesis*, Nottingham University, October 1966.

Patrick, G.T.W. (1914)

"The psychology of play." *Pedagogical Seminary*, 21: 469-484.

Patterson, S. (1963)

Dark Strangers. London: Tavistock.

Pedersen, F.A. and Bell, R.Q. (1970)

"Sex differences in preschool children without histories of complications of pregnancy and delivery." *Developmental Psychology*, 3: 10-15.

Peller, L.E. (1952)

"Models of children's play." *Mental Hygiene*, 36: 66-83.

Pestalozzi, J.H. (1904)

The Educational Ideas of Pestalozzi and Froebel. London: Herbert Russell.

Piaget, J. (1948)

Language and Thought of the Child. London: Routledge and Kegan Paul.

Piaget, J. (1967)

Play, Dreams and Imitation in Childhood. London: Routledge and Kegan Paul.

Piaget, J. (1970)

"Piaget's Theory." In P. Mussen, (ed.), *Carmichael's Manual of Child Psychology*, Vo. 1. New York: Wiley.

Piaget, J. and Inhelder, B. (1956)

The Child's Conception of Space. London: Routledge and Kegan Paul.

Piaget, J. and Inhelder, B. (1969)

The Psychology of the Child. London: Routledge and Kegan Paul.

Plato. (1922)

The Laws, text edited by E.B. England, London: Longmans.

Plowden, B.H. (1970)

Children and their Schools. Exeter: University of Exeter.

Pulaski, M.A. (1970)

"Play as a function of toy structure and fantasy predisposition." *Child Development*, 41: 531-537.

Pulaski, M.A. (1973)

"Toys and imaginative play." In J.L.Singer, (ed.), *The Child's World of Make-believe*. New York: Academic Press.

Pushkin, I. (1967)

"A study of ethnic choice in the play of young children in three London districts." *Unpublished Ph.D Thesis*.
Birbeck College, London University.

Pycraft, W.P. (1913)

The Infancy of Animals. New York: Holt.

Quèrat. (1905)

"Les Jeux des enfants." Paris, 1905, cited in J.Piaget, *Play, Dreams and Imitation in Childhood*. Routledge and Paul. 1967: 107.

Rabban, M. (1950)

"Sex role identification in young children in two diverse social groups." *Genetic Psychology Monographs*, 42: 81-158.

Radke, M. and Trager, H.G. (1950)

"Children's perceptions of the social roles of Negroes and Whites." *Journal of Psychology*, 29, 43: 3-33.

Radke, M. Trager, H.G. and Miller, J. (1952)

"The role of the parents in the development of children's ethnic attitudes." *Child Development*, 23: 13-53.

Rampton, A. (1981)

"West Indian children in our schools." *Interim Report of the Committee of Inquiry into the Education of Children from Ethnic Minority Groups*. London: H.M.S.O.

Raynor, J. (1969)

The Middle Class. London: Longman.

Reilly, A. (ed.). (1974)

Play as Exploratory Learning: Studies of Curiosity Behavior. Beverly Hills, Cal.: Sage Publications.

Rex, J. (1971)

"The concept of housing class and the sociology of race relations." *Race*, 12,3: 293-301.

Rex, J. and Moore, R. (1967)

Race Community and Conflict: A Study of Sparkbrook. London: Oxford University.

Riessman, F. (1964)

"The overlooked positives of disadvantaged groups." *Journal of Negro Education*, 33: 225-231.

- Roberts, J.M. Arth, M.J. and Bush, R.R. (1959)
"Games in culture." *American Anthropologist*, 61, 4: 597-605.
- Roberts, J.M. and Sutton-Smith, B. (1962)
"Child training and game involvement." *Ethnology*, 1: 166-185
- Roper, R. and Hinde, R.A. (1978)
"Social behaviour in a play group: Consistency and complexity." *Child Development*, 49: 570-579.
- Rose, G. (1970)
The Working Class. London: Longman
- Rosen, B. (1956)
"The achievement syndrome: A psychocultural dimension of social stratification." *American Sociological Review*, 21: 203-211.
- Rosen, B. (1959)
"Race, ethnicity and the achievement syndrome." *American Sociological Review*, 24: 47-60.
- Rosen, C.E. (1974)
"The effects of sociodramatic play on problem-solving behaviour among culturally disadvantaged preschool children." *Child Development*, 45: 920-927.

Rosen, H. (1974)

A Critical Look at the Theories of Basil Bernstein.

Bristol: Falling Wall Press.

Rosenberg, B.G. and Sutton-Smith, B. (1960)

"A revised conception of masculine-feminine differences in play activities." *Journal of Genetic Psychology*, 96: 165-170.

Rosenthal, R. and Jacobson, L. (1968)

Pygmalion in the Classroom. New York: Holt, Rinehart and Winston.

Rousseau, J.J. (1977)

Emile. Rousseau's Socratic Aemilian Myths. A literary collation of Emile and the Social Contract by Madeleine, B, Ellis. Columbus: Ohio State University Press.

Rubin, K. (1975)

"The relationship of social play preference to role-taking skills in preschool children." *Unpublished Manuscript*, Waterloo University.

Rubin, K. (1976)

"Relation between social participation and role-taking skill in preschool children." *Psychological Reports*, 46: 823-826.

Rubin, K. and Dyck, L. (1980)

"Preschoolers' private speech in a play setting." *Merrill-Palmer Quarterly*, 26, 3: 220-229.

Rubin, K.H. Maioni, T.L. and Hornung, M. (1976)

"Free play behaviours in middle-and lower-class preschoolers: Parten and Piaget revisited." *Child Development*, 47: 414-419.

Rycroft, C. (9th April 1961)

"The Kleinian viewpoint." Article in *The Observer*.

Sackett, G.P. (ed.). (1978)

Observing Behaviour: Data Collection and Analysis Methods,
Vol. 2. Baltimore: Baltimore University Park Press.

Saifullah Khan, V. (1974)

"Pakistani villagers in a British city. The world of the Mirpuri villager in Bradford and in his village of origin." *Unpublished Ph. D Thesis*, Bradford University.

Saifullah Khan, V. (1976)

"Pakistani woman in Britain." *New Community*, 5: 99-108.

Salili, F. Maehr, M.L. and Gillmore, G. (1976)

"Achievement and morality: A cross-cultural analysis of causal attribution and evaluation." *Journal of Personality and Social Psychology*, 33: 327-337.

Salter, M.A. (1974)

"Play: A medium of cultural stability." Paper presented at the *International Seminar on the History of Physical Education and Sport*. Vienna, Austria.

- Sanford, R.N. Adkins, M.M. Miller, R.B. and Cobb, E.A. (1943)
"Physique, personality and scholarship: A cooperative study of school children." *Monographs of the Society for Research in Child Development*, 8, 1: Serial No.34.
- Sapir, E. (1921)
Language: An Introduction to the Study of Speech.
New York: Harcourt, Brace and World.
- Sapora, A.V. and Mitchell, E. (1961)
The Theory of Play and Recreation. New York: Barnes.
- Sartre, J.P. (1975)
Being and Nothingness. New York: Washington Square Press.
- Schiller, F. (1862)
Über die Ästhetische Erziehung des Menschen, in einer Reihe von Briefen, in Sämt, Werke. 12: 1-112. Stuttgart: Cotta'scher Verlag.
- Schiller, F. (1875)
Essays: Aesthetical and Philosophical. London: Bell.
- Schlosberg, H. (1947)
"The concept of play." *Psychological Review*, 54: 229-31.

Schwartzman, H.B. (1978)

Transformations: The Anthropology of Children's Play

New York: Plenum Press.

Sears, R.R. (1957)

"Identification as a form of behavioral development." In D.B.Harris, (ed.), *The Concept of Development*. Minnesota: University of Minnesota.

Sears, R.R. Maccoby, E. and Levin, H. (1957)

Patterns of Child Rearing. New York: Harper and Row.

Sears, R.R. Whiting, J. Nowlis, V. and Sears, P.S. (1953)

"Some child-rearing antecedents of aggression and dependency in young children." *Genetic Psychology Monographs*, 47: 135-234.

Shacter, H. (1933)

"A method for measuring sustained attention of preschool children." *Journal of Genetic Psychology*, 1933: 42, cited in C.Bühler 1956: 98. *From Birth to Maturity: An Outline of the Psychological Development of the Child*. London: Routledge and Kegan Paul.

Shanz, C. (1975)

"The development of social cognition." In E.Hatherington, (ed.), *Review of Child Development Research*, Vol.5. Chicago: Chicago University Press.

Sheridan, M.D. (1977)

Spontaneous Play in Early Childhood. Windsor, NFER.

- Siegel, A.E. Stolz, L.M. Hitchcock, A.E. and Adamson, J. (1959)
 "Dependence and independence in the children of working mothers." *Child Development*, 30: 533-546.
- Simey, T.S. (1946)
Welfare and Planning in the West Indies. London: Oxford University Press.
- Singer, J.L. (1966)
Daydreaming: An Introduction to the Experimental Study of Inner Experience. New York: Random House.
- Singer, J.L. (1973)
The Child's World of Make-believe. New York: Academic Press.
- Singh, K. (ed.). (1960)
Selections from the Sacred Writings of the Sikhs. London: Allen and Unwin.
- Sisson, G. (1903)
 "Children's play." In E.Barnes (ed.), *Studies in Education: A Series of Ten Numbers Devoted to Child Study and the History of Education, 1806-97*. Philadelphia, 1903, cited in E.Fales, "A comparison of the vigorousness of play activities of preschool boys and girls." *Child Development*, 1937: 8: 144-158, cited on page 144.

Slobin, D. (1964)

"The fruits of the first season: A discussion of the role of play in childhood." *Journal of Humanistic Psychology*, 4, 1: 59-76.

Smilansky, S. (1968)

The Effects of Sociodramatic Play on Disadvantaged Preschool Children. New York: Wiley.

Smith, B. (1963)

Portrait of India. London: Hall.

Smith, D. (1977)

Racial Disadvantage in Britain. The PEP Report. Harmondsworth, Middx.: Penguin.

Smith, M.G. (1965)

The Plural Society in the British West Indies. California: University of California Press.

Smith, P.K. (1970)

"Social and play behaviour of preschool children." *Unpublished Ph.D Thesis*, Sheffield University.

Smith, P.K. (1974)

"Ethological methods." In B.Foss, (ed.), *New Perspectives in Child Development*, Harmondsworth, Middx.: Penguin.

Smith, P.K. (1977)

"Social and fantasy play in young children." In B.Tizard and D.Harvey, (eds.), *The Biology of Play*. London: Heinemann.

Smith, P.K. (1978)

"A longitudinal study of social participation in preschool children: Solitary and paralalled play re-examined." *Developmental Psychology*, 14: 517-523.

Smith, P.K. and Connolly, K.J. (1972)

"Patterns of play and social interaction in preschool children." In N.Blurton Jones, (eds.), *Ethological Studies of Child Behaviour*. Cambridge: Cambridge University Press.

Smith, P.K. and Connolly, K.J. (1977)

"Social and aggressive behaviour in preschool children as a function of crowding." *Social Science Information*, 16, 5: 601-620.

Smith, P.K. and Connolly, K.J. (1980)

The Ecology of Preschool Behaviour. Cambridge: Cambridge University Press.

Smith, P.K. and Dodsworth, C. (1978)

"Social class differences in the fantasy play of preschool children." *Journal of Genetic Psychology*, 133: 183-190.

Smith, P.K. and Dutton, S. (1979)

"Play training in direct and innovative problem solving."
Child Development, 50: 830-36.

Smith, P.K. and Syddal, S. (1978)

"Play and non-play tutoring in preschool children: Is it
play or tutoring which matters?" *British Journal of
Educational Psychology*, 48: 315-325.

Smith, T. (1980)

Parents and Preschool London: Grant McIntyre.

Sommer, R. (1969)

Personal Space. New York: Prentice Hall.

Spencer, H. (1901)

The Principles of Psychology. Vol. 2. New York: Appleton.

Stallibrass, A. (1977)

*The Self-respecting Child: A Study of Children's Play and
Development*. Harmondsworth, Middx.: Penguin.

Stern, W. (1930)

Psychology of Early Childhood up to the Sixth Year of Age.
New York: Holt.

Stevenson, H.W. and Stewart, E.C. (1958)

"A developmental study of racial awareness in young children." *Child Development*, 29: 399-409.

Stewart, A. Prandy, K. and Blackburn, R.M. (1981)

Social Stratification and Occupations. London: Macmillan.

Stodolsky, S.S. (1974)

"How children find something to do in preschools." *Genetic Psychology Monographs*, 90: 245-303.

Stone, G.P. (1971)

"The play of little children." In R.E.Herron and B.Sutton-Smith, (eds.), *Child's Play*. New York: Wiley.

Stone, L. (1977)

The Family: Sex and Marriage in England 1500-1800. London: Weidenfeld and Nicolson.

Stone, M. (1981)

The Education of the Black Child in Britain: The Myth of Multiracial Education. Glasgow: Fontana.

Storey, K.S. (1976)

"Field study: Children's play in Bali." In D.F.Lancy and B.A.Tindall, (eds), *The Anthropological Study of Play: Problems and Prospects*. Cornwall, New York: Leisure Press.

Strandberg, T.E. and Griffeth, J. (1968)

A Study of the Effects of Training in Visual Literacy on Verbal Language Behavior. Eastern Illinois: Eastern Illinois University Press

Stycos, J.M. and Back, K.W. (1964)

The Control of Human Fertility in Jamaica. New York: Cornell University Press.

Sutton-Smith, B. (1967)

"The role of play in cognitive development." *Young Children*, 8: 361-370.

Sutton-Smith, B. (1971)

"Children at play." *Natural History*, December, Special Supplement on Play, 54-60.

Sutton-Smith, B. (December 1971)

"Child's play, very serious business." *Psychology Today*, 67-87.

Sutton-Smith, B. and Savasta, M. (1972)

"Sex differences in play and power." Paper delivered at the *Annual Meeting of the Eastern Psychological Association*, Boston, 1972: Reprinted in *The Dialectics of Play*.

Schorndoff, West Germany: Verlag Hoffman, 1976.

Swan, C. (1938)

"Individual differences in the facial expressive behaviour of preschool children: A study by the time sampling method." *Genetic Psychology Monographs*, 20: 557-650.

Swift, D.F. (1965)

"Social class and achievement motivation." *Educational Research*, 8: 83-95.

Sylva, K. Bruner, J.S. and Genova, P. (1976)

"The role of play in the problem-solving of children 3-5 years old." In J.S.Bruner, A.Jolly and K.Sylva, (eds.), *Play: Its Role in Development and Evolution*. Harmondsworth, Middx.: Penguin.

Sylva, K. Roy, C. and Painter, M. (1980)

Child Watching at Playgroup and Nursery School. London: Grant McIntyre.

Takata, N. (1974)

"Play as a prescription." In M.Reilly, (ed.), *Play as Exploratory Learning*. Beverly Hills.: Sage Publications.

Tatsuoka, M.M. (1970)

Discriminant Analysis: The Study of Group Differences. Champaign, Illinois: The Institute for Personality and Ability Testing.

Terman, L.M. (1926)

Genetic Studies of Genius, Vol.1. Stanford, Cal.: Stanford University Press.

Terry, P.T. (1979)

"An investigation of some cultural determinants of English organization behaviour." *Unpublished Ph.D Thesis*, Bath University.

Thomas, D.S. (1932)

"An attempt to develop precise measurements in the social behavior field." *Sociologus*, 8: 436-56.

Thomas, D.S. Loomis, A.M. and Arrington, R.E. (1933)

Observational Studies of Social Behaviour: Social Behaviour Patterns, Vol.1. Institute of Human Relations, New Haven: Yale University.

Thompson, D.H. (1976)

"An ethological study of dominance hierarchies in preschool children." *Unpublished Manuscript*, 1967, cited by P.K.Smith, "Social and play behaviour of preschool children." *Unpublished Ph.D Thesis*, Sheffield University, 1970: 28 and 29.

Thompson, H. (2nd September 1936)

"Spontaneous play activities of five-year old children." Paper read at the meeting of *The American Psychological Association*, 1936, cited by M.Rabban "Sex-role identification in young children in two diverse social groups." *Genetic Psychology Monographs*, 1950, 42: 81-158, page 110.

Tizard, B. (1974)

"Do social relationships affect language development?!" In
K. Connolly and J.S. Bruner, (eds.), *The Growth of Competence*.
London: Academic Press.

Tizard, B. (1975)

Early Childhood Education. Slough: Social Science Research
Council/National Foundation for Education Research.

Tizard, B. and Harvey, D. (eds.). (1977)

Biology of Play. London: Heinemann.

Tizard, B. Philps, J. and Plewis, J. (1975)

"Play in pre-school centres - I. Play measures and their
relation to age, sex and IQ." *Journal of Child Psychology
and Psychiatry*, 17: 251-264.

Tizard, B. Philps, J. and Plewis, J. (1976)

"Play in pre-school centres - II. Effects on play of the
child's social class and of the educational orientation of
the centre." *Journal of Child Psychology and Psychiatry*,
17: 265-274.

Tizard, J. Moss, P and Perry, J. (1976)

All Our Children: Pre-school Services in a Changing Society.
London: Temple Smith.

- Tizard, B. Carmichael, H. Hughes, M. and Pinkerton, G. (1981)
 "Four year olds talking to mothers and teachers."
Monographs of the Journal of Child Psychiatry and Psychology,
 cited in D.Wood, L.McMahon and Y.Cranstoun, (eds.),
Working with Under Fives. London: Grant McIntyre, 1980:
 201-203.
- Tomkins, S.S. (1962 - 1963)
Affect, Imagery, Consciousness. Vols. 1. and 2. New York:
 Springer.
- Tough, J. (1977)
The Development of Meaning. London: Allen and Unwin.
- Trager, H.G. and Radke-Yarrow, M. (1952)
They Learn What They Live. New York: Harper.
- Turnbull, C. (1961)
The Forest People. New York: Simon and Schuster.
- Turner, I.F. (1977)
Preschool Playgroups Research and Evaluation Project.
 Final report submitted to the Government of Northern
 Ireland Department of Health and Social Services,
 Department of Psychology, The Queens University, Belfast.

Tylor, E.B. (1924)

Primitive Culture: Researches into the Development of Mythology, Philosophy, Religion, Language, Art and Custom.
New York: Brentano's (originally published 1871).

Valmiki. (1953-1959)

The Ramayana. Translated by Hari Prasad Shastri, London: Shanti Sadan, 1953-1959. Reprinted London: Shanti Sadan, 1962-1970.

Vance, T.F. and McCall, L.T. (1934)

"Children's preferences among play materials as determined by the method of paired comparisons of pictures." *Child Development*, 5: 267-277.

Veroff, J. (1965)

"Theoretical Background for studying the origins of human motivation dispositions." *Merrill-Palmer Quarterly*, 11, 1: 15-20.

Vos, G.A. de. (1973)

Socialization for Achievement. Berkeley, Cal.: University of California Press.

Vygotsky, L.S. (1962)

Thought and Language. Cambridge, Mass.: MIT Press.

Vygotsky, L.S. (1967)

"Play and its role in the mental development of the child."

Soviet Psychology, 5: 6-18.

Waddell, G.W. (1918)

An Introduction to Child Psychology. New York: Houghton
Mifflin.

Waelder, R. (1933)

"The psychoanalytic theory of play." *Psychoanalytic
Quarterly*, 2: 208-224.

Walters, J. Pearce, D. and Dahms, L. (1957)

"Affectional and aggressive behavior of preschool children."
Child Development, 28: 15-26.

Ward, R. (1970)

"Some aspects of religious life in an immigrant area in
Manchester." In D.Martin and M.Hill, (eds.), *A Sociological
Year Book of Religion in Britain*, 3. London: SCM. Press.

Warner, W.L. Meeker, M. and Eells, K. (1949)

Social Class in America. Chicago: Sci. Res. Ass.

Warren, N. (ed.). (1980)

Studies in Cross Cultural Psychology, Vol. 2. London:
Academic Press.

Washburn, R.W. (1932)

"A scheme for grading the reactions of children in a new
social situation." *Journal of Genetic Psychology*, 40: 84-99.

Washburn, S.L. and Hamburg, D.A. (1965)

"The implications of primate research." In I.DeVore, (ed.),
Primate Behavior. New York: Holt, Rinehart and Winston.

Weber, M. (1930)

"Die protestantische Ethik und der Geist des Kapitalismus."
Archiv fur Sozial Wissenschaft und Sozial Politik, 1940,
20: 1-54: 1905, 21: 1-110. Translated by T.Parsons and
published as *The Protestant Ethic and the Spirit of
Capitalism.* New York: Scribner. 1930.

Weber, M. (1961)

"The social psychology of the world religions." In H.H.Gerth
and C.Wright Mills, (eds.), *From Max Weber: Essays in
Sociology.* New York: Oxford University Press.

Weber, M. (1971)

Religionssoziologie, 1922, Germany: J.C.B.Mohr, Paul Siebeck,
translated by Ephraim Fischhoff, and published as *The Sociology
of Religion*. London: Methuen, 1971.

Weikert, D.P. Epstein, A.S. Schweinhart, L. and Bond, J.T. (1978)

*The Ypsilanti Preschool Curriculum Demonstration Project:
Preschool Years and Longitudinal Results*. Ypsilanti,
Michigan: High Scope.

Welker, W.I. (1956)

"Some determinants of play and exploration in chimpanzees."
Journal of Comparative and Physiological Psychology,
49: 181-5.

Welker, W.I. (1961)

"An analysis of play and exploratory behaviour in animals."
In D.W.Fiske and S.R.Maddi, (eds.).
Functions of Varied Experience. Homewood, Illinois:
Dorsey Press.

White, B. (1971)

"An analysis of excellent early educational practices: preliminary report." *Interchange* (Ontario Institute for Studies in Education, Toronto,) 2, 2: 71-88. Cited in C.Cazden, "Paradoxes of language structure." page 214. In K.Connolly and J.S.Bruner, (eds.). 1974. *The Growth of Competence*.

White, R.W. (1959)

"Motivation reconsidered: The concept of competence." *Psychological Review*, 66: 297-333.

White, R.W. (1960)

"Competence and the psychosexual stages of development." In M.R.Jones, (ed.), *Nebraska Symposium on Motivation*. Lincoln: University of Nebraska.

Whiting, B.B. (ed.). (1963)

Six Cultures: Studies of Child Rearing. New York: Wiley.

Whiting, B.B. and Edwards, C.P. (1973)

"A cross-cultural analysis of sex differences in the behavior of children aged 3 through 11." *Journal of Social Psychology*, 91: 171-188.

Whiting, B.B. and Whiting, J.W.M. (1975)

Children of Six Cultures: A Psycho-Cultural Analysis. Cambridge, Mass.: Harvard University Press.

Whiting, J.L. (1965)

"Determinants of psychosexual orientation." In F.A.Beach, (ed.),
Sex and Behaviour. New York: Wiley.

Whorf, B. (1941)

"The relation of habitual thought and behaviour to language."
In P.Adams, (ed.), *Language in Thinking*. Harmondsworth, Middx.:
Penguin, 1972.

Williams, R. (1961)

Culture and Society. Harmondsworth, Middx.: Penguin.

Willis, P. (1979)

"Shop floor culture, masculinity and the wage form." In
J.Clarke, C.Critcher and R.Johnson, (eds.), *Working Class
Culture*. London: Hutchinson.

Wilson, A. (1978)

"A burning fever: The isolation of Asian women in Britain."
Race and Class, 20, 2: 129-142.

Wilson, B.R. (1966)

Religion in Secular Society: A Sociological Comment.
London: Watts.

Winterbottom, M.R. (1958)

"The relation of need for achievement to learning experiences in independence and mastery." In J.W. Atkinson, (ed.), *Motives in Fantasy, Action and Society*. Princeton: Van Nostrand.

Wohl, A. (1974)

"The social conditioning of play in motion." *International Review of Sport Sociology*, 9, 7: 63-79.

Wolf, W. (1973)

"Effects of live modeled sex-inappropriate play behavior in a naturalistic setting." *Developmental Psychology*, 9, 1: 120-123.

Wood, D. Bruner, J.S. and Ross, G. (1976)

"The role of tutoring in problem solving." *Journal of Child Psychology and Psychiatry*, 17, 2. 89-100.

Wooton, A.J. (1974)

"Talk in the homes of young children." *Sociology*, 8: 277-295.

Wundt, W. (1913)

Grundriss der Psychologie. Leipzig: Kroner.