

SOME PSYCHO-SOCIAL ASPECTS  
OF CHILDHOOD ASTHMA

PETER MICHAEL MURRAY

A dissertation submitted for the degree of Doctor of Philosophy  
University of Stirling  
Department of Psychology

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## ABSTRACT

Asthma is one of the most frequently reported types of chronic illness in children. In an attempt to increase our understanding of childhood asthma in general, and of the individual variations in its clinical severity and the epidemiological variations in its prevalence, a series of social psychological investigations were conducted. Thirty children with asthma and their mothers were interviewed about various facets of the illness. Content analysis of their replies showed that the children with the more mild clinical symptoms, and their mothers, had the more optimistic and sophisticated views of the nature of, and treatment for, asthma. It is suggested that such views may actually help diminish the clinical severity of the children's asthma. The thirty children with asthma and thirty others without asthma answered a test designed to examine how 'responsible' they considered children with and without asthma to be. The children without asthma praised children with asthma more than they blamed them, whereas they blamed children without asthma more than they praised them. This attributional tendency would discourage children without asthma from interacting with children who they perceived as having asthma. The children with asthma, themselves, praised both children with and without asthma more than they blamed them. This attributional tendency would induce a feeling of helplessness, a sensitivity to adverse comments, and a desire for frequent praise among children with asthma. Both groups of children described their friends and their families. The children with asthma were less able to

differentiate their friends and their siblings from themselves and their environment. These children would be awkward in their interaction with their peers and siblings and would find it difficult to establish stable relationships with them. Their reported lack of participation in physical games would exaggerate these problems. The children with more severe clinical asthma reported certain peculiarities in their homelife which may be a reaction to the illness. Teachers answered a questionnaire about the children's classroom behaviour. The children with asthma were more often described as withdrawn and lacking in confidence. The children with more clinically severe asthma were more dissatisfied with school. In conclusion, the different findings are drawn together to provide a social psychological explanation of the different characteristics of childhood asthma. As a result, certain therapeutic strategies are suggested which might help diminish both the extent of the psychological problems of children with asthma and the clinical severity of their illness.

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## INTRODUCTION AND OVERVIEW

This thesis attempts to demonstrate the inadequacies of the contemporary medical explanation of childhood asthma and to explore some psycho-social perspectives which might lead to a better understanding of the phenomenon. It starts from an acceptance of the claim that any explanation of illness is intermeshed with "the ideas of the nature of life and man characteristic of a culture at any given time" (Rather, 1958). Just as scientific theories, in general, have been shaped by prevailing world views (Kuhn, 1970), the medical approach to the study of illness has been conditioned by a particular view of Man.

In Chapter I that "peculiarly objectified view of life and man" (Rather, 1958) typical of contemporary medicine is outlined. This view of Man, together with the scientific technique devised by Bacon, are shown to provide the essentials of the medical method of investigations. The first stage of this method is the description of the individual characteristics of illness apparent to the attending clinician, and also of the distribution of these illness characteristics throughout the population as observed by the epidemiologist. Applying this stage of the medical method to childhood asthma some interesting variations in the severity and prevalence of the problem are revealed.

In Chapter II the second stage of the medical method is explained. This stage is primarily concerned with identifying the physiological causes of different symptoms. If necessary a secondary aim is the identification of those environmental

factors which provoke the physiological lesion leading to the production of symptoms.

It is explained that the physiological basis of childhood asthma is located in the sensitive airways of certain children. However, measures of the sensitivity of children's airways have been found not to correspond with measures of the clinical severity of the children's asthmatic symptoms, i.e. some children with very sensitive airways may have few symptoms, while others with barely sensitive airways may have many symptoms. One explanation for this disparity lies in the priming role of the vagal reflex. Arousal of the vagal reflex would lead to increased sensitization of the bronchial tract such that it would react more precipitously to various stimuli. Although this psychosomatic model could help explain the individual variations in the clinical severity of children's asthma, it is only a partial explanation. The question remains as to why certain children have more aroused vagal reflexes than others.

In an attempt to resolve this inadequacy in the basic medical model, psychiatrists extended the second stage to an investigation of the sick individual's mind and of his social situation. The application of this extended stage to the investigation of childhood asthma is considered in Chapter III. Adopting an approach similar to that used in physical medicine, psychiatrists have attempted to objectively describe the assumed abnormal behavioural characteristics of children with asthma, their inner psychopathology and their outer sociopathology. Using clinical and psychometric techniques, some produced

evidence to show that children with asthma have 'neurotic' behaviour patterns, a 'neurotic' personality and a 'neurotic' family structure. However, the actual existence of such stereotyped characteristics can be criticised on several grounds. Notwithstanding these methodological and theoretical criticisms, the psychiatric investigation of childhood asthma has not provided an explanation of the clinical and epidemiological variations of the illness, nor has it encouraged the design of new therapeutic techniques.

Realising that the medical approach to the study of illness, based upon the Cartesian conception of Man and a positivist method of enquiry, is insufficient for an understanding of childhood asthma, it is suggested in Chapter IV that an alternative perspective be developed. Following Heider's (1958) advice, the strategy proposed is to begin with the layman's point of view. In everyday life, Man is conceived as an active social being who intends his behaviour and can be held responsible for it. Illness is considered to be an unpleasant experience which restricts the sick person's everyday activities. This perspective rejects the equating of illness symptoms with individual physiological impairment. Instead, it suggests that the clinical characteristics of illness should be considered as a psychosocial, as well as a physiological, construction. To understand the clinical characteristics of childhood asthma it would be necessary to consider what the sick child thinks of the illness, and how the sick child defines his position in the world and how that position is defined by others. A series of

studies which will attempt to examine these different factors and so increase our understanding of the psychological characteristics of children diagnosed as having asthma are suggested. This, in turn, may help explain the clinical and epidemiological variations in the severity and prevalence of the illness.

Before any specific details of the different investigations are provided, Chapter V outlines the characteristics of the thirty children with asthma and the thirty healthy children who participated in this study. The severity of the children's asthma is classified according to two criteria: physiological and clinical. Since sensitive airways are the basic physiological lesion in childhood asthma, the bronchial sensitivity of the children with asthma is estimated using lung function tests. This provides a physiological classification of the severity of the children's asthma. In addition, the clinical severity of the children's asthma is assessed using information provided by the children, their mothers and their doctors. Comparison of these two measures confirms that the clinical severity of children's asthma is not explained by the physiological classification of their bronchial sensitivity.

The first attempt to provide a social psychological explanation of the individual variations in the clinical severity of the children's asthma is considered in Chapter VI. This study considers the possible value of understanding how the children themselves, and their mothers, view the illness. The results revealed that the children with the most sophisticated understanding of the illness had fewer clinical

symptoms, irrespective of their bronchial sensitivity. While this may be part of the explanation for the clinical variations, other factors are involved.

To be sick in everyday life one must be socially defined as sick, and once one is so defined then that person is treated as sick, i.e. one is excused responsibility for failing to fulfil one's everyday obligations. In Chapter VII, it is considered whether certain children with asthma are defined as sick and relieved of their responsibilities more readily than others. It is possible that such a variable social definition of children with asthma as sick would explain the clinical and epidemiological variations in the severity and prevalence of the illness.

After reviewing previous empirical work which has investigated the 'responsible' nature of Man, a test is devised to examine how children with and without asthma attribute responsibility to actors with and without asthma. Certain attributional tendencies in the children's replies suggest that children with asthma are excluded from social interaction with their healthy peers and develop certain psychological characteristics. In addition, different attributional tendencies were found to be associated with the children's ages, sex and families' social class. The possible value of these findings in explaining the epidemiological variations in the prevalence of childhood asthma are discussed in the final chapter.

The medical conception of Man as a passive individual

encouraged the development of the belief that children with asthma have certain behavioural abnormalities which have their roots in a certain personality structure and in a certain family structure. The active conception of Man rejects this belief that human behaviour is mechanistically caused. Rather, it asserts that human behaviour has a social meaning and if it is to be understood it is necessary to examine the actors' own understanding of his social reality.

In Chapter VIII, the social behaviour of children with asthma is investigated by examining how they describe their friends. A review of the literature on person perception reveals the value of a detailed analysis of how children describe their friends in providing both an understanding of the children's social relations and, also, of their cognitive processes. How we interact with people around us depends partly upon how we perceive them. As we develop, our greater experience of social interaction enables the development of sophisticated cognitive processes leading to greater success in our social relations. Our study reveals the characteristics of the cognitive processes of children with asthma and so helps us understand the characteristics of their social behaviour.

In Chapter IX, the familial characteristics of children with asthma are considered. The family of children with asthma has frequently been identified as the prime psychological factor in the development of the illness. Rejecting the psychometric approach to the investigation of family relations, this study examines how children with asthma describe their siblings and parents. Detailed content analysis of their

descriptions reveals certain characteristics of the families of children with asthma. The possible endemic nature of these characteristics are discussed with reference to other findings.

The final investigation, reported in Chapter X, considers the children's school life. Once again, it is emphasized that to understand human behaviour it is insufficient to merely provide an 'objective' description of it. The validity of previous such 'objective' descriptions of classroom behaviour of children with asthma is discussed. The investigation considers whether teachers provide a stereotyped description of children with asthma. The findings are discussed in relation to the children's own views of school life and in relation to the findings of the other studies.

In the concluding chapter, the different findings are drawn together and an attempt is made to provide a social psychological explanation of the clinical and epidemiological variations in the severity and prevalence of childhood asthma.

## CHAPTER I

## IDENTIFICATION OF THE MEDICAL PROBLEM

1.1 Introduction

The term asthma is derived from a Greek word meaning bad breathing or panting. Indeed some of the earliest references to asthma as a health problem have been traced to ancient Greek civilization. Aristotle mentioned that a "harmonious mind" aided the recovery of a person with asthma. Hippocrates gave the well known advice that a person suffering from asthma should "guard against his own anger."

However, the contemporary medical approach to the understanding of asthma only began about the time of the French Revolution. That was the period when the ideas of Bacon and Descartes began to be accepted and applied by the medical profession. Yet those ideas had entered Western thought almost two centuries earlier.

During the Renaissance Francis Bacon (1561-1626) had championed the idea that Man knew nothing except that which Nature revealed to him. If Man was to understand Life he had to observe carefully the world about him free from any interfering preconceptions. Using this technique Man would be able to build up a large collection of objective facts from which he could inductively discern the pattern of Life. Bacon's argument for the use of this technique was partly moralistic. He claimed that his method involved

"keeping the eye steadily fixed upon the facts of nature, and so receiving the images simply as they are; for God forbid that we should give out a dream

of our imagination for a pattern of the world" (Brockington, 1966).

This new "scientific method" signalled "a change in the entire outlook of thinking men, who sought to escape from the tyranny of dogmatic scholasticism, and from the traditional limitations imposed by the Church" (Guthrie, 1945).

A little later René Descartes (1596-1650) expounded the dualistic conception of Man as an individual entity composed of a material body and a spiritual soul or mind. The body was like a machine whose operations could be understood by the application of those mechanical laws which were then being expressed in the natural sciences, viz. "the body is nothing more than a statue or machine of clay." The mind was conceived as a direct expression of God and so its workings could not be understood by a merely human science.

The ideas of Bacon and Descartes urged physicians to objectively observe and record the characteristics of illness which could later be explained by an understanding of the operations of the human body. Although the medical profession in the seventeenth century largely accepted the ideas of Bacon, legal difficulties concerning the procurement of human bodies for forensic examination prevented the accumulation of a systematic pathology with which to explain illness.

Despite these restrictions, physicians like Thomas Sydenham (1624-1681), the "English Hippocrates," strove to develop the techniques of modern clinical medicine with its emphasis on the careful observation and recording of the characteristics of the individual patient. Their efforts to record and classify the

innumerable characteristics of illness went to enormous lengths <sup>10</sup> during the eighteenth century, especially in France, where we had the growth of the nosological school of medicine. This school classified illness according to the symptoms observed. The symptoms were those apparently objective characteristics of an individual patient which were considered abnormal by the attending physicians. Commenting on the inductive nature of the clinical approach Rather (1958) noted:

"the clinician has always been reluctant to believe that he himself has introduced the elements of order into the phenomena; he prefers to think that he has only discerned what was already there."

Restricted in their physiological research, the eighteenth century physicians concentrated their medicinal efforts on the alleviation of individuals' symptoms which were inductively classified according to the principles of Nature.

Today the technique of observing and recording the details of the illness symptoms, "without disturbing them with discourse" (Foucault, 1973), is the hallmark of clinical medicine. Recently Mechanic (1978) described this approach thus:

"In making a diagnosis the physician compares observations of the patient and the symptoms he reports with various medical norms based in part on scientific observations and research and in part on clinical experience."

Closely allied to this clinical method of enquiry is the science of epidemiology. Whereas clinical medicine attempts to observe and record dispassionately the individual patient's

symptoms, epidemiology attempts to map out the distribution of these objective symptoms in the general population.

The science of epidemiology can also trace its modern history back to the seventeenth century, when in 1662 John Grant published his "Natural and Political Observations mentioned in a Following Index and made upon the Bills of Mortality." In this he classified deaths by causes and noted the regional, seasonal, and annual variations in the death rates. He found, among other things, that not only was mortality higher in the towns but that it was also growing (Wain, 1970).

One of the main techniques of epidemiology is to compare the distribution of illnesses in different populations and then to relate this to the factors which distinguish the populations from one another. Careful comparison of the observations might then reveal some of the necessary conditions for the appearance of the illness and so increase understanding of the problem. Early in this century one epidemiologist proudly described this approach as "an inductive science concerned not merely with describing the distribution of disease, but equally or more with fitting it into a consistent philosophy" (Frost, 1927).

Perhaps frustrated by restrictions on physiological investigations, many physicians turned to this new science based upon a wider application of the inductive principles of clinical medicine. By examining both the clinical and epidemiological techniques of modern medicine, we can begin to understand the contemporary explanation of childhood asthma.

## 1.2 Asthmatic symptoms

Although clinicians may have believed that the boundaries for the classification of any group of objectively defined symptoms were arranged by Nature, this did not prevent confusion in the application of the term asthma. "In the past 'asthma' has been used to refer to almost any sort of difficulty in breathing, especially if it occurred in episodes, no matter what its cause" (Scadding, 1977). In an attempt to standardize the use of the term, a recent conference (Ciba Foundation Study Group, 1971) accepted a symptomatic definition of 'recurrent bouts of wheezing and breathlessness' as being most in keeping with current medical practice.

Such a brief definition concealed the wide variety in the frequency and intensity of asthmatic bouts or attacks recorded by clinicians. Godfrey (1977) described various patterns asthmatic symptoms could take with different children. Most children, apparently, have only mild, infrequent bouts of wheezing with long symptom-free intervals. Other children have more regular severe bouts or even persistent wheezing. However, whatever the pattern the symptoms may take, with any child, occasionally, an acute exacerbation of the wheezing and breathlessness can occur. This particular phenomenon is called status asthmaticus.

The onset of such an attack has individual variations. In some cases it may be a gradual progression from a milder form of wheezing. In other cases it can develop quite rapidly. The breathing sounds harsh and laboured and often large blobs of mucus are expelled. The child usually becomes exhausted by the difficulty in breathing, yet often finds it difficult to sleep.

Such attacks frequently subside after a few hours, although in some cases they may last for several days.

The majority of children who present bouts of wheeziness first exhibit the symptoms before five years of age (Ford, 1969; Godfrey, 1977). The exact details of the original attack vary, although Chong (1977) reported that it seems to begin most frequently after some childhood infection, especially a respiratory infection. Godfrey (1977) claimed that quite often these young children are troubled by cough, especially at night, rather than frank wheezing.

A skin disorder, known as infantile eczema, is frequently associated with early childhood asthma. This usually begins a few weeks after birth but tends to disappear after 2 or 3 years. By 7 or 8 years most of the children have lost all signs of eczema. The few children who retain the disorder are often those with the most severe asthma (Godfrey, 1977).

As the children mature the frequency and intensity of the asthmatic attacks may increase, but by 6 to 8 years the frequency of attacks usually diminishes, such that by their teens most children have lost all symptoms. However, some individuals continue wheezing throughout adolescence and into adulthood.

The wide variety in the frequency, intensity and duration of asthmatic symptoms is one of the main problems which medical science has attempted to explain in their investigations of childhood asthma.

### 1.3 Regional variations in the prevalence of childhood asthma<sup>14</sup>

The variety in the definitions of childhood asthma made it difficult for epidemiologists to compare regional estimates of the prevalence of the illness with the aim of increasing our understanding. This led Gregg (1977) to state recently:

"the contribution made by epidemiology to our knowledge of the pathogenesis of asthma has been disappointingly small. Indeed, there is still greater uncertainty about the prevalence of asthma than of most other common diseases."

Estimates as to the extent of the problem, however, abound.

In his review, Gregg (1977) cited several British and American studies which ranged in their estimates of the prevalence of childhood asthma from 1.5% to 5.1%. In Australasia the prevalence estimates were higher, ranging from 5.4% to 7.4%, although one study (Brown, 1973) obtained a rate of 20% for the eastern states of Australia. Commenting on these figures, Godfrey (1977) reckoned that 5-10% was an accurate estimate of the prevalence of childhood asthma in Western countries. This would mean that up to half a million children between the ages of 5 and 14 years in England and Wales, alone, exhibit asthmatic symptoms. The Office of Population Censuses and Surveys (1974) has estimated that in 1970-71 over 100,000 children from this age group consulted their doctor about asthma. This suggests that although an accurate estimate of the prevalence of childhood asthma may not be available, it does apparently afflict a large number of children in Western society.

However, prevalence estimates for under-developed countries

reveal some striking comparisons. For example, Anderson (1974) found no evidence of childhood asthma among the Papua New Guinean highlanders. Herxheimer (1964) reported that before 1931 asthma had not been observed among North American Indians, but by 1964 the number of clinic admissions for asthma had reached 0.26% of the total Indian intake. In 1974 Herxheimer and Schaffer reported that only 3 out of 5,000 Eskimos, admitted to hospital in Edmonton, Canada, between 1946 and 1973, had asthma. They also referred to a Canadian government report based on an analysis of the Medicare cards of the Eskimos of the North West Territories. This showed a yearly rate for asthma of only 0.08% in 12,070 Eskimos, 0.06% in 7339 Indians and 0.86% in 17,775 others.

Earlier, Lask (1966) had referred to a study by Ehrstrom (1951) which found only one case of asthma among a population of 1500 in the town of Umanak, Greenland, and a further three cases suffering from some allergic disorder. Interestingly, Ehrstrom reported that the four individuals were "part-trained", i.e. had acquired the mode and customs of the West. For this reason, Lask described asthma as a disease of civilization.

Some confirmation of this claim was provided by a study Godfrey (1977) carried out in Gambia. He found no sign of asthma among a rural population of 1200 in three villages. Yet in the capital city of Gambia, less than 100 miles away, there were many cases of asthma. Since there was little apparent climatological difference between the rural area and the city, this would suggest that asthma could be considered a correlate of urbanization.

A series of studies by Smith and his colleagues (Smith et.al 1971; Smith, 1976) on the prevalence of asthma among immigrant

children in Birmingham, England, provided some support for the urbanization hypothesis. They found that Negro and Asian children were more likely to have asthma if they were born in England than if they were born abroad and later moved to England. He concluded that this difference in the prevalence rates was due to some unknown environmental conditions. He suggested that certain factors in the Western way of life, operating in the first few years of life, may prime certain children to present asthmatic symptoms later.

Although these studies tend to indicate that asthma is endemic of Western society, the case of Tristan da Cunha presents an anomaly. The inhabitants of this isolated island are highly inbred and its population numbered only 286 in 1971. It is known that three out of its original fifteen inhabitants (20%) had asthma. Gregg (1977) referred to a recent survey which mentioned that although the prevalence of asthma among the inhabitants had reached 49% in 1946, it had declined to 22% by 1971, along with a rise in living standards.

If we accept that the case of Tristan da Cunha is peculiar, there seems to be an overall tendency for the incidence of asthma to rise along with the development of a Western way of life. However, epidemiological research has not yet disentangled from the various dimensions of Western society those factors which are most closely associated with childhood asthma.

#### 1.4 Sex differences in the prevalence of childhood asthma

Most surveys have reported that twice as many boys as girls have asthma, although this difference tends to decrease with age.

In a survey of reported asthmatic symptoms among over 25,000 schoolchildren in Birmingham, Smith (1961) found that the ratio of boys to girls was 2.5:1 among 5-6 year old children, falling to 1.6:1 among 13-15 year olds. In a later study of a similar sample (Smith et al, 1971) a ratio of 2:1 for 5-18 year old children was obtained. Dawson et al (1969), in their survey of Aberdeen schoolchildren, found a ratio of boys to girls of 3.3:1 for 10 year olds, falling to 2.5:1 for 12 year olds.

Although these large epidemiological surveys suggest that asthmatic symptoms are more common among boys than among girls, this picture is complicated by clinical reports of sex differences in the severity of the symptoms. Smith (1961), Graham et al (1967), and Dawson et al (1969) considered boys to have more severe symptoms than girls. However, Godfrey (1977) reported that his clinical experience tended to suggest that girls had the more severe symptoms. Some confirmation of Godfrey's suggestions is provided by comparison of the sex ratio of children attending their local doctor and the hospital for help with asthma. The O.P.C.S. (1974) reported that the ratio of boys to girls for children with asthma attending their local doctor in 1970-71 was 2.4:1. However the Hospital Inpatient Enquiry (1972) reported that the ratio of boys to girls for children with asthma admitted to hospital in 1972 was 1.6:1. If only those children with the most severe asthmatic symptoms were admitted to hospital, it would seem that a larger than expected number of girls had severe symptoms.

An explanation of these sex differences is still apparently elusive, Purcell (1965) noted that it is surprising that such a challenge for research to solve has been neglected. Surprising or not, the challenge remains.

#### 1.5 Social class differences in the prevalence of childhood asthma

Consideration of social class differences in the prevalence of childhood asthma must also distinguish between general estimates of the extent of the problem, and more particular consideration of the severity of the asthmatic symptoms. The study by Graham et al (1967) supported the "widely held impression that asthma is more common in the upper social classes" (Gregg, 1977). Their estimate was based largely on an analysis of school medical records which contained information obtained from children's mothers. Analysis of the records of over 400 randomly selected 9 and 10 year olds found that twice the number expected of children from upper class families had asthma. Similarly, Hamman et al (1975) found that an excess of upper class parents reported asthma in their children. However, neither of these two studies could suggest any satisfactory explanation for the differences.

The results of the Aberdeen study complicate the issue. Dawson et al (1969) found that the children with severe asthmatic symptoms, according to clinical criteria, tended to come from working class families, and, also, from large families, regardless of social class. They suggested that better home conditions and less exposure to infection prevented the children from middle class families developing more severe asthmatic symptoms.

Overall, the evidence regarding the social class distribution

of childhood asthma is confusing. Although there may be a tendency for asthma to be more frequently observed among children from professional families, it seems that children from working class families are more likely to present severe symptoms.

#### 1.6 Variations in the incidence of childhood asthma between families

Many studies have suggested that asthma is a "family illness;" i.e. if the parents have asthma then their children are quite likely to have it also. Schwartz (1952) found that asthma occurred more frequently among the relatives of individuals with asthma than among the relatives of a group of controls. This was confirmed in a more extensive study by Leigh and Marley (1967). They compared the relatives of a randomly selected group of patients who had asthma with the relatives of a control group of patients on the list of general practitioners in London. They found more cases of asthma among the relatives of the patients with asthma than among the relatives of the control group. In 1964, Citron and Pepys reported that 89% of the Tristan da Cunha islanders who had asthma referred to a history of the illness in either their parents, siblings, or children, while only 72% of those who did not have asthma referred to such a family history.

Epidemiological surveys of asthmatic symptoms have not, however, revealed why asthma seems to follow in families.

#### 1.7 Asthmatic situations

The periodic nature of asthmatic bouts has encouraged careful consideration by clinicians of the conditions under which

the bouts most frequently occur. There seem to be wide individual variations in the conditions accompanying attacks. Some children have attacks during the winter, while others have attacks during the summer and are symptom-free in winter (Sarsfield, 1976). Some children wheeze in emotional situations (Tuft, 1957), some when exposed to dust (Simonson et al, 1967), and others after they contract an infection (Reed, 1974). Most children wheeze after strenuous exercise (Jones, 1966).

However the conditions for an attack in any particular individual are not consistent. A child might wheeze in an objectively defined situation, but not in a similarly defined situation, on a different occasion. For example, Long et al (1958) reported that a group of children who wheezed at home when exposed to housedust, did not wheeze when exposed to the same dust in hospital.

In addition, various physicians have suggested that there are sex differences in the type of situation which is asthma-provoking. For example, Crocket (1959) claimed that psychological stress was the most provocative situation for girls, whereas exposure to allergens was the most provocative for boys. It would seem that part of the explanation of the individual differences in the type of situation which is provocative lies in the characteristics of the children.

## 1.8 Conclusions

Clinical medicine and epidemiology has provided the first stage of the medical approach to the study of illness. Their aim was to provide an objective description of the individual and

group characteristics of any illness. Clinical medicine has revealed the wide individual variations in the severity of childhood asthma. Epidemiology has shown that the prevalence of childhood asthma varies widely between regions, social classes, and between boys and girls.

The second stage of the medical approach sought to explain these wide variations. It did this by seeking a cause of the asthmatic symptoms in the physiology of the individual child.

## CHAPTER II

## PHYSIOLOGICAL EXPLANATIONS OF CHILDHOOD ASTHMA

2.1 Introduction

The Age of Enlightenment during the eighteenth century created a new upsurge in scientific research throughout Europe. The rapid growth in knowledge in the mathematical and physical sciences gave a further impetus to the medical profession to firmly adopt a materialist conception of Man.

The new ease of access to human bodies for dissection, coupled with the ideas of individualism and reductionism, urged physicians to delve into the human organism for an explanation of clinical symptoms. By the beginning of the nineteenth century "the pathological-anatomist's analytic knowledge of cadavers was combined with the clinician's direct and concretely empirical investigation of sick individuals ... forming the essence of what has come to be known as the medical model " (Fourcher, 1977).

In the previous chapter, we noted how the role of the clinician had been to carefully observe and record the sick person's symptoms which could be treated according to a certain nosological classification. With the advent of the new medical model, the physician looked for an organic cause of the symptoms in the individual. During the nineteenth century, "physiological knowledge once magical and theoretical for the doctor - was to become established at the very centre of medical reflexion" (Foucault, 1973).

The technical breakthroughs in the physical sciences, especially with the discovery of the microscope, qualitatively altered the essence of medicine. Cartwright (1976) claimed that, using these newly developed techniques, the discovery of cells by Rudolf Virchow and of germs by Louis Pasteur changed "medicine from an empirical art into a science." The influence of these two pioneers still shapes medical science today. Rather (1958) summed up Virchow's role in the development of the medical model thus:

"Sydenham's entity was a 'clinical entity', and Virchow's was to become a 'pathological entity' which in the minds of many was to give substance to the clinical entity - so much so that without a visible lesion in the tissues a later generation of physicians found it difficult to believe that a patient was really ill."

The majority of attempts to explain childhood asthma in the past century have followed closely the guidelines of this new medical method: delving into the body of the child presenting asthmatic symptoms to identify the presumed physical lesions. Since Laennec (1826) revealed that "every spasm presupposes at least the contraction of a bronchial organ," medical science has concentrated its investigation of childhood asthma on physiological, and then biochemical, analyses of children's respiratory systems.

The direction the research took was guided by two aims: firstly, to objectively describe the physiological characteristics of the asthmatic attack, and then, to relate this to the clinical

and epidemiological variations in childhood asthma.

## 2.2 Structure of the lungs

Our lungs are like two large sponges which are contained within a box-like frame known as the thorax. Figure 2.2A shows the position of the lungs in the body. The neck of the sponges is made up of the bronchi, the trachea and the nasal passages. The air we breathe in passes through the mouth or nose down through the trachea and bronchi to the bronchioles and finally to the finest air passages, the alveoli (Figure 2.2B). Here oxygen is absorbed through the thin walls of the alveoli into the blood stream where it is taken up by the pigment haemoglobin in the blood's red corpuscles, and so distributed to all parts of the body. At the same time, carbon dioxide and water passes from the blood stream into the alveoli and is expelled from the body when we breathe out.

The trachea and bronchi are composed mostly of gristle-like cartilage and smooth muscle covered with a fine coating of cells called the columnar epithelium. Protruding from these cells are small hair-like projections called cilia which are usually finely covered with a sticky substance known as mucus which is produced by the bronchial glands. Any dust particles passing into the air passages sticks to the mucus which (normally) is gradually moved up through the air passages by the constant beating of the cilia. Figure 2.2C shows a cross-section of the trachea illustrating the various components.

As we move further down the airways the cartilage composition of the walls decreases such that the small narrow

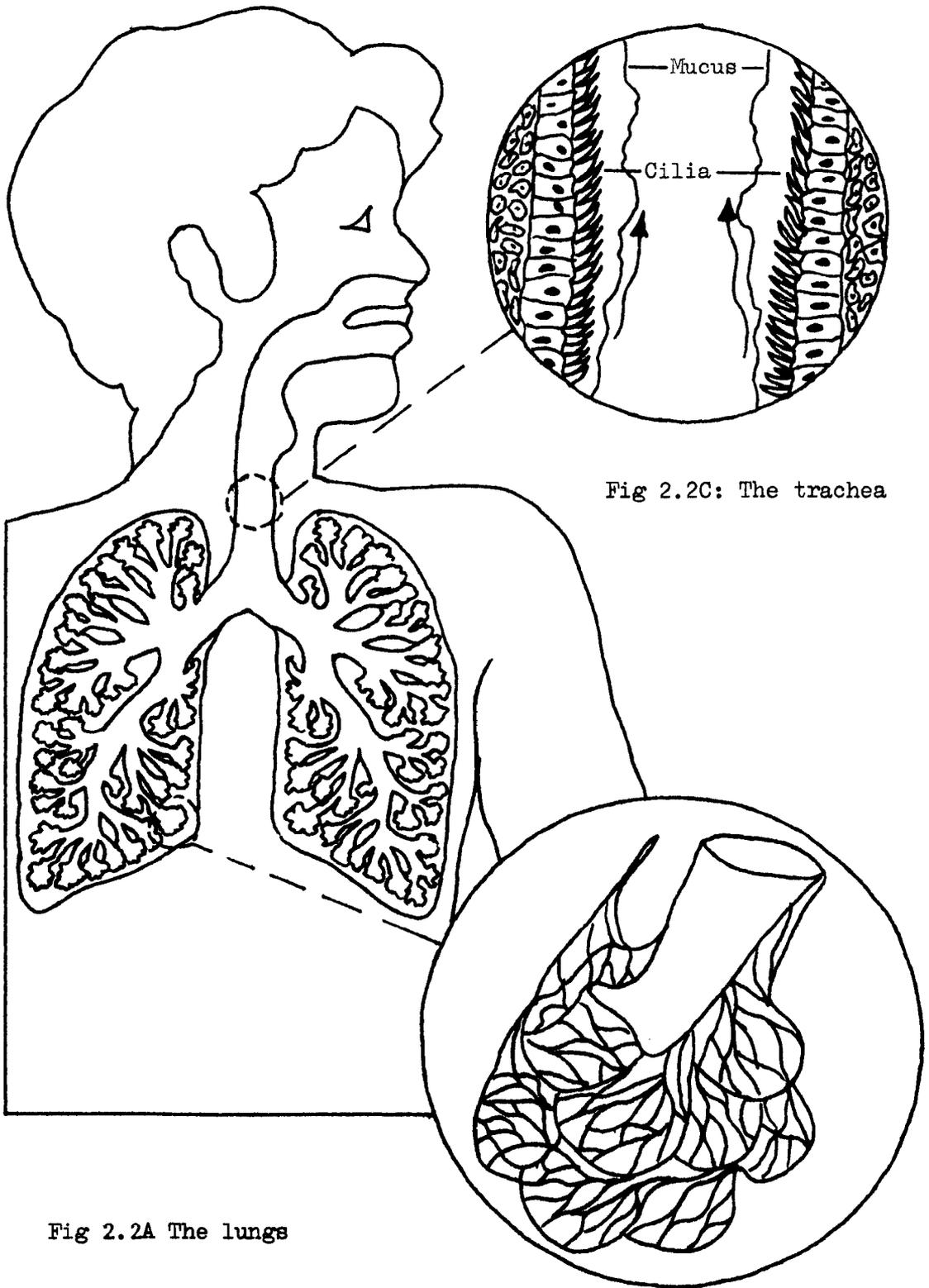


Fig 2.2A The lungs

Fig 2.2C: The trachea

Fig 2.2B: An Alveolus

bronchioles are totally composed of smooth muscle with its epithelium coating. This smooth muscle is so arranged such that when it stretches the airways narrow rapidly.

### 2.3 Respiration

During inspiration the thoracic cage expands causing the pressure of the air in the lungs to drop below atmospheric pressure, the tubes expand and air rushes in (Figure 2.3A). During expiration the thorax and the tubes contract and the greater-than-atmospheric pressure in the lungs is decreased as the air is forced out (Figure 2.3B).

This process recurs constantly throughout our life and its rhythmical action, although largely unconscious, is controlled by nervous impulses from the respiratory centre in the reticular formation, just below the floor of the fourth ventricle in the brain. During inspiration the walls of the bronchi become stretched. When a certain tension is reached stretch receptors are fired which send impulses through the vagus nerve to the respiratory centre. Impulses are sent from there to the intercostal and abdominal muscles, and the thorax relaxes. The natural elastic recoil of the lungs expels air from the lungs. At this point, the respiratory centre allows the thorax to expand again and the whole cycle repeats itself.

The rate of this cycle depends to a large extent on the concentration of  $\text{CO}_2$  in the blood flowing through the capillaries in the medulla but also upon impulses from the carotid sinus. It can also be influenced by signals from the higher cortical centres.

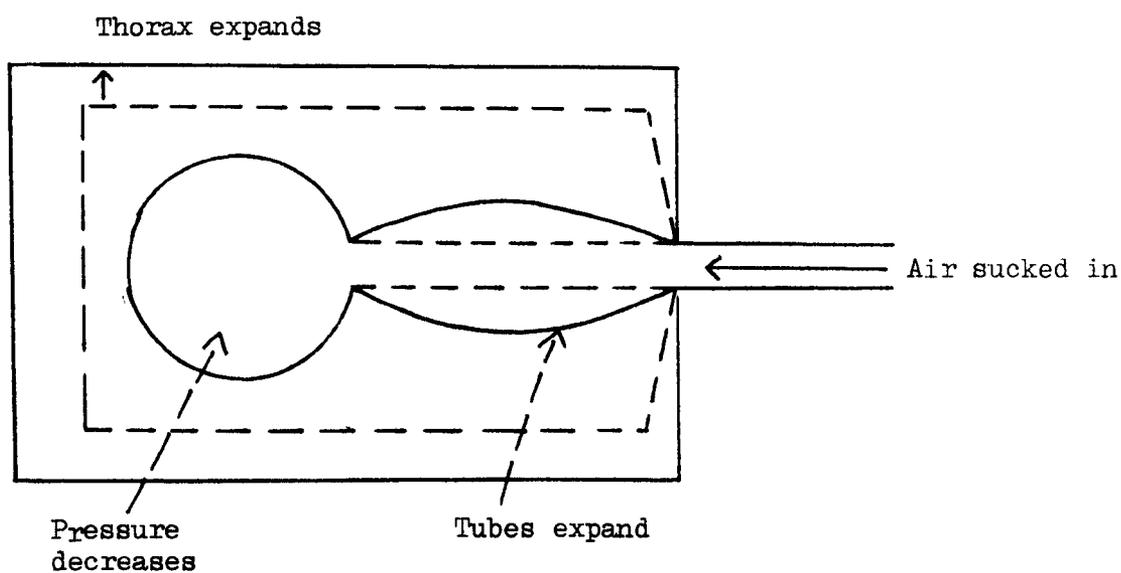


Fig 2.3A: Representation of inspiration

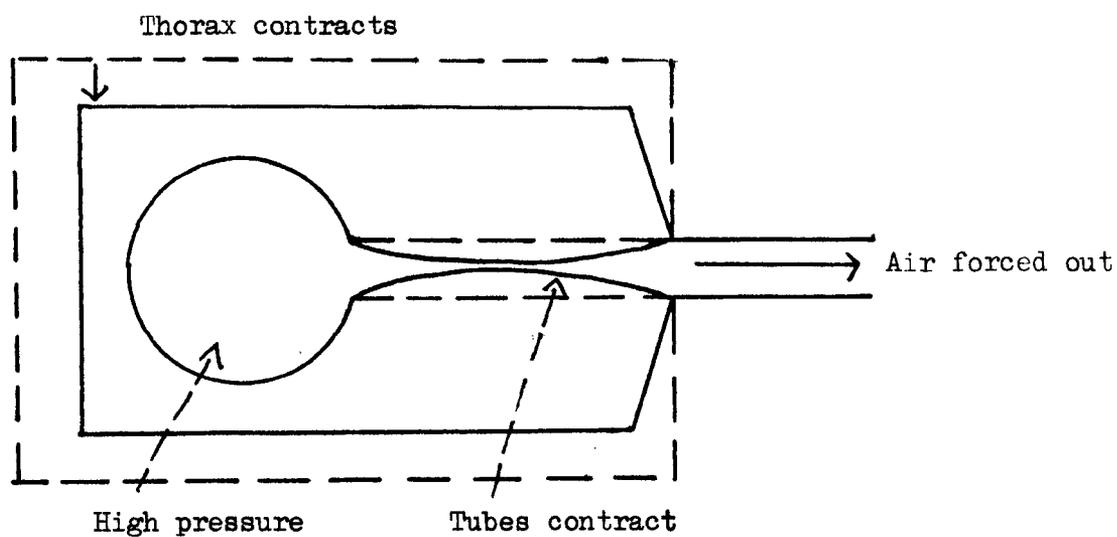


Fig.2.3B: Representation of expiration

(Both figures adapted from Jones (1977))

## 2.4 Ventilatory tests

The task of the respiratory system is to saturate the capillaries of blood with oxygen and to excrete  $\text{CO}_2$  and other chemicals, in order that the individual may cope with various situations. In recent years, pulmonologists have perfected various instruments for assessing the efficiency of respiratory function. They have been especially concerned with ventilation i.e. assessing the amount and rate of air entering the lung in different situations. One of the simplest instruments for measuring this is the spirometer which produces a tracing of the amount of air expelled by breathing into the machine. Figure 2.4A shows a typical tracing obtained after someone has breathed into a spirometer.

The tidal air is the amount of air passing in and out of the lungs in quiet respiration. When the person takes a deep breath and forces out as much air as possible, the amount of air expelled is called the vital capacity. The air remaining in the lungs after is known as the residual air. This cannot be removed since the bronchioles close before all the air is expelled.

However, to gain some estimation of any constriction in the airways it is necessary to measure the rate at which a person expels air from his lungs. In this test, the person inhales as deeply as possible, and then exhales as rapidly as he can. The total volume of air expelled is known as the forced vital capacity (FVC), and the amount expelled in the first second is known as the forced expiratory volume in one second ( $\text{FEV}_1$ ). The vitalograph produces a simple tracing of these two measures. Figure 2.4B shows a typical tracing obtained after someone breathes

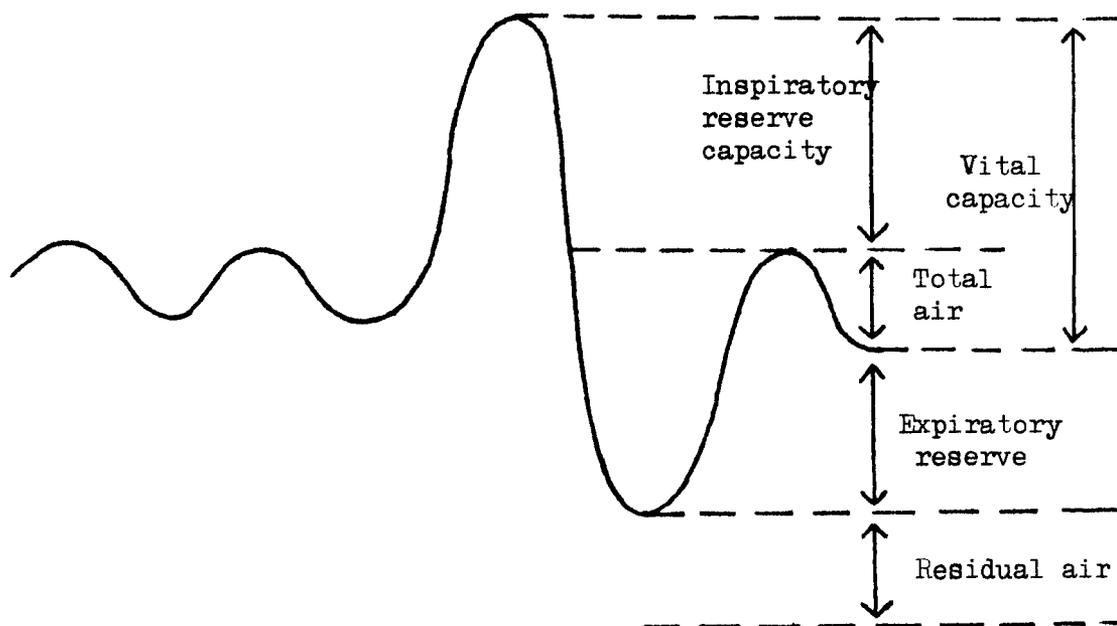


Fig 2.4A: Spirometer tracing

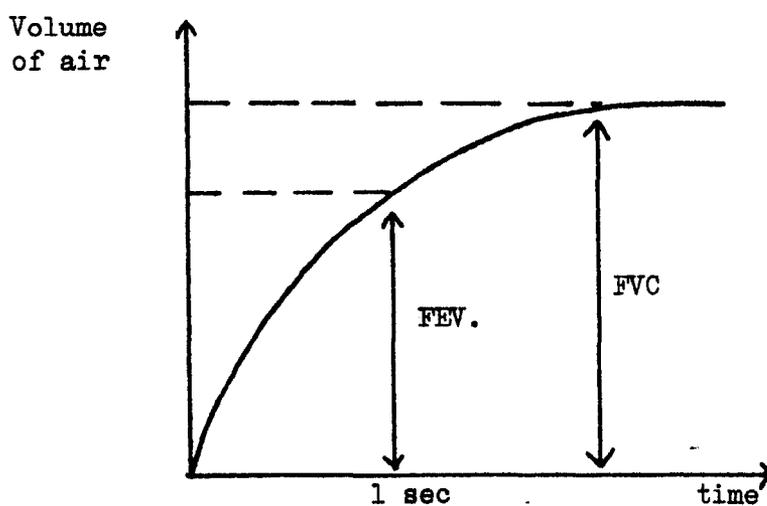


Fig 2.4B: Typical vitalograph tracing

into a vitalograph. The ratio  $FEV_1$ : FVC is often taken as a measure of the degree of obstruction to ventilation in the bronchial tubes (Clarke, 1976).

A related measure is the Peak Expiratory Flow Rate (P.E.F.R.) This is simply measured by the child blowing into a Wright peak flow meter which records the highest flow rate reached during the performance of FVC. The P.E.F.R. has a high correlation with  $FEV_1$ .

## 2.5 Pathophysiology of asthma

Now that we have roughly outlined the physiology of breathing let us return to the case of the child with asthma. What exactly happens to the airways during an asthmatic attack? There seem to be three crucial events:

- 1) The bronchial muscle, which makes up much of the smaller airways, contracts;
- 2) The cellular lining of the bronchi swells;
- 3) The epithelium secretes extra mucus.

Recent evidence (Godfrey, 1974) indicates that in children, the muscular contraction tends to be the dominant characteristic. Even when the child is not having an attack, lung function tests indicate that their bronchial muscles are in a greater state of tension causing a limited restriction of airflow (Hamman et al, 1975). Because of this, lung function tests during remission can give some indication of the physiological condition of a child's bronchi.

During an attack of asthma, the bronchial muscles go into spasm, causing narrowing of the airways and restriction of airflow.

Since the airways are usually more open during inspiration, the inflow of air is not as impeded as the outflow. This means that air which should be expelled remains in the lungs, and fresh oxygen is prevented from entering. In an attempt to cope with this problem, there is increased respiratory effort, which increases inspiration rather than expiration so that the lungs become progressively distended with air as the attack proceeds. In severe attacks there is an acute lack of oxygen being introduced into the bloodstream which sometimes leads to cyanosis.

The attack subsides as the constricted bronchi gradually widen so providing ease of breathing again. This variability of bronchial constriction is usually regarded as the distinguishing physiological feature of asthma.

## 2.6 Genetic basis of asthmatic bronchi

Earlier we mentioned how several studies had shown how clinical asthma tended to run in families (Section 1.6). An explanation for the transmission of the problem from one family member to another eluded the medical profession until the discoveries of Mendel. He revealed that human characteristics were transferred from parents to children through the genes which the children inherited. This explanation has been largely accepted by the medical profession as the mode of inheritance of childhood asthma.

For example, Schnyder (1960) made an extensive study of the family histories of clinical asthma and concluded that the illness was inherited by a single autosomal dominant gene with reduced penetrance. Leigh and Marley (1967) concluded from their

investigations that a multifactorial type of inheritance was the more probable.

However, not all the evidence is so definite. Bias (1973) reviewed a whole series of historical, twin, and family studies of asthma, and considered the various hypothetical genetic mechanisms involved. He concluded that "at the present time it is not possible to be definite regarding the genetic basis of asthma even though the literature on the subject is quite extensive." He considered the main impediment to the clarification of this problem was the ambiguity of the clinical definition of asthma. More recent research has attempted to cope with this problem.

Konig and Godfrey (1973) used evidence of bronchial lability (i.e. variation in airflow before and after exercise) as a physical definition of childhood asthma. They examined 65 relatives of 12 children with asthma and found that 33% of the relatives had a history of clinical asthma, 40% had hayfever, and 32% of the clinically healthy relatives had an abnormal lability index. Godfrey (1977) concluded from this and other evidence

that "the presence of this demonstrable lability in healthy relatives and in clinically unaffected monozygotic twins of asthmatics argues strongly for the inheritance of bronchial lability as the basic mechanism underlying asthma, however provoked."

The results of the studies by Konig and Godfrey are quite in line with Godfrey's conclusion. However, since no genetic details of the suggested inheritance of bronchial lability have been definitely revealed, it would seem sufficient to conclude that the evidence suggests that children with asthma probably

inherit sensitive bronchi from their parents, but the actual mode of transmission is unknown.

Such a conclusion reveals some additional problems. For example, why do only some individuals with bronchial lability actually exhibit symptoms of clinical asthma? Godfrey (1977) attempted to surmount this problem by suggesting that "some external event alters the inherited bronchial lability of the active asthmatic in favour of a tendency to severe restriction." One such external event frequently mentioned by physicians has been allergens.

## 2.7 Allergic basis of asthma

Since the work of von Pirquet at the beginning of this century, the study of allergy has assumed prime importance in the medical profession's attempts to explain asthma. Originally, allergy was a clinical description of the way people reacted to horse serum, but its meaning has now been extended to:

"clinical sensitivity with symptoms, to environmental material - mostly proteins in foods, drink, pollens, etc., and even physical influences such as heat, sunlight and wind" (Wood, 1977).

The basic allergic explanation of asthma claimed that when antigens, i.e. certain provocative substances, were inhaled by certain individuals, they reacted with specific anti-bodies fixed to sensitized cells within the lung tissue. The antigen- anti-body interaction caused the cells to release histamine thus causing direct local contraction of the airway smooth muscle, with resultant asthma (Fig. 2.7A). The difference between the children

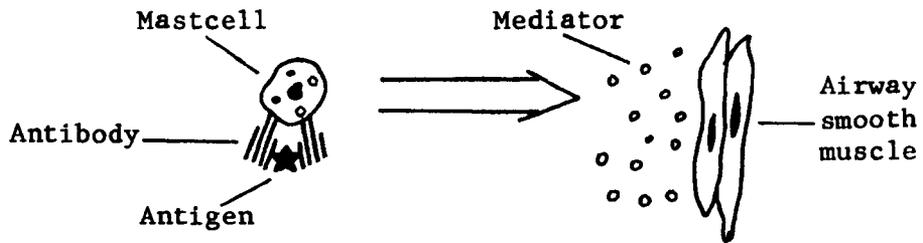


Fig. 2.7A: Basic allergic explanation of asthma

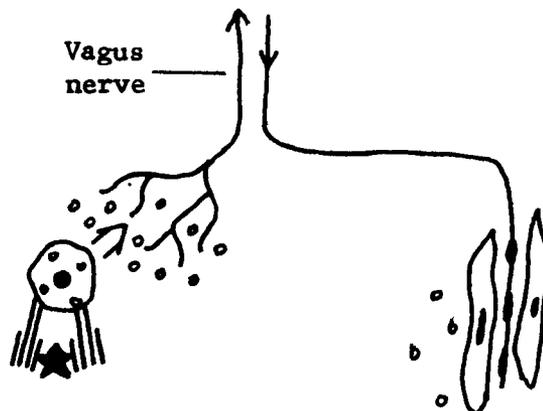


Fig. 2.7B: Vagally mediated reflex explanation of asthma

(Both figures adapted from Gold(1973))

who wheezed and those who did not was that the former possessed a biochemical defect in their lung tissue which caused it to react to certain inhaled substances.

However, several studies have illustrated the inadequacies of this basic allergic theory. Most of these have emphasized the importance of, what Cohen (1971) has called, the "level of arousal" of the individual. This concept became apparent through attempts to use the basic allergic theory to explain various clinical reports.

For example, the nineteenth century physician Trousseau (1867) reported a personal experience of a severe attack of asthma. He had suspected his coachman of dishonesty and went to check his measurement of oats. His attack began while watching his coachman. He reported that although he considered that the dust from the oats precipitated the attack, he believed there was some other factor involved. He noted:

"I had a hundred times been exposed to an atmosphere of dust considerably thicker ... it had acted on me whilst I was in a peculiar state. My nervous system was shaken from the influence of mental emotion caused by the idea of theft however trifling committed by one of my servants, and a cause slight in itself had acted on my nerves with extreme intensity. You will find in books analogous cases."

Another example is the study by Long et al (1958), already mentioned. They had diagnosed a group of children as being allergic to the housedust mite. When they removed these children from their home environment signs of wheezing declined.

This seemed to confirm the allergic theory. But then, unknown to the children, Long and his colleagues introduced large amounts of housedust into the children's new environment. There was no asthmatic reaction. This was contrary to what would have been predicted by the classic allergic theory.

In an earlier study, Gerard (1946) demonstrated that children who had asthma with an established immunologic aetiology became and remained free of clinical asthma after psychotherapy, even when exposed to allergens, although their sensitivity, as shown by skin tests, remained unchanged. It seemed as though the classic allergic theory of asthma was insufficient for a full explanation. Although the asthmatic lung tissue could react to various substances, this did not mean that it would always do so.

In an attempt to explain these anomalies, several physicians, e.g. Nadel (1973), Gold (1973), re-examined the evidence for the classic allergic theory of asthma. They pointed out that the earlier physiological research in support of the standard allergic theory had been based on in vitro studies, i.e. the researchers had examined isolated leukocytes (Lichtenstein and Osier, 1964), or pieces of lung tissue (Brocklehurst, 1956) which had been extracted from the lungs of patients who had died from asthma. Such an approach ignored other physiological processes which occurred in the living human being, and which might influence the responsiveness of the lung tissue.

Nadel (1973) found that in healthy humans there normally exists a mild degree of tone (tension) in the airway smooth muscle which is maintained by impulses from the efferent vagus nerve. Any restriction of these impulses, e.g. by administration of

atropine to the efferent nerve endings, would lead to bronchoconstriction. Further, the central nervous system can have control over what has commonly been called the vagal reflex.

Gold (1973) agreed that the antigen-anti-body interaction does cause the release of contraction agents, but argued that without vagal innervation this would only lead to immediate local contraction of the airway smooth muscle. More important, he claimed, the mediators could stimulate the afferent vagus nerve endings, leading to impulses via the efferent vagus nerve, causing more complete smooth muscle contraction. The intensity of the impulses in the efferent nerve would depend on the state of arousal of the individual concerned (Beall, 1973). A more complete allergic theory of asthma would have to include these nervous factors (Fig. 2.7B).

This mechanism for the production of asthmatic wheezing has received support from other immunologists (e.g. Itkin and Anand, 1970; Yu, Galant and Gold, 1972). While they "believe the basic defect in asthma will be found in one of the complex chains of biochemical reactions at the cell membrane" (Reed, 1974), they also accept that the intensity of the attack is mediated by the degree of arousal of the vagal reflex. In a phrase similar to that given by Trousseau over 100 years previous ("a cause slight in itself had acted on my nerves with extreme intensity") Reed (1974) concluded that " a full blown attack would thus be produced by a relatively mild triggering stimulus " when the vagal reflex was aroused. It seemed as though the physiologists had established the identity of the earlier hypothesized state of arousal.

## 2.8 Physiological explanations of clinical and epidemiological variations of childhood asthma

We ended our clinical description of childhood asthma (section 1.2) by noting that an explanation of the individual variations in the intensity of asthma was necessary. In section 2.4 we found that lung function measurements have become accepted as an index of the degree of sensitivity of the airways to constriction. However, these measures of lung function have been found to be poorly correlated with clinical measures of asthma. For example, König and Godfrey (1973) reported that relatives of children with clinical asthma often had signs of airway sensitivity, but yet had no asthmatic symptoms. Karrebijn et al (1978) reported that adolescents who had "grown out of" their clinical asthma still had signs of bronchial sensitivity. Finally, Pinkerton and Weaver (1970) found that children classed as having mild asthma according to lung function tests often had severe clinical asthma, and vice versa. Thus it would seem that although some children have the potential to wheeze, not all do so, or have less severe clinical asthma than would be expected from their lung function measurements.

The amended allergic theory can provide a partial explanation of this disparity between clinical and physiological assessments of asthma severity. It may be that, as was suggested in the previous section, the state of nervous arousal of individual children sensitizes their bronchi to hyper-react in different situations. However, such an explanation is limited, since the operation of the nervous arousal system remains obscure. If the nervous system is the intermediate controller between physiological

potential and clinical symptoms what regulates the operation of the nervous system?

The basic allergic theory has been used to explain regional and social class variations in the reported prevalence of clinical asthma in children. Smith (1976) suggested that the reasons for clinical asthma being less prevalent among children born in tropical countries "may be due to contact with fewer air-borne allergens, a more open air life in a warm climate, more frequent breast feeding, or more frequent intestinal infestation and high circulating IgE levels unrelated to atopy." However there is insufficient evidence to confirm any of these hypothetical mechanisms.

Hamman et al (1975) attempted to explain the higher reported prevalence of asthma among children from middle class families using the allergic theory. However, they noted that "the (house dust) mite has a known predilection for damper environments which might have social class connotations, although seemingly in directions opposite to those found in this study." They concluded that "no genetic, infectious or environmental hypothesis appears to explain these differences satisfactorily."

Finally, an explanation of the reported sex differences in the prevalence of childhood asthma still evades physiological research. Gregg (1977) suggested that some genetic factor might be involved, since the sex difference is apparent from early childhood. However, such a hypothetical explanation does not explain the decline in the boy/girl ratio in asthma as the children reach adolescence.

## 2.9 Conclusions

In the past century medical efforts to explain the clinical characteristics of childhood asthma, described in Chapter I, have concentrated on explaining the physiology of the asthmatic attack. It is now generally accepted by the medical profession that the physiologic basis of childhood asthma is a sensitive bronchial tract. Lung function tests have been accepted as an accurate measure of bronchial sensitivity. However, several studies have reported a poor correlation between this physiological measure and the clinical assessment of childhood asthma.

To explain this discrepancy between clinical and physiological measurements, and the clinical and epidemiological variations in the severity and prevalence of the problems, physical medicine explored variations in physical external conditions surrounding the individual. Thus we obtained the classic S-O-R model as an explanation of asthmatic wheezing (see Fig. 2.9).

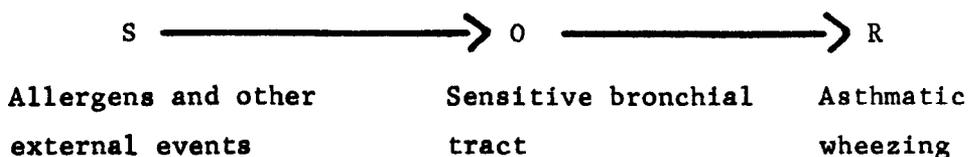


Fig. 2.9. Physical model of childhood asthma

Allergens of varying kinds were identified as the external events which could precipitate attacks of asthma in certain individuals who had inherited sensitive bronchi, but only if their airways were in a state of readiness to react. It has been suggested that the central nervous system controls this state of readiness, but more precise physiological details of this operation

are lacking.

However, this extended physical model of asthma has been found to be insufficient to explain individual, regional, social class, age, and sex variations in the clinical characteristics of childhood asthma. In an attempt to solve these problems some physicians have turned their attention to the other side of the Cartesian division: the mind.

## CHAPTER III

## PSYCHOLOGICAL EXPLANATIONS OF CHILDHOOD ASTHMA

3.1 Introduction

The Cartesian division of Man into a separate mind and body at first restricted medical investigation of illness to a study of the bodily portion, since the workings of the mind were considered as being only open to the understanding of God. However, this was changed with the Enlightenment, and the acceptance of the ideas of John Locke (1623-1703) by a more secular scientific community. Locke believed that the mind could best be understood as a tabula rasa upon which external events imprinted themselves. The impressions of these events then joined together according to the laws of association to form ideas which controlled human behaviour. In the same way as the body was considered to be composed of cells which interacted according to basically mechanical laws, the mind was viewed as being composed of mental atoms which interacted according to mental mechanics.

In the previous chapter, we found that in physical medicine it was assumed that illness symptoms (wheezing) were caused by a physiological lesion (sensitive bronchi) being provoked by certain external physical events (allergens). Closely following this reasoning, psychological medicine has suggested that certain illness symptoms are caused by a mental lesion, which could be provoked by certain external psychological events.

In the case of childhood asthma, physical medicine began its explanation by objectively describing the clinical symptoms, and then proceeding to locate the presumed physical lesion and the provocative allergens. Psychological medicine often began by

describing the clinical symptoms, which were sometimes assumed to be part of a larger neurotic complex of symptoms, and then proceeded to locate the presumed mental lesion, and sometimes the provocative psychological events.

Some psychiatrists have concentrated their efforts on describing the neurotic complex, of which asthma was assumed to be part. Others preferred to identify the mental lesion, while the rest looked for the cause or provocatants of the mental lesion.

### 3.2 Psychiatric symptoms of children with asthma

Various diagnostic procedures have been used by psychiatrists to classify the behavioural symptoms of mental disturbance. Mechanic (1978) listed several techniques including "clinical interviews, structured and guided interviews, psychological tests and scales, symptom reporting and measures of social adjustment." All of these techniques have been used by psychiatrists to describe the behaviour of children with asthma.

McDermott and Cobb (1939) clinically interviewed fifty of their patients who had asthma. They concluded that at least sixty per cent of them had such neurotic symptoms as irritability, easy arousal to anger, and a whining complaining attitude. These patients were apparently also more likely to exhibit signs of excessive cleanliness, punctuality, and meticulousness.

Rees (1964) compared the clinical psychiatric assessment of almost 400 children with asthma, attending an outpatient clinic, with the assessments of a control group of children matched for age and sex. He reported that more of the children with asthma had symptoms of anxiety, depression and tension.

Leigh and Marley (1967) interviewed 55 patients with asthma and 55 control patients from two general practices in the London area. They concluded that, compared with the control children, the children with asthma were more likely to have certain psychiatric symptoms. The most common symptoms recorded were tension habits (picking, scratching, nail-biting, hair pulling, and head banging) and motor symptoms (tics, habit spasms, and overactivity).

The most extensive study of childhood asthma, to date, was that carried out by McNicol et al (1973) in Australia. Two medical social workers interviewed 315 children with asthma, their mothers, and 82 control children and their mothers, when the children were 7, 10 and 14 years of age. A physician separately interviewed the mothers when the children were 10 and 14 years of age. In the analysis of the interviews, the children with asthma were divided into four groups, according to the clinical severity of their illness as assessed by the physician. Among other things, they reported that those children with asthma classed as clinically severe were more restless during the interviews, and showed more verbal concern during the clinical examination "constantly asking questions and seeking explanations and reassurance." According to the mothers' report, these children "reacted more often to the mother's requests or directions by displaced physical aggression," and were also abusive to their mothers.

McNicol et al also asked the children's teachers to complete a standardized questionnaire concerning specific aspects of the children's school behaviour. Analysis of the teachers'

replies showed that the children with asthma classed as clinically mild were more aggressive in class, while those with asthma classed as clinically severe were more worried.

Earlier, Graham et al (1967) had used the questionnaire technique to diagnose the behaviour of children with asthma. They asked both the mothers and the teachers of children with asthma, healthy children, and children with various physical disabilities to check a standardized list of behavioural descriptions for their children. Analysing the mean scores of the questionnaires, they found that the children with asthma were regarded by their parents as displaying more behavioural symptoms than the general population. However, there was no difference between the scores of the children with asthma and those with other physical handicaps. According to the teachers' assessments, the children with asthma displayed no more psychiatric symptoms than did either the general population or the children with various handicaps.

The early psychiatric studies of the behaviour of children with asthma now seem largely discredited simply on methodological grounds. Various critics (e.g. Freeman et al 1964; Purcell, 1965) have dismissed the validity of these studies, since they were carried out on small, unrepresentative samples of children, hospitalized with severe clinical asthma, who had often been specifically referred for psychiatric assistance. However, if we limit the findings of these studies to those children with severe clinical asthma, we find that they tend to agree with the more recent methodologically rigorous studies. The more recent studies have stressed that while most children with asthma do not

behave in anyway different from healthy children, a small proportion of them, sometimes described as having severe clinical asthma, do present certain psychiatric symptoms such as excessive worry and timidity.

### 3.3 The "asthmatic personality"

Assuming that clinical asthma was either a psychiatric symptom, or part of a complex of such symptoms, many researchers proceeded to locate the cause of these symptoms in some assumed underlying personality structure - the "asthmatic personality." To help them in their search, many psychiatrists broadly adopted the framework of physical medicine, outlined in the previous chapter. Whereas in physical medicine the aim was to analyse the sensitive lung tissue of the child with asthma to reveal its peculiar qualities, in psychiatry the aim was to dissect the human mind to expose the mental lesions which caused the abnormal behaviour. Peck and Whitlow (1975) have briefly outlined the major assumptions of this approach:

"A major assumption is that the term personality relates to what people do or what they experience. A second frequent assumption is that personality is an entity; that is, it really exists and is not just a convenient short-hand way of summarizing a person's behaviour. A third assumption is that personality is relatively fixed and enduring, so that the core remains relatively immutable, while only its more surface features are modifiable."

Psychiatrists have developed various techniques to expose the immutable asthmatic personality. At the beginning of this century, the clinical interview was the most common technique used in psychiatric practice, but later, scientific respectability was gained with the advent of the personality test. The most popular clinical technique was psychoanalysis.

For the past fifty years psychoanalysis has dominated the medical profession's attempts to understand the human mind. The basic similarities of its assumptions to those of the physical medical model have been indicated by many critics. For example Sch eff (1966) noted:

"... the basic medical model upon which psychoanalysis is constructed is the disease model, in that it portrays neurotic behaviour as unfolding relentlessly out of a defective psychological system that is entirely contained within the human body."

The early psychoanalysts considered clinical asthma a symptom of some personality defect which had its roots in some early mother-child conflict. French and Alexander (1941) claimed that childhood asthma developed out of a "wish to be protected, to be encompassed by the mother or the maternal figure." The asthmatic wheezing was a symbolic expression of the desire.

Earlier, in 1938, Dunbar interviewed just three people with asthma before concluding that all such individuals were obsessional neurotics who developed phobic and obsessional symptoms in periods of freedom from wheezing. Other psychoanalysts preferred a different classification. Fenichel (1945) considered

asthma to be a pregenital conversion neurosis with anal fixation, while Jessner (1958) emphasized the importance of conflicts in the oral phase as a cause.

More recent reports confirm that psychoanalysis has still not lost its popularity among physicians. For example, Lask (1966), after an extensive report of his clinical experiences with people who had asthma, concluded:

"ongoing asthmatic illness predicates unconscious emotional conflict, and the fate of the latter determines the outcome of the asthma."

Sperling (1968) was more specific in his diagnosis, opining after twenty years psychoanalytic treatment of people with asthma that they suffer from a "pregenital conversion neurosis."

Other clinical studies which have searched for a personality defect in children with asthma have avoided the psychoanalytic paradigm. Perhaps, the most important such study in the past decade was that reported by Pinkerton and Weaver (1970). Whereas many previous psychiatric studies of childhood asthma had largely ignored the physiological details of asthma and emphasised the primacy of a personality defect as the aetiologic agent, Pinkerton and Weaver accepted that there was "no evidence for primary psychogenesis in asthma."

They began their study by distinguishing between the physiological and clinical characteristics of childhood asthma. As explained earlier (see section 2.8) they found that the sensitivity of the children's bronchi, as measured by lung function tests, was not reflected in the amount of 'trouble' (clinical symptoms) the children presented. Indeed, out of 206

children attending their asthma clinic 85% presented more clinical symptoms than was expected from their lung function measurements. Pinkerton and Weaver hypothesized that certain unknown psychological factors were causing these children to wheeze more than they should.

They accepted that standard personality tests were unsatisfactory, since "while they measure static factors admirably, such procedures fail to demonstrate dynamic interplay ... which primes the already unstable bronchus to react more precipitately to bronchoconstricting stimuli." As an alternative to these standard tests, Pinkerton and Weaver suggested that arranging each child's attitude to himself and to his asthma along a dimension of "degrees of acceptance" was the most effective method of revealing the relevant psychodynamics. They explained:

"if the optimum attitude towards childhood asthma is defined as realistic acceptance, with all that this implies in terms of intellectual understanding, emotional insight, and overall adjustment, then the psychodynamics of all cases may be classified according to deviations from this ideal."

By means of a clinical interview, each child was rated along the dimension of over-acceptance/non-acceptance. As predicted, the children who wheezed more than expected, were assessed as having "unsatisfactory attitudes," which meant either extreme over-acceptance or non-acceptance of themselves and their illness. Although it might be suggested that this dimension was solely a clinical explanatory variable, unlike the psychoanalytic defects, Pinkerton and Weaver emphasized that "the factors which contribute

to these overall attitudes, both in the parent and child, derive from two main sources - the personality make-up and life circumstances obtaining." Later, Pinkerton (1971) gave some further details of what they meant by personality make-up.

"Two main factors of intrapsychic state determined this issue of acceptance versus non-acceptance; the child's strength of personality (egostrength), and his motivation to improve.

The more robust the personality structure, the more positive the potential response to asthmatic challenge; the weaker the profile, the more likely the prospect of giving in to invalidism."

Although remaining vague in his definition, Pinkerton rather implied that those children with excessive trouble from their asthma have a certain personality defect.

Other studies of childhood asthma were not as adverse to the use of personality tests as were Pinkerton and Weaver. The wide variety of personality descriptions of children with and without asthma offered by many psychoanalysts encouraged attempts to standardize the assessment procedure. One method which grew rapidly in popularity was the projective testing technique which often, but not always, drew inspiration from traditional psychoanalysis. Several studies have illustrated the application of this technique to the investigation of childhood asthma.

Alcock (1960) used the Rorschach test to compare a group of children with asthma, a group of emotionally disturbed children, a group of 'normal' children, and a group of children with some physical handicap. In interpreting the childrens'

replies, he concluded that the children with asthma had a personality structure clearly differentiated from those of the other children. He claimed that they were characterized by:

"marked internal conflict around object relationship, accompanied by weakness in mechanisms of ego-defence by which affect can be externalized (and) can appropriately find relief through sado-masochistic satisfaction of a physically distressing disorder."

Aaron (1967) compared three groups of children (one group had asthma, a second various allergic disorders, and the third were healthy) on the Rotter Incomplete Sentence Blank and on the Thematic Apperception Test. He concluded that the replies of the children with asthma to these tests showed more signs of hostility and of disturbances in their relationships with the opposite sex parent. These children also apparently stressed more themes of loneliness, misfortune, and estrangement from their parents.

Burton (1968) compared the performances of a group of children with asthma on the T.A.T., with those of a group of healthy children. She claimed that the children with asthma emphasized themes of sadness, anxiety, and conflict in their stories. In addition she considered that they

"see the environment as more threatening than do the controls, show significantly more fear of their own guilt, their own mental inadequacy, their own motivational inadequacy all of which prevented satisfaction of their needs."

However, not all the studies which used projective tests

were successful in identifying some personality defect in children with asthma. Neuhaus (1958) used several tests to compare a group of children with asthma, a group of children with a cardiac defect, a group of children made up of the siblings of the children in the previous two groups, and a group of healthy children. The children with asthma were classed as more maladjusted than the healthy children on the Rorschach test, more neurotic on the Brown Personality Inventory, and more dependent on the Despert Tables. However, he could find no difference between the replies of the children with asthma, their healthy siblings, and the children with a cardiac defect. He concluded by suggesting that while his results indicated that there was no unique asthmatic personality, there may be some personality traits more common among all children with a chronic illness and also among their siblings.

In 1965, Herbert was even more disappointed with the efficiency of projective tests revealing the characteristics of the asthmatic personality. He used two techniques (Picture Frustration test, Story test) to assess the personality of a group of children with asthma, a group of children who had a stammer, and a group of healthy children. He found no significant differences between the replies of the three groups. However, when he compared the case histories of the children, as provided by the children's mothers and the notes in the children's medical records, he concluded that 52 per cent of both the children with asthma and of the children with a stammer appeared to be maladjusted or neurotic. According to his report, both these groups of children had most of the following characteristics:

dependency, fear of separation from their mother, neurotic symptoms, suppression of overt signs of hostility, and emotional tension. However, he also found that 26 per cent of the children with asthma had none of these characteristics. He concluded that there was no specific asthmatic personality.

In the sixties, other tests of personality, besides the projective tests, began to be employed in the investigation of childhood asthma. These tests were often designed using the factor analytic technique of whittling down a large series of statements about individual behaviour to a certain smaller number of statements which were considered central to an understanding of the human personality. On the basis of individuals' reactions to these statements, it was considered possible to classify them as possessing certain personality traits or belonging to a particular personality type. One reason why this technique grew in popularity was its apparent scientific objectivity. Whereas with projective tests the psychiatrist had to interpret the individuals' replies, these "quantitative personality tests" produced a simple score for each individual which supposedly indicated precisely his position on a certain personality dimension.

Purcell et al (1969) tested 94 children with asthma on six of the scales from Cattell's personality inventory: desurgent-surgent, timid-venturesome, guilt-confidence, tense-relaxed, high anxiety-low anxiety, introversion-extroversion. They found no difference between the children who recovered rapidly from an attack after hospitalization (rapid remitters) and those who recovered slowly (steroid dependents). However, when they split the rapid remitters into two groups, depending on their allergic

potential, they found that those with low allergic potential were significantly more timid, depressed, guilt-prone, anxious, and introverted than those with high allergic potential. They concluded:

"these findings confirm the likelihood that different mechanisms may be involved in the symptom improvement often observed when asthmatic children are hospitalized."

Finally, Norrish et al (1977) tested a group of 64 children with asthma on the Junior Personality Questionnaire (Eysenck and Eysenck, 1975). They found that while there was no significant group deviation on the emotionality dimension, there was a tendency for a greater than expected number of children to be rated as introvert on the introvert-extravert dimension. Further, there was a greater tendency for those children classed as having clinically severe asthma to be scored as introvert compared with those whose asthma was clinically mild.

The early enthusiasm to identify the various components of the presumed asthmatic personality has now largely been subdued. As with the descriptive studies of the children's behaviour, most of the early studies have been dismissed on the grounds that they were conducted on an unrepresentative sample of children (cf. Zealley et al, 1971). The more recent studies have been content to suggest that there is a tendency for some of the children with asthma (especially those with severe clinical asthma) to have certain personality characteristics such as introversion.

### 3.4 The familial provocatants

In the previous chapter we noted how having established the physiological basis of clinical asthma in the structure of the children's bronchi, physicians then proceeded to identify the external events (allergens) which provoked the attacks of wheezing. Psychiatrists have broadly followed the same path. Having established the personality defect in children with asthma, they then turned their attention to the identification of the external events which provoked the asthmatic wheezing and psychiatric behaviour. The psychoanalytic emphasis on the importance of the mother-child relationship for children's psychological development, encouraged psychiatrists to enquire into the possibility that the mothers of children with asthma might be the provocative external event they were attempting to identify. Some early clinical studies quickly confirmed their suspicions, and the mothers of children with asthma were given the condemnatory title of asthmatogenic mothers.

This image of the mothers of children with asthma was strengthened by the work, especially in America (e.g. Peshkin, 1959), which found that removal of a child with asthma from his home could sometimes have a dramatic and beneficial effect on his asthmatic symptoms. So popular was this as a method of treatment that it was given the rather medical description of parentectomy, which tended to reinforce the belief that the parents, especially the mothers, were the prime causal agents in the precipitation of asthma in children.

Psychiatric attempts to reveal the pathological characteristics of these mothers concentrated on identifying some

defect in either the parents' personalities or in their child rearing attitudes and practices, or both. Clinical interviewing of the children and parents, and the application of various testing techniques were employed to assist in these attempts.

The early research in this field derived many ideas from the psychoanalytic work of French and Alexander (1941). From clinical interviews with a small sample of patients with asthma who attended their clinic, they concluded that mothers had an "ambivalent" attitude towards children with asthma. The children's asthmatic wheezing developed out of a fear of being separated from their mothers. Previously, French (1939), using a similar technique, had claimed that the mothers of children with asthma were "overprotective, binding the child in a dependent situation, yet sternly thwarting any behaviour that had a remotely erotic character" (Maurer, 1965).

The more detailed clinical psychiatric studies of childhood asthma, which were reported during the sixties, were more reluctant about accepting a global characterization of the mothers of children with asthma as being overprotective. Ignoring largely the psychoanalytic formulations, they preferred to hypothesize that certain unknown characteristics of maternal behaviour might influence the severity of clinical asthma in children.

Dubo et al (1961) attempted to test such a hypothesis. They interviewed seventy one children and their parents. In the parents' interviews Dubo et al concentrated on obtaining information about "the parents' backgrounds, their personalities, the tone of relationships in the home, methods of child care,

attitudes toward the child and his asthma, and the effect of the child's illness on family living." They then devised seven dimensions to help conceptualize information obtained on family adjustment. These included "tone of family relationships," "disturbance in mother," and "mother's attitude re asthma." They found that none of these dimensions was related to the clinical severity of the children's asthma, and noted that "failure to confirm assumptions that we had tended to take for granted has been disconcerting but should not be too surprising."

However, the study by Pinkerton and Weaver (1970), which adopted a similar interviewing technique to that employed by Dubo et al, did find some evidence to support the hypothesis noted above. As part of their study, which attempted to explain the disparity between clinical and physiological measurements of childhood asthma, Pinkerton and Weaver arranged the parents' attitudes along the dimension of "degrees of acceptance" of their children and their asthma (see section 3.3). They concluded that non-acceptance of the child by the parent was much more "dangerous" for the child's illness than non-acceptance of the asthma.

Pinkerton and Weaver also examined the children's living conditions for evidence of "sociopathology," i.e. broken home, extreme overcrowding and/or insanitary conditions, immoral behaviour, delinquency, etc. They did not find any relation between their scoring of an 'index of sociopathology' and the amount of discrepancy between the clinical and physiological measures of the children's asthma. However, they did find that those children who obtained the most positive score on the index were more likely to be attending a special school.

McNicol et al (1973) also found certain characteristics of the mothers' child-rearing practices to be related to the clinical severity of their child's asthma. Some of the information obtained from interviews with the mothers was coded for evidence of concern for their children's health, physical security, and social activities. The mothers of the children with clinically severe asthma expressed more concern about their children's health. These mothers also apparently flushed more during the interviews and were more extensive in their answers to the questions. McNicol et al suggested that this was a sign of stress.

They also found some differences in the structure of the children's families. Evidence from the mothers' interviews suggested that in the families of the children with clinically severe asthma "there was more family disruption and resentment between parents and the mothers were more often entirely responsible for the economic management of the home."

Nathanson and Rhyne (1970) reported a large scale study in which the mothers of over 3000 children suffering from asthma were interviewed in their homes by "trained lay interviewers" Using an index of the allocation of certain responsibilities between parents, based on the work of Kohn and Carroll (1960), they obtained a measure of the mothers' perception of role allocation within the family. They found that the boys tended to come from families in which the mothers held the dominant role. In their discussion, they suggested that this was a possible reason for their finding a sex distribution of three boys to every two girls in their sample. Borrowing from Parson's (1955) description of the socialization process, they hypothesized that

since "the boy is forced to renounce his initial dependence on the mother and become identified with the father," those boys who come from a household where the mother is dominant will "have a higher rate of asthmatic symptoms than girls as a consequence of the greater stress, centering on conflicting expectations for dependence than independence, that is imposed on males in the process of socialization."

They also found that, when they analysed the religion and social class of the children's parents, the sex disparity between boys and girls suffering from asthma was confined to small Protestant, middle class families. In the other religious and social class types of family there was an equal proportion of boys and girls with asthma. They suggested that differences in the socialization practices could account for these differences. "There are a number of lines of evidence suggesting that families with these characteristics (small, Protestant, and middle class) are especially prone both to employ socialization techniques that encourage dependency and to impose pressures on their sons for achievement and independence."

Although this was an original and interesting study, Nathanson and Rhyne were only too aware of its limitations, emphasizing that their discussion was only based on hypothetical interpretations of epidemiological findings. They concluded:

"until further work has been done to clarify the relationship between biological, psychological and social mechanisms in the etiology of childhood asthma, any interpretation of purely epidemiologic data must be a provisional one at best."

None of the previous studies used a control group, i.e. compared the mothers of children with asthma with the mothers of healthy children or with the mothers of children with other illnesses. The first main psychiatric study to overcome this omission was that by Rees (1963). He compared the parents of 170 children suffering from asthma who were attending his asthma clinic with the parents of 160 healthy children. The parents' attitudes were assessed by Rees "on the basis of interviews with parents and from relevant information from friends and relatives obtained by social workers and health visitors, from home visitors and other available sources." He then classified the parents' attitudes into Kanner's (1957) two categories of satisfactory (characterized by affection, acceptance, friendliness and secure consistent support) and unsatisfactory (characterized by lack of affection, rejection, hostility, emotional distance, or excessive solicitousness and over-protection). The unsatisfactory attitudes category was also subdivided into three sub-categories of overt rejection, perfectionism, and over-protection. Rees found that 56 per cent of the parents of children with asthma had unsatisfactory attitudes, but only 18 per cent of the control group parents had such attitudes. The commonest parental attitude towards children with asthma was over-protection. Rees also claimed that other evidence from the interviews suggested that in most cases the over-protective attitudes antedated the onset of asthma in the children.

Other studies of the parents of children with asthma used various standardized tests. Fitzelle (1959) compared the parents of 100 children with asthma with the parents of 100

children who had various non-allergic illness. He tested the parents on the Minnesota Multiphasic Personality Inventory and found that on only 1 out of 28 comparisons were the parents of the children with asthma scored as more emotionally unstable. He also tested the parents attitudes using the U.C.S. attitude survey but found no difference between the two groups. The parents of the children with the clinically severe asthma did not differ from the parents of the children with the clinically mild asthma on either of the tests.

Later, Margolis (1961) compared the scores on the Blacky Pictures Test and the Parental Attitudes Research Instrument (P.A.R.I.) of 25 mothers of children with asthma, 25 mothers of chronically ill children, and 25 mothers of healthy children. He found the replies of the mothers of children with asthma to the first test showed signs of psychological disturbance in the areas of oral eroticism, oedipal intensity, and sibling rivalry. On the second test he found no difference between the three groups.

However, Purcell and Metz (1962) found that the parents of those children with asthma who recovered rapidly after hospitalization often had "unhealthy" attitudes, according to their scores on the P.A.R.I. The mothers of those children scored especially high on the dimension "maternal authority" which included the two sub-scales of "breaking the will" and "excluding outside influence". The fathers of the children who recovered rapidly scored high on the dimension "unhealthy father" which included the sub-scale "harsh punishment."

Although early psychoanalytic studies were enthusiastic about labelling all mothers of children as being over-protective

or ambivalent, most of the more recent studies have confined such a label to the mothers of children with clinically severe asthma. Since the more recent studies have been more carefully designed to consider both the parents of healthy children and of children with another physical disorder their findings can be considered more acceptable.

### 3.5 Learning theory

Some psychiatrists have avoided consideration of the personality structure of children with asthma, preferring to adopt the basic behaviourist "black box" stance in their attempts to devise a psychological explanation of asthmatic symptoms. This behaviourist school can trace its history back almost one hundred years to the study reported by Mackenzie in 1886. He found that one of his patients, who was considered allergic to roses and wheezed in their presence, also wheezed when a paper rose was held before her. This occurrence has been described by Cohen (1971) as an example of "stimulus generalization." Despite this long history, behaviourist explanations of asthmatic wheezing were not given detailed consideration until the 1950s.

A series of studies by Dekker and his colleagues in the Netherlands particularly favoured an explanation of asthmatic wheezing based on learning theory. In 1956, Dekker and Groen reported a study in which they first identified certain allergic substances as being the precipitant of asthmatic attacks in twelve of their patients. They then found that when three of these patients were exposed to a situation which was similar to the alleged precipitant, but allergically inert, they began to wheeze.

For example, one patient who was diagnosed as being allergic to horse dander began to wheeze after viewing a picture of a horse. In the following year, Dekker, Pelser, and Groen (1957) reported a similar study on a population of approximately one hundred patients. They found that two of their patients developed wheeziness after inhaling from an empty aerosol which had previously delivered an attack-producing allergen. They concluded that "it seems justified to regard this newly formed way of production of asthmatic attacks, as changes in behaviour patterns, developed as a consequence of a conditioning process."

However, four years later Dekker wrote to Purcell (see Purcell, 1965) explaining the problems he was encountering in his attempts to "condition" asthmatic wheezing among his patients. Dekker wrote:

"If you are trying to condition your patients to have attacks of asthma, I would not be surprised if it takes some doing. We obtained positive proof that it is not possible to condition an asthmatic to any given stimulus within a reasonable time."

Despite these problems, some therapists have reported success in their treatment of individuals with asthma using behaviour therapy. Moore (1965) reported a detailed study in which four patients suffering from asthma were treated with relaxation therapy, another four were treated with relaxation therapy coupled with suggestions about improved health, and another four patients received relaxation therapy coupled with reciprocal inhibition. The therapist devised a stimulus

hierarchy of provocative situations for each of the last four patients. She then led the patient gradually through this hierarchy. Comparison of the three groups of patients revealed that although all three treatment regimens led to both subjective and objective improvements in health, the reciprocal inhibition therapy led to the greatest objective improvement in the health of the patients.

Creer (1970) applied the time-out from positive reinforcement procedure for the treatment of two children suffering from asthma. These two children regularly presented severe attacks of asthma which required hospitalization. It was decided that when they were admitted to hospital they would not be excessively cossetted as had previously happened. They found that both the frequency and the length of hospitalization for these two children fell rapidly.

However because of the small numbers involved in these studies it would be rash to conclude that all asthmatic wheezing is a learned response. Probably, Maurer's (1965) cautious conclusion is still apt. He noted:

"On the whole, the most one could say about these experiments is that the findings provide an argument in favour of the possibility that asthma could, in some instances, be a learned response."

### 3.6 Psychological explanations of clinical and epidemiological variations of childhood asthma

The early psychiatric studies did not consider the individual and group variations in the intensity and prevalence of

childhood asthma. Their method of investigation followed the guidelines devised by physical medicine. First, it was necessary to describe in detail the symptoms of what was assumed to be a psychiatric complaint. Their findings that at least some of the children with asthma have certain psychiatric symptoms does not, however, provide an explanation of the clinical and epidemiological variations of the illness.

Besides, there is reason to suggest that these supposed psychiatric symptoms may not exist. Despite their methodological differences, both the early and more recent studies of the behaviour of children with asthma accepted uncritically the essence of Locke's empiricism: that the observer records passively images of external events. Many psychiatrists have assumed that either they or their assistants could obtain an objective description of children's behaviour using interviews or questionnaires.

By accepting this assumption, psychiatrists have ignored the work which has shown that the observer is actively involved in the selection, categorization, and reporting of external events. For example, the early work by Leeper (1935) showed that observers described an ambiguous drawing of a figure as either an old hag or a young girl depending on whether they had previously seen a picture of an old hag or a young girl, respectively. Since "most people have an image of the asthmatic child as tense and inhibited " (Rutter et al 1970) it would be expected that a psychiatrist would report such characteristics in a child with asthma he investigated, even if the child did not display such behaviour.

Further we do not restrict the particular characteristics which we would attribute to a sick person to those directly related to his illness, rather we extend the sickness classification to his whole way of life. In this way the child with asthma (meaning a child who has occasional bouts of wheezing and breathlessness) is often described as the asthmatic child (which rather suggests a more continuously wheezing child). Goffman (1963) made this point in his discussion of stigma. He noted:

"By definition of course, we believe that a person with a stigma is not quite human... We tend to inpute a wide range of imperfections on the basis of the original one..."

Yet attempts to describe the behaviour of the child with asthma largely ignored these factors. Admittedly, Graham et al (1967) attempted to control for the possible influence of the asthmatic stereotype on their observers' judgements. When they examined the children's records for evidence of psychiatric symptoms, they were not provided with information to distinguish the children with asthma from those with various physical handicaps. However, since they did realise that some of the children they were assessing had asthma while the rest had some physical handicap, they would be expected to have had an image of the children which incorporated both those pieces of information. Thus, we would expect that the observers' descriptions of these two groups of children would be similar, and indeed that is what Graham et al found.

Psychiatrists also assumed that it was legitimate to ignore the social context when describing children's behaviour. This was

a strange omission when we realise that many of the 'psychiatric symptoms' reported as common among children with asthma were often identified in the psychiatrist's office, which could not be considered a comfortable situation for most children. The importance of a realisation of the situational specificity of behaviour was fully discussed by Icheiser (1949). He agreed that it was the failure to consider this factor which was one of the main causes of the misinterpretation of human behaviour.

The well known studies in psychophysics which have illustrated how the same pattern is described by observers in different ways, depending upon the background of the pattern, have their counterparts in social psychology. A child who said little in the psychiatrist's office might be described as tense and inhibited, whereas the same child who said little in the company of his elders might be described as polite and well-behaved.

Further, the psychiatric descriptions of the children's behaviour also assumed that the behaviour was emitted by the individual, i.e. they ignored the possible meaning a child's 'psychiatric behaviour' might have to that child. As we shall discuss later (see section 4.2) Harré and Secord (1972) have detailed how the concentration of psychological effort on the description of behaviour, without attempting to understand the personal meaning of that behaviour, is the major criticism of contemporary psychology. The child who said little in the psychiatrist's office might be behaving in that manner because he was shy, bored, tired, or because of various other reasons. To understand why a child behaves in a certain manner it is necessary to investigate the personal meaning of that behaviour to the child.

The second stage in the medical method of the psychiatric investigation was the identification of the presumed mental disturbance which either initially caused the child to wheeze, exaggerated his wheezing, or caused him to present certain complimentary psychiatric symptoms. The early studies, reviewed in Section 3.3, which suggested that children with asthma had certain personality types which caused them to wheeze, have now been largely dismissed on the basis of their shoddy methodology. Some of the more recent studies, which were more rigorous in their design, have suggested possible explanations for the clinical variations in the severity of childhood asthma. They have claimed that those children with severe clinical asthma tend to have certain personality traits, variously described as low egostrength, guilt-proneness, or introversion.

However, whether these personality traits are peculiar to children with asthma or emerge in all psychiatric studies of children with a physical disorder remains unresolved. Pilling (1975) concluded her review of studies since 1958 which have investigated the personality structure of children with asthma by noting:

"While it is clear that there is no 'asthmatic personality' the question of whether some traits do occur more frequently amongst disturbed severely affected asthmatic children than amongst disturbed children with other physical disorders remains unresolved."

Besides, whether such a personality structure, if it existed, actually caused children with sensitive bronchi to wheeze

excessively, or the reverse, remained an open question. Pilling (1975) noted:

"Even if evidence for the occurrence of such traits amongst severely affected, or other groups, of asthmatics is found, these characteristics are, of course, just as likely to be a reaction to the asthma as a cause of it."

However, besides these criticisms, which could perhaps be solved by greater consideration being given to the design of future studies, empirical objections have also been raised about the validity of the use of personality tests in general. These tests supposedly measure the various components of the individual's personality which is assumed to be some static psychological entity which largely determines the individual's behaviour across many situations. However, there is little empirical support for the assumed ability of an individual's scoring on a personality test to predict his behaviour across situations.

Mischel (1968) has been particularly critical about this cross-situational assumption. In his review, he demonstrated the inadequacy of personality tests for predicting an individual's later behaviour. He claimed that personality tests only provide information about an individual's reaction to a specific situation, beyond which it is impossible to generalize.

There are also theoretical objections to the conceptualization of a static personality structure. These objections, which we shall consider in more detail in the following chapter, emphasize the dynamic nature of Man's personality which changes as he interacts with his social world. The problem tends to resolve around the

theoretical definition of the term personality. If the latter dynamic definition is accepted then the intensive efforts to identify the static entity becomes rather meaningless.

The third stage of the medical method was the identification of the assumed pathological external events. The early psychoanalytic studies, which claimed that the crucial external event was the overprotective mother, did not attempt to explain the clinical and epidemiological variations in the severity and prevalence of childhood asthma. The more recent studies, having criticised the methodology of the earlier research, often continued to concentrate their efforts on identifying the pathological nature of the mother-child relationship. It has been suggested that an understanding of this might reveal the reason for the clinical and epidemiological variations.

Some researchers (e.g. Pinkerton and Weaver, 1970; McNicol et al, 1973) have claimed that the mothers of the children with clinically severe asthma were non-accepting or over-concerned about their children in general, and more specifically about their children's health. McNicol et al also identified signs of disruption in the families of those children. Others (e.g. Nathanson and Rhyne, 1970) have suggested that an explanation for the high rate of asthma among boys, and among children from middle class families, was the conflict engendered from having a dominant mother. Such a conflict did not arise for girls, and dominant mothers were not as common in working class families.

However, once again, Pilling (1975) has indicated that none of these studies clearly demonstrated a causal link between maternal attitudes (or, we might add, family structure) and

asthmatic wheezing. She noted that there was

"little evidence to suggest... that the less favourable attitudes of mothers (or both parents) of asthmatic children are anything other than a reaction to the difficulties and anxieties of raising a child with a chronic physical disorder in the family."

Further, most of the studies tended to consider the mothers' attitudes towards their children, and their actual child-rearing practices, as some fixed psychological characteristics. The aim was to identify the pathologic traits of the assumed asthmatogenic mothers in the same way as other studies had attempted to identify the traits of the asthmatic personality. The similarity between the two approaches was illustrated in the discussion by Purcell and Metz (1962) where they described some mothers as "autocratic and restrictive" as if it was another personality characterization.

Yet, as Schaffer (1978) has emphasized, a mother's child-rearing attitudes and practices cannot be considered static. Rather, they develop out of how the individual parent perceives her child and the different forms of childhood behaviour, and the actual social interaction between them.

We previously noted the stereotyped image of the child with asthma. It would only be expected that the parents of such a child would also have acquired this image, or at least an image of the sick child, from their everyday interaction in society. If this was the case then, as Richardson (1972) noted in an informative discussion on the problems of cerebral palsy, the parents might be said to "represent society and some of its values and feel that the child is less than a whole person." Thus it would be

strange if the parents of a child with asthma did not have attitudes and child rearing practices different from those of parents of healthy children. It is not that the parents are abnormal in any way, but rather that they are normal people reacting to abnormal circumstances (cf. Newson, 1973), or more precisely reacting to circumstances defined as abnormal within their social context. It was for this reason that Roskies (1972) concluded her work on parental reaction to a child with thalidomide by noting:

"Any attempt to separate the child's status in the family from his social role in the community is an arbitrary one."

Psychiatric studies of parental behaviour, in the same way as psychiatric studies of children's behaviour, largely ignored the personal meaning of the behaviour with the use of such standardized tests as the P.A.R.I. Pilling (1975) noted that there has been no attempt to understand the various fears and problems the mother of a child with asthma faces. Some of these fears might be considered legitimate, whereas others may be unfounded. For example, a mother may consider excessive exercise potentially harmful for her child and so restrict him, to an extent, from athletic activities. Although such limited restrictions might be beneficial, another mother may forbid her child from involvement in any physical activities because she fears they might precipitate an attack. Such behaviour might be labelled over-protective. Yet the mother might relax her restrictions if it was explained to her the groundless nature of her exaggerated fears. Indeed the apparent eagerness of various researchers to attach a psychiatric label to the mothers of children with asthma has

diverted attention away from any investigation of the problems and worries such mothers may have, and also, perhaps, from the provision of assistance for those mothers.

Finally, we can mention briefly the role learning theory might play in explaining the clinical and epidemiological variations of childhood asthma. Although there has been no specific attempt to use learning theory to explain these variations, it would be expected that some combination of classical and operant conditioning would be offered as an explanation. While it cannot be denied that it might be possible to devise such an explanation, there is no experimental evidence to confirm its validity.

### 3.7 Conclusion

The psychiatric investigation of childhood asthma adopted fully the assumptions of physical medicine. The method was threefold. Firstly to identify the behavioural symptoms of this apparently psychiatric complaint (i.e. a complaint unexplained by physical medicine). Secondly to locate the mental lesion which caused these symptoms, and thirdly to identify the external events which provoked the lesion. Thus we had once again the classic S-O-R model (see Fig. 3.7).

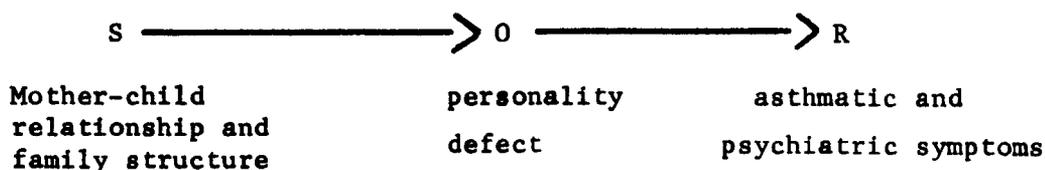


Fig. 3.7 Psychiatric model of childhood asthma

However, when we considered the studies which examined each of these components, we found that most did not manage to explain the clinical and epidemiological variations of childhood asthma. Those studies which suggested possible explanations were deficient either methodologically or theoretically.

This inability of psychiatric studies to provide an explanation of childhood asthma has had repercussions on the extent of recent investigations. Khan (1973) noted that the early hectic rush of reports which heralded the establishment of the psychosomatic concept of asthma thirty to forty years ago has tended to dwindle to a trickle. It would seem that psychology has no part to play in providing an understanding of childhood asthma.

## CHAPTER IV

## SUGGESTIONS FOR A SOCIAL PSYCHOLOGICAL APPROACH TO CHILDHOOD ASTHMA

4.1 Introduction

In the past twenty years re-examination of the historical changes in the prevalence of illness has revealed the small role which clinical medicine has played in the rapid improvement of health in Western society. It has become apparent that it was not that physical medicine had improved the health of specific individuals but, rather, the large scale improvements in living conditions had improved the health of all individuals.

Thomas McKeown has been particularly articulate in detailing the limited contribution of clinical medicine to improvements in health. In a recent article (McKeown, 1971) he claimed:

"Since the time of Kepler and Harvey, medical thought has been dominated by the belief that improvements in health must rely largely on an engineering approach, based on an understanding of the structure and function of the body, and of the disease processes which affect it. In fact, man's health offers only limited scope for this approach... Past improvement has been due mainly to modification of behaviour and changes in the environment and it is to these same influences that we must look particularly for future advance."

Besides the growing awareness of the limited role clinical medicine has played in improving health, there has also been a realization of the inadequacy of traditional medicine as a tool for explaining specific health problems (Tuckett, 1976). In childhood asthma the clinical and epidemiological variations in the severity and prevalence of the illness have not been explained by increased physiological and biochemical knowledge of the children's bronchi.

The implicit assumptions which guided the work of the medical profession, or any other scientific community, can best be described as "paradigms." Kuhn (1970) defined paradigms as those "incommensurable ways of seeing the world and of practicing science in it." Different paradigms have arisen at different periods of history to help different groups of investigators understand various problems which have confronted them. Those paradigms which gained precedence over others did so "because they were more successful than their competitors in solving a few problems that a group of practitioners had come to recognise as acute."

After a new paradigm has become established a period of, what Kuhn called, "normal science" develops, which is characterized by a "determination of significant fact, matching of facts with theory, and articulation of theory." However, after a certain period of operating within a new paradigm, scientists may become aware of certain anomalies or problems which evade explanation in the usual framework. According to Kuhn:

"when ... the profession can no longer evade anomalies that subvert the existing traditions of

scientific practice - then begin the extraordinary investigations that lead the profession at last to a new set of commitments, a new basis for the practice of science. The extraordinary episodes in which that shift of professional commitments occurs are the ones known... as scientific revolutions."

During a period immediately preceding a scientific revolution there exists a certain amount of crisis within a scientific community.

The contemporary medical profession could be said to be experiencing the first signs of such a crisis. Gradually it is becoming apparent that certain problems continue to evade explanation. In the case of childhood asthma there is the discrepancy between the clinical and physiological definitions of the illness and the wide epidemiological variations in its prevalence. Although, in such a period of questioning, it might seem that a new conceptual framework could increase our understanding of illness, the problem is how to establish such a framework. We could begin by considering an alternative to the Cartesian conception of Man which has dominated medical investigation for centuries.

#### 4.2 Commonsense conception of Man

Fritz Heider (1958) introduced his book on interpersonal relations by claiming that if psychology was to achieve an understanding of human relations then it should begin by turning to the layman for guidance since

"the ordinary man has a great and profound understanding of himself and other people which,

though unformulated or only vaguely conceived, enables him to interact with others in more or less adaptive ways."

In everyday life the layman distinguishes between "things" and "persons." While the layman assumes that both have "colour and occupy certain positions in the environment," persons are, however, "rarely mere manipulanda; rather they are usually perceived as action centres and as such can do something to us. They can benefit or harm us intentionally, and we can benefit or harm them."

The two central concepts in the commonsense definition of a person are intentionality and responsibility. Whereas the "thing", like the medical conception of Man, is conceived as a passive entity whose movements are mechanically caused, the "person" <sup>is an being who</sup> active/ intends his behaviour. Since the person intends his behaviour, he can be held responsible for that behaviour by other people. It is this capacity to be held responsible for his actions (intended behaviour) which distinguishes the person from things. Fauconnet (1928) discussed this differentiation, claiming:

"There exists a causality peculiar to Man, different from the causality which connects natural phenomena, Man is, in a certain sense, a first cause, if not of the physical movements which constitute his acts, at least of their moral quality... From this perfect causality originates his responsibility... Be it good or bad, the act is mine exclusively and absolutely..."

However, whether or not we hold a person responsible for particular effects depends on the dispositional properties of the person, the context of his behaviour, and our own previous experiences. Firstly, "if we are convinced that the act does not originate in the constant characteristics of the person we shall not hold him responsible" (Heider, 1958). For example, say, we believed a particular person to be "good" and we perceived him committing an act we considered "bad". We would be unlikely to consider the "good" person to be responsible for that behaviour. Since the "bad" act was so completely "out of character," the "good" person would be unlikely to have intended it, and so, probably, would not be held responsible for it.

The second factor which conditions whether or not a person is held responsible for an act is the context. "In general, the more they (environmental factors) are felt to influence the action, the less the person is held responsible" (Heider, 1958).

Thirdly, our own previous experiences can influence how we attribute responsibility to another person for an effect. According to Hastorf et al (1970)

"variations in the person's experiences of efficacy would produce variations in the extent to which he considers another person to be the origin of his own actions or to be the pawn of the environment."

A person who, because of his experiences, believed that his own behaviour was largely caused by environmental forces, rather than being consciously intended, is said to have an external locus of causality. Such a person would be less likely to attribute responsibility to an actor for an effect, even though that actor

may have intended the effect, than a person with an internal locus of causality who felt he had some control over his own actions.

Implicit in this conception of Man as an action centre is the assumption that persons act according to how they interpret reality, not according to the "objective" dimensions of reality. If we are to understand human behaviour then it is necessary to

"deal with commonsense psychology regardless of whether its assumptions and principles prove valid under scientific scrutiny. If a person believes that the lines in his hands foretell his future, this belief must be taken into account in explaining certain of his expectations and actions" (Heider, 1958).

Coupled with this commonsense conception of Man as an action centre is a commonsense conception of illness.

#### 4.3 Commonsense conception of illness

Whereas in biomedicine "illness is viewed as a disturbance of some normal function of body processes, marked by certain symptoms, and taking a certain course, in everyday life being sick may be looked at as giving up, in part or totally, the performance of one's customary duties" (Kas1 and Cobb, 1966).

This commonsense definition of illness has been confirmed in several studies. Apple (1960) presented 60 adults with eight different descriptions of a person with a health problem. He found that the adults were most likely to characterize the person as being ill if the health problem interfered with his usual activities and

was of recent onset. If a particular individual presented various clinical symptoms (the primary component of the medical definition) he was not viewed as ill unless his activities were also limited.

A later study by Baumann(1961) produced similar findings. She interviewed 182 chronically ill patients and 252 medical students to find how they defined health. She found that whereas the patients considered that it was the ability to perform their everyday activities, the medical students emphasized the importance of an absence of clinical symptoms.

The classic report by Herzlich (1973), on the layman's view of health and illness, agreed with the previous findings. She interviewed 80 French adults about health and illness. Content analysis of the interview transcripts revealed, among other things, that illness was "defined in terms of inactivity; to be reduced to inactivity is for most people the real criterion of illness."

Other studies have revealed different components of the commonsense definition of health and illness which vary with the individual's sex, social class, and age. For example, Mechanic(1964) reported that girls are more likely than boys to identify symptoms as an indication of illness. Gordon(1966) found that working class adults were less likely than middle class adults to attribute the label illness to symptoms which did not impair physical activity.

Campbell (1975) revealed developmental changes in the definition of illness. He interviewed 264 children about their

views of illness. He found that the younger children concentrated on a "vague nonlocalized feeling", while the older children referred to "specific diseases or diagnoses... and to aspects referring to alterations in conventional role behaviour." He also found that whereas the younger children with poor health were the most likely to have the least sophisticated definition, the older children with poor health had the most sophisticated definition, i.e. they had the most "socialized illness concept."

Thus, whereas the physician abstracts clinical symptoms out of their psycho-social context and attempts to explain them with reference to some inner defect, the layman places the symptoms fully within that context on the basis of which he can define them. Some social scientists have used the terms disease and illness to help clarify these two viewpoints. Disease is defined as the Physiological lesion which in the physician's eyes is the problem. Illness is the layman's personal and social definition of ill health. Reading (1977) used these two concepts to distinguish between the two views. He noted:

"From the physician's point of view disease is a tangible and real entity, evidence of which is directly accessible to him, whereas illness, being something that he cannot perceive directly, is viewed as discomfotingly vague and insubstantial. From the patient's point of view, just the opposite prevails. It is his illness that he perceives as being real; disease, to him, is a much more abstract entity whose existence can, for the most part, be detected only by the physician."

If instead of searching within the individual's physiology for an explanation of illness we attempted to grasp the meaning of the illness to the patient, then we might be provided with some new insights. More specifically, grasping the meaning of the illness to children suffering from asthma might help provide an explanation of the clinical and epidemiological variations in the nature of childhood asthma.

However, it is insufficient to claim that if a person complained of feelings of pain and neglected his everyday activities then that person would be defined in commonsense psychology as ill. Rather, illness is socially, not individually, defined in everyday life, i.e. for a person to become ill he must be socially sanctioned. Friedson (1970) has considered this issue:

"It may be the individual himself who becomes aware that something may be wrong with him. But at the next step of the process he cannot act as an individual: when he actually attempts to act as if he were ill by seeking privileges and release from ordinary obligations, he requires both the approval of those around him and their agreement that his complaints "really" represent sickness."

Whether the layman perceives someone who complains of pain and does not fulfill his everyday obligations as being "really" ill, depends on the perceived characteristics of the individual, the social context of the behaviour, and the experiences of the layman. If the layman perceives that the individual does not usually complain, that he does not want to neglect his obligations, and if the layman accepts from his experience and knowledge that the

complaint seems legitimate, then he will label the individual sick and excuse him for neglecting his duties.

It should be apparent that for illness to be sanctioned the individual must not intend to be sick, i.e. he cannot be held responsible for his behaviour. Aubert and Messinger (1958), in distinguishing between the lay conception of the criminal and the sick person, noted:

"The sick person is unable to be healthy for the time being; however much he wishes to be well he cannot. Failure to perform the roles he usually performed, or normally would have been able to perform, is not his responsibility."

However, the attribution of sickness is not an all or nothing process, but one that has to be regularly reaffirmed. If the layman doubts the legitimacy of the individual's sickness status then he will remove his sanctioning. Thus, Aubert and Messinger added a proviso to their original definition:

"it is necessary to remain in proximity to some of the negative values- fever, pain, etc. - as long as the exclusion is legitimate. When all signs of malfunctioning disappear, the sick person has recovered, and the role ceases to apply."

Besides excusing the sick person from his everyday responsibilities, the layman often excludes the sick person from his company. Once again Aubert and Messinger have provided a succinct description of this process:

"Known sickness seems virtually impossible without some exclusion... if Alter does not exclude him to

some extent in his interaction, by cutting down his expectations the sick person will disappoint him... By under-expecting, proper performance would be made socially difficult or impossible, irrespective of somatic ability."

Thus, once a person has been labelled as sick, it can lead to a change in his social interaction which may or may not be beneficial for his recovery.

If certain children were labelled as sick by their peers, we would expect that not only would they be excused from their normal obligations, but that also their social interaction would be restricted. However, to examine this phenomenon it would be necessary to consider the characteristics of both the sick children, and their peers, and the particular behaviour observed. For example, it might be that a healthy boy might accept that a certain girl was sick and excuse her from certain obligations. Yet the same boy might refuse to accept that a boy, complaining of similar symptoms as the girl, was sick, and so refuse to excuse him from his obligations.

More specifically, we would expect that healthy children, in general, would attribute less responsibility to children with asthma, in general. However, whether all healthy children would attribute less responsibility to all children with asthma for all types of behaviour is unknown. Variations in the way different healthy children attribute responsibility to different children with asthma would imply different definitions of asthma, i.e. certain children with asthma might be perceived as more sick than others. Investigation of these interactions might help us understand

those clinical and epidemiological variations of childhood asthma which have eluded a physiological explanation.

But what of the sick children themselves? If, as has been suggested, they are excused from everyday responsibilities, we could expect that they would develop an external locus of causality, a feeling of being a pawn rather than an origin (de Charms, 1968). Such children, because of their experiences, would be expected to perceive other children as pawns and not to hold them responsible for their behaviour (cf. Hastorf et al, 1970). Yet again there could be an interaction between the personal characteristics of the sick children and of their healthy peers which could influence how the former attributed responsibility to the latter. An understanding of the variations in the way children with asthma attribute responsibility to their peers could help explain the type of social interaction between healthy children and children with asthma.

#### 4.4 Social environment

Medicine has largely ignored the social world of the sick person. Illness was considered a purely individual concern. The sick person was one who displayed certain objective illness symptoms. The child with asthma was one who had periodic bouts of wheezing and breathlessness. In the eyes of the physician, the basic reason for the wheezing was the child's sensitive bronchi. In addition, according to some reports, the child with asthma often behaved strangely. He was sometimes described as timid and generally awkward in his social relations (e.g. Thomas, 1976). The cause of these behavioural aberrations was usually attributed to some

pathological intra-psychic forces.

When the intra-individual factors were revealed as insufficient to explain the clinical nature of childhood asthma, medicine had recourse to an investigation of the external environment, both physical and social. A clear dividing line was assumed to separate the objective environment from the individual. Certain physical factors in the environment, e.g. allergens, were identified as forces which, when they impinged on the passive organism, caused it to respond in a predictable fashion. Also, certain social factors in the environment, e.g. family conflict, were identified as objective forces which stimulated the individual to respond in a certain fashion.

However, in commonsense psychology Man is not defined as an individual passive organism clearly demarcated from his social environment. Rather, "the social is not something to be found outside of the individual; the individual is a social being" (Scheff, 1966). The symbolic interactionist school in social psychology has attempted to conceptualize Man's social and active nature by defining him as a centre of reciprocity. By this definition was meant:

"the very process of conscious living, i.e. experiencing, is a creative action in which an individual subject, some person, is constituted in relation to some other individual subject. This intersubjective process is viewed as the origin of all human meanings. To say this simply: people are people because of their relationships to one another; more than that,

people could not be people except in so far as they are related to other people" (Fourcher, 1977).

This approach implies that Man is not simply a passive individual who responds to an objective social environment, rather Man is an active social being who reacts to his own interpretation of other people's actions. "Thus one of the fundamental points of departure for the study of social behaviour is that we always carry in our heads a highly complex representation of our social environment" (Tajfel and Fraser, 1978). This "complex representation" not only develops out of our interaction with others but also guides our interaction towards others.

For this reason, if we are to understand human behaviour, it is insufficient to strive for an objective description of it and its social correlates. Instead, we must attempt to investigate the individual actor's own understanding of his social reality. We cannot, according to MacLeod (1958), "sit back and describe the social field as we would describe an array of colours, permitting the natural organization of the field to dictate our descriptive categories." The alternative approach is to ask "what is actually there for the individual." Let us consider a well-known study to clarify the value of adopting this phenomenological approach.

In 1950, Kelley carried out an interesting replication of Asch's (1946) warm-cold experiment. Kelley informed half of the students in a class that the guest lecturer who was about to teach them was "rather warm" besides having certain other characteristics. The other half of the class was told that the lecturer was "quite cold" besides having the same list of other characteristics. The guest lecturer then taught the students for twenty minutes and

encouraged them to join in a discussion about his talk.

According to the passive conception of Man, both groups of students would give the same response, since the guest lecturer provided them with the same stimulus. Instead, Kelley found that those students who had been informed that the lecturer was "warm" participated much more in the class discussion than did those students who had been told he was "cold".

If a traditional psychiatrist had been given the results of Kelley's study, without details of its design, he might have attempted to explain the apparent behavioural difference between the two groups of students on the basis of group difference in personality. However, if the psychiatrist accepted an active conception of Man, he would first have enquired about the students' own impressions of the lecturer. He would have accepted Harré and Secord's (1972) advice that

"The things people say about themselves and other people should be taken seriously as reports of data relevant to phenomena that really exist and which are relevant to the explanation of behaviour."

When Kelley later asked the students to give their impressions of the guest lecturer, he found that those who had been told he was "warm" gave more favourable impressions than those who had been told he was "cold". Thus, the differences in the students behaviour was explained by the different impressions they held of the lecturer.

It is obvious that if we adopt an active conception of Man, we accept that to gain an understanding of an individual it is insufficient to strive for an objective description of his behaviour and of the social context. Instead we should attempt to understand

the world in which the actor lives from the actor's own point of view. Adopting such an approach might increase our understanding of childhood asthma.

In the same way as the psychiatrist who accepted an active model of Man soon established an explanation of the students' classroom behaviour, a phenomenological investigation of a sick person's social relations could increase our understanding of the social nature of illness. In the case of childhood asthma, the approach of the traditional psychiatrist has been to speculate about the influence of certain objective environmental forces on the child's social behaviour and clinical status. However, if we adopt the phenomenological approach we begin to understand the child's behaviour by grasping his understanding of his social environment. By placing asthma within the child's own definition of his social context we might begin to understand some of the clinical and epidemiological variations in the severity and prevalence of the illness.

The commonsense definition of illness emphasizes the restrictions it places on the sick person's everyday activities. Since, as we have pointed out, the development of our understanding of our social environment depends upon the extent of our social interaction, a sick person's understanding of his social relations would not be as developed as his healthy peers'. Commenting on a similar situation Kelley et al (1960) noted:

"the handicapped person's information about others' reactions will be severely restricted and he will have less chance than his normal fellows to learn to make the discriminations

possible in ordinary social interactions."

It has frequently been asserted that, according to objective reports, children with asthma are generally inadequate in their social relations (e.g. Thomas, 1976). If this was the case then we would expect that the conceptualization of their friends by children with asthma would not be as developed as that of healthy children. Further, a child who was defined socially as very seriously ill would have very little social interaction. If the social definition of childhood asthma was related to its clinical severity we would expect that those children with asthma classed as clinically severe would have a more under-developed conceptualization of their friends than would children with asthma classed as clinically mild.

Investigation of the children's conceptualizations of their social relations might reveal some additional insights. For example, Lask (1966) suggested that conflict in interpersonal relations was a provocative factor in the development of childhood asthma. We would expect that any evidence of greater conflict in the social relations of children with asthma would be apparent in their conceptualizations of their friends.

The family of the child with asthma has frequently been implicated as a factor in the development of the illness. Several psychiatric reports have claimed that the mothers of children with asthma were overprotective (see section 3.4). Although few studies have specifically considered the influence of the siblings, generalizations about stressful family life suggest that psychiatrists have assumed that brothers and sisters often have an adverse effect on the health of children with asthma.

In the same way as a child's understanding of his friends is dependent upon the extent of his interaction with them, a child's understanding of the members of his family depends on the type of interaction he has with them. Thus family relationships which are peculiar to the families of children with asthma should be apparent in the social representations of the family members developed by those children.

Finally, the children's school has also been implicated in the list of social factors which can have an adverse effect on the health of children with asthma (see Pinkerton, 1974). According to several psychiatric reports these children behave strangely in school. For example, Rackham (1976) reported that "the boys are easily diverted, and they find concentration, other than for short periods, very difficult." Such a description is typical of the passive psychiatric approach which leaves behaviour completely devoid of any meaning.

Adopting the active conception of Man implies that to understand human behaviour we must understand its meaning for the actor. To understand the child's behaviour in school, strange or not, we would need to grasp the child's own view of school. If the child with asthma viewed school in a particular fashion then we would expect that his behaviour would not be the same as the healthy pupils.

#### 4.5 Conclusion

The contemporary medical approach to the understanding of illness has been based upon a Cartesian image of Man and a positivist method of enquiry. An alternative approach could begin

by accepting a model of Man as an active social being, and could adopt a phenomenological method of enquiry. This new approach, based upon the commonsense psychology of the layman, has suggested various investigations which could increase our understanding of childhood asthma.

Firstly, in everyday life the layman, unlike the physician, does not equate clinical symptoms with a physiological impairment. Rather, the layman attempts to understand the symptoms with reference to his everyday activities. It is upon the basis of this social definition that the layman takes action, which may or may not be beneficial. In the case of childhood asthma, we could begin by exploring the meaning of asthma to the children who have it. Variations in the children's definitions may help explain the clinical and epidemiological variations which have evaded physiological explanations.

Secondly, to become sick the layman must be sanctioned by those around him. Having conferred the label sick on someone, that person is then relieved of his normal obligations. However there may be differences in the ease of access of particular individuals to the sick role. Examination of the way healthy children attribute responsibility to children with asthma might reveal an explanation for the epidemiological variations in the reported prevalence of childhood asthma. In addition, investigation of the way children with asthma themselves attribute responsibility would reveal whether they define themselves as pawns of the environment or origins of change.

Thirdly, in everyday life the social environment is not regarded as objective and fixed. Rather, the layman learns to

define his social environment in a certain way and reacts to it accordingly. Thus, to understand a person's social behaviour requires that we understand his interpretation of his social relations. If children with asthma have certain problems with their friends, their family, or at school, we would expect this would be apparent in the conceptualization they have of them. Thus, to understand the everyday life of children with asthma requires that we investigate their own view of the social world.

Various empirical studies have indicated that children with severe physical handicaps are more restricted in their social relations than those with a minor illness. However, there may be individual variations, with children with a minor illness being restricted from, or excluding themselves from, substantial social interaction. An investigation of the various ways children with asthma conceptualize their social relations could increase our understanding of the social definition of different children with asthma and perhaps explain the clinical and epidemiological variations in the severity and prevalence of the illness.

In conclusion, adopting the commonsense view of Man has suggested five main areas for empirical investigation:

- (a) the meaning of asthma to the children with asthma themselves;
- (b) the way children with asthma attribute responsibility;
- (c) the way children with asthma view their friends;
- (d) the way children with asthma view their family;
- (e) the way children with asthma view school

Consideration of each of these issues will begin to provide an understanding of the psycho-social, rather than the physiological,

aspects of childhood asthma, in the hope that the new information acquired will provide an explanation of the clinical and epidemiological variations in the severity and prevalence of the illness.

Each of the investigations will be considered separately. We shall begin each by a review of the relevant literature and a description of the methodology involved.

## CHAPTER V

### PARTICIPANTS IN THE STUDY

#### 5.1 Selection of Children

Sixty children took part in the study. Thirty of these were diagnosed by their doctor as having asthma while the rest did not have asthma or any other chronic illness. All of the children were aged between 8-12 years. This age range was selected not only because it is considered a single cognitive developmental stage in the Piagetian scheme (the period of concrete operations), but also because the children have not reached adolescence, where possibly more complicated psycho-social problems in their development might only make our analysis more awkward. Moreover, it is also at about this age range that most children have become free of the usual series of childhood infections, so that the influence of asthma on their way of life has become clearer (Voorhorst-Smeenk, 1977).

The children who had asthma were obtained from two centres:

- (1) 10 were out-patients at the Chest Clinic, Belvidere Hospital, Glasgow;
- (2) 20 were patients at Craigshill Health Centre, Livingstone, West Lothian.

Two centres were used in the hope of obtaining a fair range of asthma severity both physiologically and clinically. Fifteen of the children were aged between 8 years and 9 years 11 months, and these children will in future be referred to as the young or younger children. The other children were aged between 10-12 years and will in future be referred to as the old or older children. Ten of the children were girls and the rest boys (this is the usual

Table 5.1: Age and sex of the children with and without asthma, and the social class of their families.

		Children with asthma		Children without asthma			
		8yrs-9yrs11mths (Young)	10-12 yrs (Old)	8yrs-9yrs11mths (Young)	10-12yrs (Old)		
Boys	Middle class families	2	4	4	1	11	35
	Working class families	7	7	3	7	24	
Girls	Middle class families	0	1	1	1	3	25
	Working class families	6	3	7	6	22	
		15	15	15	15		
		30		30			

sex ratio obtained in Britain for children with asthma). The children were also divided into two groups according to their father's occupation. This showed that seven children came from middle class families (social classes I, II and IIIN according to the Registrar General's Classification of Occupations, 1970) and twenty three children came from working class families (social classes IIIM, IV and V).

The thirty healthy children came from Bannockburn Primary School, Stirlingshire. Although attempts were made to match these children according to their sex and their social class, with the children who had asthma, because of the difficulties involved, this was only partially achieved. Whereas the age and social class ratios were maintained, there were, however, fifteen boys and fifteen girls. Table 5.1 gives the full details of the age, sex and father's social class of the children with and without asthma.

## 5.2 Physiological Assessment of the Children with Asthma

All of the children with asthma had their ventilatory capacity measured using a spirometer. As explained earlier, the performance of a child with asthma on a spirometer, which gives a measure of forced expiratory volume in one second ( $FEV_1$ ) and forced vital capacity (FVC), provides a good estimate of any resistance in that child's airways. Even when the child is not wheezing, his scoring on these measures usually indicates a certain amount of airflow resistance when compared with the scores of children without asthma.

The tests were all administered by physicians at the two centres named. In the majority of cases the children were

Table 5.2A: Details of the children with asthma classified as physiologically mild.

Subject Number	21	22	23	24	25	26	27	28	29	30
Age (Yrs.)	8.7	10.9	11.1	9.8	11.0	9.3	10.0	10.9	11.4	9.2
Sex	M	M	F	F	M	M	M	M	M	M
Social class	W.C.	M.C.	W.C.							
FEV <sub>1</sub>	2.26	2.38	2.62	1.65	2.25	1.65	1.70	2.00	2.00	2.50
FEV <sub>1</sub> /FVC	94	86	88	94	94	89	85	83	83	93
$\frac{\text{Observed}}{\text{Predicted}}$ FEV% Observed Predicted	100	98	98	100	100	100	98	95	95	100

Note: For sex, M= Male, F = Female:

For social class, W.C. = Working class, M.C..= Middle class.

Table 5.2B: Details of the children with asthma classified as physiologically moderate

Subject number	11	12	13	14	15	16	17	18	19	20
Age (Yrs.)	9.9	9.3	8.0	12.0	11.1	10.9	8.1	8.4	12.0	11.9
Sex	F.	M.	M.	M.	M.	F.	F.	F.	M.	M.
Social class	W.C.	W.C.	W.C.	W.C.	M.C.	W.C.	W.C.	W.C.	M.C.	M.C.
FEV <sub>1</sub>	1.86	2.13	1.86	2.81	1.20	1.80	1.35	1.25	1.80	2.0
FEV <sub>1</sub> /FVC	83	82	93	79	78	82	79	78	82	82
<u>Observed</u> FEV%	93	93	94	91	90	92	89	88	94	94
Predicted										

Note: For sex, M = Male, F = Female.

For social class, W.C. = Working class, M.C. = Middle class.

Table 5.2C. Details of those children with asthma classified as physiologically severe.

Subject number	1	2	3	4	5	6	7	8	9	10
Age (Yrs)	11.0	8.6	11.4	8.6	8.9	10.9	10.0	9.4	11.9	10.5
Sex	M	F	F	M	M	F	F	M	M	M
Social class	W.C.	W.C.	M.C.	M.C.	M.C.	W.C.	W.C.	W.C.	W.C.	W.C.
FEV <sub>1</sub>	1.70	1.62	1.80	1.20	0.90	2.60	1.91	1.10	1.20	1.40
FEV <sub>1</sub> /FVC	65	66	72	50	60	74	71	58	50	72
$\frac{\text{Observed}}{\text{Predicted}}$ FEV <sub>1</sub> %	74	73	81	57	69	83	81	67	57	83

Note: For sex, M = Male, F = Female.

For social class, W.C. = Working class, M = Middle class

acquainted with the physicians so they had little apprehension and completed the tests satisfactorily. The highest score from three attempts was taken as the best estimate of airflow restriction. From the two scores obtained, the FEV % was calculated as  $(FEV_1/FVC) \times 100$ . This measure could then be compared with the expected measure for each child as standardized for age and sex, thus giving us a final score of Observed FEV %/Predicted FEV %.

The final scores for the children ranged from 57% to 100%. On the basis of this, the children were divided into three groups of 10 as follows:

- (1) less than 83% were termed physiologically severe;
- (2) 84% - 94% were termed physiologically moderate;
- (3) more than 95% were termed physiologically mild.

The breakdown of these groups according to age, sex and social class are given in Tables 5.2A, 5.2B and 5.2C.

A confirmation of the validity of this grading was provided by the children who were assessed at the health centre. All twenty of these children were also measured on the Wright peak flow meter giving another estimate of their ventilatory capacity known as the Peak Expiratory Flow Rate. When the children were again divided into three groups according to this measure, comparison with the previous grouping showed that they were significantly related. The figures for this are given in Appendix 5.2

### 5.3 Clinical Assessment of Children with Asthma

Each child who had asthma was also graded according to the amount of clinical symptoms he or she presented. There have been several previous attempts to devise a standard grading for this

(e.g. Falliers et al 1966; Walsh and Grant, 1966) but no agreement has been reached. The main problem arises because the frequency and the severity of a child's attacks are not usually recorded in medical records. The child's doctor may not even be aware that a particular child has frequent mild bouts of wheezing because the child, or his mother, might not consider it important to report these. For this reason, alternative techniques for grading the severity of clinical symptoms have to be devised. In this case three different measures were used. Two of these were devised from information obtained from both the child and his mother, and the other from medical records. The three dimensions were:

(1) Frequency of attacks: the importance of an estimate of the frequency of attacks in medical histories of childhood asthma has often been emphasized. However, the problem arises when it is estimated from the patients' and their mothers' recall of the attacks. Yet, Falliers et al (1966) noted that careful history taking from a child had a high correlation with a clinical examination by a physician. Also, Chai et al (1968), although cautioning against the overuse of parental reports, admitted that a mother could recall well previous severe attacks in her child. For these reasons, it was decided that the children and their mothers should be asked to recall details of severe attacks in the previous year. Both the mother and child were encouraged to dwell in detail upon these events and not to give a rapid reply. On the basis of the information provided, the following coding scheme was devised to classify all the replies of both the children and their mothers separately, giving two scores:

- 1: 1 - 3 attacks per year;
- 2: 1 attack every 2 - 3 months;
- 3: 1 attack every 4 - 7 weeks;
- 4: 1 attack every 2 - 3 weeks;
- 5: 1 attack every week

2. Length of attacks: again this is a frequently used estimate of the clinical severity of childhood asthma, but it too is influenced by the problem of recall by the children and their mothers. For this reason, care was taken here to encourage the development of as much information as possible about previous severe attacks. The coding scheme for the replies of the children and their mothers (taken separately to provide two further scores)

- was:
- 1: less than one hour;
  - 2: less than one day;
  - 3: less than three days;
  - 4: less than one week;
  - 5: more than one week

3. Medication: children suffering from asthma are regularly or occasionally receiving some sort of medication. The type of medication prescribed by a physician depends to a large extent on the severity of the symptoms presented by the child. It ranges from simple antibiotics to corticosteroids, which are usually only prescribed in cases of severe wheezing. For this reason, it provides quite an accurate measure of the clinical severity of the wheezing, and the details are usually obtainable from medical records. The actual regimen each child was receiving was scored as follows, after discussion with a general practitioner:

- 1: No treatment or anti-histamines only;
- 2: sodium cromoglycate only;
- 3: Bronchodilator oral only;
- 4: Bronchodilator oral and/or inhalation;
- 5: Corticosteroids

When the five scores were summed, each child had a potential overall score of between 5 and 25, but the actual scores ranged from 9 to 22. On the basis of their overall scores, the children were divided into three groups of ten as follows:

- (1) overall score 16-22 were termed clinically severe;
- (2) overall score 13-15 were termed clinically moderate;
- (3) overall score 9-12 were termed clinically mild.

The individual scores for each of the three groups are presented in Tables 5.2A, 5.3B and 5.3C, along with details of age, sex and social class.

#### 5.4 A note on the statistics involved in Future Analyses

Most of the statistical analyses performed in this study followed a two stage technique to assess the relationship between any two variables. First, a Kendall rank correlation coefficient, ( $\tau$ ), was used to measure the degree of relationship between two variables. This test is one of the most popular methods used where the variables to be examined are scaled in an ordinal fashion, as was mostly our case. An advantage of this technique is that it can be followed by partial correlation which controls for other variables which might be the cause of the apparent relationship between two variables.

Table 5.3A: Details of children with asthma classified as clinically mild.

Subject number	22	4	25	26	5	18	29	10	30	20
Age (Yrs)	10.9	8.6	11.0	9.3	8.9	8,4	11.4	10.5	9.2	11.9
Sex	M	M	M	M	M	F	M	M	M	M
Social class	W.C.	M.C.	W.C.	W.C.	M.C.	W.C.	M.C.	W.C.	W.C.	M.C.
Frequency(child)	1	1	3	4	2	1	1	1	2	3
Length(child)	2	2	2	1	2	2	1	1	3	1
Frequency (Mother)	3	1	2	3	2	1	3	1	1	3
Length (Mother)	1	2	1	2	2	2	1	3	2	1
Medication	2	3	2	2	2	5	3	5	4	3
Severity score	9	9	10	12	10	11	9	11	12	11

Note: For sex, M = Male, F = Female. For social class, W.C. = Working class, M.C.= Middle class.

Table 5.3B: Details of children with asthma classified as clinically moderate.

Subject number	11	12	13	3	24	27	28	16	9	19
Age (Yrs)	9.9	9.3	8.0	11.4	9.8	10.0	10.9	10.9	11.9	12.0
Sex	F	M	M	F	F	M	M	F	M	M
Social class	W.C.	W.C.	W.C.	M.C	W.C.	W.C.	W.C.	W.C.	W.C	M.C
Frequency(child)	5	2	3	3	3	3	3	3	1	2
Length (child)	3	4	4	2	3	2	3	3	3	4
Frequency (mother)	3	1	2	3	3	3	3	2	3	1
Length (Mother)	1	4	3	3	3	1	2	2	3	3
Medication	2	3	1	3	3	4	4	4	4	3
Severity score	14	14	13	14	15	13	15	14	14	13

Note: For sex, M = Male, F = Female.

For social class, W.C. = Working class, M.C. = Middle class.

Table 5.3C: Details of the children with asthma classified as clinically severe.

Subject number	1	21	2	23	15	17	6	7	8	14
Age (Yrs)	11.0	8.7	8.6	11.1	11.1	8.1	10.9	10.0	9.4	12.0
Sex	M	M	F	F	M	F	F	F	M	M
Social class	W.C.	W.C.	W.C.	W.C.	M.C.	W.C.	W.C.	W.C.	W.C.	W.C.
Frequency (child)	5	5	3	3	4	4	2	4	4	5
Length (child)	2	2	4	5	4	3	3	5	3	1
Frequency (Mother)	5	5	3	1	4	3	2	4	4	5
Length (Mother)	2	2	3	5	4	3	4	5	3	2
Medication	3	4	4	3	2	5	5	4	5	4
Severity score	17	18	17	17	18	18	16	22	19	17

Note: For sex, M = Male, F = Female. For social class, W.C. = Working class, M.C. = Middle class.

Let's take an example to clarify this. Say we compared the scores of the physiological and clinical classifications and found that the Kendall's tau test showed a significant relationship between the two variables. However, this finding might be due to the fact that all the girls with asthma classed as physiologically severe also had asthma classed as clinically severe, but yet there was no such relationship with the boys. To control for this possibility we could 'partial out' the effect of sex. This would provide a new value of Kendall's tau which would give a more accurate estimate of the relationship between the physiological and clinical classifications of the children's asthma.

In our case we considered four main variables when we analysed all of the children together, i.e. whether or not the children had asthma, the children's age, sex, and their families' social class. When the information on the children with asthma was analysed separately, we also considered their clinical and <sup>or</sup> physiological classifications. It can be assumed, except where otherwise noted, that the significance of a relationship between any two variables in future analyses has been obtained via the process of partial correlation. This would mean that if we show a significant relationship, say, between the age and the weight of the children, this has emerged from the analysis after controlling for the possible effects of whether or not the children had asthma, their sex, and their families' social class.

The presentation of the results of the partial correlation analyses will be in two parts. The first part will be a table presenting the tau values of the relationship between one set of variables and another. The larger the tau value, the greater the relationship between the two variables in that particular analysis.

Those values followed by an asterisk indicate that the relationship is statistically significant at, at least, the five per cent level.

In these tables, the direction of the relationship between any two variables is indicated by preceding each tau value by either a negative sign or no sign. No sign before a value indicates that either the children with asthma, the younger children, the boys, the children from middle class families, or the children with either physiologically or clinically mild asthma more frequently gave the reply indicated in the vertical items column of the table. A negative sign before a tau value indicates that either the children without asthma, the older children, the girls, the children from working class families, or the children with either physiologically or clinically severe asthma more frequently gave the reply indicated in the items column.

For example, Table 5.4 shows that children without asthma (negative sign before tau value), especially the boys (no sign before tau value), like dogs. However, the children with asthma (no sign before tau value), especially those from working class families (negative sign before tau value), like cats.

Table 5.4: Example of layout of Kendall's tau table

Items	Classifications of children			
	Asthma	Age	Sex	Social class
Likes dogs	-0.34*	0.10	0.42*	0.26
Likes cats	0.41*	0.24	-0.21	-0.36*

The second part of the presentation of the results of the analyses will be a series of tables displaying further details of those variables found to be significantly related.

### 5.5 Relationship between classifications of children with asthma

Our first analysis compared the clinical and physiological

classifications of the children's asthma. The results showed that although there was a tendency for children rated as mild, moderate or severe in one classification to be similarly rated in the other classification, this relationship was not significant (Table 5.5A). If we accept that our measures of physiological and clinical severity provided a good estimate of these two aspects of childhood asthma, then this finding provides some confirmation of our earlier discussion. We had previously noted that an assumption of the medical method was to equate illness symptoms with physiological impairment. Our finding, however, shows that the variation in the physiological classification of the children does not explain the variation in the clinical classification. Perhaps further study of some psycho-social aspects of childhood asthma will partially explain this disparity between these two classifications of the phenomenon. However, it should be noted that the tendency for the two classifications to be related suggests that we cannot ignore the degree of the children's bronchial sensitivity in any explanation of the extent of their wheezing.

Considering the physiological classification of the children separately, we found that there was no significant relationship between the children's scoring on this and their age, sex or social class (Table 5.5B). The nil relationship with age and sex was to be expected since both were involved in obtaining the standardised measures of airflow which were used in our physiological classification.

Considering the clinical classification of the children, we again found that there was no significant relationship between the children's scoring on this and their age, sex or social class (Table 5.5B). Closer analysis revealed that there was a non-

Table 5.5A: Relationship between the physiological and the clinical classifications of the children's asthma.

Physiological classification	Clinical Classification		
	Mild	Moderate	Severe
Mild	5(50%)	3(30%)	2(20%)
Moderate	2(20%)	5(50%)	3(30%)
Severe	3(30%)	2(20%)	5(50%)

$$\tau = 0.26, \quad p = 0.1$$

Table 5.5B: Relationship of the physiological and clinical classifications of the children's asthma to their age, sex, and families' social class.

	Age	Sex	Social class
Physiological classification	-.05	-.13	.28
Clinical classification	.11	.25	.29

(Note: Figures give Kendall's tau values of the relationships between the different classifications)

Table 5.5C: Relationship between the clinical classification of the children's asthma and their sex.

Clinical classification	Sex of children	
	Boys	Girls
Mild	9(45%)	1(10%)
Moderate	6(30%)	4(40%)
Severe	5(25%)	5(50%)

Table 5.5D: Relationship between the clinical classification of the children's asthma and the social class of their families.

Clinical classification	Social class	
	Middle class	Working class
Mild	4(57%)	6(26%)
Moderate	2(29%)	8(35%)
Severe	1(14%)	9(39%)

significant tendency for girls and children from working class families to be rated as clinically severe (Tables 5.5C and D). The slight relationship with sex tends to agree with Godfrey's (1977) clinical impressions although it also disagrees with other reports (e.g. McNicol and Williams, 1973). Also, the slight relationship with social class agrees with previous reports (e.g. Dawson et al 1969). However, since neither of our findings reached statistical significance they cannot be treated with confidence, although a finer analysis of some psycho-social aspects of sex and social class might prove interesting.

#### 5.6 Social background of the children

To increase our understanding of the social background of the children in the study, each child was asked to provide some details of their living conditions. From the information provided five social indices were devised (Appendix 5.6). Considering all of the children together, we found that none of these indices were related to whether or not the children had asthma (Table 5.6). However, we did find that the children from working class families were more likely to live in a smaller house (Table 5.6A) and to share a bedroom (Table 5.6B).

In addition when we considered the children with asthma alone we found that those with asthma rated as clinically severe were also more likely to share a bedroom (Table 5.6C).

We also found that those children with asthma classed as physiologically severe were more likely to come from larger families (Table 5.6D). Bennett et al (1971) found in their study of Kent schoolchildren that those from larger families performed worst on

Table 5.6: Relationship between the social background and the different classifications of the children

Items	Classifications of the children						
	Asthma	Age	Sex	Social class	Clinical	Physiological	
Position in family(oldest)	.08	-.06	-.02	.10	-.08	.22	
Size of family (Large)	.18	-.07	.09	-.15	-.10	-.39*	
Broken family	.10	.14	.08	.01	-.11	-.04	
Size of home (large)	.01	-.01	.09	.28**	.10	-.14	
Shares bedroom	.12	.03	.07	-.36***	-.35*	-.19	

Note: Figures give Kendall's tau values of the relationships between items and the different classifications of the children.

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Table 5.6A: Relationship between the social class of the children's families and the size of their homes

Social class	Number of bedrooms			
	1	2	3	4 or more
Middle class	0(0%)	1(7.1%)	10(71.4%)	3(21.4%)
Working class	1(2.2%)	14(30.4%)	29(63.0%)	2( 4.3%)

Table 5.6E: Relationship between the social class of the children's families and whether the children share bedrooms

Social class	Shares bedroom
Middle class	4(28.6%)
Working class	30 (65.2%)

Table 5.6C: Relationship between the clinical classification of the children's asthma and whether the children share bedrooms.

Clinical classification	Shares bedroom
Mild	5(50%)
Moderate	6(60%)
Severe	7(70%)

Table 5.6D: Relationship between the physiological classification of the children's asthma and the size of their families.

Physiological Classification	Number of children in families		
	1 - 2	3	4 or more
Mild	6(60%)	4(40%)	0(0%)
Moderate	3(30%)	3(30%)	4(40%)
Severe	4(40%)	1(10%)	5(50%)

lung function tests but that this relationship disappeared when they controlled for the effects of area of residence and social class. Since we have only controlled for social class in our analysis this relationship which we have shown may only be an artifact of the area of residence of the children.

The two other indices which were not related to any of the classifications of the children considered were:

- (1) broken home: only 3 (5%) of the children didn't have a father at home, and only 1 (1.7%) lived with his grandmother.
- (2) ordinal position: besides the 6 (10%) only children, 26 (43.3%) were the oldest of two or more siblings, 15 (25%) were the youngest of two or more siblings, and 13 (27.7%) were in the middle of two or more siblings.

In summary, we can claim that, in our sample of children, there was little difference in the family structure or living conditions of the children with and those without asthma. However, it seems that children with clinically severe asthma tended to share a bedroom which was more common in working class homes.

### 5.7 General health of the children

In an attempt to provide further information on the general health of all the children in the study, each child was asked to provide some details of recent health complaints and medical consultations. Attention was concentrated on a short list of complaints sometimes labelled "psychosomatic", "asthma-related" complaints like eczema and hayfever, other minor ailments and

medical consultations. Of the seventeen coding frames used in the analysis (see appendix 5.7A) twelve were related to at least one of our classifications of the children (Table 5.7).

In addition, the mothers of the children with asthma, whose interviews will be discussed in detail later, were also asked a few questions about the health of their children. Of the seven coding frames used in the analysis of this section of their interviews (see appendix 5.7B) two were related to one or more of our classifications of the children with asthma (Table 5.7).

From the children's interviews we found that five items were related singly to whether or not the children had asthma but not to any other classification of the children. We found that the children with asthma were more likely to admit that they bedwetted, had eczema, had someone else with asthma in their family, and to have visited their doctor frequently (Table 5.7A). At the same time they were less likely to report any other minor illnesses. They also complained more of trouble getting to sleep at night, but so did the children from middle class families when contrasted with those from working class families (Table 5.7B), and the older children when contrasted with the younger children (Table 5.7C). This suggests that the older children with asthma from middle class families were most likely to report sleep problems.

For our interpretation of these findings it should be realised that they are unlike the children's reports of their social background which were concerned with impersonal details. These 'accounts' of the children's health are much more personally valuable and hence subject to attributional bias. Farr (1977) suggested that we should guard against such a bias by considering

Table 5,7: Relationship of items concerning general health of the children from the children's and mothers' interviews to the different classifications of the children.

Items	Classifications of the children					
	Asthma	Age	Social class	Sex	Clinical	Physiological
Sleep problems	.30**	-.29**	.35**	.04	.22	-.24
Hand trembling	-.09	-.07	.18	-.23*	-.03	-.03
Heart palpitations	.15	.10	-.05	-.30**	-.09	.01
Nightmares	.07	-.01	-.10	.04	-.07	-.11
Sweaty hands	-.15	.13	-.02	-.06	-.24	-.18
General health	-.01	-.01	-.14	-.01	-.14	.06
Likes doctor	.10	.01	.24*	-.05	-.13	-.13
Been in hospital	-.02	.04	-.13	.02	.14	-.04
Likes hospital	-.10	.13	-.19	-.06	.05	.04
Visits doctor often	.53***	.04	-.06	.04	-.25	.28
Minor illness	-.22*	-.11	-.09	-.01	.19	.05
					(.16)	(.29)

Table 5.7 (cont)

	Asthma	Age	Social class	Sex	Clinical	Physiological
Hayfever	.13	-.02	.09	.14	-.51** (.01)	-.02 (.27)
Eczema	.31**	-.03	-.12	-.16	.07 (.19)	.08 (.05)
Nervous	-.11	-.03	.04	-.01	.42** (.36*)	.23 (-.18)
Headaches	-.03	-.30**	-.27*	.14	.32* (-.10)	.04 (.12)
Bedwets	.23*	.18	.18	.03	-.09 (-.46**)	-.17 (-.29)
Asthma in family	.41***	.20	-.02	.04	-.21 (-.15)	-.13 (-.01)

\*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ .

Note: Figures (in brackets) give Kendall's tau values of the relationships between the items from the children's and mothers' interviews and the different classifications of the children.

TABLE 5.7A : ITEMS FROM CHILDREN'S INTERVIEWS CONCERNING HEALTH  
RELATED TO WHETHER OR NOT THE CHILDREN HAVE ASTHMA

ITEMS	CHILDREN	
	WITH ASTHMA	WITHOUT ASTHMA
ECZEMA	10 (33.3%)	1 (3.3%)
BEDWET	6 (20 % )	1 (3.3%)
SLEEP PROBLEMS	19 (63.3%)	10 (33.3%)
SPECIFIC AILMENTS	2 ( 6.7%)	6 (20 %)
ASTHMA IN FAMILY	10 (33.3%)	0 ( 0 %)
REGULAR VISITS TO DOCTOR	15 (50 % )	2 (6.7%)

TABLE 5.7B: ITEMS FROM CHILDREN'S INTERVIEWS CONCERNING HEALTH  
RELATED TO THE SOCIAL CLASS OF THE CHILDREN'S FAMILIES

ITEMS	SOCIAL CLASS	
	MIDDLE CLASS	WORKING CLASS
SLEEP PROBLEMS	10 (77.9%)	19 (40.4%)
REGULAR HEADACHES	5 (39.5%)	29 (61.7%)
LIKING FOR DOCTOR	2 (15.4%)	2 ( 4.3%)

the tendency to under-attribute undesirable factors to ourselves. Following Harré and Secord's (1972) advice, he advocated that we revise the accounts we obtain through negotiations, and subject them to empirical criticism. We can do this by not only referring to previous reports, but also by comparing the limited evidence obtained from the mothers of the children with asthma.

However, evidence of attributional bias in the children's accounts is limited, with most of the findings noted so far agreeing with previous reports. The finding that children with asthma report bedwetting more often not only agrees with previous research linking enuresis with childhood asthma (e.g. Rutter et al, 1970) but also the number of the mothers of the children with asthma reporting it for their children was almost the same (5, 16.7%). The evidence regarding the heritability of asthma accords with the greater reporting of asthma in their families by the children with asthma, and also the same number of the mothers of the children with asthma (10, 33.3%) reported this. Physiological studies of the sleep patterns of children with asthma (e.g. Kales et al, 1970) agree with the account of the children with asthma complaining more of sleep problems. However, the other three items related to childhood asthma create a few problems in explanation.

Firstly, the finding that the children with asthma reported more frequent visits to their doctor agrees with the comments by general practitioners (e.g. Gregg, 1972) about how often they have to deal with the problems of childhood asthma. However, compared with their mothers' reports the children with asthma seemed to over-estimate the frequency of their medical consultations. Why 15 (50%) children with asthma as compared with only 8 (26.7%)

of the mothers reported frequent visits to the doctor is not clear. Perhaps it was because the medical consultation makes a greater impression on the children so they exaggerate the frequency of the visits.

The greater reporting of eczema by the children with asthma seems quite straightforward at first. The asthma-eczema syndrome has been well documented (e.g. Godfrey 1977) and almost the same number of mothers (9, 30%) reported eczema in their children. However, closer analysis of the children's accounts revealed that of the twelve who reported eczema, 10 claimed it was current and only 2 that it was infantile. On the other hand only 1 mother claimed it was current while 8 claimed it was infantile. Perhaps it is that the children, with their more intimate experience of the complaint, retain a strong memory of it after it is no longer apparent, whereas the mothers relegate eczema to one of the many complaints children have in their early years.

The finding that children with asthma tended to report fewer minor ailments has not previously been noted. However, it may well be the case, especially since only 1 (6.7%) mother of a child with asthma reported that her child had any other complaint. This might be because asthma acts as some kind of physiological protection against other illnesses. On the other hand, it might well be because asthma has assumed such primacy in that region of a child's (and his mother's) life space concerned with health and illness (G. Lewin, 1957) other complaints assume a reduced importance, compared to within the life space of healthy children, and so are under-reported.

Considering the children with asthma separately we found that

three items from their interviews were related to the clinical classification of the children (Table 5.7E). This showed that whilst the children classed as clinically severe were more likely to report having hayfever, they were less likely to complain of nerves and headaches. The last problem was especially reported by the older children from working class families (Table 5.7B and C). However, once again, we should be cautious about accepting these findings at their face value.

The relationship of hayfever to clinical severity was previously reported by McNicol and Williams (1973) although they also noted that hayfever was more common among all children with asthma. Hayfever was not related to clinical severity in the mothers' interviews. This might be explained by the fact that although only 4 (13.3%) mothers definitely reported that their children had hayfever, another 9 (30.0%) mentioned summer sneezes which might be accepted as a description of hayfever. However, when we combined summer sneezes with hayfever there was still no relationship with the clinical classification of the children's asthma.

The other two findings suggest that the children classed as clinically severe under-reported the experience of nervousness and headaches. This time the mothers' reports add some confirmatory evidence, with the mothers of the clinically mild children being more likely to describe their children as nervous. Nine (30%) mothers also reported that their child had occasional headaches, but this was not related to the clinical severity of the children's asthma. These findings might at first encourage the traditional psychoanalytic explanation that if a neurosis does not find its expression through

TABLE 5.7C: ITEMS FROM CHILDREN'S INTERVIEWS CONCERNING HEALTH  
RELATED TO THE AGE OF THE CHILDREN

ITEMS	AGE	
	YOUNG	OLD
SLEEP PROBLEMS	10 (33.3%)	19 (63.3%)
REGULAR HEADACHES	13 (43.3%)	21 (70 % )

TABLE 5.7D: ITEMS FROM CHILDREN'S INTERVIEWS CONCERNING HEALTH  
RELATED TO THE SEX OF THE CHILDREN.

ITEMS	SEX	
	BOYS	GIRLS
HAND TREMBLING	5 (14.2%)	8 (32 %)
HEART PALPITATIONS	24 (68.6%)	23 (92 %)

TABLE 5.7E: ITEMS FROM CHILDREN'S INTERVIEWS CONCERNING HEALTH  
RELATED TO THE CLINICAL SEVERITY OF THE CHILDREN  
WITH ASTHMA

ITEMS	CLINICAL SEVERITY		
	MILD	MODERATE	SEVERE
HAYFEVER	1 (10%)	2 (20%)	4 (40%)
NERVES	7 (70%)	7 (70%)	2 (20%)
REGULAR HEADACHES	7 (70%)	6 (60%)	3 (30%)

TABLE 5.7F: ITEMS FROM MOTHERS' INTERVIEWS CONCERNING HEALTH  
RELATED TO THE CLINICAL SEVERITY OF THE CHILDREN  
WITH ASTHMA

ITEMS	CLINICAL SEVERITY		
	MILD	MODERATE	SEVERE
BEDWET	0 (0%)	2 (20%)	3 (30%)
NERVES	8 (80%)	5 (50%)	4 (40%)

one organ, then it will through another. On the other hand it may be the case that, as before, asthma has assumed such importance for the clinically severe children and their mothers that complaints such as nervousness and headaches are subsumed under it and are not as readily reported.

Finally, the mothers of the clinically severe children were more likely to report that their children bedwetted (Table 5.7F). This item in the children's interview was previously related to whether or not the children had asthma but was not related to the clinical severity of the children with asthma. Perhaps the clinically severe children were once again under-reporting what they considered to be a complaint of minor importance.

None of the items from either the children's or the mothers' interviews was related to the physiological classification of the children with asthma. This would suggest that in the same way as the degree of bronchial sensitivity is not related to the clinical severity of childhood asthma it is also not related to other health problems.

Several other items were related to either the age, sex or social class of all the children. We have already mentioned that sleep problems were more frequently reported by older children especially by those from middle class families. In the case of headaches, these were also reported more frequently by older children but, this time, especially by those from working class families (Table 5.7B and C).

We found that the girls were more likely to complain of hand trembling and palpitations of the heart (Table 5.7D)

The other five items from the children's interview were not related to any of our classifications of the children. We found that only 4 (6.7%) of the children reported that overall they were unhealthy, 8 (13.3%) complained of occasional nightmares, and 43 (72%) reported that they often had sweaty hands but this was usually after some form of exercise. Interestingly, there was no difference between the children in their experience of hospital, with 26 (43.3%) reporting that they had been in one for some reason or another, and 7 (11.7%) expressing some liking for hospitalization.

#### 5.8 Summary

Thirty children with and thirty without asthma took part in this study. The two groups were partially matched for age, sex and social class. The children with asthma were further classified according to physiological severity using lung function tests and according to clinical severity using an index of asthmatic symptoms. Neither of these two classifications were related to the age, sex or social class of the children nor to each other.

Considering the social background of the children there was no apparent difference between the children with and those without asthma. There was however a tendency for the children with asthma classed as clinically severe to share a bedroom.

As regards the general health of the children those with asthma reported certain specific complaints more often than the healthy children. The children with asthma classed as clinically severe were less likely to report certain complaints and more likely to report others. This was partially confirmed by their

mother's reports. No health problems were related to the physiological classification of the children with asthma. There were no consistent age and social class variations in the reporting of complaints although the girls were more likely than the boys to report certain symptoms.

## CHAPTER VI

## THE PERCEPTION OF ASTHMA BY CHILDREN WITH ASTHMA AND THEIR MOTHERS

6.1.1 Introduction

The contemporary medical approach to the understanding and management of childhood asthma has been based upon the disease model. The essence of this approach has been the identification of some physiological process as the cause of the illness symptoms, followed by direct physical attempts to alter that process. The modern treatment regimens prescribed by a doctor for a child with asthma are guided by this approach. When the wheezy child enters the surgery, seeking assistance for his breathing difficulty, the doctor's reaction is usually the prescription of drugs, which are intended to act directly on the structure of the child's airways causing them to dilate, and so ease the child's breathing.

There is little attempt to involve the child in the recovery process. Rather, the child is expected to follow the sick-role outlined by Parsons (1951), and to relinquish all responsibility for recovery into the hands of his doctor. The doctor, in his turn, will dispense his secret remedies as if to a machine. This type of doctor-patient relationship has been described by Kasl and Cobb (1966) as asymmetrical. Further, they claimed, this sort of relationship is purposely cultivated by the doctor:

"it is the doctor, who while permissive and supportive, manipulates most of the rewards, denies any reciprocity, and maintains a relatively affective neutrality."

Kasl and Cobb concluded that it is hardly surprising that such a relationship was often considered unsatisfactory by the sick person.

The veil of secrecy, from behind which the physician works,

has been described as one of the defining characteristics of today's medical profession (Friedson, 1970). In Britain, Cartwright (1964) found that the paucity of information, about the illness and prescribed treatment, given to sick people by their doctors, has almost become part of hospital folklore. Cartwright reported that sixty per cent of hospital patients she interviewed claimed they had difficulty in obtaining information from the attending physicians. Yet there is evidence to suggest that not only is this asymmetrical relationship unsatisfactory, but it might also retard the recovery rate of the sick person.

In a well-known study by Egbert et al (1964), attempts were made to increase the sick person's understanding of his illness and his treatment. In this study a group of patients who were about to undergo elective intra-abdominal operations were seen individually by the anaesthetist prior to the operation. He explained to the patients the operational procedure, the pain to expect afterwards, and he suggested how best to cope with this pain. Another group of patients undergoing the same operation were given no such information. The study showed that those patients who had been given the information needed a lower dose of pain-relieving drugs after the operation, and left hospital earlier than those who had received no information.

It might be suggested that the physician tends to divulge little information about the illness and the treatment prescribed because the sick person does not seek such information. Yet Lewin (1957) reported that her experience with people who had epilepsy suggested that they were "overwhelmingly concerned with trying to understand their mysterious condition, seeking clarification of its

medical, social and psychological aspects." Further, Cartwright (1964) added that it was not that the patients in her study did not seek information about their health, but that rather the doctors found it "easier not to tell."

The physician's over-concern with treating the organic basis of illness neglects the possible importance of the sick person's own evaluation of his illness. As Friedson (1970) has suggested:

"While illness as a bio-physical state exists independently of human knowledge and evaluation, illness as a social state is created and shaped by human knowledge and evaluation."

There have been few attempts to explore the patient's view of asthma. What sort of meaning does the child with asthma attribute to his illness? Is that meaning related to the bio-physical state (degree of bronchial sensitivity) or the social state (clinical symptoms) of the illness? There is some evidence to suggest that an understanding of asthma by children suffering from it can be beneficial. Rackham (1976) reported that her experiences of a boarding school for children suggested that the gaining of an understanding of the illness by the children was one of the prime values of the school. She noted:

"Comments from past pupils have shown that given the chance to understand their asthma and learn methods of dealing with it (breathing exercises, relaxation, awareness of underlying emotional stress) they can develop confidence to be masters of their asthma rather than being mastered by it."

It would seem that an increased understanding of children's

perception of their asthma might help provide an explanation for the clinical variations in the severity of the illness.

#### 6.1.2 The beginnings of an attack

Asthma is considered to be a cyclical phenomenon. It is described as periodic bouts of wheezing and breathlessness followed by periods of relative quiescence. However, such a description is, at best a rough generalization. In some children the wheezing may build up gradually over a period of days leading to a frightening climax of acute breathlessness which might then rapidly fade. In others it may start suddenly and violently and last for several days.

The innumerable variations in the clinical nature of childhood asthma prompted physicians to look for physical and mental peculiarities in the different children, and also to attempt to identify certain objective features of the children's environment as potential precipitants of attacks. The tendency has been to sharply differentiate the child from his environment. Interaction between the two was conceived in a ping-pong fashion. For example, if a certain allergen was identified by a physician as the precipitant of attacks of asthma in a particular child, then it was assumed that the child had a certain sensitivity, such that exposure to that allergen automatically triggered an attack.

Various techniques were employed to objectively identify those factors which could precipitate an attack in a particular child. Rees (1963) reported a study in which a team consisting of "a physician, specially trained in allergy, a paediatrician, an otorhinolaryngologist, and psychiatrist" identified allergens,

infections and psychological factors as being of different importance as precipitants for different children. However, although factors such as these may be considered possible precipitants, it does not mean that they will always precipitate attacks in particular children. An example of the variability of children's reactions to certain objectively defined precipitants was the experiment by Long et al (1958). He found that a group of children who had attacks of wheezing when exposed to house-dust at home, did not wheeze when exposed to such dust while in hospital. In another experiment, Luparello et al (1968) found that when a group of people with asthma inhaled a neutral substance, to which they believed they were allergic, they rapidly developed wheezing. While it would be idealistic to suggest that only factors of which we are aware can influence our behaviour, an understanding of what the children themselves think precipitate attacks may be more important than the physical characteristics of those factors in explaining the clinical variability of childhood asthma.

Purcell (1963) examined the self-reported precipitants of asthma given by a group of boys who had been hospitalized with severe attacks of asthma. He found that those boys who recovered rapidly from their attack reported unpleasant emotional experiences (e.g. worry, anger, sadness) as important precipitants more frequently than the slow recoverers. There was also a tendency for the latter group to consider physical factors (e.g. pollens, foods) more important.

It would be interesting to know whether children with clinically severe asthma reported certain precipitants more frequently, irrespective of their airways sensitivity.

### 6.1.3 The attack

Despite various precautions, the majority of children classified as having asthma have, at some stage, experienced a full-blown attack. Although it has been recognised as a frightening experience for the young sufferers, there have been relatively few attempts to understand the children's experiences of the event.

In one early study by Weiss (1966), a group of children, hospitalized with severe wheezing, were administered a revised version of the Mood Adjective Checklist, whilst having an attack, and within twenty four hours after it had subsided. He found that positive moods (e.g. happy, relaxed, alert) were reported more often after the attack, while negative moods (e.g. uneasy, confused, worn-out) were reported more often during the attack. He also noted that even during an attack positive moods predominated over negative moods. He concluded that while an asthmatic attack was associated with anxiety and fatigue, it was not associated with depression and aggression. Although this is an interesting report, Weiss did not attempt to relate the different moods to either the physiological or clinical severity of the children's asthma. Perhaps those children who are most uneasy and confused during an attack are the ones whose asthma would be classed as clinically severe, irrespective of the bronchial sensitivity.

More recently, Kinsman and his colleagues have attempted to explore the personal experience of having an attack of asthma. They (Kinsman et al, 1973a) devised an Asthma Symptom Checklist made up of 77 items which 100 people hospitalized with severe wheezing associated with having an attack. Cluster analysis of responses to this checklist revealed five main categories. Two of

these were considered mood categories and labelled Panic-Fear and Irritability; two were considered somatic categories and labelled Airway-obstruction and Hyperventilation-Hypocapnia (dizziness, headache, etc.); and the final category was labelled Fatigue.

Administration of this checklist to 175 patients, ranging in age from 14 to 67 years, revealed some interesting features (Kinsman et al, 1973b). Airway obstruction was the most frequently reported category during an asthmatic attack. This was followed by fatigue, panic-fear, irritability, and hyperventilation-hypocapnia. They also found that females reported experiencing panic-fear and fatigue more often than did males. However, they suggested that this might have been due to the reluctance of the males to report experiencing 'un-masculine' categories, rather than it being a true reflection of their experience. They also noted that those with high panic-fear scores more frequently reported hyperventilation and received more steroid treatment.

However, like Weiss' study, Kinsman et al did not relate the patients reported experiences to the physiological and clinical severity of their asthma. The last finding linking panic-fear with increased drug therapy would suggest that those children with severe clinical asthma, irrespective of bronchial sensitivity, would be more likely to report distress during an attack.

#### 6.1.4 Treatment of an attack

Contemporary treatment of childhood asthma involves the administration of various drugs. This can be illustrated by examining the expenditure on drug therapy by the National Health Service in Britain. Table 6.1.4 sets out the estimated

expenditure on drugs in 1974 (Office of Health Economics, 1974).

Table 6.1.4: Cost of asthma to the N.H.S. in £millions (1974)

	<u>Asthma</u>	<u>Total</u>	<u>% of Total</u>
Hospital services	18.34	2,630	0.53
General medical services	2.88	253	1.14
Pharmaceutical services	7.82	352	2.22
Dental and ophthalmic services	-	206	-
	<hr/> 25.54	<hr/> 3,442	<hr/> 0.71

This shows that almost one third of the £25 million spent on the treatment of asthma in 1974 was on drugs. The most popular drugs prescribed are bronchodilators, sodium cromoglyate, and corticosteroids. Various controlled studies with placebos (e.g. Brogden et al, 1974) have shown that these drugs have been effective in reducing wheezing and breathlessness. However, this does not negate the possibility that children's attitudes towards the various forms of medication may influence the relative effectiveness of the medications.

A series of studies by Krugman et al (1964) and Lyerly et al (1964) have demonstrated the importance of the patients' attitudes and beliefs about drugs prescribed. In these studies, some people were given energisers and others sedatives. They were also given some information about the potential properties of one or other of the drugs. However, the information given was not matched to the type of drug prescribed. It was found that the people generally behaved in accordance with the information provided, even though this was often at variance with the properties of the drug prescribed.

Commenting on these studies, Murray (1976) noted that since "drugs usually are given with expressed or implied suggestions concerning some expected effect... (they) are in part placebos." That is, at least part of the change following the taking of any drug are due to people's expectations rather than to the chemical action of the drug.

Despite the prescription of large amounts of drugs to children with asthma, there has been no attempt to examine the children's views of this treatment. If a partial placebo effect operated we would expect that those children with the most positive views of the treatment prescribed would have fewer asthmatic symptoms, irrespective of their bronchial sensitivity.

#### 6.1.5 Development of the children's views of asthma

Children's general understanding of their asthma, their reaction to an attack, and their opinions about the treatment prescribed, are not simply idiosyncratic personal viewpoints. Rather they develop out of the social interaction of the children. Friedson (1970) summed up this process as follows:

"In the process of imputing meaning to his experience the individual sufferer does not invent the meanings himself but rather uses the meanings and interpretations that his social life has provided him."

This is not to say that children passively accept the interpretation of illness provided by others. Rather (to change slightly the words of Berger and Luckmann(1971.), it entails an interaction between an evaluation of their behaviour by others and self-evaluation, between objectively assigned and subjectively

appropriated understanding of their illness. It is the meaning which children learn to attribute to their illness which determines their reaction to it.

At least two approaches can be used to explore the factors involved in the development of children's definition of their illness. The first would involve investigating the understanding of asthma held by the significant others in the children's life-space. Although mothers have frequently been implicated in the development of childhood asthma, there has been little attempt to explore the mothers' understanding of the illness (c.f. Pilling, 1975). Yet there is evidence to show that increasing mothers' understanding of other childhood illnesses can improve the health of their children. Skipper and Leonard (1968) found that when information and emotional support was provided to the mother of a child in hospital, that child recovered more rapidly. This would suggest that those mothers who have a good understanding of asthma would be more likely to have children with clinically mild asthma, irrespective of the children's airways sensitivity.

The second approach to understanding the development of the children's own definition of their illness could examine how the children view the attitudes of those around them. In the same way as Cooley (1902) emphasized the importance of how we think other people perceive us in the development of our (looking-glass) self, we could investigate how children with asthma think other people view their illness.

It is commonly accepted that if we think others perceive us in a certain manner, then that influences our behaviour in their presence. Would it also be the case that if children with asthma

think others consider them unhealthy, then they would display more clinical symptoms, irrespective of their bronchial sensitivity?

#### 6.1.6 Conclusion

Contemporary medicine has rather ignored the patients' understanding of their illness, and more specifically the way children with asthma view their illness. Yet there is evidence to suggest that the way a child perceives his illness is related to its outcome. In his theoretical introduction to the understanding of the social psychology of illness, Mechanic (1968) summarized the issues which we have raised in the previous five sections. He noted:

"The ability of a person to cope with his problems - whether physical, mental, or social - depends on how he defines the problem, the causes he identifies that have brought the problem about, the alternatives he sees for reversing the problem, and the resources he has for making use of various alternatives."

It would seem that further exploration of each of the issues raised in the preceding sections would increase our understanding of the clinical variations of childhood asthma. For this reason, we shall investigate five different aspects of the children's definitions of asthma.

First, we shall ask the children to broadly define the illness they have, its severity and prognosis. If, as we have suggested, the patients' definitions of their illness "creates and shapes" its outcome, then we would expect that those children with few clinical symptoms of asthma, irrespective of their

bronchial sensitivity, would underrate the severity of their illness. In addition we would expect that if asthma "as a bio-physical state exists independently of human knowledge and evaluation," then the physiological assessment of the children's asthma would not be related to the children's definitions.

Second, we shall consider the children's views of the asthmatic attack. The evidence presented in section 6.1.3 would suggest that those children who were most distressed about the event would have the most symptoms, irrespective of their bronchial sensitivity.

Third, we shall examine how the children view the treatment they are currently receiving. If any kind of placebo effect does influence the effectiveness of the treatment prescribed, then we would expect that those children with the most positive view of the treatment would have asthma classed as clinically mild.

Fourth, we shall consider what the children with asthma think others think of their illness. Once again we would expect that whereas clinical severity of the children's asthma would be related to this information, physiological severity would not be.

Finally, we shall consider how the mothers view asthma in general, and more specifically how they view an attack and the treatment prescribed. If the mothers' views are related to the children's views, then we would expect that each of the previous predictions concerning the children's replies would apply equally to the mothers' replies.

In addition, although we have insufficient information to predict possible variations in the children's replies being related

to their sex, age, and families' social class, such findings might help explain the epidemiological variations in the reported prevalence of childhood asthma.

The method employed to obtain this information from the children and their mothers will be the semi-structured interview. This technique was preferred for several reasons:

(a) The dearth of empirical evidence on children's definitions of illness in general, and asthma in particular, means that tests designed by the experimenter would introduce the experimenter's implicit assumptions;

(b) Leaving the children and their mothers as much freedom as possible to provide the information will reveal the details of the participants', rather than the experimenter's, definition of asthma;

(c) The technique is simple, and it enables the participants to seek clarification of various queries, thus minimizing the potential bias of questionnaires where questions could be interpreted in a variety of ways;

(d) "Above all, (the interviewer) can build up and maintain rapport, that elusive motivating force that will keep the respondent interested and responsive to the end of the interview" (Oppenheim, 1966).

## 6.2 METHOD AND RESULTS

### 6.2.1 Design of the Interviews

The basic format of the children's interviews fell into four sections. The first section was designed to gain some general information about the children's knowledge and evaluation of their illness. The second was concerned with the asthmatic attack itself. It was an attempt to understand the children's experience of an attack from start to finish. The third section concentrated on the children's views of the treatment they were receiving. The final section enquired about how the children with asthma thought others viewed their illness. The basic structure of these four sections of the children's interviews is given in Appendix 6.2.1A.

An interview format, somewhat similar to the above, was also designed for the mothers. It was concerned with the mothers' general views of their children's illness, what happened during an attack, and what they thought of the treatment. The basic structure of the mothers' interviews is given in Appendix 6.2.1B.

### 6.2.2 Procedure

Each child was interviewed individually by the author either in the school medical room or in a consulting room at the Chest Clinic. Although this setting was not very satisfactory it was the best that was made available by the collaborating educational and medical authorities. In an attempt to counter any apprehension the children might have had about speaking to a strange person in this situation, the author made several efforts to relieve the children's anxieties.

When the child entered the room the author warmly welcomed him by his first name and invited him to be seated beside the author. The author then explained to the child the reasons for the interview. He began by pointing out to the child that many children had asthma and that scientists were trying to understand it better in order to stop children wheezing. The author continued, that since the child had asthma he knew a lot about it, and that it would be very useful if he would tell the author all about his asthma. This was an effort to increase the child's feeling of importance and so, hopefully, encourage him to talk freely about his experiences.

The author also emphasized that all the information provided by the child was confidential and would not be revealed to his parents, teacher, or doctor. The format of the interview was then explained. The author would ask the child a few questions. If the child did not understand them he had to say so. In fact he could say what ever he wished.

Since what the child said had to be tape-recorded, the operation of the tape-recorder was explained. The child was shown the microphone and allowed to hear what his voice sounded like on tape. Most children had previously had this experience and none were alarmed by its presence.

When the interviewer was satisfied that the child was comfortable and relaxed he began to ask questions. No two interviews followed the same format. Rather the interviewer attempted to link his questions to each child's previous answers so as to encourage a smooth flow of conversation.

There was a wide variety in the children's reactions to the

different questions. Some children were very talkative, so that the interviewer sometimes found it difficult to interrupt their steady flow of conversation to enquire about other topics. A few children were quite withdrawn and it was only with encouragement that they were prepared to develop their replies. Overall, however, it was possible for the interviewer to gain some information from each of the children about all the main areas considered. For most children, this part of the interview lasted about twenty minutes.

At a different time, each of the mothers was seen individually. This was usually in a separate room at the Health Centre or Chest Clinic while the child was performing the lung function tests. The majority of the mothers were eager to participate in the study. It was apparently a rare opportunity for them to actually discuss the problems they had with sick children. It seemed to be a commonly held opinion by the mothers that anything which might possibly improve the health of their children was worthwhile. There was little problem in establishing rapport with the mothers, and the short interviews were completed satisfactorily.

### 6.2.3 Analysis of interviews

All the interviews were transcribed from the tape-recorder. Although no two interviews followed an identical format, for ease of comparison, a similar structure was placed upon each interview in the process of transcription. This meant that the first interview-child exchange on each transcript concerned when the child began wheezing, the second was about the child's hopes for the future, and so on. This structure also simplified the design of

a coding scheme for the transcripts.

The designing of the coding scheme followed the outline suggested by Oppenheim (1966). From the children's interviews a random sample of ten transcripts was selected. Each similar interviewer-child exchange from each of the ten transcripts was then examined separately by the author and a fellow psychologist. For example, in the first exchange already mentioned, about the onset of asthma, we found the following replies:

Subject 1: My gran says the hospital found it out when  
I was very young;

Subject 2: I remember it at 5 years. My mum says 3 years;

Subject 3: When I was young;

Subject 4: I was young;

Subject 5: When I was about 6 years old;

Subject 6: About 8 weeks ago;

Subject 7: When I was 2;

Subject 8: When I was 7, just after I had the measles;

Subject 9: When I was 2 years and 3 weeks, I don't remember  
it but my mum told me;

Subject 10: I think it was when I was 2. My mummy told me.

We then suggested the following coding frame:

1: Under 4 years or when I was young;

2: Over 4 years

These two categories were sufficient to code all ten of the previous replies. Since the categories in this coding frame and in most of the other coding frames, tended to be quantitative rather than qualitative, it was considered sufficient for the author alone to allocate the remaining children's replies to the different

categories. When this particular frame was applied to the other children's replies it proved satisfactory.

However, in some other cases the original coding frame devised from the first ten children proved unsatisfactory in coding the replies of the other twenty children. In such a situation, the frame was modified so as to provide a better fit for all thirty children. For example, in the case of the second exchange, concerning hope for the future, the coding frame devised from the first ten transcripts was the simple:

- 1: Yes, my asthma will go away when I'm older;
- 2: No, I'll always have asthma.

However, when the author tried to apply this frame to the other transcripts he found that four children had remained non-committal in their remarks. After discussion with the assisting psychologist, the author introduced a third category of:

- 3: Don't know

The author then reapplied the new coding frame to all the children's replies and found it satisfactory.

The coding frame for both the children's and the mothers' interviews were devised in a similar manner often using the same categories for ease of comparison. Both coding schemes are presented in Appendices 6.2.4,5 and 6A and B and 7.2.7. These appendices also report the number of children and mothers who were coding in each category of each frame.

The relationship between each of the classifications of the children and each coding frame or item was then computed using the partial correlation technique described in section 5.4. The first

stage of this technique involving computing a complete matrix revealing the extent of all the possible interactions between the five classifications of the children and each of the items in the coding scheme. This stage was followed by the partial correlation analysis which used the matrix to compute the characteristics of the relationship between each one of the classifications of the children and each of the items in the coding scheme, controlling for the possible influence of each of the other four classifications of the children on the results.

Since the partial correlation analysis required that the coding frames be ordinal in their design, it was suitable for the analysis of most of our data. However, in a few cases the coding frames were not ordinal in design. To prepare these frames for the analysis, several categories within each were combined so that the frame became ordinal in style. The appendices show which categories were combined for the analysis.

Also, several coding frames contained a "don't know", or a "not relevant" category. In certain cases, this category was excluded from the analysis. In other cases, the analysis concentrated specifically on the "Don't know" category. Again, the appendices show which categories were excluded from the partial correlation analysis.

#### 6.2.4 The children's<sup>and</sup>/mothers' general views of asthma

In the analysis of that section of the children's interviews designed to tap their general views of asthma nine coding frames,

were used (see appendix 6.2.4A), of which five were significantly related to one or more of our five classifications of the children (Table 6.2.4). For the analysis of a comparable section of the mothers' interviews, we used eight coding frames (appendix 6.2.4B), of which six were related to at least one classification of the children (Table 6.2.4). The details of these relationships are set out in Tables 6.2.4A to H. For simplicity of exposition, further details of those items which were not significantly related to any classification are not presented in separate tables but instead are introduced where appropriate as we describe the other results. The full details of the number of children and mothers coded in each category are presented in the appendices.

Considering the clinical severity of the children's asthma first, we found that only one of the coding frames from the children's interviews and four from the mothers' interviews were related to this classification. This showed that the children with asthma classed as clinically severe were more likely to report bouts of wheeziness between full-blown attacks (Table 6.2.4A). However, analysis of a similar frame for the mothers' interviews did not reveal a similar relationship, although 8 (26.7%) mothers reported that their children had occasional wheezy bouts between attacks.

Despite this anomalous finding, the mothers of the children with asthma classed as clinically severe were more likely to describe their children's asthma as being generally severe and were also more pessimistic about their children's chances of growing out of asthma in later life (Table 6.2.4B). The latter point was especially the case with mothers from working class families (Table 6.2.4F) and when their children were boys (Table 6.2.4H).

Table 6.2.4: Relationship of items concerning asthma from children's and mothers' interviews to the different classifications of the children.

Items	Classifications of the children				
	Clinical	Physiological	Age	Social class	Sex
Wheezy between attacks	-.34*	.24	-.06	.19	-.03
	(-.10)	(-.07)	(-.08)	(-.13)	(-.19)
Severe in comparison	-.20	-.39*	-.23	-.05	.25
Asthma prevents activities	-.23	.05	-.40*	-.37*	.12
Asthma aids avoidance	-.22	.26	-.01	-.02	.08
Healthy without asthma	.14	-.03	-.25	.04	.01
Onset before 4 years	.10	-.17	.42*	-.09	.47*
	(.02)	(-.06)	(.27)	(.01)	(.36*)
Asthma severe	-.09	-.23	.34*	.16	.28
	(-.40*)	(-.27)	(.17)	(-.24)	(-.18)
Asthma in family	-.21	-.13	.25	.31	.05
	(-.15)	(-.01)	(.09)	(.27)	(-.34*)

Table 6.2.4 (cont)

## Classifications of the children

Items	Clinical	Physiological	Age	Social class	Sex
Will grow out of asthma	-.20 (.39*)	-.03 (.21)	.16 (-.17)	.24 (.37*)	-.03 (-.38*)
Details of onset	(.36*)	(.12)	(-.21)	(.03)	(-.03)
No signs for optimism	(-.43*)	(.02)	(.12)	(-.16)	(-.09)
Reasons for pessimism	(.18)	(-.23)	(.08)	(-.10)	(.28)

Note: Figures (in brackets) give Kendall's tau values of the relationships of items from the children's (mothers') interviews to the different classifications of the children.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

TABLE 6.2.4A Children's view of asthma and clinical severity of children's asthma

Items	Clinical Severity of Children's asthma		
	Mild	Moderate	Severe
Wheezy between attacks	0(0%)	1(10%)	2(20%)

TABLE 6.2.4B Mothers' view of asthma and clinical severity of children's asthma

Items	Clinical Severity of Children's asthma		
	Mild	Moderate	Severe
Don't know what started asthma	1(10%)	5(50%)	6(60%)
Asthma severe	0( 0%)	4(40%)	7(70%)
Will grow out of asthma	5(50%)	3(30%)	0( 0%)
No signs for optimism	0( 0%)	4(40%)	5(50%)

TABLE 6.2.4C Children's view of asthma and physiological severity of children's asthma

Items	Physiological Severity of Children's asthma		
	Mild	Moderate	Severe
Asthma severe compared to other children with asthma	0( 0%)	2(25%)	3(33.3%)

TABLE 6.2.4D Children's view of asthma and age of children

Items	Age of Children	
	Young	Old
Onset of asthma before 4 years	12(80%)	7(46.7%)
Asthma severe	6(40%)	3(20%)
Asthma prevents activities	9(60%)	15(100%)

TABLE 6.2.4E Children's view of asthma and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Asthma prevents activities	4(57.1%)	20(87%)

TABLE 6.2.4F Mothers' view of asthma and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Will grow out of asthma	4(57.1%)	4(17.4%)

TABLE 6.2.4G Children's view of asthma and sex of children

Items	Sex of Children	
	Boys	Girl
Onset of asthma before 4 years	15(75%)	4(40%)

TABLE 6.2.4H Mothers' view of asthma and sex of children

Items	Sex of Children	
	Boy	Girl
Onset of asthma before 4 years	13(65%)	3(30%)
Will grow out of asthma	5(25%)	3(30%)
Asthma in family	9(45%)	7(70%)

The reasons suggested for pessimism were that the mothers did not see any improvement in their children's health (4 out of 5 mothers, 80%) or family experience of someone with long term asthma (1 mother, 20%). Conversely, of those 25 mothers who at least expressed some degree of optimism about their children's later health, 6(24%) reported some recent improvement in the children's health, 10 (40%) referred to their doctors' optimism, 3( 12%) referred to family or neighbourly experience, 2 (8%) suggested various reasons, and the other 4 (16%) simply remained hopeful. Considering all the mothers together, we found that the mothers of the children with asthma classed as clinically severe were the least likely to report any signs for optimism. Generally the children themselves were very optimistic about their future health, with 23 (76.7%) claiming that they would grow out of their asthma as they grew older.

When we considered the physiological severity of the asthma we found that none of the coding frames used for the mothers' interviews was related to this classification, although one item from the children's own interviews was. This showed that of the 21 (70%) children who claimed they knew another child with asthma, those with asthma rated physiologically severe were more likely to class their own asthma as being more severe (Table 6.2.4C). However, physiological severity was not related to a general rating of severity, although we did find that the younger children were more likely to consider their asthma generally severe (Table 6.2.4D). Despite this, the younger children, especially those from middle class families, were less likely to report that having asthma prevented their involvement in various activities (Table 6.2.4D and E). Overall the children presented quite a healthy image with only

2 (6.7%) reporting that if their asthma ceased they would still be unhealthy. In addition, 16 (53.3%) of the children admitted that their asthma had occasionally aided their avoidance of certain disliked activities.

We also found that the younger children, especially the boys, were more likely to claim that they first began wheezing when they were quite young, especially before the age of 4 years (Table 6.2.4D and G). The mothers agreed, since the boys' mothers reported earlier onset in their children but also a smaller incidence of asthma in their families (Table 6.2.4H). However, only 18 (60%) of the mothers could provide further details of the first attack in their children. Of these, 8 (44.4%) claimed that it followed a childhood infection or cold, 1 (5.6%) claimed she had first noticed it when the family were on holiday, 1 (5.6%) thought it had started when they had moved house, 3 (16.7%) thought their children had always been "chesty", while the other 5 (27.8%) mentioned a variety of other details. The mothers of the children with asthma classed as clinically severe were the least likely to know what started an attack. (Table 6.2.4B).

The most important findings of this section are that although most of the children with asthma tended to have rather healthy images of themselves, there was a limited tendency for the children with asthma rated as physiologically severe, especially the younger children, to perceive their asthma as being severe. The mothers, however, did not agree with these reports. They often adopted a more pessimistic view, especially about the present and future health of those children with asthma classed as clinically severe, who themselves were more prone to report bouts of wheeziness. The

mothers of the clinically severe children were also the least likely to report any signs for optimism in their children's health, and the least likely to provide details of the first asthmatic attack in their children.

#### 6.2.5 The children's and mothers' views of an asthmatic attack

Twenty coding frames were used for the analysis of this section of the children's interviews (see Appendix 6.2.5A) of which ten were significantly related to at least one of our classifications of the children (Table 6.2.5). For a comparable section of the mothers' interviews, out of eleven frames used for the analysis (appendix 6.2.5B) seven were significantly related to one or more of the classifications of the children (Table 6.2.5).

Considering the precipitants of attacks first, we found that only one factor was singly related (i.e. not related to any other classification) to the clinical classification of the children. This showed that the children with asthma classed as clinically severe were more likely to report dust as a precipitant (Table 6.2.5A). However, the mothers' listing of dust as a precipitant was not related to the clinical classification of the children's asthma, although the mothers were more likely to consider dust a precipitant if their children were older (Table 6.2.5F), and the family was working class (Table 6.2.5H).

In addition, the children with asthma classed as clinically severe especially the younger children (Table 6.2.5E) were more likely to list variations in the weather as a precipitant. This finding was almost the reverse of the mothers' who were more likely to report the weather precipitous for the children with asthma classed

Table 6.2.5: Relationship of items concerning asthmatic attack from children's and mothers' interviews to the different classifications of the children.

Items	Classifications of the children				
	Clinical	Physiological	Age	Social class	Sex
Season of attacks	-.15	-.07	-.02	.06	.23
Aware of approaching attacks	-.30	-.08	.14	-.01	-.04
Lists additional precipitants	-.35*	-.29	-.44**	.10	.24
Tried to stop an attack	.10	.07	-.04	.05	.36*
Methods employed (rest)	.10	.07	.01	-.17	.05
Methods effective	-.17	-.29	-.12	-.38*	-.13
Doctor visits during an attack	-.34*	.19	.27	-.09	-.09
Thoughts during an attack	.12	-.22	-.01	-.16	.09
Mothers ensure medication taken	-.07	-.05	.01	.08	-.19
Visits doctor during an attack	-.21	-.26	.31	-.02	.27
	(-.40*)	(-.05)	(.29)	(-.25)	(-.28)
Activity during an attack (bed)	-.23	.23	.09	-.24	-.06
	(-.22)	(.30)	(.18)	(-.24)	(.13)

Table 6.2.5: (cont)

Classifications of the children

Items	Clinical	Physiological	Age	Social class	Sex
Weather a precipitant	-.32* (.43*)	-.16 (-.10)	.36* (.36*)	.21 (-.13)	.24 (.04)
Exertion a precipitant	.08 (.34*)	.24 (.02)	-.12 (.05)	.19 (-.12)	.27 (.03)
Excitement a precipitant	.01 (.46**)	-.29 (-.41*)	.34* (-.09)	.22 (.04)	.27 (-.35*)
Emotions a precipitant	-.18 (-.07)	-.40* (.27)	-.27 (-.08)	-.01 (-.13)	-.29 (-.31)
Laughing a precipitant	.01 (.29)	.15 (.26)	-.33* (.03)	.38* (-.11)	-.39* (-.57***)
Pollens a precipitant	-.22 (.33*)	.39* (.21)	-.40* (-.28)	-.01 (-.06)	-.24 (.01)
Colds a precipitant	-.09 (.02)	.27 (.17)	-.01 (-.13)	-.11 (.03)	.19 (-.09)

Table 6.2.5 (cont)

## Classifications of the children

Items	Clinical	Physiological	Age	Social class	Sex
Dust a precipitant	-.33 (.31)	-.26 (.09)	-.15 (-.57***)	-.21 (-.41*)	.18 (.03)
Relaxation aids recovery	.06 (.14)	-.06 (.19)	.05 (-.52**)	-.14 (-.28)	-.02 (.29)

Note: Figures (in brackets) give the Kendall's tau values of the relationships of items from the children's (mothers') interviews to different classifications of the children.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

TABLE 6.2.5A Children's view of asthmatic attack and clinical severity of children's asthma

Clinical severity of children's asthma			
Items	Mild	Moderate	Severe
Dust a precipitant	0(0%)	0(0%)	3(30%)
Weather a precipitant	4(40%)	3(30%)	7(70%)
List additional precipitants	0(0%)	2(20%)	3(30%)
Regular visits from doctor	5(50%)	6(60%)	8(80%)

TABLE 6.2.5B Mothers' view of asthmatic attack and clinical severity of children's asthma

Clinical Severity of children's asthma			
Items	Mild	Moderate	Severe
Weather a precipitant	10(100%)	8(80%)	5(50%)
Exertion a precipitant	9( 90%)	8(80%)	5(50%)
Excitement a precipitant	8(80% )	4(40%)	5(50%)
Pollens a precipitant	7( 70%)	3(30%)	3(30%)
Frequent visits to doctor	0( 0 %)	3(30%)	5(50%)

TABLE 6.2.5C Children's view of asthmatic attack and physiological severity of children's asthma

Physiological severity of children's asthma			
Items	Mild	Moderate	Severe
Emotions a precipitant	0(0%)	0(0%)	4(40%)
Pollens a precipitant	3(30%)	3(30%)	0(0%)

TABLE 6.2.5D Mothers' view of asthmatic attack and physiological severity of children's asthma

Physiological severity of children's asthma			
Items	Mild	Moderate	Severe
Excitement a precipitant	3(30%)	6(60%)	8(80%)

TABLE 6.2.5E Children's view of asthmatic attack and age of children

Items	Age of children	
	Young	Old
Weather a precipitant	9(60%)	5(33.3%)
Excitement a precipitant	5(33.3%)	2(13.3%)
Laughing a precipitant	0(0 % )	3(20 % )
Pollens a precipitant	1(6.7%)	5(33.3%)
Lists additional precipitant	0( 0% )	5(33.3%)

TABLE 6.2.5F Mothers' view of asthmatic attack and age of children

Items	Age of children	
	Young	Old
Weather a precipitant	14(93.3%)	9(60%)
Dust a precipitant	1( 6.7%)	8(53.3%)
Relaxation aids recovery	2(13.3%)	7(46.7%)

as clinically mild. The mothers did agree on the second point, listing weather as provocative more often if their children were young.

Finally, the children with asthma classed as clinically severe, especially the older children this time, were more likely to report additional precipitants of attacks, besides those listed.

One item from the mothers' interviews was singly related to the clinical classification of the children. This showed that the mothers of the clinically mild children were more likely to consider exertion a precipitant. This item in the children's interviews was not related to the clinical classification, although 26 (86.7%) children considered exertion provocative.

The mothers also considered excitement a precipitant more often for the children with asthma classed as clinically mild, especially if they were girls, but also if the children had asthma classed as physiologically severe (Table 6.2.5D). In the children's interviews, excitement was not related to any of these classifications, although the younger children were more likely to list it as a precipitant. (Table 7.2.5G).

Finally, the mothers were more likely to consider pollens a precipitant if their children had asthma classed as clinically mild. Once again, this was at variance with the children's interviews where the older children with asthma classed as physiologically mild listed pollens most often (Table 6.2.5C).

Only one other item from the children's interviews was related to the physiological classification. The children with asthma classed as physiologically severe were more likely to list emotions as a precipitant. The relationship was not apparent in the mothers'

TABLE 6.2.5G Children's view of asthmatic attack and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Laughing a precipitant	2(28.6%)	1 (4.3%)
Personal therapy methods effective	2(28.6%)	14(60.9%)

TABLE 6.2.5H Mothers' view of asthmatic attack and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Dust a precipitant	1(14.2%)	8(34.8%)

interviews, although 18 (60%) mothers admitted that emotions were occasionally important.

Only two other items were specifically considered to be potential precipitants - laughter and colds. The former was especially reported by older girls from middle class families (Table 6.2.5E,G,I). Concurring to a degree, the mothers of the girls also listed laughter more frequently than the boys' mothers (Table 6.2.5J).

Finally, colds as a precipitant was not related to any of the classifications of the children. Interestingly, however, it was only mentioned by 2 (6.7%) children but considered important by 18 (60%) mothers.

The other items considered were more concerned with further details of the attack itself. Since only single relationships were established between a few of these and the various classifications of the children, we will consider each in turn. Firstly, as regards seasonality of attacks, 9 (30%) children reported that their attacks usually came during the summer, 3 (10%) that they were more common during the winter, while the others reported that attacks occurred throughout the year.

More specifically, 12 (40%) children reported that they were at least occasionally aware of an oncoming attack before they actually started wheezing. However, few of the children were capable of elaborating on the warning signs besides such feelings as a tickly throat and a tight chest. Progressing from this we found that the boys were more likely to report personal attempts to suppress an oncoming attack, once they were aware of the warning signals (Table 6.2.5I). Of the 22 children who provided further

TABLE 6.2.5I Children's view of asthmatic attack and sex of children

Items	Sex of Children	
	Boys	Girls
Laughter a precipitant	1(5%)	2(20%)
Have tried to stop an attack	17(85%)	5(50%)

TABLE 6.2.5J Mothers' view of asthmatic attack and sex of children

Items	Sex of children	
	Boys	Girls
Excitement a precipitant	10(50%)	7(70%)
Laughing a precipitant	3(15%)	6(60%)

details of their personal therapy techniques, 6(27.2%) mentioned rest, 4 (18.1%) mentioned breathing exercises, 4 (18.1%) mentioned immediate intake of medicines, while the others reported a variety of other techniques. The children from working class families were the more likely to report limited success for their personal therapy (Table 6.2.5G).

Once the attack had established itself, the most frequent recourse was for the children to lie down. Of the children, 11 (36.7%) claimed they usually went to bed, 3 (10%) only went to bed sometimes, 4 (13.3%) often lay on a couch, while the other 12 usually just sat and rested. Somewhat similarly, 7 (23.3%) of the mothers reported that their children went to bed during an attack, 6 (20%) that they usually lay on the couch, 12 (40%) that they simply sat and rested, while the other 5 claimed their children behaved differently from attack to attack.

Most of the children were particularly vague in their attempts to recall their thoughts during an attack. Ten (33.3%) claimed that they simply wished the attack would end, 1 (3.3%) claimed she thought about what was going on at school, 3 (10%) alarmingly reported that they often felt they were going to die, while the others simply found it difficult to recall any thoughts or gave a variety of replies.

Fifteen (50%) children reported that their mothers' reactions to an attack were simply to ensure that the medicines prescribed were taken, 4 (13.3%) children claimed that their mothers encouraged them to relax, 3 (10%) reported that their mothers tried to take the children's minds off the wheezing by providing such distractions as story-telling, 1 (3.3%) reported that his mother

encouraged breathing exercises, while another child reported that his mother suggested that he "give himself a shake." The other children reported that their mothers reacted in a variety of ways.

The most common remedial action involved medical consultation. The children with asthma classed as clinically severe were more likely to report that their doctors visiting them during an attack, whilst their mothers were more likely to report that they visited the doctor. Of the children, 19 (63.3%) reported that they occasionally visited their doctors during an attack but only 4(13.3%) claimed that they usually went. The children's estimate of the frequency of their visits to the doctor was not related to the clinical or any other classification.

Both medicine taking and relaxation were the factors most frequently cited by the children and their mothers as being important in bringing an attack to an end. Of the children, 8 (26.7%) claimed medicines were most important, another 8 considered relaxation important, 2 (6.7%) thought a combination of medicines and relaxation important, 3 (10%) considered " a good night's sleep" was the best therapy, 5 (16.7%) listed a variety of factors, while the other 4 (13.3%) simply did not know. Of the mothers, 6 (20%) considered medicines most important, 9 (30%) emphasized relaxation, a similar number claimed that the attack simply "runs it's cycle," 2 (6.7%) thought parental care important, while another 2 listed a variety of factors. The other two mothers did not know what ended an attack. Considering these factors separately we found that the mothers of the older children were more likely to list relaxation as an important aid to recovery (Table 6.2.5F).

In summary, we can claim that the coding frames used in this section of the interview differentiated clearly between the children with asthma classed as clinically mild and severe, when contrasted with the poor differentiation of the physiological classification. However, there was little agreement between the reports of the children and those of their mothers. Whereas the children with asthma classed as clinically severe were more likely to list certain factors as precipitants of attacks the mothers of the children with asthma classed as clinically mild were more likely to list certain other factors as precipitants. The mothers and the children did, however, agree in reporting greater child-doctor contact for the children with asthma classed as clinically severe.

#### 6.2.6 The children's and mothers' views of the treatment of asthma

Seven coding frames were used for our analysis of this section of the children's interviews and five for the mothers' interviews (Appendices 6.2.6A and B). Three items from the children's interviews and three from the mothers' interviews were related to at least one of our classifications of the children (Table 6.2.6).

Considering the clinical classification first, we found that the children with asthma classed as clinically severe, especially those from middle class families, were more likely to describe their doctors as unhelpful (Tables 6.2.6A and E). In addition, of the 11 children who provided a definite reply, 2 (18.2%) claimed that their doctors did not really understand their illness. Also 5 (16.7%) mothers reported that their doctors did not fully understand their

Table 6.2.6: Relationship of items concerning treatment from the children's and mothers' interviews to the different classifications of the children.

Items	Classifications of the children				
	Clinical	Physiological	Age	Social class	Sex
Doctor unhelpful	-.44**	.20	.16	.59***	.19
Medicines not taken sometimes	.19	-.12	-.18	.24	-.21
Medicine best treatment	-.06	.19	.10	-.15	-.07
Receiving desensitization	-.40*	.23	-.40	-.52**	.20
	(-.37*)	(-.09)	(-.08)	(-.35*)	(.19)
Medicines effective	.18	.32*	.34*	.24	.02
	(.41*)	(.04)	(.18)	(.05)	(-.29)
Medicines essential	.17	-.25	.07	-.19	-.21
	(-.15)	(-.27)	(.14)	(.06)	(-.05)
Doctor knowledgeable	.16	.19	.31	.04	.06
	(-.01)	(.18)	(.14)	(.32)	(-.18)
Could not recommend treatment	(-.34*)	(-.10)	(.18)	(-.05)	(-.02)

Note: Figures give Kendall's tau values between items and classifications of children. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

children's asthma.

The children with asthma classed as clinically severe, especially those from working class families, were also more likely to report that they were receiving desensitization treatment. The mothers' reports confirmed this, with the working class mothers of children with clinically severe asthma more frequently reporting that their children were receiving such treatment (Table 6.2.6F).

The mothers of children with asthma classed as clinically mild were more likely to report that the medicines prescribed for their children's asthma were effective (Table 6.2.6B). However, in the case of the children, it was those whose asthma was classed as physiologically mild, especially the younger ones, who were most likely to affirm the effectiveness of the medicines (Tables 6.2.6C & D).

We also found that 13(43.3%) of the children reported that at least occasionally they did not take their medicines as prescribed, while 3(12.5%), out of the 24 children who replied, claimed that on some occasions they considered that the medicines were unnecessary for recovery. A similar number of mothers agreed with the latter point, and a further 7(23.3%) expressed the view that perhaps occasionally their children might recover without any medicines.

However, when they were asked to give details of what treatment they considered the most effective for easing attacks of wheezing, both the children and their mothers listed various medicines. Of the children, 10(33.3%) cited tablets, 7(23.3%) preferred an inhaler, 3(10%) listed injections, another 3(10%) listed relaxation and rest, 2(6.7%) preferred breathing exercises, 2(6.7%) both medicines and breathing exercises, another 2(6.7%) listed various remedies, and 1(3.3%) could not think of anything.

TABLE 6.2.6A Children's view of treatment and clinical severity of children's asthma

Items	Clinical Severity of children's asthma		
	Mild	Moderate	Severe
Receiving desensitization	2(20%)	3(30%)	6(60%)
Doctor unhelpful	0( 0%)	1(10%)	1(10%)

TABLE 6.2.6B Mothers' view of treatment and clinical severity of children's asthma

Items	Clinical Severity of children		
	Mild	Moderate	Severe
Medicines effective	4(40%)	0( 0%)	1(10%)
Could not recommend treatment	2(20%)	3(30%)	6(60%)
Receiving desensitization	2(20%)	3(30%)	6(60%)

TABLE 6.2.6C Children's view of treatment and physiological severity of children's asthma

Items	Physiological severity of children's asthma		
	Mild	Moderate	Severe
Medicines effective	10(100%)	10(100%)	8(80%)

TABLE 6.2.6D Children's view of treatment and age of children

Items	Age of children	
	Young	Old
Medicines effective	15(100%)	13(86.7%)

TABLE 6.2.6E Children's view of treatment and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Doctor unhelpful	2(28.6%)	0(0%)
Receiving desensitization	1(14.3%)	10(43.5%)

TABLE 6.2.6F Mothers' view of treatment and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Receiving desensitization	1(14.3%)	10(43.5%)

The mothers were much more unsure. Although 8 (26.7%) listed medicines, 5 (16.7%) listed relaxation, 2 (6.7%) medicines and relaxation, and 4 (13.3%) various remedies, over a third (11, 36.7%) could not recommend any treatment regimen. Indeed it was the mothers of the children with asthma classed as clinically severe who were the most likely not to recommend any particular treatment (Table 6.2.6B).

To summarise, it seemed that those children with asthma classed as clinically severe and their mothers were the most likely to express dissatisfaction with the medical assistance provided, although the children with asthma classed as physiologically severe also reported on the ineffectiveness of the medicines they were prescribed. There was a general cynicism among most of the children about the various treatments, but at the same time most were not prepared to risk neglecting the prescribed treatment and still considered the various medicines the best treatment available. The mothers seemed even more disheartened with the treatment prescribed and this was especially the case for the mothers of the children with asthma classed as clinically severe

#### 6.2.7 The children's views of how others perceive their asthma

In this last section ten coding frames were used for the analysis of the children's interviews (See appendix 6.2.7). Not one was related to the clinical classification of the children. However, one frame was related to the physiological classification and some others to the age, sex and social class of the children (Table 6.2.7).

We found that the children with asthma classed as

Table 6.2.7: Relationship of items concerning others' views of asthma to the different classifications of the children.

Items	Classifications of the children				
	Clinical	Physiological	Age	Social class	Sex
Asthma annoys parents	-.05	-.02	-.04	-.46**	-.19
Parents complain	-.01	.34*	-.18	-.05	-.55***
Hides asthma from parents	.27	.11	-.29	-.28	-.10
Reasons for hiding asthma (not to annoy)	-.16	.03	-.35*	-.18	.05
Parents different	-.30	.12	.05	-.15	-.08
Parents different during attack	.02	.01	.08	.01	.05
Friends know	-.15	.06	-.38*	-.07	.16
Self told friends	-.14	.04	-.50**	-.51**	-.01
Friends ignore information about asthma	-.08	-.16	-.38*	-.04	-.01
Concerned about friends knowing	.06	-.06	.24	.05	-.07

Note: Figures give Kendall's tau values of the relationships between items and classifications of children.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ ;

physiologically mild were more likely to report that their parents complained about their asthma (Table 6.2.7A). This was especially so for the girls (Table 6.2.7D). The children from working class families claimed most that their asthma annoyed their parents (Table 7.2.7C).

In addition, 17 (56.7%) children admitted that sometimes they attempted to conceal their wheezing from their parents. Out of the 13 children who provided an explanation for this concealment, 9 (69.2%) claimed they did it so as not to annoy their parents, another 3 (23.1%) said they only concealed their wheezing when they considered it did not merit attention, while the other 1 (7.8%) claimed he only hid it when he wanted to go out, since his mother would prevent him if she knew he was wheezing. The older children were more likely to provide the first explanation (Table 6.2.7B). On the other hand, 11 (36.7%) children thought that their parents were generally a little kinder to them because they had asthma, while most (25, 83.3%) reported that their parents were very kind to them when they had an attack.

As regards their friends, more of the older children reported that their friends knew they had asthma and that they themselves had told them (Table 6.2.7B). The latter point was especially the case for children from working class families. Indeed, of the 25 children who replied, 18 (72%) claimed they did not really mind whether their friends knew they had asthma. Also, of the 15 who replied, 10 (66.7%) said that those friends who knew they had asthma never commented on it. This was especially the case for the older children.

TABLE 6.2.7A Others' views of asthma and physiological severity of children's asthma

Physiological severity of children's asthma			
Items	Mild	Moderate	Severe
Parents complain about asthma	3(33.3%)	3(33.3%)	2(20%)

TABLE 6.2.7B Others' views of asthma and age of children

Items	Age of children	
	Young	Old
Hides asthma so as not to annoy parents	2(40%)	7(87.5%)
Friends know about asthma	13(86.7%)	15(100%)
Self told friends about asthma	5(33.3%)	12(85.7%)
Friends don't comment about asthma	2(40 %)	8(72.5%)

TABLE 6.2.7C Others' views of asthma and social class of children's families

Items	Social class of children's families	
	Middle class	Working class
Asthma annoys parents	0( 0%)	13(56.5%)
Self told friends about asthma	2(28.6%)	15(65.2%)

TABLE 6.2.7D Others' views of asthma and sex of children

Items	Sex of children	
	Boys	Girls
Parents complain about asthma	2(10%)	5(50%)

In summary we can suggest that although quite a lot of the children felt that their asthma was a nuisance in the family and often tried to hide their wheeze, most felt that their parents were very kind to them, especially when they had an attack. Only a few children appeared to be reluctant to tell their friends that they had asthma and, according to the children, those friends who did know did not seem to mind that they had asthma.

## 6.3 DISCUSSION

### 6.3.1 General overview

The results confirmed our general expectations that the children's and their mothers' views of asthma would be related more to the clinical, rather than to the physiological, classification of the children's asthma. Out of the 46 items in the coding scheme for the children's interviews, 7 were related to the clinical classification of the children's asthma, and 5 were related to the physiological classification. Out of the 24 items in the coding scheme for the mothers' interviews, 12 were related to the clinical classification of the children's asthma, and only 1 to the physiological classification.

It would seem that irrespective of the bronchial sensitivity of the children with asthma, it was how they, and their mothers, perceived the illness which predicted the severity of the illness symptoms. The extent of the relationship between the mothers' interpretations of the illness and its clinical severity would tend to emphasize the importance of the mother-child relationship in the development of childhood asthma. Particular details of the items from the interviews related to the clinical and physiological classifications of the children's asthma will be discussed in sections 6.3.2 and 6.3.3 respectively.

The age, sex, and social class variations in the replies of the mothers, and more especially of the children, were greater than expected. Thirteen items from the children's interviews, and three from the mothers' interviews were related to the age of the children. The large age differences in the children's replies would suggest that there are developmental changes in children's conceptualization of asthma. The mothers, however, apparently had a more fixed image

of asthma which varied little according to the age of the children. These differences will be considered in greater detail in section 6.3.4.

Four items from the children's interviews and five from the mothers' interviews were related to the sex of the children. This would suggest that not only did the children's definition of asthma vary with sex, but also the mothers perceived asthma in girls differently from asthma in boys. More details of these differences will be considered in section 6.3.5.

Six items from the children's interviews and three from the mothers' interviews were related to the social class of the family. This would suggest that there are social class variations in the perception of asthma, especially among the children. Further details will be considered in section 6.3.6.

#### 6.3.2 Items related to the clinical classification of the children's asthma.

The relationship of items from the interviews concerning the general definition of childhood asthma to the clinical classification of the children's asthma tended to confirm the criteria used in the design of that classification. The children with asthma classed as clinically severe reported more bouts of wheeziness intermediate to acute attacks, and also reported more frequent visits from their doctors. However, the item concerning wheezy bouts in the mothers' coding scheme was not related to the clinical classification of the children's asthma, although eight mothers, as compared with only three children, reported such wheezy bouts. Campbell (1975) reported a tendency for both adults and children to perceive illness more so in others than in themselves. He suggested

that a reason for this attributional bias in the perception of illness was that people try to "maintain an adequate self-picture" such that they tend to under-report personal illness episodes which provide a "threat to personal equilibrium". He claimed that this tendency was especially the case when "the symptoms themselves are not too overwhelming", as would be the case with minor bouts of wheeziness.

Campbell's thesis could not only explain the difference between the children's and their mothers' reports of wheezy bouts, but also the general optimism of the children with asthma about their health. Most of the children thought that they would 'grow out of' their asthma sometime in the future, and that without their asthma they would be generally healthy. In contrast, the mothers, especially those with children who had asthma classed as clinically severe, were much more pessimistic about their children's health. That particular group of mothers were most uncertain about the occasion when their children began to wheeze, were the most doubtful about whether their children would 'grow out of' their asthma, and were the least likely to report any signs of optimism. This apparent maternal concern, and to an extent despair, about their children's present and future health underlines Pilling's (1975) claim that the mothers of children with a chronic physical disorder could only be expected to have "difficulties and anxieties" about raising such children.

The particular plight of the mothers of children with clinically severe asthma was increased by their replies to other sections of the interview. The finding that those mothers were least likely to list the weather, exertion, pollens, or excitement as precipitants of their children's attacks might seem confusing.

However, it might well have been that it was the mothers themselves who were confused. These mothers did not know what caused an attack and were the least likely to recommend any form of treatment. They were also more likely to consider the medical treatment prescribed ineffective.

Returning to the children's reports, the finding that those children with asthma classed as clinically severe more frequently listed dust and weather as precipitants of attacks seems interesting. Taken at its face value, this would suggest that these children had a particular type of sensitive bronchi which reacted especially to physical changes in the environment. In this respect they would appear similar to those children classified by Purcell (1963) as slow recoverers. However, the fact that these two relationships were not confirmed by the mothers' replies alerts us to the need for a more critical analysis.

In his criticism of Herzlich's (1973) study of laypeople's conceptions of health and illness, Farr (1977) referred to the human tendency to attribute the cause of unfavourable outcomes (e.g. illness) to the environment, and the cause of favourable outcomes (e.g. health) to the self. Thus we could predict that the children with asthma would be more likely to attribute the cause of their wheezing to the environment. Yet we found that those children with asthma classed as clinically severe tended to do this more than others (i.e. if we classify dust and weather as environmental factors). Perhaps, returning to Campbell's thesis, these children exaggerated this attributional bias tendency in an attempt to diminish their apparent image of sickness and so "maintain an adequate self-picture!"

The findings concerning treatment are also interesting. Those children with asthma classed as clinically severe had more contact

with their doctors, according to their own and their mothers' reports, yet those children were the least likely to consider their doctors helpful. Overall, almost 20 per cent of the children voiced dissatisfaction with their doctors, and sometimes ignored the medical treatment prescribed. It would seem that contemporary medical treatment, aimed at the physiological characteristics of childhood asthma, is seen by many children, especially those with many clinical symptoms, as insufficient.

That the children with asthma classed as clinically severe more frequently reported receiving, or having received, some form of desensitization treatment might at first suggest that these children were particularly allergic. However, an alternative explanation might be that in an effort to provide some form of effective therapy, and so reduce the frequency of consultation by these children, their doctors might have referred them for desensitization. That the criteria for referral for specialist assistance is often not solely based on medical grounds is well known (Mechanic, 1978). In this case, it would be interesting to examine the criteria used by general practitioners for the referral of children with asthma for desensitization.

Overall, the clinical severity of the children's asthma was closely related to how the children, and, even moreso, how their mothers, perceived the illness. Those children with the most clinical symptoms, and their mothers, generally expressed the most confused and pessimistic view of the current and future state of the illness. Since the bronchial sensitivity of the children did not predict the severity of their clinical symptoms, it is possible that how they and their mothers viewed the illness influenced its clinical characteristics. However, it is not possible to be definite about

the causal direction of this relationship. An intervention - type study, providing specific health education about asthma to the children and their mothers, could, by monitoring changes in how they perceived the illness and recording any changes in its clinical characteristics, establish whether the way asthma is perceived influences its clinical nature. Perhaps, as was suggested by Skipper and Leonard (1968), merely increasing the mothers' understanding of the illness would be sufficient to improve the health of the children.

The large amount of dissatisfaction about the medical treatment expressed by the children with clinically severe asthma could have a negative effect on any potentially effective medicines. Bloom (1968) has claimed that the outcome of any therapeutic effort is partly dependent on how the patient views the physician. Thus, a negative placebo effect would be expected to operate in the case of children with clinically severe asthma, which would decrease the impact of any medical treatment. To reverse this effect it would be necessary for the physician to cultivate the trust of the children and their parents. Such efforts could, in themselves, lead to some improvement in the health of the children.

### 6.3.3 Items related to the physiological classification of the children's asthma.

The characteristics of the items from both the children's and their mothers' interviews, which were related to the physiological classification of the children's asthma, did not form a very coherent pattern. The one item, out of 24 items, in the mothers' interviews which was related to this classification can be discounted, since the significance level which we accepted for the

rest of the analysis was .05 or 1 in 20. The five items from the children's interviews which were related to the physiological classification of the children's asthma were rather inexplicable, and did not seem to increase our understanding of childhood asthma.

The children with asthma classified as physiologically severe tended to rate their asthma as being more severe than that of other children with asthma. However, neither these children nor their mothers were more likely to consider the children's asthma severe in general. While we expected that a general estimate of asthma severity would not be related to the physiological classification, an explanation for the relationship is not apparent.

The children with asthma classed as physiologically severe also reported more often that emotions precipitated attacks, but rarely referred to pollens as a precipitant. These reports were not, however, confirmed by their mothers, nor is there any apparent physiological, or psychological, reason for the differences in the children's reports.

The finding that the children with asthma classed as physiologically mild more frequently reported that the medicines they were receiving were effective could suggest that psycho-social factors contributed little to the progress of their illness. Drug therapy was, apparently, sufficient to ease the restrictions in airflow of these children with slightly sensitive bronchi.

Finally, the finding that those children with asthma classed as physiologically mild more frequently reported that their parents complained about their wheezing is not easily explained. It is rather the reverse of Pinkerton and Weaver's (1970) finding that children with physiologically severe asthma had "negative, critical, rejective" parents.

Overall, the findings of this section were rather confusing. Although it would seem that certain items from the children's interviews were related to the physiological characteristics of the children's asthma, the content of those items was so particular and disparate that it was not possible to derive any general conclusions.

#### 6.3.4 Items related to the age of the children

The age difference in the children's perceptions of asthma can be interpreted as indicating some developmental changes in their conceptualizations of the illness. This changing conceptualization might also suggest an explanation for the reported decline in the prevalence of asthma as children develop.

The younger children more frequently reported early onset of asthma. Since this relationship was not confirmed by their mothers, we should be cautious in our interpretation. It is known that as children develop they acquire a more sensitive understanding of time. Flickinger and Rehage (1947) claimed that while the concept of past versus present was acquired by the age of eight, a full understanding of time measurement was not reached until about eleven years. Thus, it could be suggested that it was not that the younger children began wheezing at an earlier age, but that, rather, they preferred a vague estimate of age of onset as being in their early life. On the other hand, the older children preferred a more accurate estimate of the time of onset, ranging in their estimates from before 4 years to more recent time.

The younger children also described their asthma as being severe, whereas the older children more frequently reported the restrictions it placed upon their everyday activities. These age differences seem to agree with the developmental changes in

children's illness concepts reported by Campbell (1975). He found that younger children, especially those who were sick, preferred a definition of illness based on a "vague non-localized feeling", such as "feeling bad", or "not nice". The children's replies in this study to the question about the severity of their illness included such vague phrases as "Its bad", or "Its very bad", which, according to Campbell, would be especially popular among young children. Campbell also reported that older children, again especially the sick children, preferred a "socialized illness concept ..... referring to alterations in conventional role behaviour". This would agree with our finding that the older children in our study emphasized the restrictions upon their everyday activities caused by their asthma.

Most of the precipitants suggested by the children and their mothers were related to the age of the children. The younger children listed weather and excitement more often, while the older children listed laughing, pollens, and various other factors. The reason for this age difference is not clear. There was some confirmation of the children's reports, since the mothers of the younger children listed the weather more frequently, whereas the mothers of the older children listed dust more frequently. There was, perhaps, a tendency on the part of the younger children and their mothers to be more vague in suggesting precipitants, preferring terms like "when its hot", or "when its windy". This vagueness might have reflected a certain confusion among the younger children and their mothers about the illness in general. We had previously suggested that such confusion was especially prevalent among the mothers of children with clinically severe asthma.

The finding that older children were less likely to list

medicines as being effective was partially confirmed by their mothers who referred more frequently to relaxation as a therapeutic aid. This would suggest that as children with asthma develop, they and their mothers acquire a more sceptical view of the medical care provided. Such a view may have developed through greater opportunity to be disappointed by contemporary medical treatment of asthma. Similarly, we suggested that the mothers of children with asthma classed as clinically severe were more likely to consider medicines ineffective because they had seen their limited impact on their children's wheezing.

Finally, the age differences revealed in that section of the children's interviews concerning how they thought others viewed their illness tended to be consistent. The finding that the older children were more reluctant to inform their mothers of every wheezing episode agrees with Campbell's (1978) results. Although, he did not find any age differences in the extent to which children communicated their sick role, he did find that older boys were more likely to reject the sick role by being "inclined to say that on first feeling ill they acted as if they weren't really sick."

Although the older children were more reluctant to tell their mothers about their wheeziness, they more often told their friends they had asthma. This difference may have been a reflection of a wider developmental change. As they develop children identify their peers, more than their family, as their reference group. This change in orientation would be expected to discourage dependency on their mothers, and, at the same time, to encourage the children to share their problems with their peers.

In summary, it would seem that as children with asthma develop they acquire a more sophisticated view of their illness.

They also, apparently, reduce their dependence upon medical care and maternal support. This is somewhat similar to Campbell's(1978) findings which suggested that as children develop they acquire a more stoic, unemotional reaction to illness.

The finding that as children develop they acquire a more sophisticated illness concept could be said to complement the finding that the children with few clinical symptoms were least confused about their illness. Since children with asthma 'grow out of' their illness(clinical symptoms) in adolescence, the similarity of these relationships would suggest that the development of a more sophisticated illness concept influences the 'growing out' process. Once again, however, it is not possible to establish with any certainty cause and effect relationships.

#### 6.3.5 Items related to the social class of the children's families

Some of the items from the children's and their mothers' interviews related to their families' social class agreed with the findings from previous research. The other items which were related to social class were disparate in their characteristics and will be considered individually. Despite this, it was possible to discern a certain pattern which conceptualized the social class differences.

Koos (1954) found that whereas middle class adults defined themselves as sick when they perceived illness symptoms, working class adults did not consider themselves sick unless their everyday activities were disrupted. Our finding that the children with asthma from working class families referred more frequently to restrictions on their everyday activities would suggest that social class differences in the definition of illness are developed in childhood.

Osborne (1973) found that middle class adults are , in general, more positive about their health status. Similarly, the mothers from middle class families in our study tended to be more optimistic about their children's future health.

The finding that the children from middle class families more frequently reported laughing as a precipitant of attacks, was not confirmed by their mothers' reports. It might well be, however, that people from working class backgrounds underestimate psychological causes, such as laughter, and emphasize physical causes. This could explain the emphasis upon dust as a precipitant by the mothers from working class families.

The finding that the children from working class families more frequently reported that they were attending for desensitization treatment might, again, be a reflection of the referral process rather than of the characteristics of the children's asthma. The tendency to believe that allergic conditions are more common in working class households (see Hamman et al, 1975) might incline physicians to refer children from such homes for desensitization.

The finding that the children from working class families reported more success with their personal therapies, such as relaxation and breathing exercises, can be compared with the finding that the same children were less likely to report dissatisfaction with their doctors. Perhaps, children from working class families have low expectations of the worth of medical care and so express less dissatisfaction with the care provided. As an alternative, they might place greater emphasis on home remedies such that they would be more inclined to report success with their personal therapies.

The finding that the children from working class families

more frequently reported that their parents were annoyed at their wheezing might suggest that working class parents apply stricter criteria for entry to the sick role. In addition, the smaller homes in which working class families live (see section 5.6) would ensure that a sick child would be more likely to interfere with the household activities and so annoy the parents.

Overall, the social class differences in the replies of the children and their mothers did not form a very coherent pattern. Admittedly, there was some evidence to suggest that asthma caused greater disturbance in the working class families. Although the evidence for this pattern was slight, it would agree with our earlier suggestion that there was a tendency for children from working class families to have more clinically severe asthma (see section 5.5)

#### 6.3.6 Items related to the sex of the children

The items from the children's and their mothers' interviews related to the sex of the children tended to agree with the empirical evidence concerning sex-role socialization. At the same time, the findings could suggest an explanation for the developmental change in the sex ratio of the prevalence of childhood asthma.

Kagan and Moss (1962) reported that the tendency in our society has been for boys to acquire a more independent, self-contained approach to life, whereas girls learn to depend on others. This would provide an explanation for our finding that the boys were more likely to report personal therapeutic attempts to halt oncoming attacks of asthma, and so maintain their independence. Perhaps, it was the success of these attempts which encouraged their mothers to

be more optimistic about their sons' future health. Alternatively, perhaps this sex difference reflected the maternal concern to encourage the development of the masculine stereotype of healthy independence in their sons.

On the other hand, girls, with their dependent attitude, would be expected to seek parental assistance when they felt wheezy. That the girls more frequently reported that their parents complained about their wheezing might suggest that their demands were not always being met.

The finding that both girls and their mothers more frequently reported that laughing precipitated attacks could also be interpreted as evidence of sex-role socialization. Kinsman et al (1973b) suggested that the reason why males in their study referred less to 'panic-fear' and 'fatigue' in their descriptions of asthmatic attacks was that such experiences were considered 'unmasculine'. Perhaps, the boys in our study, and their mothers, thought the idea of laughter as a precipitant of attacks 'unmasculine' and so did not report it. Alternatively, laughter might well be a precipitant peculiar to girls. Crockett (1959) claimed that psychological factors were more likely to provoke asthma in girls than in boys.

Finally, the finding that the boys and their mothers more frequently reported early onset of asthma would suggest that boys do start wheezing earlier than girls. The reason for this sex difference is unclear.

Overall, our interpretation of the items related to the sex of the children would suggest that as boys develop they acquire a more independent image of themselves, whereas the girls become more dependent. Since the changing sex ratio of the prevalence of

childhood asthma (see section 1.4) would suggest that boys more frequently lose their clinical symptoms in adolescence, our findings would suggest that the developing male role precedes the decline in clinical symptoms. Since there is little evidence for developmental physiological change in children who lose their symptoms, it might well be that the development of this 'masculine' image of independence aids the decline in clinical symptoms.

### 6.3.7 Other findings

There were certain expected relationships between items, from both the children's and the mothers' interviews, with the various classifications of the children which were not established. This was especially the case with the children's descriptions of their asthmatic attacks. The little information which was obtained from the children about their attacks would suggest that it is a common experience. Whether you have many or few clinical symptoms, the asthmatic attack is an unpleasant experience about which little can be done, except to lie down and wait for it to end.

The apparent resignation and passivity in the face of an attack was common to both the children and their mothers. The frequent report of the mothers about the attack 'running its cycle' particularly reflected this passivity in the face of crisis. Mechanic's (1968) claim that remedial action is guided by an understanding of the problem and of possible solutions would indicate a lack of understanding among these children and their mothers. Although many children were sceptical about the effectiveness of drug therapy, they were still resigned to the view that it was the only form of treatment, besides 'going to bed'. Similarly, the only assistance the mothers could provide was to ensure that

the medicines were taken by their children.

Although we had expected that only children with clinically severe asthma and their mothers would be confused about the characteristics of asthma and its treatment, it would seem that many of the children and their mothers were confused.

#### 6.3.8 Conclusion

The evidence from our analysis of the interviews with the children with asthma and their mothers suggested that an understanding of how they perceive the illness might provide a partial explanation of the individual variations in the clinical characteristics of the illness. In addition, it was possible to discern certain age, sex, and social class differences in the views of the children and their mothers which might help explain the epidemiological variations in the prevalence of childhood asthma.

The major findings of this investigation were:

- (1) Those children with few clinical symptoms, and their mothers, tended to have a clear and optimistic view of the illness and the treatment prescribed;
- (2) There was little relationship between the physiological severity of the children's asthma and how they and their mothers perceived the illness;
- (3) The older children tended to have a more sophisticated view of their illness, similar, in some respects, to how the children with clinically mild asthma viewed their illness;
- (4) There was some evidence to suggest that childhood asthma caused more disruption in working class families;
- (5) The boys had a more independent attitude to asthma,

which, again, was similar to how the older children, and those with clinically mild asthma, perceived the illness.

## CHAPTER VII

### ATTRIBUTION OF RESPONSIBILITY AND CHILDREN WITH ASTHMA

#### 7.1.1 Introduction

The concept of responsibility is of central concern in our understanding of Man as an active social being. The way we behave towards another person depends to a large extent upon how responsible we consider that person to be for his or her behaviour. For example, Aubert and Messinger used the concept of responsibility to clarify our differentiation of the sick from the criminal. Although both behave in a socially undesirable manner, the sick person is not considered responsible for his behaviour and so is given remedial treatment, whereas the criminal is considered responsible and so is punished.

Responsibility is not some attribute which an actor possesses like red hair or blue eyes, rather it is something which the person acquires through social interaction. For the past twenty years a steady stream of empirical work has attempted to clarify the social and psychological processes involved in the attribution of responsibility.

#### 7.1.2 The different usages of responsibility

Heider distinguished between five major usages of the term responsibility:

- (1) "At the most primitive level the concept is a global one according to which the person is held responsible for each effect that is in any way connected with him or that seems in any way to belong to him."

- (2) "At the next level anything that is caused by P is ascribed to him ... even though he could not have foreseen the outcome however cautiously he had proceeded."
- (3) "Then comes the stage at which P is considered responsible, directly or indirectly, for any after-effect that he might have foreseen even though it was not part of his goal... "
- (4) "Next, only what P intended is perceived as having its source in him."
- (5) "Finally, there is the stage at which even P's own motives are not entirely ascribed to him but are seen as having their source in the environment." (Heider, 1958, pp 113-114).

Following on from Piaget's (1932) discoveries that there are developmental stages in the way children attribute causality, Heider hypothesised that the different senses of the concept of responsibility would be more prevalent in different developmental periods. This would suggest that a young child would be more likely to use the most primitive sense of responsibility and consider someone responsible for an effect even if that person was merely associated with the effect (see example below). At a later developmental stage a person must be perceived as intending the effect before he is considered responsible.

In an attempt to examine whether the stages hypothesised by Heider could be empirically justified, Shaw and Sulzer (1964) devised a series of short incident descriptions each of which only contained the minimum elements of one particular stage. For example, a story designed to incorporate the elements of the most primitive level of responsibility was:

"A boy hit another child with Perry's toy gun.

Is Perry responsible for the child being hit?"

There were twenty stories altogether, four at each level. Half of the stories had a negative outcome and half a positive outcome. Shaw and Sulzer compared the way a group of children (aged 6 - 9 years) and a group of college students (aged 19 - 38 years) attributed responsibility to the actors in these stories, and found some confirmatory evidence for Heider's prediction. Responsibility was attributed differently at each of the stages by both children and adults. There was also a tendency for the children to attribute more responsibility than the adults at the more primitive stages. Both children and adults were more likely to attribute responsibility to the actor in the story if the outcome of the event described was negative than if it was positive. As Shaw and Sulzer put it, "apparently, individuals are more willing to blame another than to give him credit for his actions."

Shaw and Sulzer then replicated this study. This time, however, the main character in each story was an adult, and the situation described was more adult in content. They found that, although there was still a clear distinction between the amount of responsibility attributed at each level, the differences between positive and negative outcomes and between children and adults was not as clear. Since the major difference between the two studies was the story content, they concluded that "personal relevance" may have accounted for the difference, i.e. the degree of responsibility attributed to an actor depends upon whether the observer

identifies with the actor. According to Shaw and Sulzer this effect was most prominent for positive outcomes.

These two studies suggested that it is not just the actual stage of responsibility incorporated in each event which influences how we attribute responsibility, but also the developmental stage of the observer, the quality of the outcome and the personal relevance of the actor. Further, Shaw and Sulzer noted that an ad hoc examination of the results suggested two other influential factors - the situational relevance of the events described and also the intensity of the outcome. Besides reaffirming Heider's basic hypotheses, this original piece of research has sparked off a re-examination of the factors which influence our attribution of responsibility.

### 7.1.3 Developmental differences in the attribution of responsibility

The early research on moral development has provided several important pieces of information on the influence of developmental stages on the way children attribute responsibility. Kay (1970), in his review of such research, noted:

"Moral development depends upon the possession of a sense of responsibility. As children grow they move from a sense of objective responsibility to that of subjective responsibility. They turn from calculating blame in terms of external factors (i.e. the amount of damage done) and proceed to calculate in terms of internal factors (i.e. the motives

and intentions of the children concerned)."

This quotation illustrates the close intermeshing of the ideas of those researchers concerned with moral development and attribution theorists. It is only as the child develops that he assimilates the concept of intentionality, so that he learns to attribute responsibility only when he perceives a person as intending to cause an effect.

While most writers agree that subjective responsibility becomes predominant around eight years of age (Lerner, 1937; Boehm, 1962), there is evidence which suggests that this is not an all-or-nothing transition. Although Piaget (1932) claimed that he had found no evidence of objective responsibility in 10 year old children, Bandura and MacDonald (1963) claimed to have found some indication of subjective responsibility in younger children, and also some evidence of objective responsibility in older children.

This suggested that it is not possible to pinpoint certain chronological ages at which children move from one stage of moral judgement to another. Rather, there seems to be a gradual transition between stages within certain age ranges, and whether a child is more rapid in his transition seems to depend on his social interaction. In the transition from the stage of objective responsibility to the stage of subjective responsibility the child assimilates the concept of intentionality from the interpretation of his own behaviour by his parents (Peck and Havighurst, 1960). According to Lerner (1937), this happens more rapidly for children from middle class families. This is because,

he suggested, adult constraint in these families is less compulsive so that the child finds it easier to become aware of himself as an intentionally acting being. In addition, Kohn (1959) compared working class and middle class parents child-rearing practices. He concluded that the latter were more likely to decide on an appropriate punishment for a misdeed on the basis of the judged intention behind the deed, whereas the former were more likely to punish in keeping with the seriousness of the outcome. There has been little recent evidence to substantiate this apparent class differential.

Returning to studies in the more traditional Heiderian framework, Shaw and his colleagues have suggested that differences in family interactions and child-rearing practices may influence how we attribute responsibility. Shaw, Briscoe and Garcia-Esteve (1968) found differences in the way Cubans, Americans, and Puerto Ricans attributed responsibility to the central character in a series of short stories similar to those outlined by Shaw and Sulzer (1964). This was especially so when the outcome of the effect in the stories was positive. In those cases the Puerto Ricans attributed most responsibility, the Americans less, and the Cubans least. In an attempt to explain these differences Shaw et al suggested that since "Latin cultures give more attention to reward and praise and less to punishment than American cultures ... this probably sensitizes individuals to a consideration of circumstances to be considered in attributing responsibility for positive outcomes." However, they admitted that this did not explain the low scoring of the Cuban observers.

One important feature which might explain these variations was the influence of the situational relevance of the incidents described. Although Shaw and Sulzer (1964) had earlier drawn attention to the factor, it seems to have been ignored in this case when the stories were being devised. This suggests that any difference found between the Puerto Ricans, Americans and Cubans might be an artifact of the cultural relativity of the testing materials, rather than evidence of cultural variations in the attribution of responsibility and the influence of different child rearing practices.

A similar explanation may well be the case for a later study by Shaw and Schneider (1969) which revealed differences in the way young black and white Americans attributed responsibility. In this case, the explanation proffered was the deprived cultural background hypothesis. But again, situational relevance was not considered in the test construction. Yet another study by Shaw and Iwawaki (1972), which found differences between Japanese and American children, can be criticised on the same grounds.

Overall, although differences in child rearing practices may influence how a child attributes responsibility, cross-cultural studies of this hypothesis should ensure that situational relevance should be considered in the test construction.

#### 7.1.4 Individual differences in the attribution of responsibility

It has been suggested that various personal characteristics of the perceiver influence the way he attributes responsibility.

Sulzer and Burglass (1968) claimed that two "personality" characteristics, empathy and punitiveness, were related to how responsibility was attributed. They used two different tests to assess 112 college women and 68 airmen along these two dimensions of empathy and punitiveness. Then, each person attributed responsibility to the central character in a series of 20 stories designed in the format outlined by Shaw and Sulzer. All of the stories had a negative outcome, but two were of minor severity and two of major severity. An overall score of responsibility attributed (AR) was obtained for each subject by adding up the different amounts of responsibility attributed to the actor in each story. Analysis showed that there was no correlation between the scores obtained by the college women on the personality test and the AR score. However, in the case of the airmen, analysis showed that the more empathetic and less punitive individuals tended to hold others less personally responsible for negative outcomes. Sulzer and Burglass suggested that the reasons for this finding not appearing in the analysis of the female sample were:

- (1) the college sample was more homogenous than the airmen with respect to family background, intelligence and socio-economic status which prevented very high or very low scores on the personality tests. Since it was only the observers who had the highest and lowest personality scores whose results were correlated, the college women's upper and lower scores were not as differentiated as the airmen's scores;

- (2) since the college subjects were psychology students, they were probably more self-conscious and less spontaneous than the airmen;
- (3) the college students tended to be less aggressive which might have influenced how they attributed responsibility.

However, although the authors questioned the validity of the empathy measure, there was still the assumption that such tests could measure a static psychological characteristic. As we have emphasised before (section 3.6) the items in a personality test are usually situationally specific (Mischel, 1968) so that a person's scoring on one of these tests can only be applied to a similar situation. Sulzer and Burglass made no attempt to relate the situations in these tests to the construction of the stories used in the attribution of responsibility analysis.

Further, the brief details given of the stories used in this study indicate that both male and female actors were involved. However, no attempt was made to find whether there was any significant interaction between sex of the observer and sex of the actor. This might well have provided a simpler explanation of the sex differences in the attribution of responsibility.

In an attempt to avoid the usage of personality tests, Aderman et al (1975) carried out a study in which the subjects were induced to empathise with the plight of different people. Four groups of ten male undergraduates were asked to imagine themselves as either a "non-victim", an "innocent victim", a "responsible victim", or a "responsible victim plus harmdoer". The actual meaning of each of these conditions was explained to

each subject before he was asked to role play that person in a specific situation. This procedure was supposed to encourage each individual to empathise with one of the four victim descriptions. It was expected that those who acted out the innocent victim role would attribute more responsibility to a description of a person performing a negative action. Each student was asked to attribute responsibility to the central character in the same twenty stories which had been designed by Sulzer and Burglass. They found that, as expected, the "experience of role playing an innocent victim ... (led) to more responsibility being attributed to the central actors" as compared to the non-victim and the responsible victim roles. However, they found that when they carried out a 4 (role-playing conditions) x 5 (contextual levels) analysis of variance, there was no significant interaction, although it approached significance. They concluded that perhaps their differentiation between the four role-playing conditions was not as clear-cut as they had originally believed.

Overall, however, this was an interesting result. Since none of the pre-arranged empathy experiences were related to the attribution tests, the results suggested that the perceiver could, to an extent, generalise from one experience to another. However, since the stories used to examine the attribution of responsibility of the students were exactly the same as those used by Sulzer and Burglass, it is obvious that the personal and situational relevance of these stories were not considered. For example, any difference in the way the male undergraduates attributed responsibility to

the male and female actors in the stories was not explored. Such an analysis might have produced some interesting results.

Overall, while it is possible that certain personal characteristics of the perceiver might influence how he or she attributes responsibility, there is insufficient evidence to confirm or deny the hypothesis.

#### 7.1.5 Quality and intensity of outcome

Other studies have investigated whether the quality and intensity of the outcome of the incident perceived by the observer influences how he attributes responsibility. One of the earliest such studies was that by Walster (1966). She examined how 44 male and 44 female students attributed responsibility to a male actor whose car was involved in an accident. Analysis of the results revealed that the actor was judged as more responsible for the accident when the consequences were severe than when they were trivial. This finding was equally true whether the driver of the car or an innocent bystander was the victim of the accident. Walster suggested that the reason for this was that in a minor accident the observer could feel sympathetic for the car driver and reason that it could "happen to a person (i.e. the car driver) through no fault of his own". However, in a severe accident "it becomes more and more unpleasant to acknowledge that 'this is the kind of thing that could happen to anyone'. Such an admission implies a catastrophe of similar magnitude could happen to you. If we can categorise a serious accident as in some way the victim's fault, it is reassuring."

Although this explanation seems reasonable, the findings of a later study (Walster, 1967) did not support it. This time 152 children (no sex ratio noted) were asked to decide how responsible a female actor was for either gaining or losing either a small or a large amount of money. Walster found that the greater the outcome, either negative or positive (i.e. losing or gaining the money), the less responsibility was attributed to the actor.

Shaver (1970) suggested that a possible reason for these apparently conflicting findings was that the personal and situational relevance in the two studies was different. In the first study (Walster, 1966) there was high personal relevance (the actor in the story was apparently a student, just like the observer) and high situational relevance (the story involved an incident with a car which could conceivably happen to anyone). In this situation of high relevance the observer could be expected to feel threatened by the severe accident, imagining that it could happen to himself. For this reason, the observer attributed high responsibility to the actor in an effort to dissociate himself from such a disaster.

In the second study (Walster 1967) there was low personal relevance (the actor was older than the student observers) and low situational relevance (the story was about the possible outcome of buying a house, a transaction which few students would have encountered). In this situation of low relevance the observer would not feel threatened, but instead would be sympathetic towards an actor involved in a disaster. For this reason he

would attribute little responsibility to the actor.

However, when Shaver (1970) carried out an experiment similar to Walster's (1966) study, in which there was high personal and situational relevance between the actor and the observer, he found that, unlike Walster, the observers attributed less responsibility to the actor for a severe negative outcome. In an attempt to explain this new anomaly Shaver proposed his "defensive attribution theory." This theory claimed that if there was high personal relevance between the actor and the observer the observer would attribute less responsibility to the actor if he committed a severe negative action. The reason for this style of attribution was that if the observer considered that a severe negative event had only happened by chance, then he (who was similar to the actor) was less likely to experience such an event.

Although this theory did not explain Walster's (1966) original study it has generated a lot of research. For example, Shaw and Skolnick (1971) in their paper claimed to have found some evidence in support of defensive attribution theory. However, in their introduction they suggested that Walster's (1966) explanation of her results (more responsibility attributed for severe negative outcome, so as to differentiate observer from actor) could be described as a theory of defensive attribution. But, they added Walster's explanation could only be applied to negative outcomes. In the case of positive outcomes, the observer would consider the actor less responsible for a severe effect so as to increase the likelihood that the observer might have the good fortune to also create a severe positive effect. Ignoring

Shaver's (1970) formulation of defensive attribution theory, save to note his explanation for the apparent inconsistency between Walster's two findings, the authors then proceeded to test their own version of the theory.

They asked 116 students (58 male, 58 female) to attribute responsibility to a male actor who had seemed to cause a mild negative effect, a severe negative effect, a mild positive effect, or a severe positive effect. On a preliminary analysis of the results they found no difference in the amount of responsibility attributed to the actor for both mild and severe negative outcomes.

Following on from Shaver (1970), who considered that if both the actor and the observer were of the same sex there would be high personal relevance, Shaw and Skolnick examined the results for the male observers separately. They found that the males attributed more responsibility to the male actor for the severe negative outcome than for the mild negative outcome. This was similar to the result obtained by Walster (1966) and which Shaver (1970) considered also involved high personal relevance. Shaw and Skolnick considered it evidence for defensive attribution theory. It must be emphasised that by this they meant Walster's (1966) explanation of her findings and not Shaver's (1970) original formulation which would have predicted that in a situation of high personal relevance less responsibility would be attributed for the severe negative than for the mild negative outcome.

When Shaw and Skolnick examined the results for the positive outcomes, it seemed that all the observers (no sex difference) were likely to attribute less responsibility to the

actor for a severe outcome than for a mild outcome. This confirmed their formulation of a defensive attribution theory for positive outcomes. It should be noted, however, that this result occurred whether or not there was personal relevance between observer and actor. In Walster's (1967) second study (which Shaver (1970) claimed did not involve personal relevance) there was a similar finding. Overall, we can say that this study provided some support for Walster's (1966) explanation of how we attribute responsibility for a negative outcome, and also some support for Shaw and Skolnick's own version of this theory for positive outcomes, although in the latter case personal relevance, surprisingly, did not seem to be involved.

Support for Shaver's (1970) version of defensive attribution theory came from a study by Chaikin and Darley (1973). Using film strips, instead of incident outlines, they found that, when there was personal relevance between the actor and the observer, less responsibility was attributed to the actor for a severe negative outcome.

In an attempt to clarify this confusion, Fishbein and Ajzen (1973) suggested that perhaps a reason for the inconsistency in the results was that the authors ignored the contextual levels of the incidents used as examples i.e. the actual usage of the term 'responsibility' may have differed from study to study. They devised a two-way classification of the incident observed and the developmental response level of the observer (Fig 7.1.5).

The terms used for each level were those suggested by Shaw and Sulzer (1964) for Heider's five stages of responsibility.

Fig. 7.1.5: Fishbein and Ajzen's (1973) two-way classification of contextual and developmental levels of responsibility.

Developmental or response levels	Contextual levels				
	Association	Commission	Foreseeability	Justification	Intentionality
Association	X	X	X	X	X
Commission		X	X	X	X
Foreseeability			X	X	X
Intentionality				X	X
Justification					X

Fishbein and Ajzen suggested that, on the basis of Shaw and Sulzer's research, it was necessary to reverse the order of justification and intentionality on the contextual level so as to devise this simple two-way design. The Xs in the table indicate combinations of developmental and contextual levels which would lead to the attribution of responsibility. Thus, a child at the foreseeability developmental level would only attribute responsibility to an actor if he considered that the actor either could have foreseen the consequences of his action, or was justified in committing the act, or simply intended to commit the act.

In the case of the studies concerning the influence of the intensity and quality of outcome, Fishbein and Ajzen noted that the actual contextual level of the incidents described had not been considered. Thus, if in one study the incident described was at the commission contextual level, then adults (probably at the intentionality or justification developmental level) would be expected to have attributed less responsibility to the actor in that incident than if the incident was at the justification contextual level.

Vidmar and Crinklaw (1974) agreed with this formulation and pointed out that the majority of the studies on defensive attribution had involved incident descriptions at the commission and foreseeability contextual levels at which adults could be expected to attribute little responsibility. No wonder there was such inconsistency in the results.

#### 7.1.6 Sex differences

The available evidence as regards sex differences in the way observers attribute responsibility is conflicting. In the earlier studies either no sex differences were found or else they simply were not considered. However, in Shaw and Skolnick's (1971) study, sex differences were found and explained on the basis that there was greater personal relevance between the male observer and the male actor than between the female observer and the male actor.

Evidence from other fields adds some insight. For example, several researchers (Smith, 1939; Farnberger, 1948; Chafetz, 1974) have reported that both males and females hold a higher opinion of the male role. This is understandable when we realise the dominant position of the male in our Western society. On the other hand, there is some evidence (Minuchin, 1971) that children are more favourably biased towards members of their own sex. Added to this, Feshbach and Roe (1968) claimed that boys were more empathetic with boys, and that girls were more empathetic with girls. It is, perhaps, a developmental phenomenon. Children are more sympathetic with a like-sexed child, but as they mature the acceptance of the dominant male role may influence their opinions of male and female behaviour.

In one short study, Cunningham (1977) attempted to explore specifically sex differences in attribution of responsibility. Using picture stories involving either a male or a female actor, she found that, overall, there was no difference in the way boys and girls attributed responsibility, nor was there any

significant sex of observer x sex of actor interaction. However, this was only a small study and further research may provide different results.

#### 7.1.7 The sick role and responsibility

Although several sociologists (e.g. Parsons, 1951, Aubert and Messinger, 1958) have hypothesized that the sick person is perceived by the layman as not being responsible for the neglect of his everyday duties, there have been few attempts to substantiate this claim. Segall (1975), in his review of research involving Parson's sick role concept, in which responsibility for behaviour is an important aspect, noted that there has been a tendency to accept uncritically this concept as a description of empirical reality rather than, as Parson's had originally formulated the concept, as an abstract set of "institutionalized expectations." The sick role is not some fixed mode of behaviour which we adopt when we are in a certain physical condition, but a variable set of expectations of the way certain people should behave at certain times. Recently, Mechanic (1978) has re-emphasized the variable nature of the sick role:

"Although attempts have been made to state theoretically the specific norms applying to sickness situations, it is clear that the sick role is not a single concept that applies equally to all people who claim illness, but varies considerably with the person, the conditions involved, and the social context within which illness is claimed."

As we emphasized in section 4.3, whether a person is defined as sick, and so excused his everyday responsibilities, depends upon several factors including the characteristics of the person claiming to be sick, the characteristics of the legitimators of the sick role, and the type of responsibilities from which the person would be excused.

As regards the characteristics of the person claiming sickness, there is little empirical evidence to suggest that children with asthma are generally defined as sick. It is possible that because of the periodic nature of asthma, with long periods of normal health, a child with asthma would be less likely to be defined as sick than someone with a more chronic illness. This possible reluctance to attribute the sick role to children with asthma might be confounded by other characteristics of the children, such as their sex. The evidence reported in section 7.1.6, although not conclusive, did suggest that the sex of the actor might influence the degree of responsibility attributed. If this is the case, then we would expect that there would be differences in the attribution of the sick role to boys and girls. As suggested in section 4.3, it might well be that children would excuse a boy with asthma from his everyday responsibilities, but not a girl. Such a sex difference in the ease of access to the sick role could provide a partial explanation of the sex difference in the reported prevalence of childhood asthma.

The characteristics of the legitimators of the sick role are also important. In section 4.3 we emphasized that a component of the sick role was exclusion from everyday social interaction.

However, Richardson (1969) noted that certain children do involve physically handicapped children in their social activities. This would suggest that there are differences in the extent to which various children will attribute the sick role to other children.

In section 7.1.3 we noted evidence for developmental changes in the way children attribute responsibility. If there are similar developmental changes in children's attribution of the sick role, then we would expect that there would be developmental changes in the way healthy children attribute responsibility to children with asthma. It is possible that older children, with their more developed sense of responsibility, would be more reluctant to excuse another child from his responsibilities by defining him as sick.

In section 7.1.3 we also commented on the slight evidence regarding social class differences. This suggested that children from middle class families had a more developed sense of responsibility. If this is the case, we would expect social class differences in the way children attribute responsibility to children with asthma.

Finally, there is the possibility that there are sex differences in the way people attribute responsibility. Although there is no evidence regarding sex differences in the attribution of responsibility, if there was, we would expect sex differences in the way children attribute responsibility to children with asthma.

The other feature we cannot ignore in understanding the

attribution of responsibility is the characteristics of the behaviour. In section 7.1.5 the importance of the different contextual levels (cf. Fishbein and Ajzen, 1973) was explained. Although no empirical work has been reported on the extent of behaviours which the sick role excuses, it is possible that, depending upon the perceived severity of the illness, the sick person may be excused from behaviour at different contextual levels. Thus, responsibility might not be attributed to a child with asthma for behaviour involving the association contextual level, but might still be attributed for behaviour at the foreseeability contextual level.

In section 7.1.5 we also referred to the importance of the quality of the outcome of the behaviour. It may well be that healthy people, with their generally negative view of sick people (Goffman, 1968), would not consider a sick person responsible for positive outcomes but would continue to hold that person responsible for negative outcomes.

However, the process of formation of the sick role is a two-way process. As emphasized in section 4.3, the specific characteristics of the sick role are constantly being re-defined by both the actor and those around him. For this reason, we need to assess the self-definitions of the children with asthma.

As children develop they acquire an image of themselves as responsible agents. This image is developed throughout the children's social interaction with their peers and their family. However, in the case of sick children the smooth development of such an image would be prevented for two reasons. First, sick

children are restricted in their everyday social interaction with other children of their own age (Richardson 1969). Second, the parents of sick children are more likely to treat their children in a way which is not conducive to the development of a sense of responsibility. Shere (1956) found that parents, in general, were less willing to give their handicapped children responsibility for performing various tasks, and were more lenient towards their children's deviant behaviour. It would be expected that, because of such factors, sick children would not assimilate the concepts of intentionality and responsibility as rapidly as healthy children. If this was the case, sick children would be expected to be less developed in their understanding of the different usages of responsibility (cf. Fishbein and Ajzen). These restrictions could also lead the sick children to develop, what de Charms (1968) has called, an external locus of causality, i.e. a feeling that one is a pawn rather than an origin. This external locus of causality would be apparent in the way sick children attribute responsibility. However, like the healthy children, to understand how sick children attribute responsibility we must consider the characteristics of the children, the characteristics of the actors, and the characteristics of the behaviour.

Children attribute responsibility according to their own experiences of the efficacy of their behaviour (cf. Hastorf et al, 1970). For this reason, we would expect that if children with asthma had developed an external locus of causality they would attribute less responsibility to an actor

than would healthy children , i.e. they would perceive other children to be pawns of their environment, like themselves. However, several characteristics of the actor might influence the way the children with asthma attribute responsibility.

The most important characteristic would possibly be whether or not the actor had asthma. If children with asthma have an external locus of causality, they would under-attribute responsibility to a healthy actor. But if the actor had asthma, the children with asthma might attribute even less responsibility, since they would define that actor to be even more of a pawn than the healthy actor.

However, if some of the children with asthma had enjoyed normal social interaction in their development, then they would probably not have developed an external locus of causality. These children would not differ from healthy children in the way they attribute responsibility to healthy actors. However, since they might feel they are more the origin of their behaviour, despite having asthma, they would define the actor with asthma as also an origin, and so attribute responsibility to that actor as to a healthy actor.

Clarification of the way different children with asthma attribute responsibility to actors with and without asthma would thus reveal differences in their self-definitions as responsible agents. We would expect that those children who define themselves as pawns, according to the way they attribute responsibility, would be the most sick, i.e. exhibit the most clinical symptoms.

In addition, other characteristics, such as their age, sex, and families' social class, might influence the way children with asthma attribute responsibility, as we suggested they would for healthy children. Finally, the characteristics of the behaviour considered might also be important.

#### 7.1.8 Conclusion

According to Heider the concept of responsibility is of crucial importance in the common-sense definition of Man. In everyday life we tend to perceive people as being the sources of their behaviour and not merely passive manipulanda. As such, we consider people responsible for their behaviour. However, certain people are not always held responsible for their behaviour. Theoretical speculation has suggested that one such group of people is the sick.

The various factors influencing the way responsibility is attributed have been explored in a series of empirical investigations. The technique devised by Shaw and Sulzer (1964) has been particularly germane in providing a framework for the study of these factors. It might be possible to adopt such a technique to explore the importance of the concept of responsibility in the layman's definition of asthma.

In an attempt to understand the different classifications of the severity of childhood asthma, and its variable prevalence across age, sex and social class, this study will use a technique derived from Shaw and Sulzer's work to consider specifically the following issues:

1. The way healthy children attribute responsibility.

It would be expected that they would attribute less responsibility to actors with asthma than to healthy actors. Evidence that other characteristics of the actor, such as sex, influence the attribution of responsibility would suggest differential access to the sick role.

2. The way children with asthma attribute responsibility.

It would be expected that they would attribute less responsibility than healthy children to both healthy actors and actors with asthma. Children with asthma who did not differentiate between healthy actors and actors with asthma would not be conforming to the sick role expectations. Those children we would expect to have few clinical symptoms.

## 7.2 METHOD AND RESULTS

### 7.2.1 Design of testing materials

Forty stories were devised along the lines suggested by Shaw and Sulzer (1964). There were eight stories at each of the five contextual levels, four with a positive outcome and four with a negative outcome. All of the stories were about situations commonly experienced by schoolchildren and, to ensure that there was this situational relevance, a primary school teacher assisted in their preparation. The central actor in each of the stories was a boy named John.

After the stories had been devised, three research psychologists rated each story for contextual level, quality of outcome, and intensity of outcome. The judges agreed with the contextual level and quality of outcome of all of the stories. However, two of the judges considered that the outcome in three of the stories was more intense than in the others. After discussion with the three judges, the author altered the content of the stories slightly to reduce the intensity of their outcomes.

From each sub-cell of four stories, two were selected at random which provided two sets of twenty stories, each set equal in context and quality of outcome. In one of these sets, the description of the central character was changed from the simple John to James, who has asthma. Then, the two sets of twenty stories were combined in a booklet format. At the end of each story was printed a question asking whether the central character was responsible for the effect described.

The question was followed by a simple 'YES' or 'NO' alternative to be circled by each child. Beneath this was printed a row of five boxes of increasing sizes which the child, if he answered 'YES', was required to tick, depending on whether he considered the central character only slightly responsible for the effect described, completely responsible, or of some intermediate degree of responsibility. This was similar to the format described by Shaw and Sulzer. An example of a story at the association contextual level with a negative outcome is:

"John kicked Alec's ball through a window

Is Alec responsible for the broken window? YES/NO

"



The image shows a row of five square boxes of increasing size from left to right. The second box from the left contains a checkmark, indicating that the child selected 'YES' to the question above. The boxes are arranged horizontally and are empty except for the checkmark in the second one.

Here the child considered Alec slightly responsible for the broken window.

To the front of the booklet containing the stories and questions was attached a set of instructions. These explained that the child was required to decide whether the central actor was responsible for the effect described. Following on from Shaw and Sulzer, the term 'responsible' was defined in this manner: "If a person is responsible for something that means we would blame him if it was bad and thank him if it was good." To standardize the children's interpretation of the term 'asthma', it was explained that if a child had asthma that meant he found it "difficult to breathe sometimes." These instructions were followed by two sample stories drawn

at random from the basic forty.

#### 7.2.2 Pilot Study: Procedure

To test the effectiveness of this series of stories in eliciting different degrees of attributed responsibility at different levels and for different actors, a pilot study was conducted. For this study, a sample of 10 healthy boys aged 9-10 years was tested. The children involved were all boys in order to control for the possible effect of personal relevance (the actors in the stories were boys). This reduced the number of variables we would have had to consider in the analysis.

Each child was seen individually at his school. After an initial general conversation to ease any apprehension the child might have, the reason for the researcher's visit was explained.

The procedure of the test was then outlined. First, the instructions were carefully read aloud by the researcher while the child was encouraged to follow the words on the page. The term 'asthma' was explained and the children seemed to have no difficulty in understanding it, pretending to wheeze or quoting examples of other children who had asthma.

The term 'responsible' was then explained. To ensure the children understood the meaning of this term, the researcher asked each child to read aloud one of the sample stories. He then asked the child to explain the meaning of the story and the question. If the child understood the

meaning of the incident described and the question, he was asked whether he considered the central actor responsible for the incident described. If the child answered NO, he was told to circle NO. If he answered YES, he was told to circle YES, and it was then explained how to score degrees of responsibility. This procedure was repeated for the second sample story.

In most cases the instructions and the two examples presented few problems. The child then proceeded to examine the other forty stories. The format of the child reading each story aloud, etc., was followed as before. If the child did not understand a story, it was read aloud again by the interviewer.

Overall, no great problems were encountered, and the children seemed to enjoy the task. After each child had answered all forty questions, the interviewer thanked him, and the child returned to his classroom. Altogether, the time with each child for completion of the task was about twenty minutes.

### 7.2.3 Pilot Study: Results

The answers to each story were scored as suggested by Shaw and Sulzer: 0 for a No answer, and 1 to 5, depending on degree, for a Yes answer. This meant that if a child considered the actor in a story to be fully responsible for some effect, he was given a score of 5, whereas if the child thought that the actor was only slightly responsible for

some effect, he was given a score of 1.

After scoring each answer we obtained forty basic scores. The mean attribution of responsibility (A.R.) score for each contextual level with a similarly described actor and a similar quality of outcome was obtained by halving each pair of scores at each level. This provided us with twenty mean A.R. scores i.e. four scores for each of the five contextual levels. One series of scores for the five contextual levels came from the stories which had a negative outcome and an actor who had asthma. Another series of scores came from those stories which had a positive outcome and an actor who had asthma. Another series of scores came from stories which had a negative outcome and an actor who did not have asthma. The other series of scores came from those stories which had a positive outcome and an actor who did not have asthma. These attribution of responsibility (A.R.) scores for the children are plotted in Figures 7.2.3A and B.

Figure 7.2.3A, which presents the scores obtained from stories concerning actors who did not have asthma, provides a picture somewhat similar to that found by Shaw and Sulzer. Very little responsibility was attributed to the actor for a negative effect at contextual levels I and II, much more was attributed at contextual levels III and IV, and an intermediate amount was attributed at level V. On the other hand, no responsibility was attributed for a positive effect at level I, while an intermediate amount was attributed at the other four levels. When we compared the children's

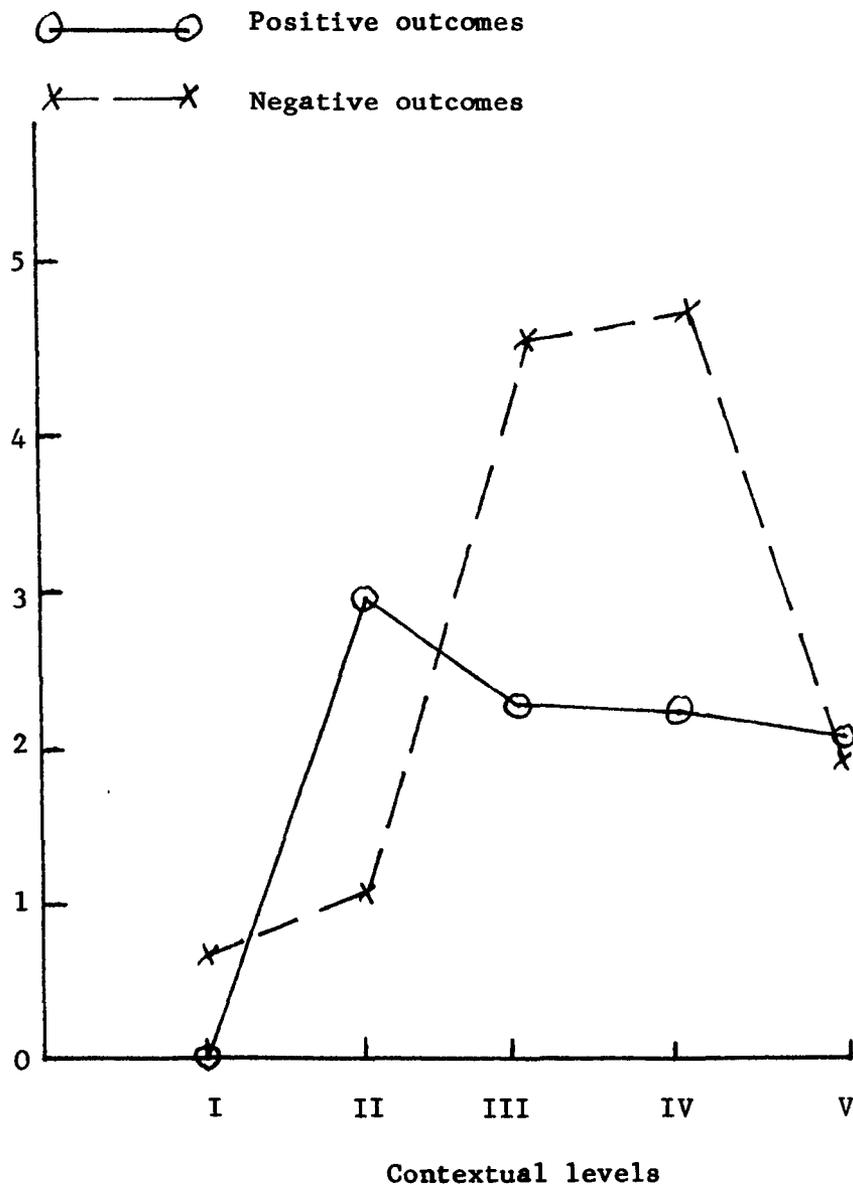


Fig. 7.2.3A: Pilot study: Actors without asthma:  
Mean attribution of responsibility (A.R.)  
scores as a function of contextual levels  
for different outcomes

scores for positive and negative effects at each contextual level using a t-test (Table 7.2.3A), we found that significantly more responsibility was attributed for a negative effect than for a positive effect at levels III and IV, while significantly less was attributed for the negative effect at level II. Generally, the findings confirmed Shaw and Sulzer's claim that children blame others more than they praise them.

However, when we consider Figure 7.2.3B, which presents the attribution of responsibility scores obtained from stories concerning actors with asthma, a different picture emerges. Again, there was little responsibility attributed to an actor with asthma for a negative effect at contextual levels I and II. At levels III and IV more responsibility was attributed, but not as much as was the case for actors without asthma (Fig. 7.2.3A). At level V very little responsibility was attributed, much less than for the healthy actor. More surprisingly, however, the responsibility attributed to an actor with asthma for a positive effect was also very little at levels I and II but then rose steeply to surpass the amount of responsibility attributed to the actor for a negative effect at levels IV and V. A t-test (Table 7.2.3B) showed that there was little difference between the responsibility attributed to an actor with asthma for a negative or positive effect at levels I to IV. However, more responsibility was attributed at level V for a positive effect than for a negative effect. Thus, it seems that there

TABLE 7.2.3A Comparison of responsibility attributed at different contextual levels to actors without asthma for positive and negative effects

Contextual level	t	p
I	1.206	N.S.
II	2.341	<0.05
III	2.857	<0.05
IV	2.549	<0.05
V	0.244	N.S.

TABLE 7.2.3B Comparison of responsibility attributed at different contextual levels to actors with asthma for positive and negative effects

Contextual level	t	p
I	0.707	N.S.
II	1.180	N.S.
III	1.024	N.S.
IV	0.253	N.S.
V	1.890	<0.05

TABLE 7.2.3C Comparison of responsibility attributed to actors with and without asthma for different effects

Quality of outcome	t	p
Negative	2.335	<0.05
Positive	0.661	N.S.

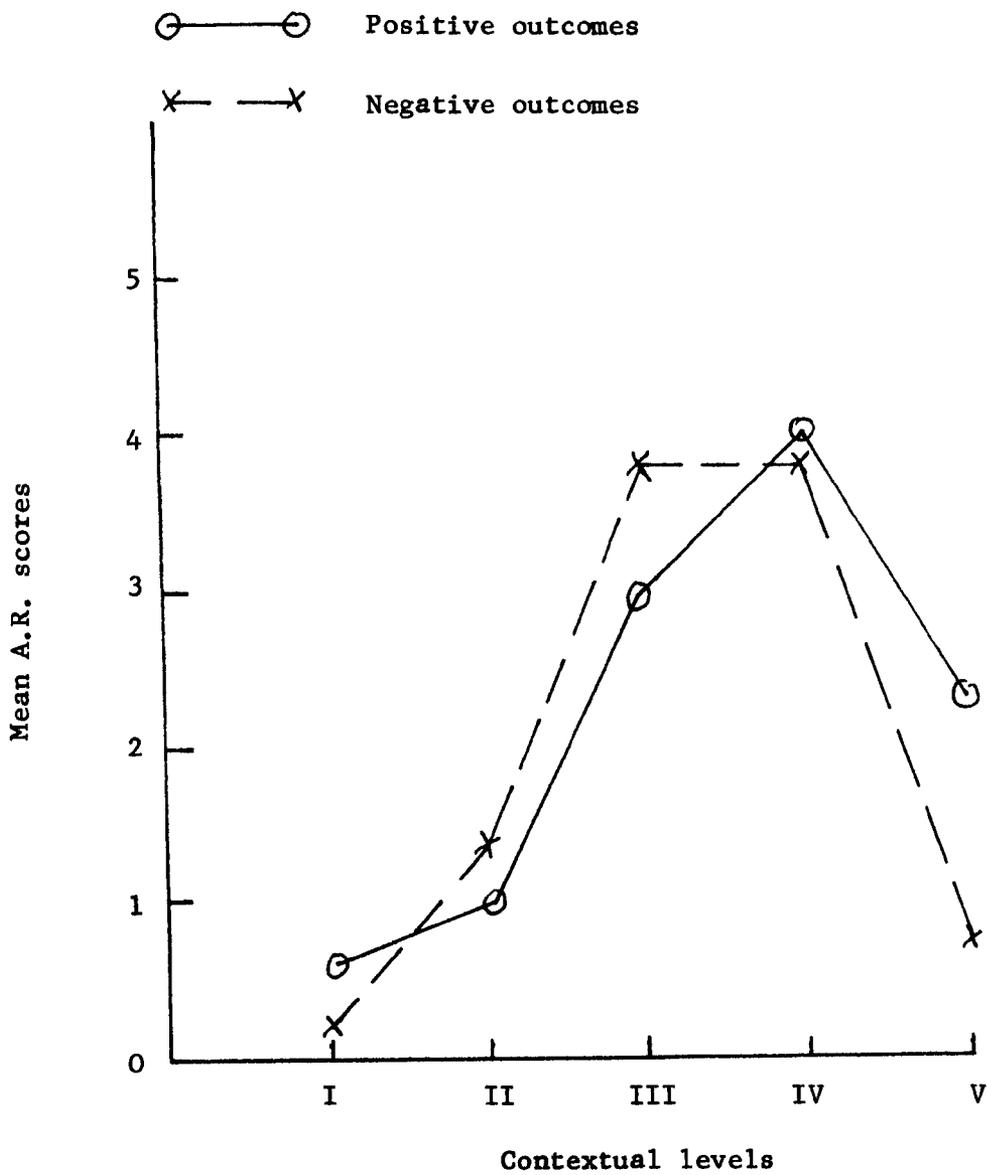


Fig. 7.2.3B: Pilot study: Actors with asthma:  
Mean attribution of responsibility (A.R.)  
scores as a function of contextual levels  
for different outcomes

was a tendency to praise children with asthma more than to blame them.

When we combined the attribution of responsibility scores across the five contextual levels, the essence of our findings became more apparent. Figure 7.2.3C shows that whereas more responsibility was attributed to a healthy actor when an effect was negative than when it was positive, when the actor had asthma the reverse was the case, i.e. more responsibility was attributed for a positive effect than for a negative effect. A t-test (Table 7.2.3C) showed that although there was little difference between the amount of responsibility attributed to an actor with asthma and to an actor without asthma for a positive effect, significantly less responsibility was attributed to the actor with asthma for a negative effect. Indeed, it seemed that although the child with asthma was not blamed for his misdeeds, he was still praised for his good deeds.

This small pilot study confirmed the effectiveness of the stories, devised along the lines suggested by Shaw and Sulzer, in eliciting different attributions of responsibility at different contextual levels and for different qualities of outcome. It also suggested that children with asthma are perceived in a different way from healthy children by healthy children. The results tended to confirm our initial reasoning about the importance of the concept of responsibility in the common-sense definition of illness. Since such findings were in line with our earlier discussion,

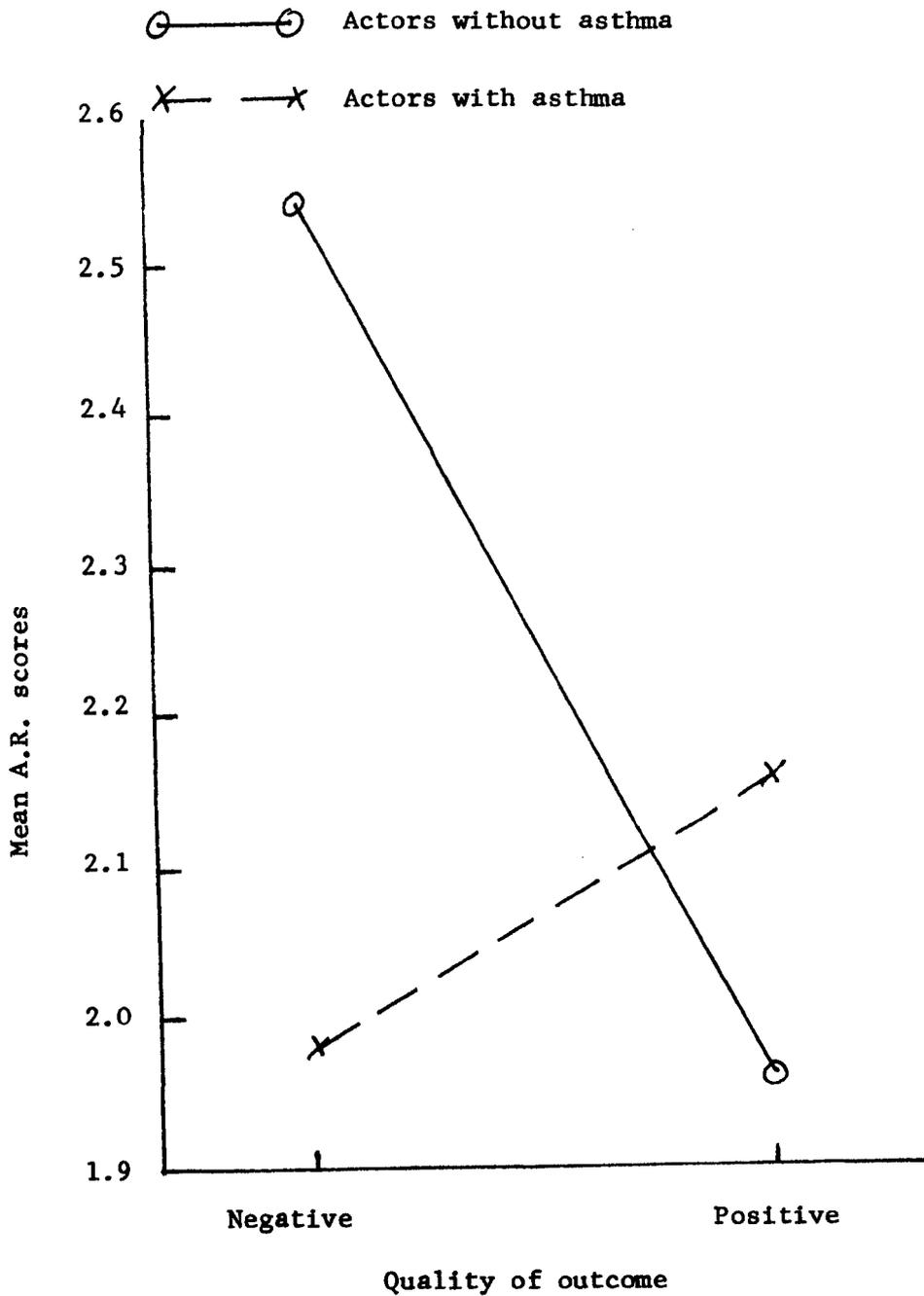


Fig. 7.2.3C: Pilot Study:

Mean attribution of responsibility (A.R.)  
scores as a function of different outcomes  
and for actors with and without asthma

and also since they diverged so strikingly from previous studies, they merited more detailed consideration. One major point which could be clarified by further work was whether children with asthma (or perhaps just some of them) differed from healthy children in their attributions of responsibility to children with and without asthma.

#### 7.2.4 Amendment of the materials and procedure for the main study

All the children who took part in the pilot study were boys, and so were all the actors in the stories considered, so ensuring the personal relevance described by Shaver. The reason for this was to simplify the analysis. However, in the group of children who took part in our main study, there was a large proportion of girls. To ensure personal relevance for these girls, it was necessary to amend the stories so that the actors were girls. We did this by changing the name of each of the actors e.g. "Ewan blotted his writing book with James's pen" became "Anne blotted her writing book with Jane's pen." In the few instances where it was considered that the incident described in the story was too male-oriented, it was slightly changed to make it more 'female-like'.

This now meant that we had two sets of forty stories, one set concerning male actors, and the other concerning female actors. By giving both sets of stories to all the children it would be possible to consider additionally, the sex of children by sex of actor interaction (see section

7.1.6).

To, hopefully, reduce the size of the test in the eyes of children, and so encourage sufficient commitment to answer all the questions, two sets of stories were devised, each containing twenty stories concerning boys and twenty concerning girls. The two booklets could then be presented to each child separately. The same title page as was used in the pilot study, with a few minor modifications, was affixed to the front of one of the booklets. Both booklets of forty stories are given in Appendix 7.2.4, along with a key to identify the contextual levels of the stories.

The procedure followed in obtaining the children's replies was similar to that described in the pilot study. Each child was seen individually at school. After chatting to the child for a few minutes, the first booklet was presented by the researcher and the procedure, outlined before, was then followed. After the child had completed one booklet, the interviewer again engaged him in conversation for a few minutes before presenting the second booklet. The answering procedure was the same. Few problems were encountered, and the time taken to answer all eighty stories varied from thirty to forty minutes. (It should be noted that the children completed this test on a different occasion from when they were interviewed about the issues considered in the other chapters. The testing conditions were the same).

#### 7.2.5 Results of the main study

The children's replies to each question were scored in the same way as in the pilot study. After summing each pair of scores for the matching pairs of stories, as before, we derived forty mean A.R. scores for each child. In the pilot study our statistical analysis only involved a t-test of the groups of scores at each contextual level. In this, the main, study an analysis of covariance was carried out on the children's scores to obtain a greater amount of information about the various relationships between the different variables.

An analysis of covariance involves a procedure not unlike the partial correlation technique discussed earlier (see section 5.4). Our test design had four "within subject" variables: quality of incident outcome, contextual level, whether or not the actors had asthma, and the sex of the actors. In our total sample of children we considered four "between subject" variables: whether or not the children had asthma, their age, sex and their families' social class. The analysis of covariance procedure employed, considered the interaction of one between subject variable with each of the four within subject variables, controlling for the possible effects of the other three between subject variables.

Employing this procedure ensured that we could be more definite about our results. Say we found that there was a significant interaction between the sex of the children and the sex of the actors in the stories. It might be claimed that this could have been caused by some social class effect. However,

since our analysis of covariance controlled for such a possible effect, we could be sure that such a sex of children by sex of actors interaction did exist independently of social class, i.e. boys differed from girls, irrespective of their families' social class, in the way they attributed responsibility to other boys and girls.

Four analyses of covariance were performed on the attribution of responsibility scores of all sixty children. Each analysis examined the relationship between the four within subject variables (quality of outcome, whether or not the actors had asthma, contextual level, and sex of the actors) with one of the between subject variables (whether or not the children had asthma, the children's ages, the children's sex, and their families' social class) controlling for the possible effects of the other three between subject variables. In each analysis, the number of children who participated in the study was entered as a separate variable such that each child's set of forty attribution of responsibility scores was considered as a set rather than as a series of forty individual scores.

There was a certain amount of repetition in these analyses since each computed the extent of the interaction between the four within subject variables. These within subject interactions are presented separately in Table 7.2.5A. Since the data in this table were taken from a larger analysis with a between subject variable, no separate error score is presented. Instead, error scores and details about the independence of the children's replies are given with the further details of the higher order

TABLE 7.2.5A: Summary of that part of the analysis of covariance of the attribution of responsibility (A.R.) scores showing the interaction of the characteristics of the actors and of the incidents (within subject variables).

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Quality of outcome (Q)	1	213.6	40.2 ***
Illness of actor (I.A.)	1	15.0	2.8
Contextual level (L)	4	4318.8	813.3 ***
Sex of actor (S.A.)	1	11.8	2.2
Q x I.A	1	20.9	3.9 *
Q x L	4	3490.0	65.7 ***
Q x S.A.	1	0.4	0.1
Q x I.A x L	4	79.4	15.0 ***
Q x L x S.A.	4	4.6	0.9
Q x I.A x S.A.	1	2.8	0.5
Q x I.A x L x S.A	4	3.3	0.6
I.A x L	4	41.3	7.8 ***
I.A x S.A.	1	11.8	2.2
I.A x L x S.A.	4	3.7	0.7
L x S.A.	4	5.8	1.1

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

interactions which the analyses computed in Table 7.2.5B, C, D and E.

Table 7.2.5A shows that, as expected, the amount of responsibility attributed by the children was related to the outcome quality of the incidents described, the contextual level of the incidents, and the interaction of those two variables. However, when we examined more closely these particular findings they were somewhat more unexpected than the results of the analysis of covariance had suggested.

Figure 7.2.5A shows that, overall, the children attributed more responsibility to actors <sup>for</sup> positive outcomes than for negative outcomes. This was, apparently, the reverse of what Shaw and Sulzer had found in their study.

Figure 7.2.5B shows that, overall, the children attributed very little responsibility to actors for incidents at the association contextual level (I), an intermediate amount at the commission and justification contextual levels (II and V), more at the foreseeability level (III) and most at the intentionality level (IV).

Figure 7.2.5C shows the amount of responsibility attributed to an actor as a function of the quality of outcome and contextual level of the incident described. It is apparent that the children differentiated more strongly between the five contextual levels for negative outcomes than they did for positive outcomes. With the negative outcomes, little responsibility was attributed at levels I, II and V, and quite a substantial amount at levels III and IV. With the positive

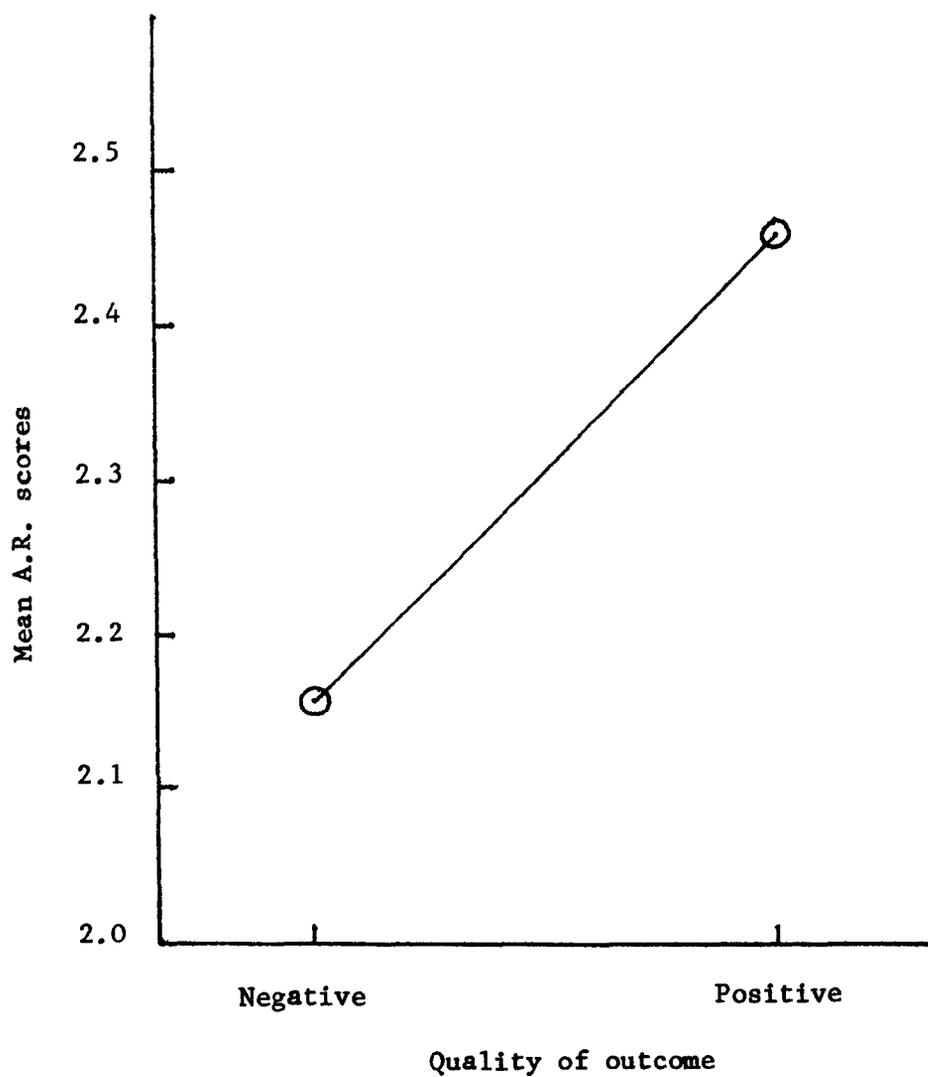


Fig. 7.2.5A: Mean attribution of responsibility (A.R.)  
scores as a function of quality of outcome.

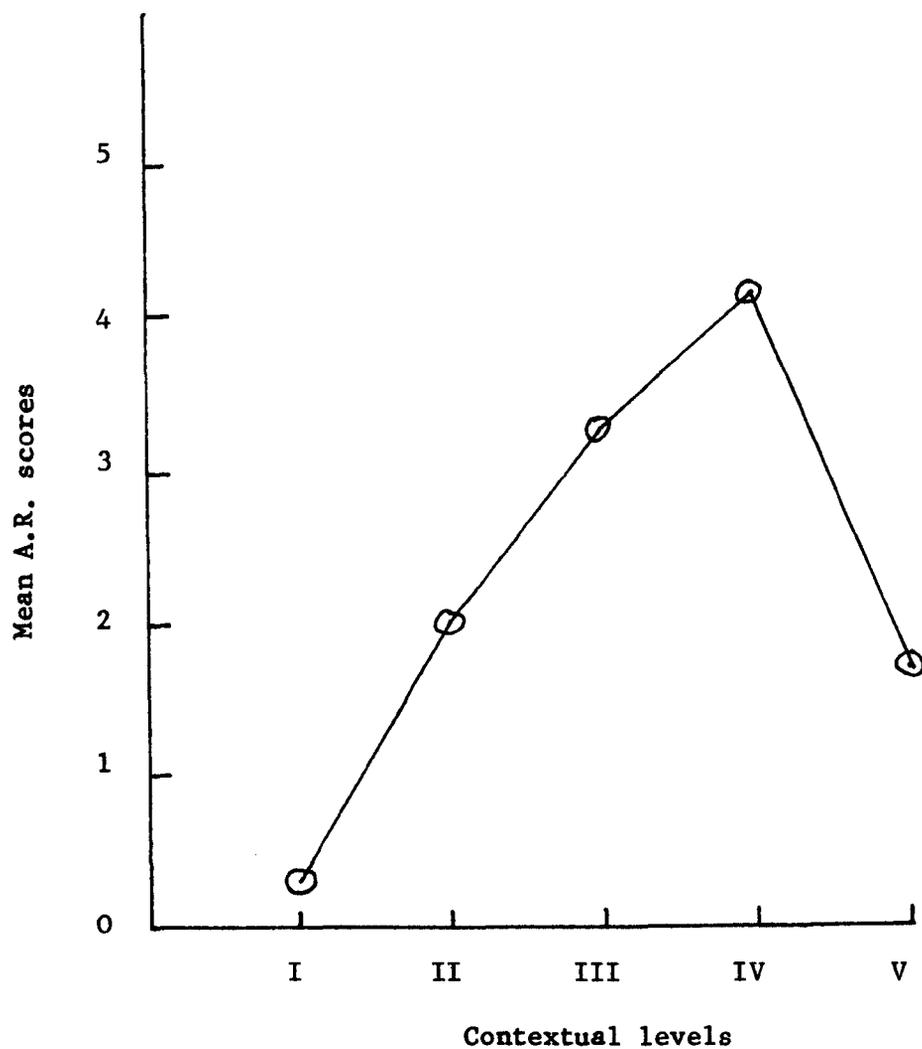


Fig. 7.2.5B: Mean attribution of responsibility (A.R.) scores as a function of contextual levels

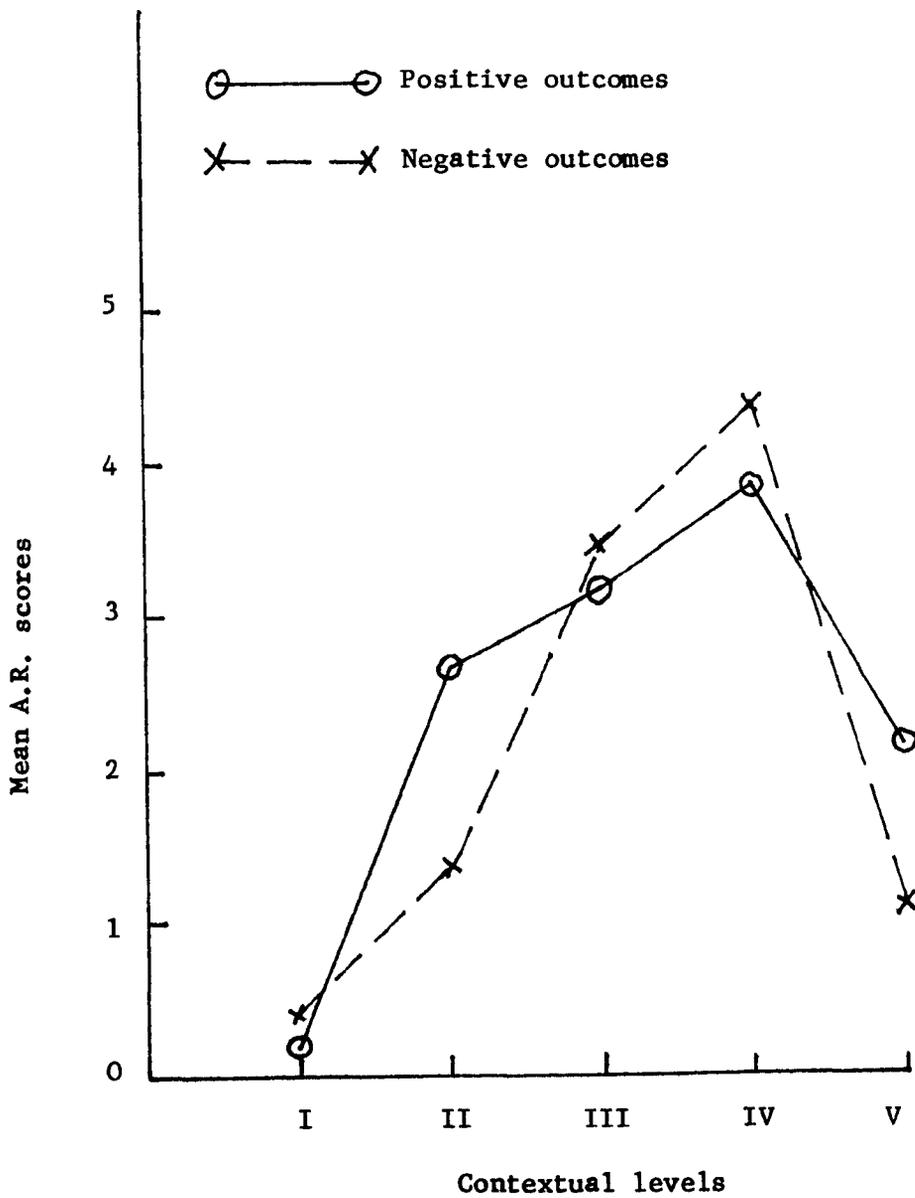


Fig. 7.2.5C: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for different outcomes

outcomes, little responsibility was attributed at level I, and an intermediate amount at the other four contextual levels. More responsibility was attributed for negative outcomes than for positive outcomes at levels I, III and IV, and less at the other two levels.

The analyses of covariance also revealed that, although whether or not the actors in the stories had asthma was not independently related to the amount of responsibility attributed by the children, there was a significant interaction between that variable and the outcome quality and contextual level of the stories (Table 7.2.5A).

Figure 7.2.5D extends the data presented in Figure 7.2.5A. It shows that, although there was little difference between the amount of responsibility attributed to actors with and to actors without asthma in incidents with a negative outcome, more responsibility was attributed to actors with asthma, than to actors without asthma, for positive effects. The finding that, overall, more responsibility was attributed to actors without asthma for positive, rather than negative outcomes, is still the reverse of Shaw and Sulzer's findings.

Figure 7.2.5E extends the data presented in Figure 7.2.5B. It shows that, overall, more responsibility was attributed to actors with asthma, than to actors without asthma, at the association and foreseeability contextual levels (I and III), less at the commission and justification levels (II and V), and an equal amount at the intentionality level (IV).

Figure 7.2.5F combines the findings of the two

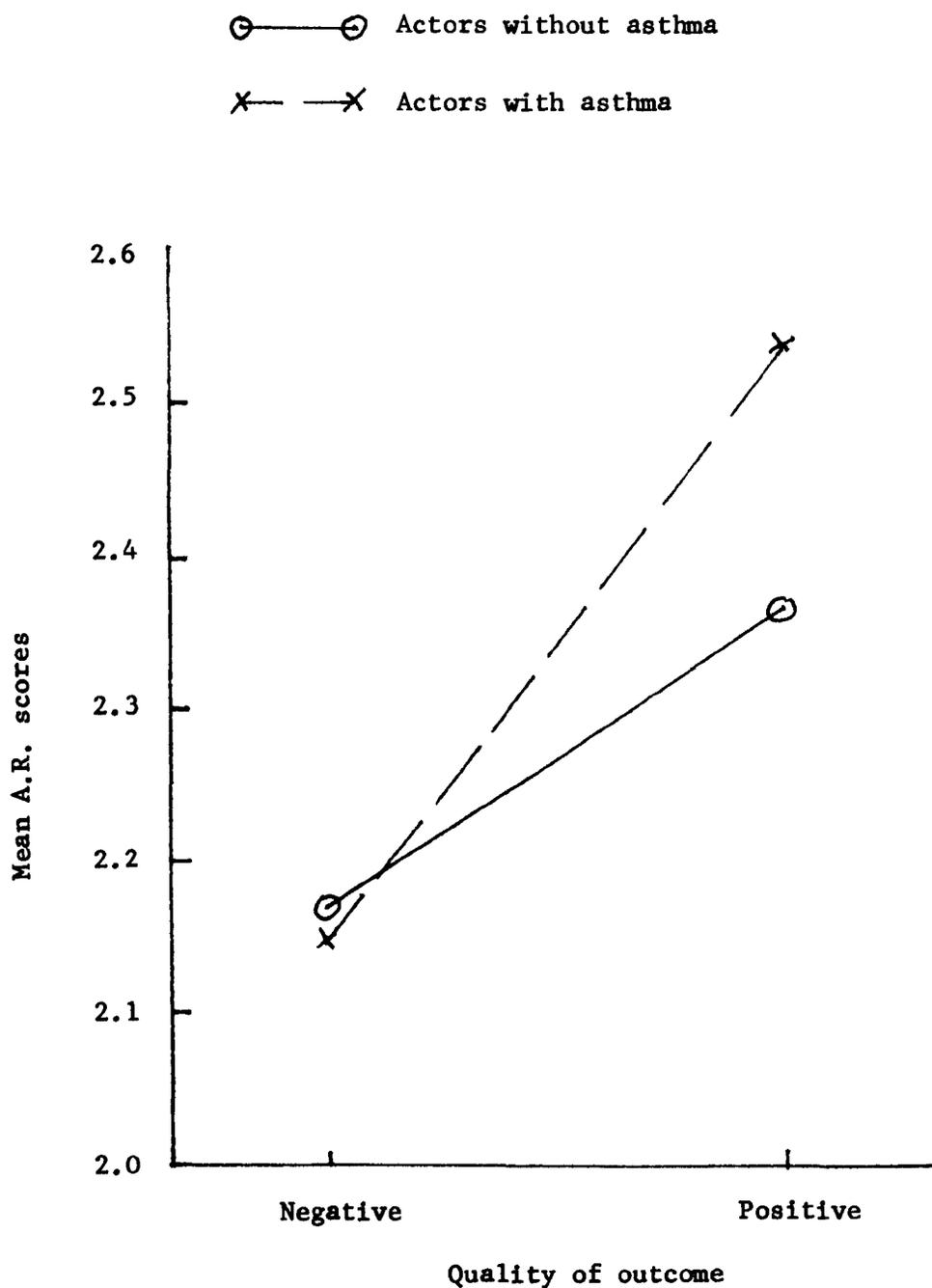


Fig. 7.2.5D: Mean attribution of responsibility (A.R.) scores as a function of different outcomes for actors with and without asthma

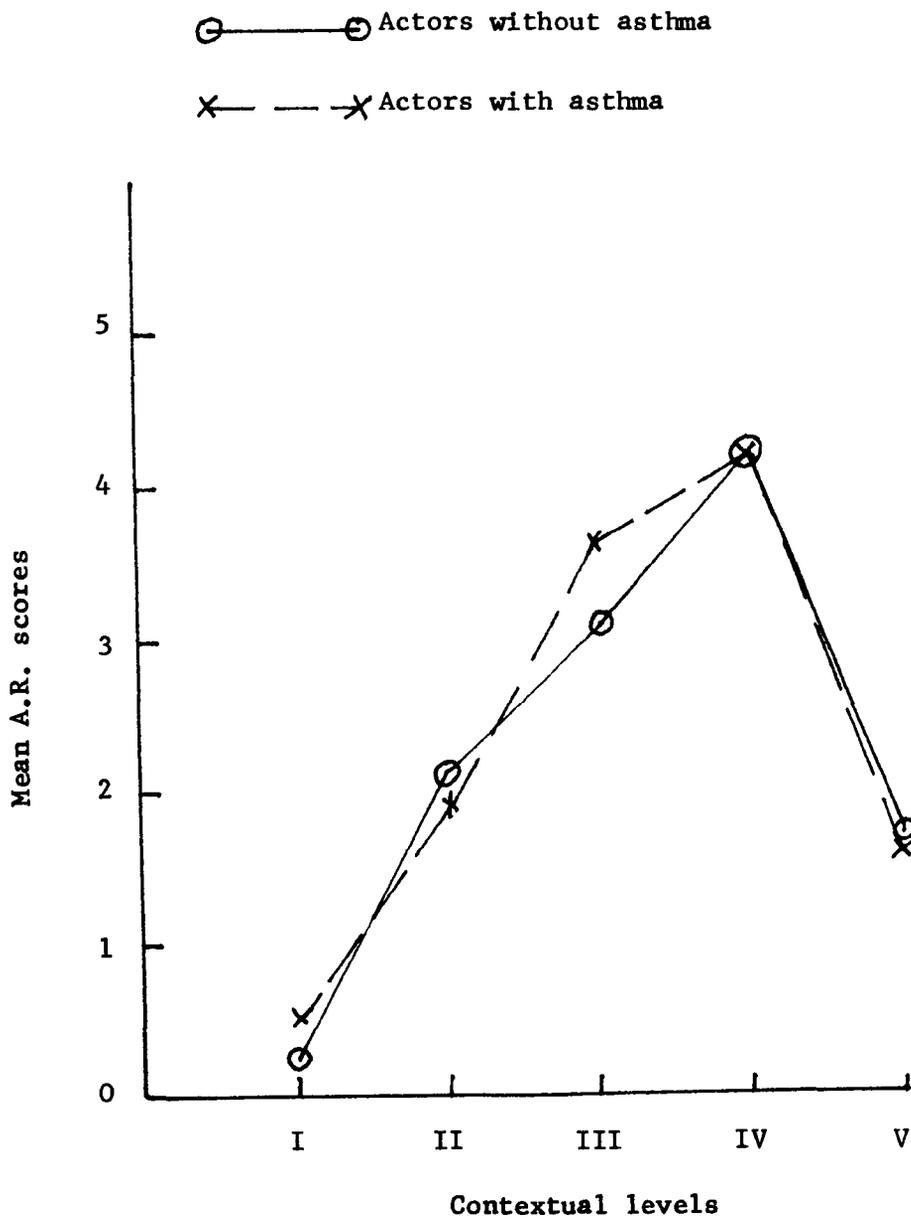


Fig. 7.2.5E: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for actors with and without asthma

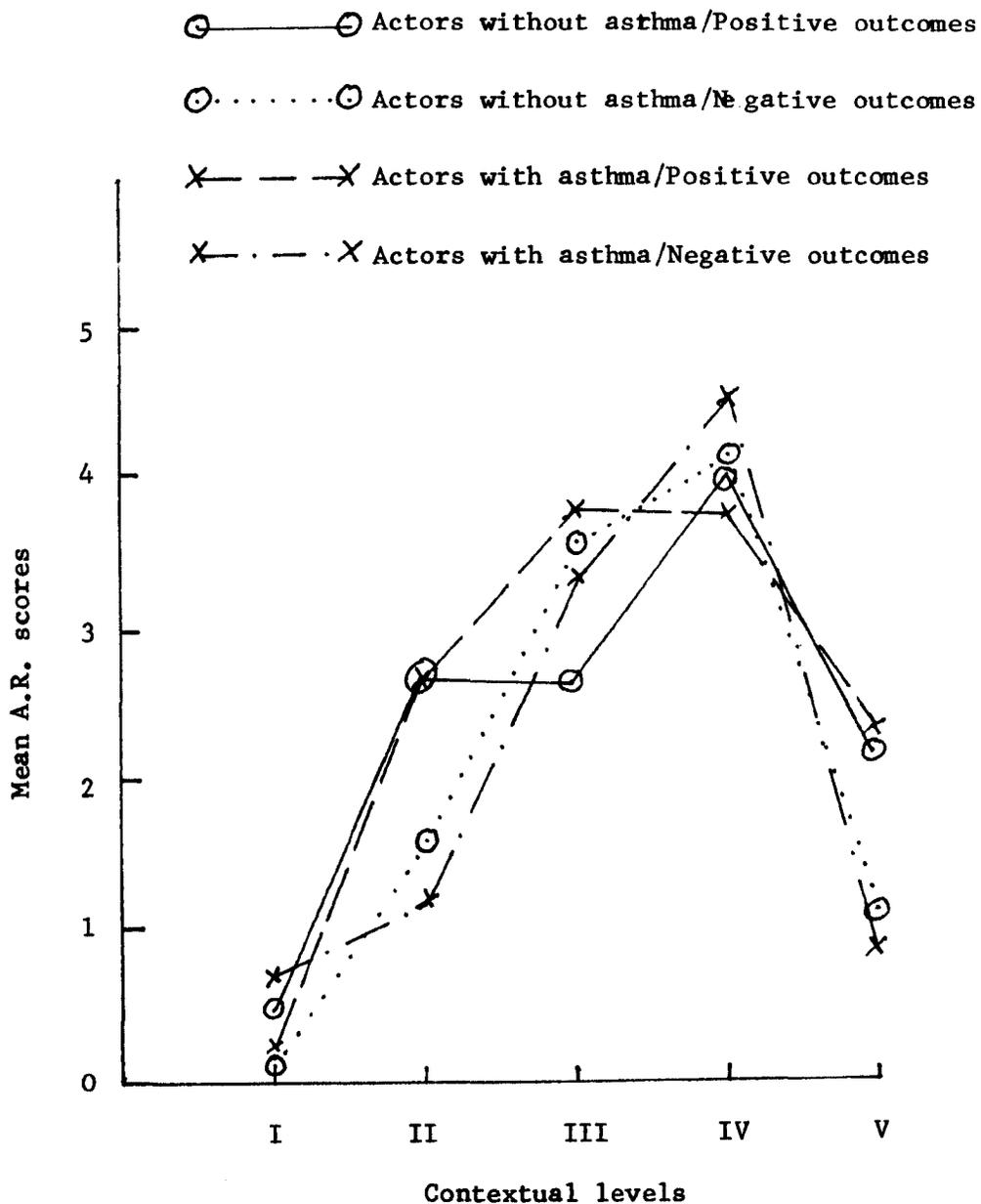


Fig. 7.2.5F: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for different outcomes and for actors with and without asthma

previous figures. At contextual levels I and IV, more responsibility was attributed to actors with asthma for negative effects than for positive effects, or to actors without asthma whatever the outcome quality of the effects. At level II and V, more responsibility was attributed to actors with or without asthma for positive rather than negative effects. At contextual level III, less responsibility was attributed to actors without asthma for positive effects than for negative effects or to actors with asthma whatever the outcome quality of the effects.

Table 7.2.5B summarizes the results of that part of the first analysis of covariance (the remainder having been presented in the previous table) which considered the relationship between the amount of responsibility attributed by children with and without asthma and the four within subject variables. This table shows that, although whether or not the children had asthma was not independently related to the amount of responsibility attributed, there was a significant interaction between this variable and the outcome quality of the incident, the sex of the actors, and the outcome quality together with whether or not the actors had asthma.

Figure 7.2.5G shows that there was no difference between the children with and without asthma in the amount of responsibility they attributed to actors for negative effects, overall. However, much more responsibility was attributed by the children with asthma, than by the children without asthma, for positive effects. The greater amount of responsibility attributed by the healthy children for positive outcomes than

TABLE 7.2.5B: Summary of that part of the analysis of covariance of the A.R. scores showing the interaction of whether or not the children had asthma with the within subject variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Illness of children (1)	1	87.4	1.4
Subjects	58	61.0	11.5 ***
1 x Q	1	92.8	17.5 ***
1 x 1.A	1	0.1	0.1
1 x L	4	5.4	1.0
1 x S.A	1	24.8	4.7 *
1 x Q x 1.A	1	20.9	3.9 *
1 x Q x L	4	9.5	1.8
1 x Q x S.A	1	0.2	0.1
1 x Q x 1.A x L	4	2.1	0.4
1 x Q x L x S.A	4	3.6	0.7
1 x Q x 1.A x S.A	1	0.7	0.1
1 x Q x 1.A x L x S.A	4	5.7	1.1
1 x 1.A x L	4	7.5	1.4
1 x 1.A x S.A	1	0.1	0.1
1 x 1.A x L x S.A	4	5.3	0.9

TABLE 7.2.5B (cont)

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
1 x L x S.A	4	5.8	1.1
ERROR	2262	5.3	
TOTAL	2399		

\*  $p < 0.05$ ; \*\*\*  $p < 0.001$

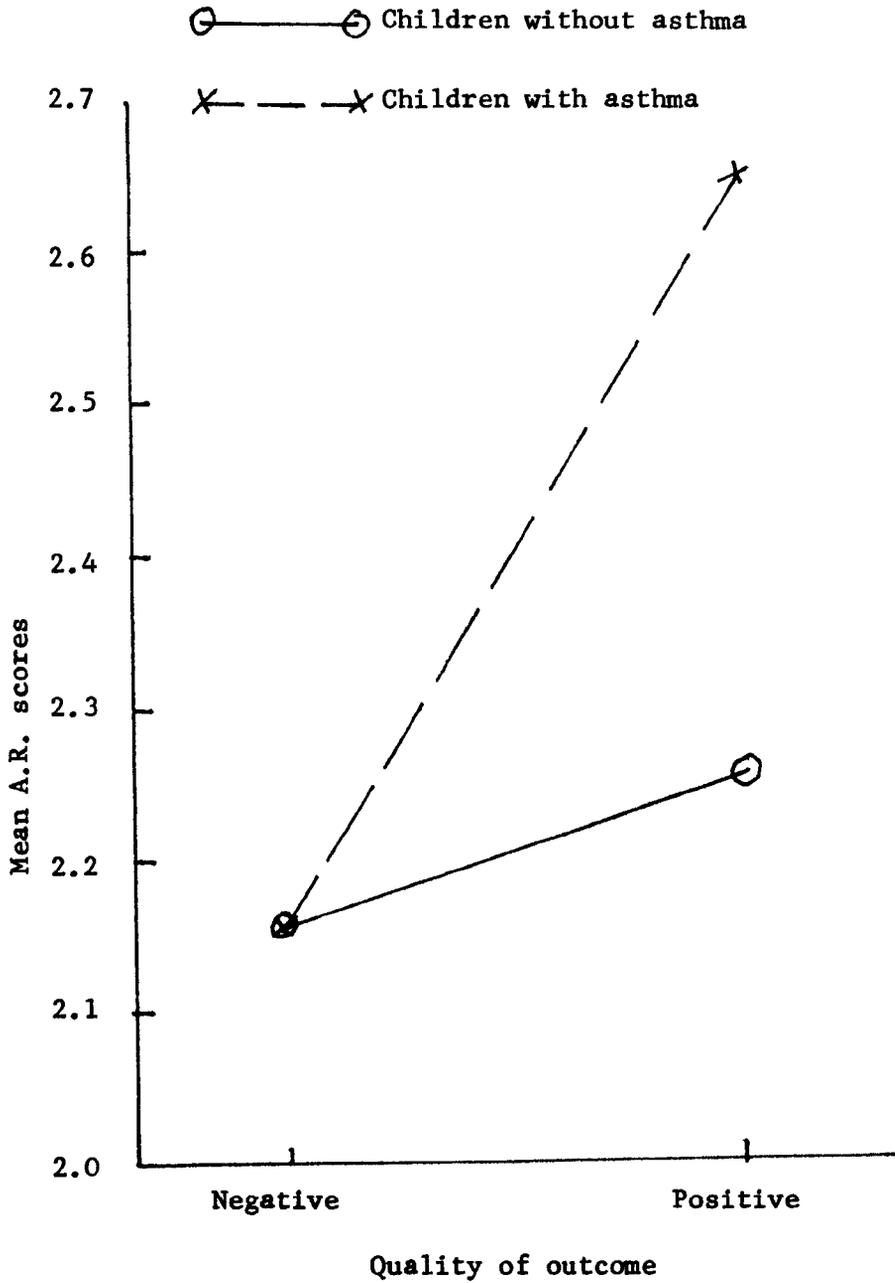


Fig.7.2.5G: Mean attribution of responsibility (A.R.) scores as a function of different outcome qualities for children with and without asthma

for negative outcomes is still contrary to Shaw and Sulzer's findings.

Figure 7.2.5H shows that children with asthma, generally, attributed more responsibility, but especially when the actors were girls.

Figure 7.2.5I offers an explanation for the apparently disturbing findings presented in Figures 7.2.5A, D and G. This figure shows that the children with asthma attributed much more responsibility to actors for positive rather than negative effects, irrespective of whether or not the actors had asthma. The children without asthma also attributed more responsibility to actors with asthma for positive than for negative effects, although for both types of effects they attributed less responsibility than did the children with asthma. However, the healthy children attributed less responsibility to actors without asthma for positive effects than for negative effects, as was predicted by Shaw and Sulzer's findings.

Table 7.2.5C summarizes the results of that part of the second analysis of covariance of the attribution of responsibility scores of all sixty children showing the interaction of the children's age with the four within subject variables. This analysis of covariance revealed that the children's age was not independently related to the amount of responsibility they attributed. However, the amount of responsibility attributed by young and old children significantly interacted with the contextual level of the incidents, and the outcome quality and contextual level of the incidents together.

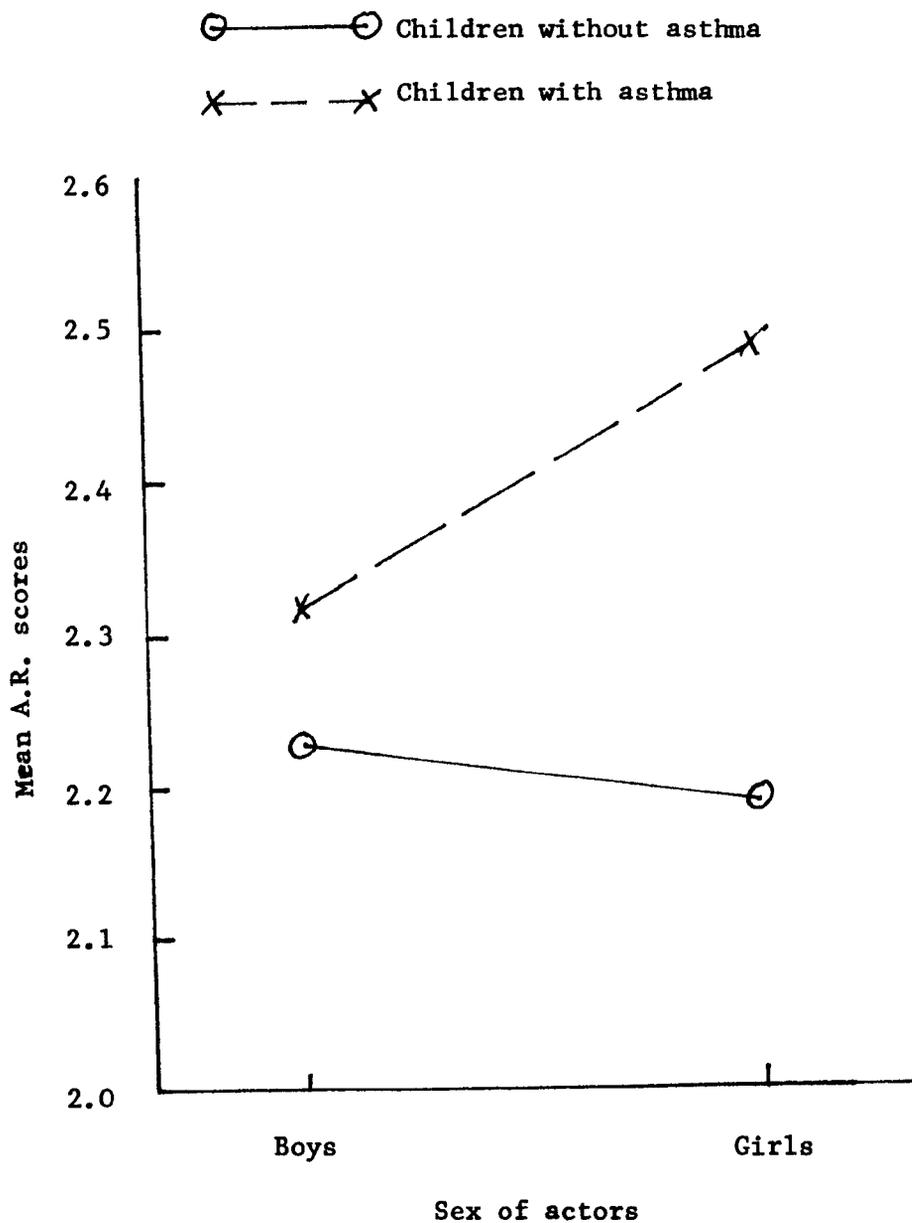


Fig. 7.2.5H: Mean attribution of responsibility (A.R.) scores as a function of the sex of actors for children with and without asthma

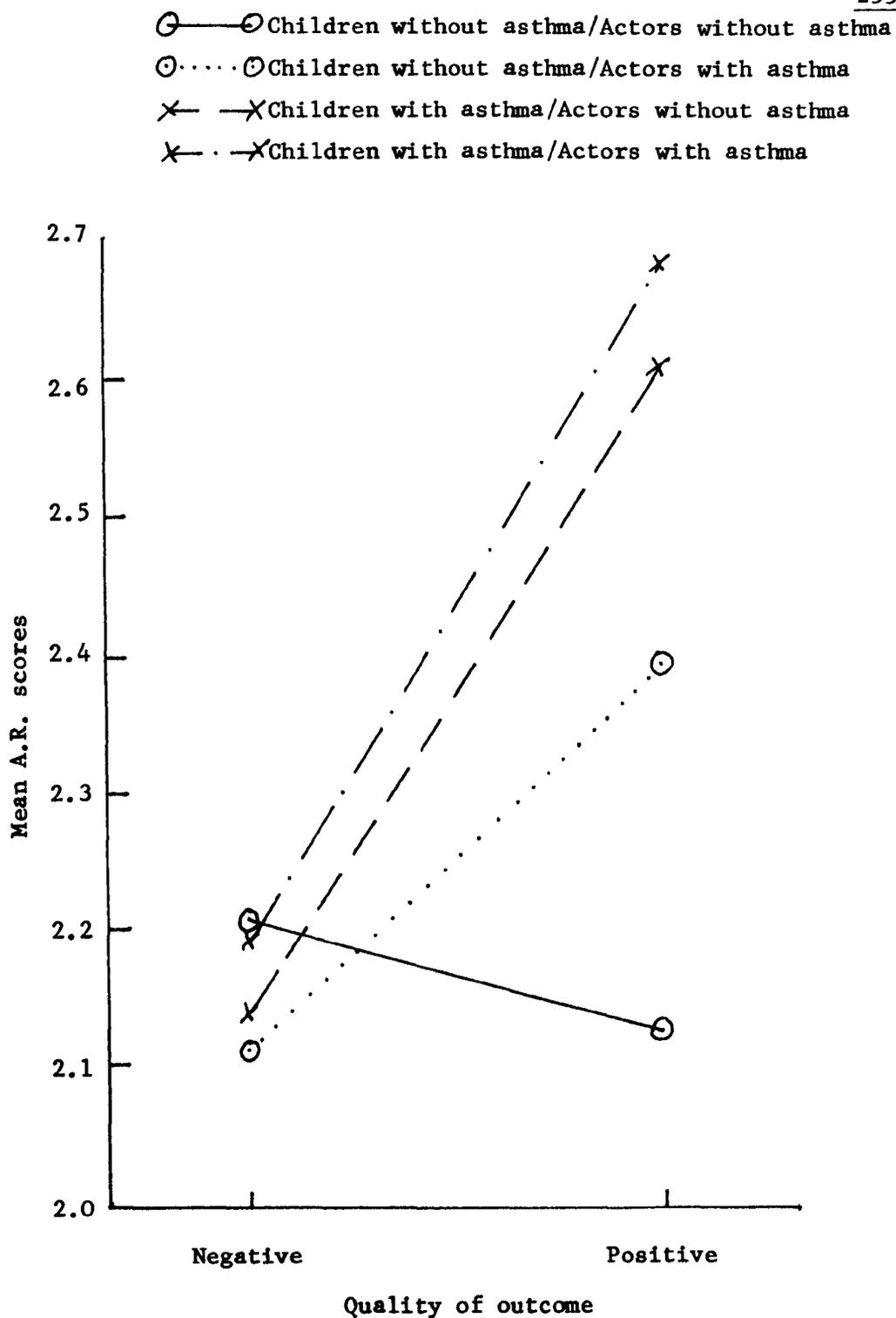


Fig. 7.2.5I: Mean attribution of responsibility (A.R.)  
scores as a function of quality of outcome  
for children and actors with and without  
asthma

TABLE 7.2.5C: Summary of that part of the analysis of covariance of the A.R. scores showing the interaction of the children's ages with the within subject variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Age of children (A)	1	129.5	2.1
Subjects	58	60.3	11.4 ***
A x Q	1	10.2	1.9
A x 1.A	1	0.3	0.1
A x L	4	25.8	4.9 ***
A x S.A	1	5.7	1.1
A x Q x 1.A	1	5.6	1.1
A x Q x L	4	25.2	4.7 ***
A x Q x S.A	1	8.6	1.6
A x Q x 1.A x L	4	6.6	1.2
A x Q x L x S.A	4	1.9	0.4
A x Q x 1.A x S.A	1	2.8	0.5
A x Q x 1.A x L x S.A	4	0.7	0.1
A x 1.A x L	4	4.5	0.9
A x 1.A x S.A	1	2.1	0.4
A x 1A x L x S.A	4	4.6	0.9

TABLE 7.2.5C (cont)

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
A x L x S.A	4	3.8	0.7
ERROR	2262	5.3	
TOTAL	2399		

\*\*\*  $p < 0.001$

Figure 7.2.5J shows that the younger children attributed more responsibility than the older children at the association and justification contextual levels (I and V), and less at the commission, foreseeability, and intentionality levels (II, III and IV).

Figure 7.2.5K shows that the young children attributed more responsibility for negative outcomes than for positive outcomes, and more than the older children for either type of outcome quality at the association contextual level (I), and less at the commission and justification levels (II and V). At levels III and IV the older children attributed more responsibility for both positive and negative effects than did the younger children for the two effects, respectively.

Table 7.2.5D summarizes the results of the third analysis of covariance of the amount of responsibility attributed by the sixty children, showing the interaction of the social class of the children's parents with the four within subject variables. Figure 7.2.5L shows that the children from working class families attributed more responsibility at the association, commission and justification contextual levels (I, II and V), and less at the intentionality contextual level (IV), than did the children from middle class families. There was no apparent difference between the two groups of children in the amount of responsibility they attributed at the foreseeability contextual level (III).

Figure 7.2.5M shows that the children from middle class families attributed more responsibility for negative effects

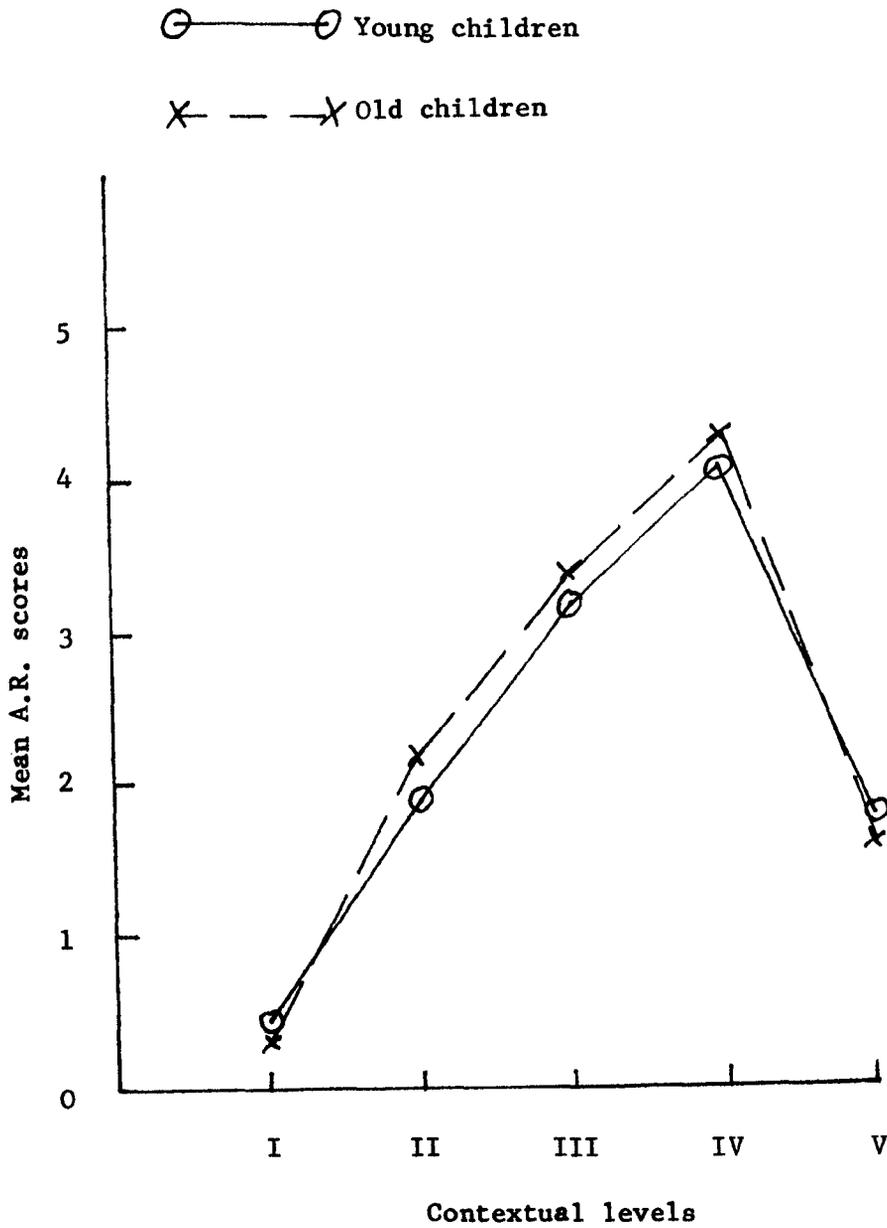


Fig. 7.2.5J: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for young and old children

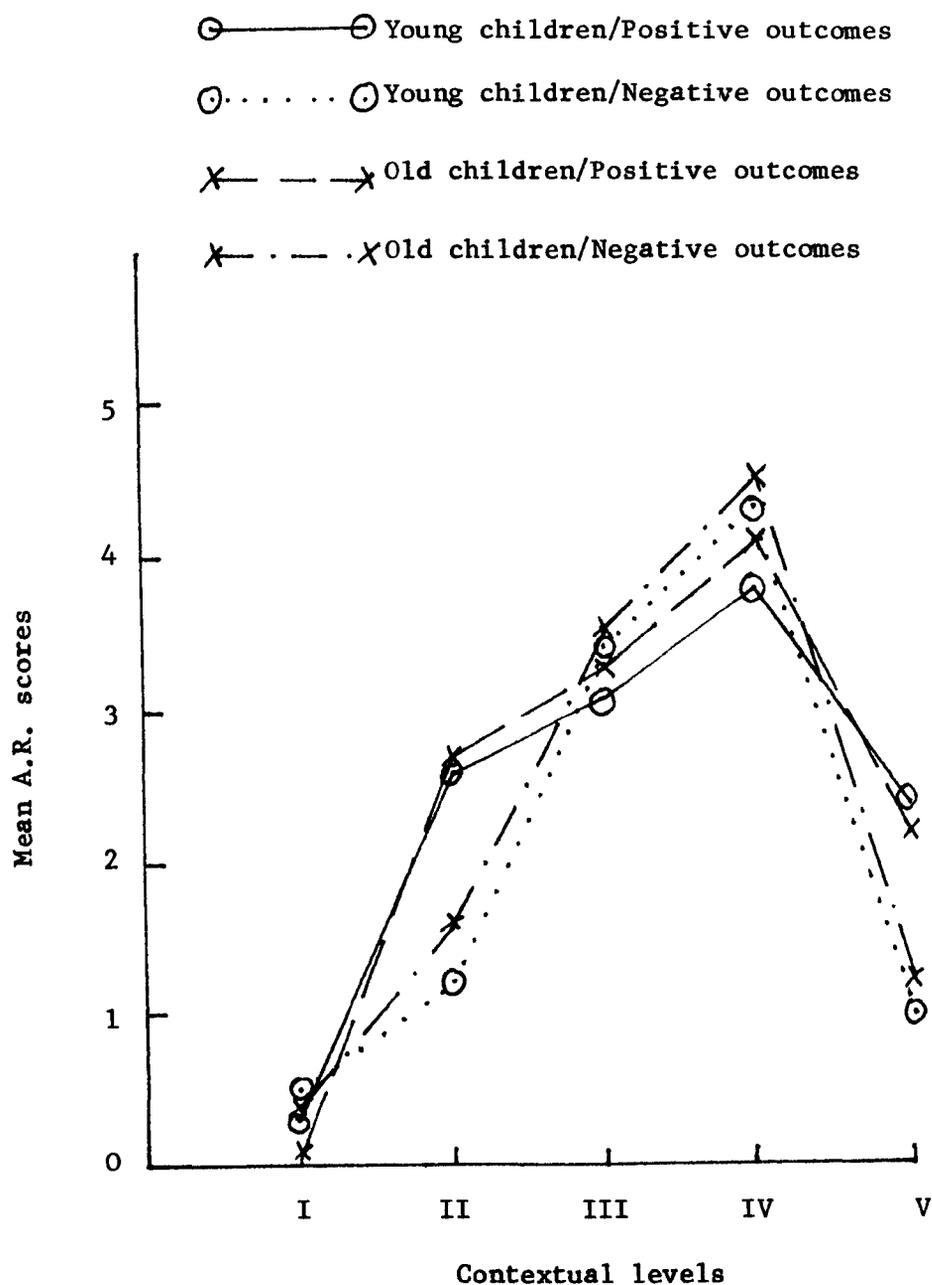


Fig. 7.2.5K: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for different outcomes and for young and old children

TABLE 7.2.5D: Summary of that part of the analysis of covariance of A.R. scores showing the interaction of the social class of the children's families with the within subject variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Social class (c)	1	98.8	1.6
Subjects	58	61.1	11.5 ***
C x Q	1	17.3	3.2
C x 1.A	1	0.1	0.1
C x L	4	27.8	5.2 ***
C x S.A	1	2.1	0.4
C x Q x 1.A	1	7.1	1.3
C x Q x L	4	18.6	3.5 **
C x Q x S.A	1	1.8	0.3
C x Q x 1.A x L	4	2.3	0.4
C x Q x L x S.A	4	5.4	1.0
C x Q x 1.A x S.A	1	0.9	0.2
C x Q x 1.A x L x S.A	4	10.5	2.0
C x 1.A x L	4	3.5	0.7
C x 1.A x S.A	1	6.8	1.3
C x 1.A x L x S.A	4	5.1	0.9

TABLE 7.2.5D (cont)

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
C x L x S.A	4	5.7	1.1
ERROR	2262	5.3	
TOTAL	2399		

\*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

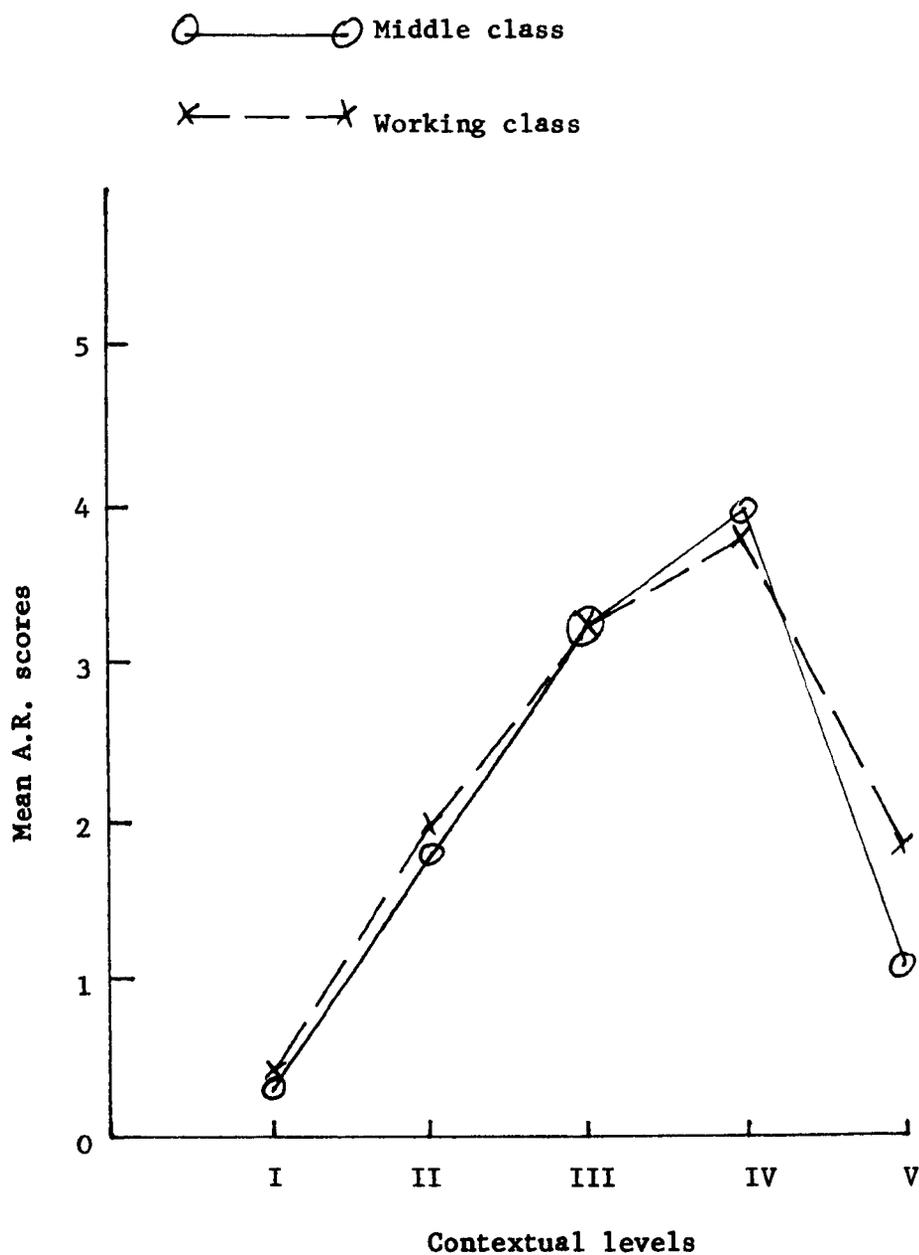


Fig. 7.2.5L: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for children from middle class and working class families

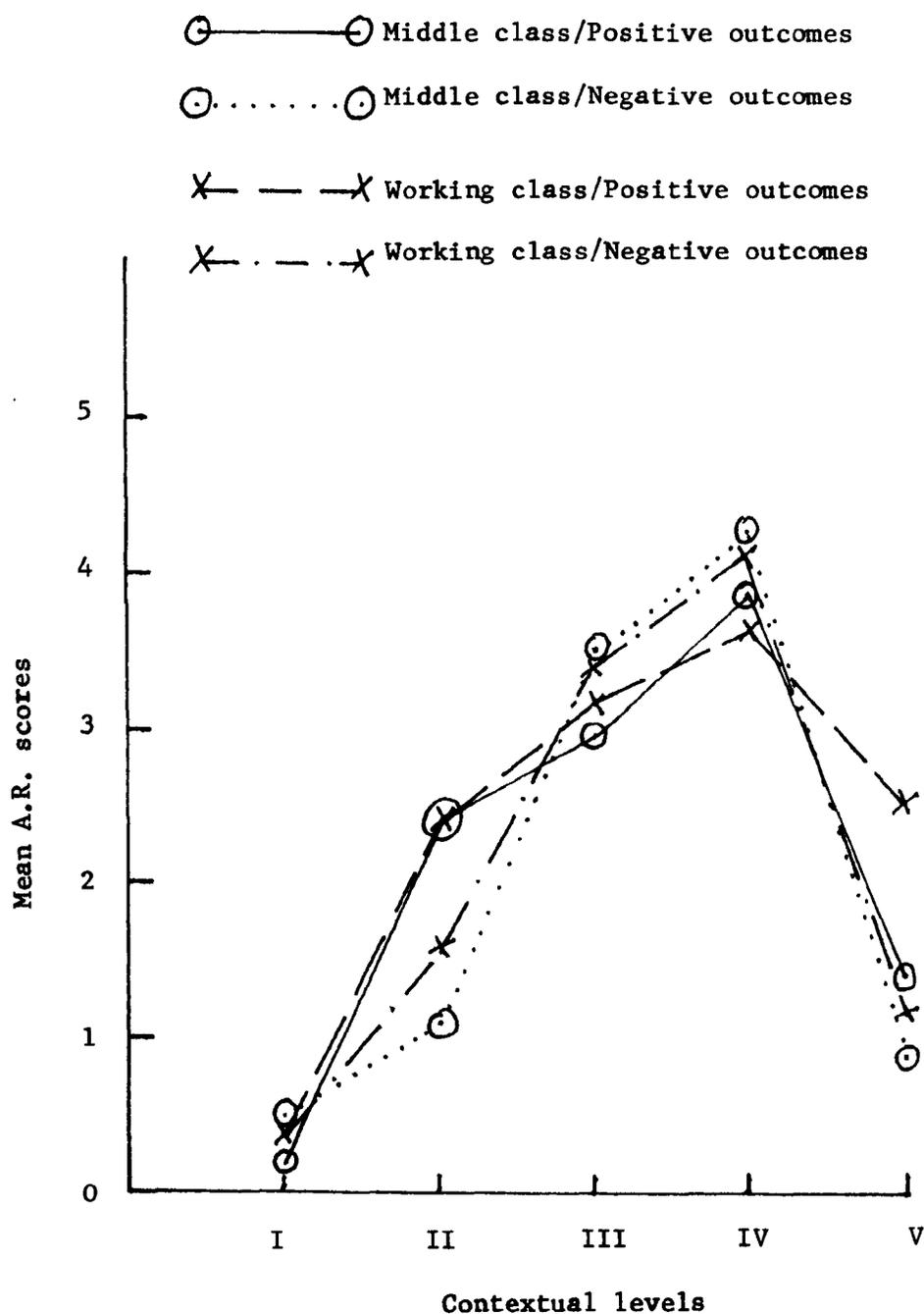


Fig. 7.2.5M: Mean attribution of responsibility (A.R.) scores as a function of contextual levels and outcome quality for children from middle class and working class families

than for positive effects, and more than the children from working class families for both types of effects, at the association, foreseeability, and intentionality contextual levels (I, III and IV). They also attributed least responsibility for negative effects at the commission and justification contextual levels (II and V). The children from working class families attributed least responsibility at the intentionality contextual level (IV), and most at the justification level (V), for negative effects.

Table 7.2.5E summarizes the results of the fourth analysis of covariance which considered the relationship between the amount of responsibility attributed by boys and girls and the four within subject variables. This shows that although the sex of the children was not independently related to the amount of responsibility attributed, there was a significant interaction between this variable and the outcome quality and contextual level of the incidents described, and the sex of the actors in the incidents.

Figure 7.2.5N shows that the boys attributed less responsibility than did the girls for incidents with a negative outcome, and more than the girls for incidents with a positive outcome.

Figure 7.2.5O shows that the boys attributed more responsibility than the girls at the association and justification contextual levels (I and V), less than the girls at the commission and foreseeability (II and III) levels, and an equal amount as the girls at the intentionality

TABLE 7.2.5E: Summary of that part of the analysis of covariance of A.R. scores showing the interaction of the sex of the children with the within subject variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Sex of children (S)	1	2.8	0.1
Subjects	58	62.9	12.0 ***
S x Q	1	83.2	15.9 ***
S x 1.A	1	1.2	0.2
S x L	4	39.7	7.6 . ***
S x S.A	1	41.7	8.0
S x Q x 1.A	1	0.8	0.1
S x Q x L	4	34.3	6.6 ***
S x Q x S.A	1	3.4	0.6
S x Q x 1.A x L	4	4.7	0.9
S x Q x L x S.A	4	3.4	0.6
S x Q x 1.A x S.A	1	7.9	1.5
S x Q x 1.A x L x S.A	4	4.7	0.9
S x 1.A x L	4	12.0	2.3
S x 1.A x S.A	1	0.2	0.1
S x 1.A x L x S.A	4	4.5	0.9

TABLE 7.2.5E (cont)

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
S x L x S.A	4	4.1	0.8
ERROR	2262	5.2	
TOTAL	2399		

\*\*p < 0.01; \*\*\*p < 0.001

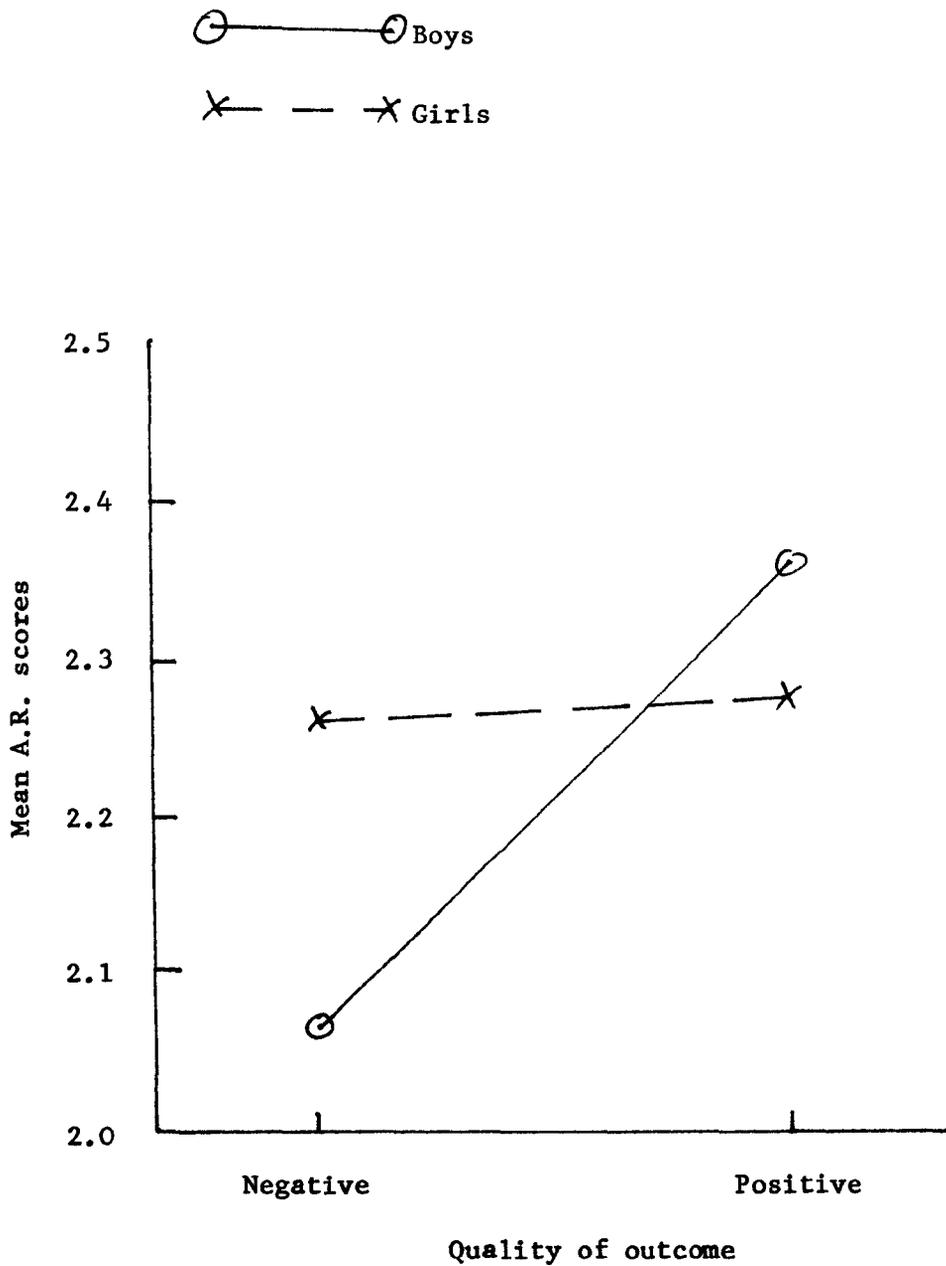
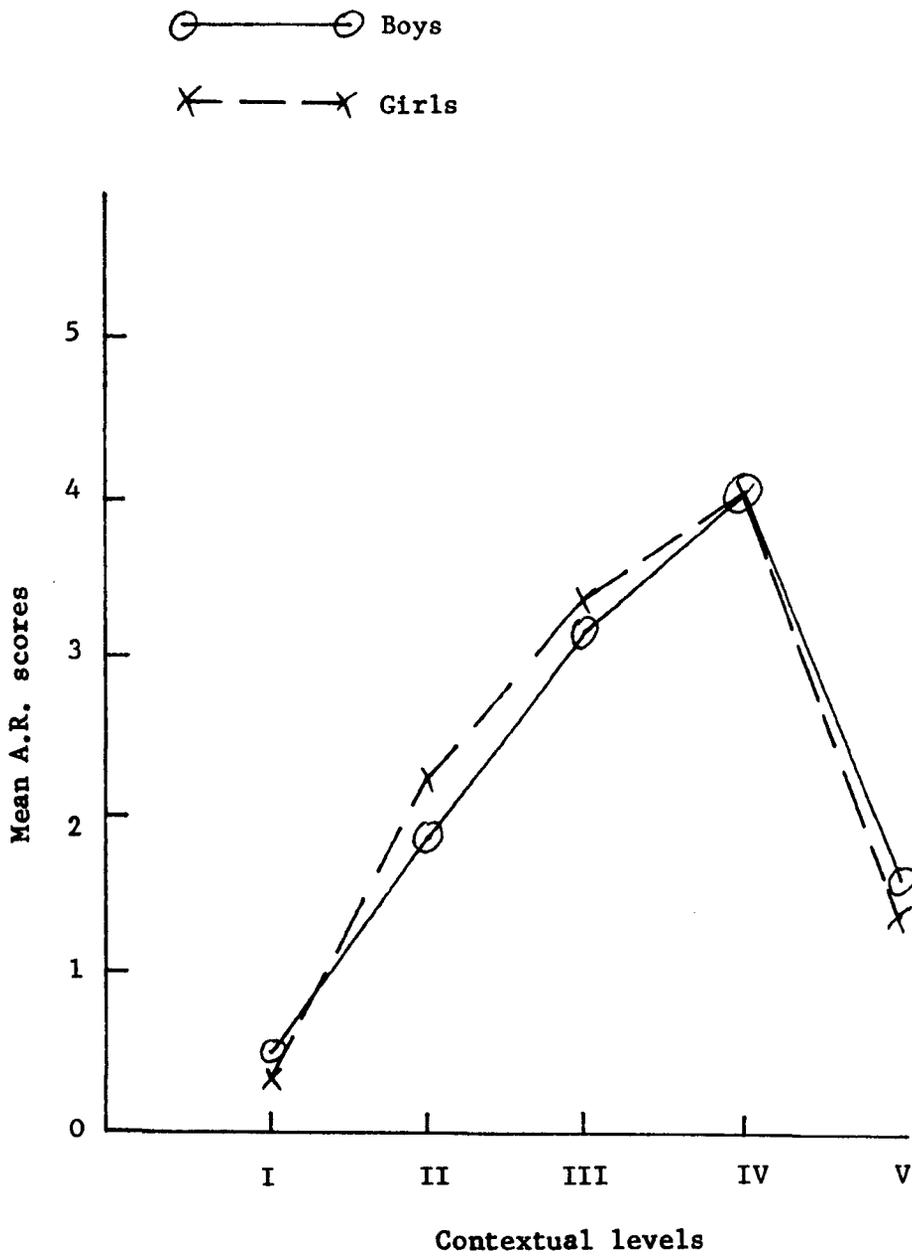


Fig. 7.2.5N: Mean attribution of responsibility (A.R.) scores as a function of outcome quality for boys and girls



**Fig. 7.2.50: Mean attribution of responsibility (A.R.) scores as a function of contextual levels for boys and girls**

contextual level (IV).

Figure 7.2.5P combines the findings from the previous two figures. This shows that the boys attributed more responsibility for negative effects than for positive effects, and more than the girls for either type of effect, at the association contextual level (I) and least at the commission and justification contextual levels (II and V). The boys also attributed more responsibility for positive effects than for negative effects, and more than the girls for either type of effect, at the commission and justification contextual levels (II and V), and less at the foreseeability level (III). The girls attributed more responsibility than the boys for negative effects at the foreseeability and intentionality levels (III and IV).

Figure 7.2.5Q shows that overall, the boys attributed more responsibility to the girls, and the girls attributed more responsibility to the boys.

Two analyses of variance were performed on the attribution of responsibility scores of the thirty children with asthma. Although an analysis of covariance would have been preferable, this was found to be impossible using the available computer packages. The type of analysis of covariance sought would have first examined the relationship between the clinical classification of the children's asthma and the four within subject variables, controlling at the same time for the effect of the children's ages and sex, the social class of their families, and the physiological

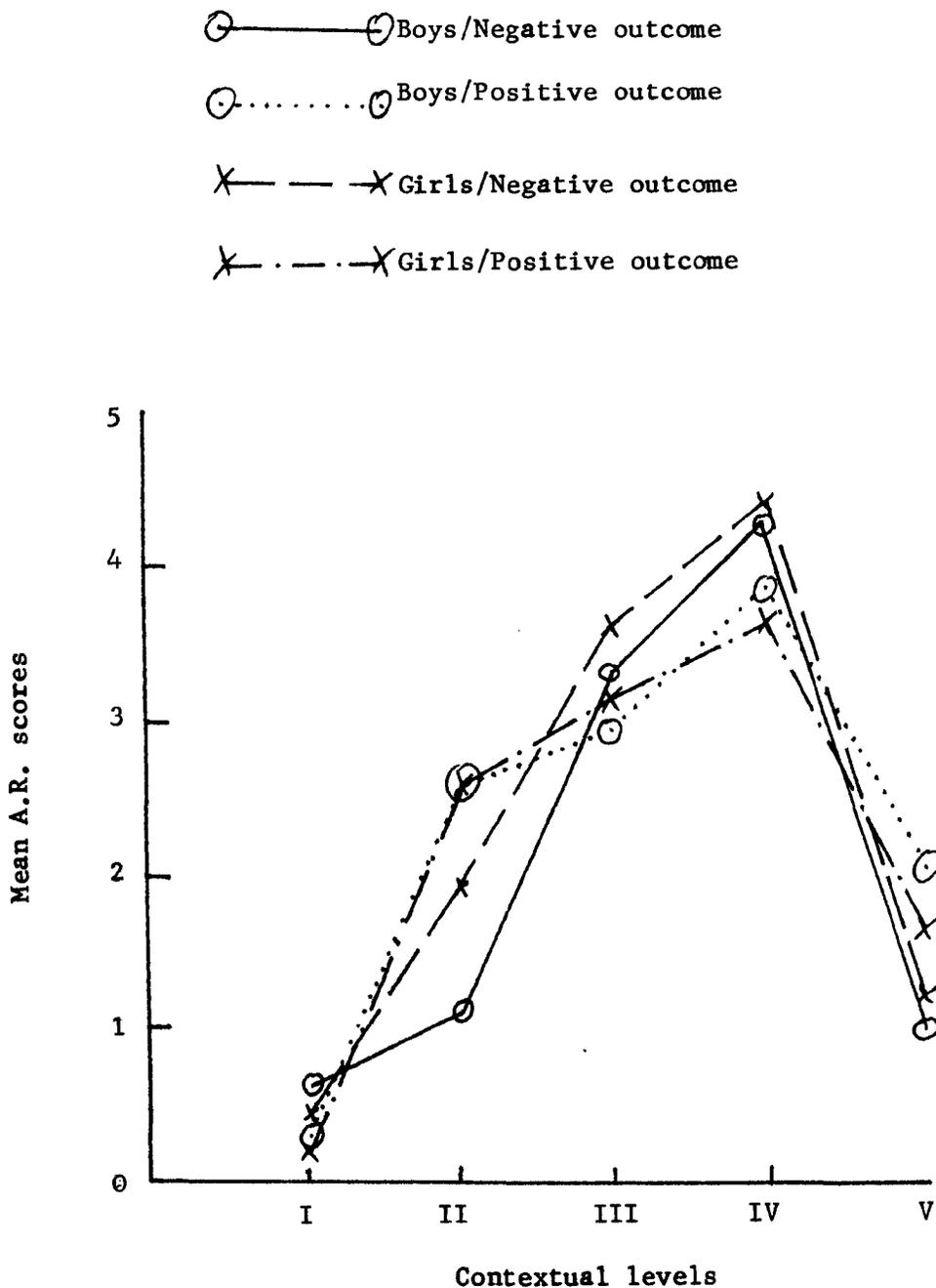


Fig. 7.2.5P: Mean attribution of responsibility (A.R.)  
scores as a function of contextual levels  
for boys and girls and for negative and  
positive outcomes

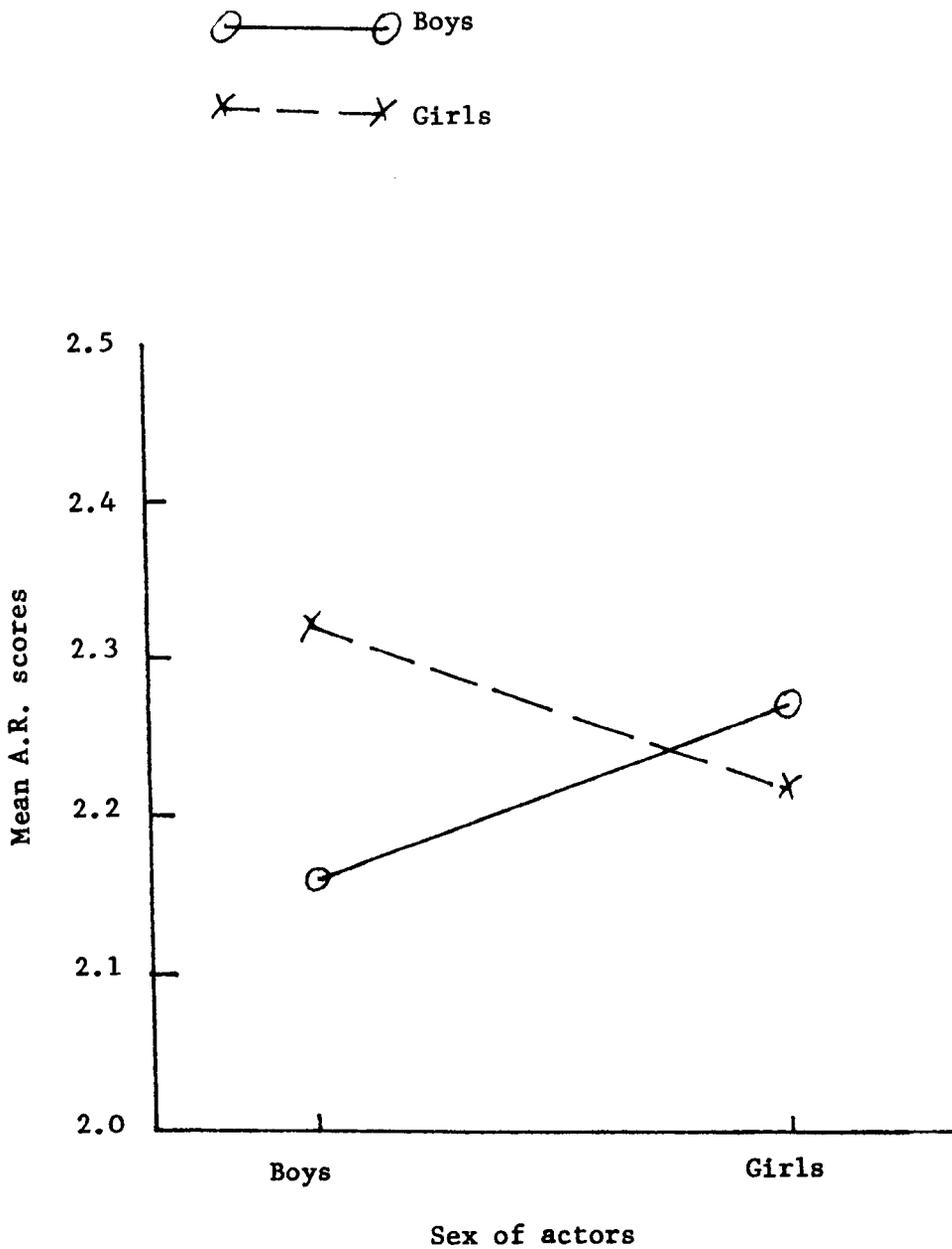


Fig. 7.2.5Q: Mean attribution of responsibility (A.R.)  
scores as a function of the sex of the actors  
for boys and girls

classification of their asthma. A similar analysis would then have sought the relationship between the physiological classification of the children's asthma and the within subject variables.

However, the computer package which handled such a complex design in the four previous analyses failed to complete these projected analyses because the number of children had been reduced to thirty. For this reason an analysis of variance was substituted. This analysis examined the relationship between the clinical and physiological classifications of the children's asthma and the four within subject variables without controlling for the effect of the between subject variables. For this reason any relationship which is established must be interpreted with caution. A summary of the results of the two analyses of variance is given in Tables 7.2.5F and G. Table 7.2.5F presents the results of the analysis of variance which examined the relationship between the clinical classification of the children's asthma and the four within subject variables. It is obvious from this table that, not only was the clinical classification of the children's asthma not independently related to the amount of responsibility attributed, but also, there was no significant interaction with any of the within subject variables.

Table 7.2.5G presents a summary of the results of the analysis of variance which examined the relationship between the physiological classification of the children's asthma

TABLE 7.2.5F: Summary of that part of the analysis of  
variance of the A.R. scores (children with asthma)  
showing the interaction of the clinical classification  
of the children's asthma with the within subject  
variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Clinical classification (CL)	2	16.9	0.2
Subjects	29		
C.L x Q	2	19.8	0.7
C.L x 1.A	2	0.5	0.1
C.L x L	8	11.7	0.5
C.L x S.A	2	0.6	0.1
C.L x Q x 1.A	2	2.0	0.6
C.L x Q x L	8	9.1	0.7
C.L x Q x S.A	2	3.1	0.8
C.L x Q x 1.A x L	8	3.1	0.8
C.L x Q x L x S.A	8	2.1	0.5
C.L x Q x 1.A x S.A	2	0.2	0.1
C.L x Q x 1.A x L x S.A	8	3.8	0.9
C.L x 1.A x L	8	4.2	1.2
C.L x 1.A x S.A	2	0.7	0.2
C.L x 1.A x L x S.A	8	3.1	1.2
C.L x L x S.A	8	6.4	1.2

TABLE 7.2.5G: Summary of that part of the analysis of variance of A.R. scores (children with asthma) showing the interaction of the physiological classification of the children's asthma with the within subject variables

<u>Source of variance</u>	<u>df</u>	<u>Mean square</u>	<u>F</u>
Physiological classification (P)	2	21.3	0.3
Subjects	29		
P x Q	2	32.7	1.0
P x 1.A	2	14.0	5.3 **
P x L	8	24.9	1.2
P x S.A	2	0.6	0.7
P x Q x 1.A	2	2.1	0.6
P x Q x L	8	10.1	0.8
P x Q x S.A	2	2.0	0.6
P x Q x 1.A x L	8	5.0	1.3
P x Q x L x S.A	8	6.1	1.5
P x Q x 1.A x S.A	2	1.6	0.6
P x Q x 1.A x L x S.A	8	3.3	0.8
P x 1.A x L	8	2.5	0.7
P x 1.A x S.A	2	9.4	2.8
P x 1.A x L x S.A	8	2.4	0.9
P x L x S.A	8	6.8	1.3

and the four within subject variables. This shows that, again, there was no independent relationship between the physiological classification of the children's asthma and the amount of responsibility attributed. However, there was a significant interaction between the physiological classification of the children's asthma and whether or not the actors in the stories had asthma. Figure 7.2.5R shows that the children with asthma classed as physiologically severe attributed the least amount of responsibility to both actors with and actors without asthma. There was little difference between children with asthma classed as physiologically mild and moderate in the amount of responsibility attributed to actors without asthma. However, those with asthma classed physiologically moderate attributed much more responsibility to actors with asthma than did either the children with asthma classed as physiologically mild or severe.

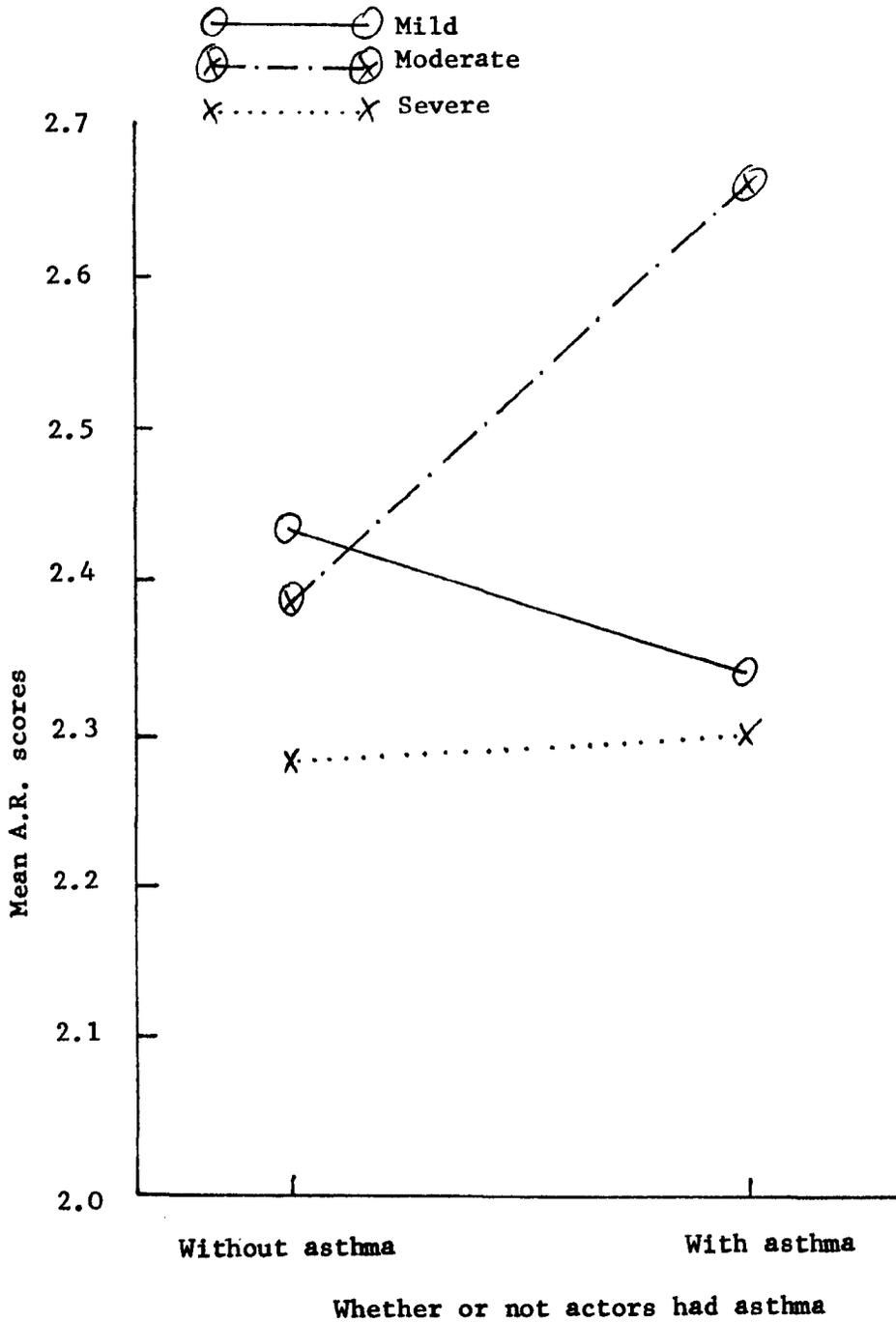


Fig. 7.2.5R: Mean attribution of responsibility (A.R.) scores for children with asthma as a function of whether or not the actors have asthma for the physiological classification of the children

### 7.3 DISCUSSION

#### 7.3.1 General overview

This investigation has confirmed that not only is responsibility attributed to actors with asthma in a different way than to actors without asthma, but that also, responsibility is attributed by children with asthma in a different way than by children without asthma. Bearing in mind the importance of the concept responsibility in the common-sense definition of the sick role, these findings, and those concerned with the outcome quality of the incidents investigated, can increase our understanding of the common-sense definition of asthma. In addition, although we did not find any relationship between the clinical classification of the children's asthma and the way the children with asthma attributed responsibility, this does not imply that further investigation of this concept will not throw some light on the clinical variations in the severity of childhood asthma. The implications of these findings will be discussed in section 7.3.3.

Our finding that the children's ages influenced the way they attributed responsibility confirmed Shaw and Sulzer's (1964) original findings. Particular details of these findings will be discussed in section 7.3.4.

The finding that the social class of the children's families influenced the way they attributed responsibility extends the slight evidence linking social class with attribution of responsibility which we discussed in section 7.2.3. Since there was no interaction between this variable

and whether or not the actors had asthma, it would seem that the responsibility component of the common-sense definition of the sick role is constant in the different social classes. We will discuss these issues further in section 7.3.5.

The finding that the sex of the children influenced the way they attributed responsibility confirmed the suspicions which we expressed in section 7.2.6. Although these particular findings were difficult to interpret, we will discuss possible explanations in section 7.3.6.

Finally, it was established that the characteristics of the actors and of the incidents were of crucial importance in determining the way the children attributed responsibility. Although it is rather abstract to discuss these particular findings in isolation, because of their interaction with the characteristics of the observers, we will begin with a few general comments which largely reveals some criticisms of the test design.

### 7.3.2 The relationship of the incident and actor characteristics to how the children attributed responsibility

Our finding that the amount of responsibility attributed by the children, in general, was independently related to the contextual level of the incidents, confirms Shaw and Sulzer's (1964) original findings. It is apparent that children consider the contextual level of an incident before attributing responsibility. This finding also supports Fishbein and Ajzen's (1973) caution that if we are to

understand the way people attribute responsibility, the contextual level of the incidents must be considered.

Very little responsibility was attributed by the children to an actor for an incident at the association contextual level, no matter what was the outcome quality of the incident, or what were the characteristics of the actor. Interpreting a similar finding Shaw and Sulzer claimed that "the data lend support to Piaget's (1955) statement that 'precausality' tends to disappear between the ages 7 and 8." In the terms of Fishbein and Ajzen's model, most of the children in our study were, at least, at the commission developmental level, since so few attributed responsibility at the association contextual level.

However, there was a tendency for the children, in general, to blame the actors with asthma more than the actors without asthma at the association contextual level. There is no apparent reason why more blame should be attached to an actor with asthma than to a healthy actor at this level. One possible explanation for this finding is that the characteristics of the incidents involving the actors with asthma differed somewhat from those involving the healthy actors.

Inspection of the four negative incidents at this level revealed that this was a possible explanation. In the two incidents involving a healthy actor, the outcome intensity was rather mild (cut knee and cut finger). Similarly in one of the incidents with an actor with asthma, the outcome intensity

was also mild (blotted writing book) However, in the other incident involving an actor with asthma, the outcome intensity was more severe (broken window). This distinction had not previously been revealed in the pilot study. Perhaps, although the healthy children did not attribute extra responsibility to the actor with asthma for this more severe negative effect, the children with asthma did.

At the commission contextual level we found that more responsibility was attributed for a positive effect than for a negative effect, irrespective of the characteristics of the actors. Shaw and Sulzer had found that with their group of children more responsibility was attributed for negative effect at this contextual level.

However, Shaw and Sulzer also found that more responsibility was attributed for a positive effect, at this level, by 19-38 year old college students. Since our group of children were aged 8 - 12 years, whereas the children in Shaw and Sulzer's study were aged 6 - 9 years, it is possible that as children develop the amount of responsibility which they attribute for a positive effect, at this level, surpasses the amount which they attribute for a negative effect. This would suggest that as children develop they become more reluctant to blame an actor for a negative effect, unless they have some confidence that the effect was caused deliberately, i.e. the incident was either at the foreseeability or intentionality contextual levels.

At the foreseeability and intentionality contextual

levels the children attributed more responsibility to an actor for a negative effect than for a positive effect. Finding a similar difference, Shaw and Sulzer suggested that "apparently, individuals are more willing to blame another than to give him credit for his actions."

However, Figure 7.2.5F revealed that while this might be true for healthy actors, it was only partially true for actors with asthma. Although, at the intentionality contextual level the actors with asthma were blamed more than they were praised, at the foreseeability level the reverse was the case. Thus, it would seem that children, in general, are reluctant to blame a child with asthma, unless they are confident that the child intended the negative effect.

Finally, at the justification contextual level the children attributed more responsibility to an actor, whether or not he had asthma, for a positive effect than for a negative effect. Shaw and Sulzer found the reverse in their study. Since no apparent reason explained the difference, we reluctantly considered the test construction again.

Inspection of the incidents at this level revealed that their outcome intensity might provide an explanation. The negative outcomes were rather severe (broken window, broken fence, broken glass), whereas the positive outcomes were rather mild (clean shoes, clean teeth, made bed, finished homework). It is possible that because the negative effects at this level were severe, the children were reluctant to attribute responsibility.

Overall, whereas Shaw and Sulzer found that more responsibility was attributed to actors for a negative effect at all contextual levels, we found that the children in our study, who included children with asthma, were reluctant to blame the actors for a negative effect, especially if the actors had asthma, unless they were confident the actors intended the effect. Although we have partly offered an explanation for the difference between the findings of the two studies, the following sections will reveal the importance of considering the characteristics of both the actors and of the observers in any interpretation of our findings.

On the negative side, our discussion has suggested some criticism of the test design which would have to be taken into consideration in any replication of this study. Despite these criticisms, since the general pattern revealed in our findings were in broad agreement with the theoretical rationale of the test design and were not that dissimilar from Shaw and Sulzer's findings, it is still possible to accept that our test has provided us with a fair estimate of the way children attribute responsibility.

### 7.3.3 The relationship of whether or not the children had asthma to how they attributed responsibility

Overall, we found little difference between how the children with and without asthma attributed responsibility to the actors involved in incidents at the five contextual levels. This was rather disappointing since we had suggested in

section 7.1.7 that if children with asthma were restricted in their social interaction then they would not have developed as sophisticated an understanding of the concept responsibility as healthy children. In Fishbein and Ajzen's terms, we expected the children with asthma to be at a lower developmental level than their healthy peers, according to the way they attributed responsibility.

Our findings would suggest that whatever the restrictions, if any, there might be on the social interaction of children with asthma, they are not sufficient to prevent the development of an understanding, similar to that of healthy children, of the different usages of the concept responsibility. Despite their illness, these children are still able to distinguish clearly between effects which have been intended and those which have not.

However, although whether or not the children had asthma was not related to the amount of responsibility attributed at the different contextual levels, it was related to the quality of the incident outcomes, whether or not the actors had asthma, and the sex of the actors. The finding that the children with asthma attributed more responsibility for positive effects than did the children without asthma (Fig. 7.2.5G) concealed probably the most important finding of this investigation: the interaction between the amount of responsibility attributed by the children with and without asthma, the quality of the incident outcomes, and whether or not the actors had asthma.

Figure 7.2.5I revealed that the relationship between the amount of responsibility attributed and the outcome quality of the incidents was as Shaw and Sulzer had established, but only when both the children and the actors were healthy. That is, the children without asthma attributed more responsibility to actors without asthma for a negative effect, than for a positive effect. In general, it would seem that healthy children are more willing to blame their healthy peers than they are to praise them.

Although the findings discussed in the previous section suggested that, overall, the children praised the actors without asthma more than they blamed them, it is now apparent that that finding ignored the effect of the observer characteristics. It was not that all children praised healthy actors more than they blamed them, but, instead, that healthy children blamed healthy actors more than they praised them.

Although Shaw and Sulzer did not suggest an explanation for this effect, it is possible that Shaver's defensive attribution theory could provide a partial explanation. According to this theory, a child would be more likely to blame a person for a negative effect if he perceived that person as similar (a healthy actor perceived by a healthy child) in an effort to defend himself against a similar ill wind. Also, he would be reluctant to praise a similar actor for a positive effect in the hope that such good fortune would befall himself. Such an interpretation would explain the findings which we

obtained for the healthy children perceiving healthy actors.

On the other hand, the healthy children attributed less responsibility to the actors with asthma than to the actors without asthma for a negative effect, and much more responsibility to the actors with asthma than to the actors without asthma for a positive effect. It would seem that whereas healthy children are more willing to blame their healthy peers than to praise them, those same healthy children are much more willing to praise children with asthma than to blame them.

Two conflicting interpretations are possible for these findings. The first would rest, at least partly, on Shaver's defensive attribution theory. According to this interpretation, the healthy children attributed little responsibility to the actors with asthma for a negative effect because they perceived the actors as dissimilar, and so as people with whom they could sympathise for an event which was unlikely to befall themselves.

The application of this theory to interpret the finding that healthy children praised actors with asthma more than healthy actors is more awkward. A possible interpretation <sup>that</sup> would be/when the actors were similar, the observers could experience a certain amount of jealousy for that person having caused a positive effect, and therefore were reluctant to attribute praise, rather hoping that such good fortune would befall themselves. However, when the actors were dissimilar (had asthma), the observers could foresee little opportunity

of a similar effect happening to themselves and so attributed praise.

An alternative interpretation of our finding that healthy children praised actors with asthma much more than they blamed them, would rest upon the role which the concept responsibility plays in the common-sense definition of illness. In section 7.1.7 we stated that part of this common-sense definition was that sick people are relieved of their everyday responsibilities. If this was the case, we suggested, then, overall, less responsibility would be attributed to children with asthma, if they were defined as sick.

This interpretation would, at least, explain the reluctance of the healthy children to blame the actors with asthma for negative effects. The evidence from the previous section would suggest that it is only when children with asthma are seen to deliberately commit a misdeed, with no justification, are their healthy peers prepared to blame them.

However, our finding that the actors with asthma were especially praised does not immediately tally with our expectation that, in general, less responsibility would be attributed to children with asthma for all effects. Admittedly, this finding might have revealed a further dimension of the sick role which we had not anticipated. Inspection of Figure 7.2.5F would suggest that this new dimension would entail that whereas healthy observers must be confident that healthy actors had intended a positive effect before they would attribute praise, they would be

prepared to attribute praise to actors with asthma even if they were not confident that the actors intended the effects. It would seem that not only are healthy children prepared to overlook a sick person's misdeeds, but they are also prepared to exaggerate his role in causing positive effects.

A solution to these two rival interpretations of the way healthy children attribute responsibility to actors with asthma is provided by examination of the way children with asthma, themselves, attribute responsibility. If the explanation based upon defensive attribution theory is suitable, then the children with asthma would be expected to attribute responsibility in a similar manner as the healthy children. That is, they would attribute much blame and little praise to actors with asthma (personal relevance), and much praise and little blame to actors without asthma (no personal relevance).

If, however, the explanation based upon the sick role is applicable, then we would expect that since children with asthma are excessively praised for their positive effects and little blamed for their negative effects, then they would attribute responsibility accordingly. That is, because of the efficacy of their previous experiences, they would attribute much praise and little blame, whatever the characteristics of the actor. Since this pattern was established in our findings, it would seem that the explanation based upon the sick role is the most suitable interpretation of the way healthy children attribute responsibility.

Whereas the healthy children praised healthy actors

for a positive effect, to an extent, they seemed to reason when they observed actors with asthma creating a similar effect, that despite their illness, those actors were still able to create that effect so they must have tried harder, and so were more entitled to praise than their healthy peers. In the case of negative effects, the healthy children possibly reasoned that the illness was a justification for the children with asthma creating those effects, such that they were not as responsible for them as their healthy peers who had no justification.

Our finding that healthy children perceive children with asthma as different from their healthy peers would imply that healthy children would interact with children with asthma in a different manner from the way they would interact with their healthy peers. Aubert and Messinger emphasized that healthy people are reluctant to interact with sick people because the latter cannot be held responsible for their failures, and indirectly the healthy people can be held responsible for the failures of the sick people.

We found that healthy children were reluctant to blame children with asthma. According to Aubert and Messinger's thesis, we could then expect blame to be shifted to the people (if any) with whom the children with asthma were interacting. If this was the case, then we would expect that healthy children would avoid social interaction with children with asthma in an attempt to avoid misplaced blame.

The attribution of excessive responsibility to children

with asthma for positive effects could also imply exclusion from social interaction with their healthy peers. If children with asthma are praised for positive effects which they did not intend, this would suggest that some praise had been shifted from their healthy peers (if any) with whom they were interacting. If this was the case, healthy children would again avoid social interaction with children with asthma in an attempt to receive legitimate praise for any positive effects they might create.

Thus, it would seem that the "overprotection" of children with asthma by their peers, i.e. their freedom from blame and attraction of praise, would act as an obstacle to their social and psychological development. Excluded from social interaction these children would be deprived of the opportunity to develop their social and cognitive skills. However, this restriction on social interaction is dependent upon the healthy peers being aware that the child with asthma has asthma. In the absence of such information, there is no evidence to suggest that the healthy peers would exclude children with asthma from their company.

The children with asthma attributed much more responsibility for positive effects than for negative effects to both actors with and without asthma. Earlier (see section 4.2) we emphasized that children's understanding of the concept responsibility develops out of their social interaction with other children and adults. In the previous paragraphs we stated that healthy children are

more likely to praise children with asthma than to blame them. It would seem that because of this experience in their everyday life, children with asthma learn to attribute more responsibility for positive rather than for negative effects, whether or not the actors have asthma.

These findings would suggest a possible modification to de Charm's (1969) basic origin-pawn model. Whereas some children may consider themselves origins for certain effects, they may consider themselves pawns for others. It would seem that the children with asthma perceive themselves very much as origins of positive effects - they have a high internal locus of causality, but only for positive effects. For negative effects, the children with asthma perceive themselves as pawns - they are not really responsible for negative effects.

This finding that children with asthma have a strong internal locus of causality for positive effects would suggest that these children consider themselves responsible for many positive effects which they did not intend. This exaggerated sense of their own capability would be expected to influence their social behaviour. In many cases where they were merely associated with a positive effect, they would expect and, perhaps, demand praise for their contribution. Thus, children with asthma may become excessively demanding of their peers.

The reluctance of children with asthma to accept responsibility for negative effects could be interpreted as a variant of Seligman's (1965) concept of 'learned helplessness' (cf. Schneider et al, 1979). If they believe that negative outcomes are outside their control they would tend to accept their inevitability. This resignation in the face of negative effects would excuse them from self-criticism, such that they would be unlikely to take precautions to prevent the re-occurrence of such events. Their reluctance to attribute blame to children with asthma is probably, also, an indication of their sensitivity to criticism, which would be a counterpoint to their excessive desire for praise.

The 'positive-origin/negative-pawn' image of others could have various influences on the social behaviour of children with asthma. Their tendency to praise their peers much more than they would blame them might perhaps encourage children with asthma to develop an overly optimistic view of their peers - that they were the source of positive effects but not of negative effects. Although a desire by their peers to experience praise for their actions might entice them to interact with children who had asthma, the latter's generalized attribution of praise for all types of positive effects and for all types of people could rapidly disvalue the extent of the praise attributed in the eyes of the peers. Thus, although the child with asthma may legitimately attribute praise to someone for

his behaviour, it would not be as readily accepted as would praise from someone more sparing in his attribution of praise. For this reason, the excessive praise given by children with asthma might actually deter their peers from interacting with them, preferring the company of those who made a considered decision before attributing praise rather than attributing praise for every action.

The negative pawn image could also adversely affect the social relations of children with asthma. Their apparent reluctance to attribute blame would suggest that they would be left 'at a loss' in the face of adversity with no apparent source of the negative effect. Excused from blame, the peers could be expected to taunt the child with asthma with the knowledge that their antics would be unlikely to evoke retaliation.

Additionally we found that the children with asthma attributed less responsibility to boys than to girls, irrespective of the characteristics of the incident. This is quite an awkward finding to interpret. It would appear that the children without asthma, in general, differentiated little between boy and girl actors. Yet the children with asthma tended to perceive the girl actors as having a greater internal locus of causality and attributed more responsibility to them, in general.

This finding is rather the reverse of the supposed stereotype of women as pawns, as having external loci of causality. A possible reason why the children with asthma

tended to perceive girls as more origins of their behaviour might be the dominant role which their mothers play in their lives.

Since the early work of the psychologists French and Alexander, the mothers of children with asthma have been frequently described as dominant. Although in section 3.6 we emphasised that there were deficiencies in the theoretical and empirical support for this thesis, the findings reported in the previous chapter suggested that the maternal role must be considered if we are to explain the variations in the clinical severity of childhood asthma. This additional suggestion, that the mothers of children with asthma are indeed dominant, should be considered speculative, and, in the words of Nathanson and Rhyne (1970,) "must be a provisional one at best."

A study which compared the way healthy children and children with asthma attributed responsibility to their mothers and fathers would help clarify whether the mothers of children with asthma do indeed play a more dominant role in their children's lives.

Considering the attribution of responsibility scores of the children with asthma separately, we were disappointed to find that there was no relationship with the clinical severity of the children's asthma although there was a relationship with the physiological classification of the children's asthma. In section 7.1.7 the reverse had been predicted. Our findings would suggest that variations in the clinical severity of the children's asthma is not related to

whether or not the children have an internal or external locus of causality. Alternatively, there might be a more particular relationship between the concept responsibility and the clinical severity of the children's asthma which did not emerge from our analysis. Such a relationship might have been revealed in an interactional analysis of the children's scores considering both the characteristics of the children and of the actors. The small number of children in our study meant that it was not possible to carry out such an analysis. A replicative study with a larger sample size might help clarify the relationship between the concept responsibility and the variations in the clinical severity of childhood asthma.

The relationship between the children's attribution of responsibility scores and the physiological severity of their asthma was both unexpected and difficult to explain. The results revealed that the children with asthma classed as physiologically severe had attribution of responsibility scores most similar to those of children without asthma, while the children with physiologically moderate asthma had the most dissimilar scores. Why this should be is not apparent. We can only suggest that either the children's bronchial sensitivity is somehow indirectly related to their loci of causality, or else the relationship we have established between degrees of bronchial sensitivity and attribution of responsibility scores is unreliable. The unsatisfactory nature of the analysis of variance, which did not consider the possible effect of the children's ages, sex, families' social class or the clinical

severity of the children's asthma on the relationship between physiological classification of the children's asthma and their attribution of responsibility scores encourages us to accept the latter interpretation.

Overall, these findings have illustrated the value of closely examining the concept responsibility to increase our understanding of the social behaviour of children with asthma. The evidence would suggest that children with asthma are excluded by their peers from social interaction since, because of their sick role, they "get all the praise and none of the blame." The way the children with asthma attributed responsibility would suggest that they are very demanding for praise and sensitive to criticism. Their view of their peers as being the source of positive effects, but not of negative effects, would deter their peers from involving them in positive effects but not in negative effects. Also, the greater tendency of the children with asthma to attribute more responsibility to girls than to boys might perhaps be an indication of the dominant role of their mother in their lives.

The nil relationship between attribution of responsibility scores and the clinical severity of the children's asthma was disappointing. While this might be a true finding, because of the large number of possible interactions in a complete statistical analysis of the results it would seem desirable to replicate the study with a larger number of children with asthma.

#### 7.3.4 The relationship of the children's age to how they attributed responsibility

In general, the relationship of the children's ages to their attribution of responsibility scores confirmed Shaw and Sulzer's findings. The younger children differentiated less than the older children between the five contextual levels. Thus, it would indeed seem that as children develop they become more aware of the different usages of the concept responsibility, and so more sophisticated in their decisions as to whether to attribute responsibility to another.

At the association contextual level there was a tendency for the younger children to attribute more responsibility, especially when the outcome was negative. It would seem that although most of the children in our study would have passed through the Piagetian "precausality" stage, some of the younger children still blamed an actor who was merely associated with an event.

At the commission, foreseeability, and intentionality contextual levels, the older children attributed more responsibility than the younger children for negative outcomes and for positive outcomes, respectively. It would seem that as children develop they become more aware of the relationship between intentionality and responsibility, such that, as it becomes more apparent in the incidents that the actor intended the effect, the older children attribute considerably more responsibility.

There was little difference between the younger and older children in the amount of responsibility they attributed at

the justification contextual level, irrespective of the outcome quality of the incidents. This would suggest that children become aware early in life of the role justification plays in reducing an actor's responsibility for an effect.

The finding that the age of the children was not related to the amount of responsibility attributed to children with and without asthma would suggest that between the ages of 8-12 years the responsibility component of the common-sense definition of illness does not change. Perhaps if a group of children with a wider age range were surveyed it might be possible to establish whether there are any such developmental changes.

#### 7.3.5 The relationship of the social class of the children's families to how the children attributed responsibility

The relationship of the social class of the children's families to the children's attribution of responsibility scores provides some evidence in support of Lerner's (1937) thesis that children from middle class families have a more developed sense of the different usages of the concept responsibility. In our study these children differentiated more clearly between the five contextual levels than did the children from working class families.

Examination of the different amounts of responsibility attributed for positive and negative effects by children from middle and working class families revealed possible social class differences in familial interaction. The children from middle class families attributed less responsibility for the positive

effects than did the children from working class families, unless the effects were obviously intended. Also, the same children attributed more responsibility for negative effects than did the children from working class families, unless those effects were justified. It would seem that children from middle class families were more reluctant to praise their peers and more ready to blame them than were children from working class families.

This would suggest that in middle class families the children are more likely to be reprimanded for negative effects, unless they have been justified, and less likely to be praised for positive effects, unless they obviously intended those effects. It is, perhaps, these experiences that help them develop a greater understanding of the usages of the concept responsibility.

The finding that the children from middle class and working class families did not differ in the amount of responsibility they attributed to actors with and without asthma would suggest that both groups of children praise children with asthma much more than they blame them, i.e. the responsibility component of the sick role is similar in middle class and working class families.

#### 7.3.6 The relationship of the children's sex to how they attributed responsibility

An explanation for the relationship which was found between the sex of the children and their attribution of

responsibility scores was not obvious. The girls seemed to have a more developed sense of the usage of responsibility at the five contextual levels for negative effects, while the boys had a more developed sense of the usage of responsibility for positive effects. Considering those incidents with negative effects, we found that the girls were more likely than the boys to attribute responsibility at each contextual level, except the association level. However, the boys were more likely than the girls to attribute more responsibility for positive effects at the association, intentionality, and justification contextual levels.

Since the way we attribute responsibility depends upon our previous experience of efficacy, it might be that, because of previous experiences, the boys have developed a feeling that positive effects are internally caused, whereas the girls, because of different experiences, have developed a feeling that negative effects are internally caused. In the terms of de Charms' model, the boys have developed a 'positive-origin' image of themselves, while the girls have developed a 'negative-origin' image.

The work of Deaux (1976) would provide some support for this interpretation. She found that both men and women considered success for males as being due to some stable internal characteristic (ability), but success for females was due to an unstable characteristic (luck, great effort). On the other hand, failure for males was considered unexpected and attributed to unstable characteristics, but failure for females was

expected and attributed to stable internal characteristics.

If the process described by Deaux influenced the psychological development of boys and girls, then we would expect that while boys would grow up believing that any success they achieved would be due to internal characteristics, the girls would believe that they were the source of any failures. Thus, it is not unexpected that the boys attributed more responsibility to the actors for positive effects, while the girls attributed more responsibility to the actors for negative effects.

We also found that there was a tendency for the boys to attribute more responsibility to girls than to boys, while the girls tended to attribute more responsibility to boys than to girls. This would rather suggest that children tend to perceive the behaviour of children of the opposite sex as being more personally caused, while the behaviour of children of their own sex is perceived as being more impersonally caused.

This finding is really a variant of the actor-observer differences in causal attribution which were summarized by Jones and Nisbett (1972). They referred to several empirical studies which indicated that there is a human tendency to perceive other people's behaviour as being internally caused, whereas we tend to perceive our own behaviour as being more under situational control.

Because of the influence of personal relevance, it would be expected that boys and girls would identify more with actors of the same sex. They would then be expected to perceive

the behaviour of those same-sex actors as being more under situational control than the behaviour of opposite sex actors. Thus they would tend to attribute more responsibility to actors of the opposite sex than to actors of the same sex.

The finding that there was no relationship between the attribution of responsibility scores of the boys and girls and whether or not the actors had asthma would suggest that both boys and girls praise children with asthma more than they blame them, i.e. the concept responsibility is apparently not a factor in any possible sex differences in children's definitions of childhood asthma.

#### 7.3.7 Conclusion

The findings from this investigation would suggest that the concept responsibility is an important component of the common-sense definition of childhood asthma. Our findings have extended the generalised definition of the sick role by revealing that the common-sense definition of childhood asthma includes exemption from responsibility for negative effects, except those obviously intended, and added responsibility for positive effects with which the child with asthma might only be associated. Such a definition of childhood asthma would indicate that because children with asthma "get all the praise and none of the blame" they would be excluded from social interaction by their peers.

The findings also indicated that children with asthma develop an over-optimistic view of their peers which could

encourage their peers to take negative action against them secure in the knowledge that the children with asthma would be unlikely to retaliate. The children with asthma themselves would be very demanding of their peers for praise and sensitive to any criticism.

The finding that the attribution of responsibility scores were not related to the clinical classification of the children's asthma suggested that the extent of symptomatology is not related to the personal definition of the sick role (or at least the responsibility dimension of the sick role). The unsatisfactory statistical analysis cautioned us against accepting this finding outright.

The age differences in our findings confirmed Shaw and Sulzer's work that there are developmental changes in the usages of responsibility. However, we did not find any evidence of developmental changes in the responsibility component of the children's definitions of childhood asthma. Nor did we find social class or sex differences in the children's definition of the responsibility component of childhood asthma. Thus, the responsibility component of the sick role does not seem to provide us with an understanding of the epidemiological variations of childhood asthma. We shall return to this point in our final discussion.

## CHAPTER VIII

### THE CHILDREN AND THEIR FRIENDS

#### 8.1.1 Introduction

There is much empirical evidence to suggest that, outside of their families, the most important influence on children's social, emotional and cognitive development is their peers. In a recent review of the relevant literature, Hartup (1978) emphasized the importance of peer relationships. He noted:

"in all cultures, peer relations affect the course of socialization as profoundly as any social events in which children participate."

Hartup concluded that the existing evidence from both correlative and experimental studies demonstrated the necessity to consider peer relationships if we are to gain a full understanding of children's development. One particular type of peer relationship is friendship.

Friendship can be considered a qualitative extension of everyday peer relations. While peer relations may be univalent in character, reciprocity is an integral part of the definition of friendship. Basing himself on Telfer's (1970-71) analytic interpretation of the concept friendship, Peters (1974) claimed that it consisted of three main components: the sharing of activities, a liking and desire for each other's company, and reciprocal commitment to the relationship. Empirical evidence for such a structure was provided by the work of Bigelow and La Gaipa (1975). They asked 480 school children to write an essay distinguishing their expectations of their friends from those of their acquaintances. They found a developmental change in

the children's expectations which they characterized as a transition from egocentric to sociocentric to empathic notions of friendship. The earliest expectations were the sharing of common activities and the giving of help by the friend. Only when the children reached their teens did they mention common interests, attitudes and values. It would seem that friends satisfy different needs at different ages.

The importance of the role played by friendship in everyday life seems well established in common-sense psychology. Commenting on the typical parents' view of their children's friends, Hartup (1978) noted:

"Having friends is considered to be a significant social achievement, an indicator of social competence, and a mark of positive mental health."

Yet our understanding of how children form friendships during their everyday social interaction is still inadequate.

Consideration of this phenomenon may help us understand the various social problems many children experience.

#### 8.1.2 Social interaction and sick children

In the past few decades there have been several empirical as well as anecdotal reports highlighting the problems children with a visible physical handicap have with their social interaction. As early as 1943 Bonney found that high school students seldom chose a child with a handicap for a friend although they did treat such children with kindness and sympathy. Other researchers such as Soldwedel and Terrill(1957) and Holden(1962) reported similar findings.

In the sixties Richardson and his colleagues carried out a series of studies which re-emphasized the problems of social rejection met by children with a physical handicap. Using the picture preference technique Richardson et al. (1961) found that children aged 9 to 11 years (both with and without a handicap) consistently ranked pictures of children with various visible handicaps lower than one of a child without a handicap. The fact that the handicapped children also ranked the pictures in the same order implied that they had adopted the rejecting attitudes of their peers.

Later, in a study of friendship formation among 8-14 year olds in a summer camp, Richardson (1964) found that the healthy children chose non-handicapped children as friends more often than they did children with a visible handicap. Typical remarks of the healthy children were "I don't feel comfortable with a handicapped child", and "I don't know what to say to a handicapped child".

Other evidence shows that when a handicapped and a non-handicapped child do actually interact the situation is often strained. For example, Kleck et al. (1966) found that a non-handicapped child exhibited greater emotional arousal (as measured by galvanic skin response) when he encountered a handicapped child than when he encountered a non-handicapped child. To prevent such unpleasant arousal it would be reasonable to expect that the non-handicapped child would avoid any further such encounters.

However, these studies refer to children with a visible physical handicap and so their findings should not be applied uncritically to the case of childhood asthma. Most children with asthma seldom exhibit any obvious signs of any physical defect except during the periodic attacks when the distressful wheezing and breathlessness is apparent.

Yet a visible stigma is not necessary for social rejection. We found earlier, in our study of how children attribute responsibility, that the mere description of a child as having asthma was sufficient to alter the way children attributed responsibility to that child. It was suggested that since a healthy child was reluctant to attribute responsibility to a child for a misdemeanor, he would be reluctant to interact with that child.

There may be other factors which restrict the social encounters of children with asthma. For example, the asthmatic wheezing itself may physically prevent the children engaging in social interaction at certain periods. This interference may be exaggerated in some cases by excessive parental concern. Referring to these restrictions Dubo et al. (1961) noted:

"the children's (with asthma) most commonly expressed feeling about the illness was one of frustration; it interfered with achievement of goals, with the realization of plans, and with social life".

Whatever the reasons, such deprivation of social interaction would mean that these children would be delayed in developing

the social skills essential for the success of further social encounters. Thus, as Hastorf et al. (1970) suggested, a vicious circle is developed which prevents the children fully developing their social relationships.

Empirical examination of the peer relationships of children with asthma are few and limited. Burton (1968), in her study of children with clinically severe asthma, reported that the term "outsiders" was a typical description of their social role. Isbister and Mayer (1969) claimed that of the 77 children who were admitted to a residential home with severe asthma, 65 were diagnosed as having problems in their social relationships both with other children and with adults. Also, Thomas (1976) described a similar group of institutionalized children with asthma as being "timid children (who) find difficulty in making good relationships".

Such descriptions of children with asthma can be compared with Goffman's (1963) comments on social rejection. He noted how frequently the, perhaps clumsy, attempts by some stigmatized people to conceal their stigma, so as to encourage greater social interaction, is often misinterpreted by other people as yet another expression of their defect. Thus, by misunderstanding the behaviour of children with asthma we can attribute the traits of timidity and egocentricity to them.

To avoid such stereotyping, it is essential not to abstract the children's behaviour from its psychosocial context. Rather, we should attempt to gain an explanation of their behaviour by understanding how they perceive those people around them.

In Roger's (1968) words:

"If we wish to understand the social behaviour of children we must also attempt to understand their understanding of other people's behaviour".

Although asking children specific questions about different aspects of their friendships might help us understand the relationships, recent research has shown the value of allowing the children to provide free descriptions of their friends. As we shall see, careful analysis of such descriptions have not only provided information about the friends, but also about the children who describe the friends. As Livesley and Bromley (1973) emphasized:

"Traditionally, judge ratings of others were assumed to tell us something about the others' personality ... we now realize that they tell us something about the judge".

### 8.1.3 Children's descriptions of their peers

Since Bruner and Tagiuri's (1954) admonition on the dearth of empirical evidence regarding the way laymen describe each other, there have been a series of studies which have attempted to remedy this absence. In 1973, Livesley and Bromley, on reviewing the current literature on such research, concluded:

"So far studies suggest that: (1) people have a small number of categories or terms that they consistently use to describe others ... ; (2) perceivers differ considerably in the

categories they use to describe others ... ;  
(3) subjects use different categories to describe different people, although one subject's description of two people tend to be more alike than descriptions of one person obtained from two subjects... ; (4) there is a strong relationship between the categories people use to describe others and those used to describe themselves".

Livesley and Bromley's own study is one of the few detailed attempts to examine the development of the use of different categories of description. They asked 320 children between the ages of 7 and 16 years to write down their descriptions of a man, a woman, a boy and a girl who they liked, and of four similar people whom they disliked. They then content analysed each descriptive statement, which they defined as "an element or idea referring directly or indirectly to the stimulus person," using two different coding schemes.

The first scheme was qualitative and consisted of a central and a peripheral category. The central category was concerned with all those "psychological statements", like personality traits, general habits, motives and attitudes. The peripheral category included all the remaining "non-psychological statements" such as appearance, possessions, social roles, relationships, likes and dislikes, general information and life history. The theoretical reasoning behind the application of this "rather crude method" of categorizing the children's statements was twofold. Firstly, a similar technique had been

used before by psychologists analysing Role Construct Repertory Tests, where it had been considered useful in revealing considerable individual differences between adults and children. "Secondly, the 'central versus peripheral' contrast is analogous to that of 'abstract versus concrete' in cognitive psychology and seems to be associated with levels of conceptual competence in interpersonal relationships." They further suggested that those children who commonly use "concrete or peripheral" statements to describe others would be ineffective in social interaction, for to be effective "the perceiver must employ central (dispositional) terms, since peripheral qualities have little or no generality and are poor predictive cues."

Their results showed that, as expected, the older children used a greater proportion of central statements and fewer peripheral statements than the younger children. In their discussion, they suggested that this developmental shift may be caused by the transition from egocentric to socialized thinking, as conceptualized by Piaget. They concluded that this would enable the older children to acquire "the inferential skills necessary for the use of abstract and generalized psychological terms which enable the subject to form impressions in terms of inner dispositional constants."

Their second technique for content analysis was quantitative, involving the recoding of all the descriptive statements into 33 empirically derived categories which could be grouped together into 13 larger categories of 'objective information', 'contemporary and historical circumstances', 'personal

characteristics and behavioural consistencies, 'aptitudes and achievements', 'interests and preferences', 'attitudes and beliefs', 'evaluations', 'social factors', 'subject-other relations', 'comparison against standards', 'family and kinship', 'illustration, corroboration and explanation; and finally a residue category.

Using this coding scheme, they found that statements coded under objective information, family and kinship, and residue decreased with age. These categories mostly involved what was previously defined as peripheral information. Those statements coded under personal characteristics, behavioural consistencies, attitudes and beliefs, social relationships, comparison with others, and collateral facts and ideas increased with age. This was especially the case for the first two categories, leading Livesley and Bromley to state that "the bulk of 'psychological' or 'central' statements consisted of traits, general habits and specific interpersonal responses."

In commenting on these findings in their discussion, they raised an important point which is related to our understanding of children with asthma. They posited :

"Of course, the reflexive and inferential nature of thought that makes the acquisition of a 'psychological' vocabulary possible does not develop independently of the perception of persons. Piaget (see Flavell, 1963) stressed that the emergence of operational thought depends upon repeated interpersonal interactions in which the child is forced by arguments and

disagreements to see things from the viewpoint of the other person."

This would suggest that children who are restricted from social interaction (as may be the case with children with asthma) would be more immature than their peers in the acquisition of a psychological vocabulary.

A similar developmental study reported in the same year by Peevers and Secord (1973) qualitatively extended the classification scheme proposed by Livesley and Bromley. They asked 80 children, ranging in age from kindergarden to college level, to provide a description of 3 people they liked and one who they disliked. These descriptions were then divided into "items", each of which consisted of one discrete bit of information about the stimulus persons. These items were then content analysed using both a quantitative and then a qualitative approach.

The quantitative approach was not mentioned in the original report but was in a later report (Secord and Peevers, 1974) where they claimed that "this (technique) was analogous to the type of coding used for open-end interviews in survey research." They also noted in the second report that following the quantitative analysis "the descriptions were carefully studied to uncover their general qualitative structure, and to find qualitative changes that emerged at different ages." On the basis of this latter analysis, and with the theoretical work of Heider and Piaget in mind, they devised four coding dimensions: 'descriptiveness', 'personal involvement', 'evaluative

consistency', and 'depth'.

The "descriptive" dimension classified each item in terms of the amount of information it yielded about the stimulus person as a unique individual. There were four levels of descriptiveness into which each item could be classified:

(i) Undifferentiating: all items in which the stimulus person was not differentiated from his environment but was described in terms of his possessions or social setting;

(ii) Simple differentiating: all items in which the stimulus person was differentiated as an individual, but was described in terms of simple, superficial characteristics, global judgements, or his relationship to the perceiver;

(iii) Differentiating: all items in which the stimulus person was described in terms of fairly specific personal characteristics, such as interests, abilities or beliefs, or temporary states or conditions;

(iv) Dispositional: all items in which the stimulus person was described in terms of traits which had implications for his behaviour in a wide range of situations.

Theoretically, this dimension combined Piaget's idea that as a child grows he develops the ability to differentiate other persons from their environment with Heider's idea that the child

gradually develops the concept of intentionality and so the image of the person as the origin of his own actions.

This categorization is much finer than Livesley and Bromley's "rather crude" central/peripheral distinction. Whereas, Livesley and Bromley classified "inner, psychological qualities," like general habits, motives and values, in their central or dispositional category, Peevers and Secord restricted their dispositional category to those "traits which had implications for his behaviour in a wider range of situations." This meant that global descriptions, beliefs and values were relegated to the simple differentiating and differentiating categories.

Using this categorization, Peevers and Secord found that although the most predominant type of description in all age groups was the simple differentiating, there was a steady increase in the use of dispositional items with age.

Thus they were able to claim that their "general hypothesis that with increasing age people are seen in a more sharply differentiated way has been strongly confirmed by the data."

The "Personal involvement" classification dimension devised by Peevers and Secord had three categories: (a) egocentric, where the person was described in a way which made the describer the object of the description; (b) mutual, where the stimulus person was described in terms of his relationship with the perceiver; (c) other-oriented, where no personal involvement was expressed by the describer. This dimension "was suggested in part by" Piaget's view that young children have an egocentric view of the world but as they mature they develop reciprocity or

the ability to see the others point of view. Their results showed that while the younger children preferred egocentric descriptions and the college students preferred other-oriented descriptions, in all groups, few mutual items were used.

The third dimension was "evaluative tone" and referred to the extent to which a describer recognised and articulated desirable and undesirable qualities in those they described. From this classification they derived an "evaluative consistency quotient" which was a measure of the amount of desirable qualities in a liked person or undesirable qualities in a disliked person. Peevers and Secord did not detail any specific theoretical underpinning for this dimension although they noted that in a pre-test interview "the kindergarden children gave inconsistent responses in immediate juxtaposition, suggesting that either they do not perceive inconsistency, or they have not established any need to be consistent in describing persons." They predicted that the third and seventh grades would be the most consistent in their descriptions and expected the older ones to be inconsistent because of a greater tolerance for relatively disparate characteristics. However, they found that although the third and seventh grades were more consistent than the kindergarden children, the college students were no more inconsistent than the seventh grades.

The fourth dimension was "depth," which was intended to cut across the dimension of descriptiveness, and reveal the degree to which personal characteristics were recognised as being conditional upon certain situational, temporal, or internal states.

Peevers and Secord devised three levels of depth: level

1 included undifferentiating and simple differentiating descriptions plus unembellished differentiating and dispositional items; level 2 included those differentiating and dispositional items which extended their descriptions but did not provide an explanation for the characteristics; level 3 contained those differentiating and dispositional descriptions which were extended to provide an explanation. Their prediction, that if the higher levels required more insightfulness or sophistication then they would only be apparent in the older children's descriptions, was confirmed. Level 2 items were only detected in seventh grade children's descriptions and level 3 in eleventh grade descriptions.

Later, Secord and Backman (1974) summarized these findings obtained from the four-fold reclassifications of children's descriptions of their peers thus:

"In younger children, there are two kinds of confusions:

(1) those between the person and the social setting or possessions and (2) those between the person and the observer himself."

Both the Livesley and Bromley and the Peevers and Secord studies confirmed that there were developmental changes in the way children conceptualize other people. However, whereas the former established this using a simple two-level qualitative classification of the children's descriptions followed by a more extensive quantitative classification, Peevers and Secord used a series of qualitative classification schemes each of which revealed different developmental changes in the children's

descriptions.

Since we have suggested that children with asthma (or some of them) may be restricted in their social interaction, the techniques devised by Peevers and Secord would seem the more sensitive for identifying any associated immaturity in the way those children conceptualize others. The developmental emphasis of this classification scheme might, however, ignore certain aspects of children's peer descriptions peculiar to children with asthma. To investigate this possibility further would necessitate some additional analyses.

#### 8.1.4 Sick children's descriptions of their peers

There have been few studies which have specifically examined the way sick children describe their peers. The studies which have been reported were concerned with children with a visible physical handicap. However, by surveying these and relating it to our understanding of childhood asthma, we can make some predictions.

One early report by Hastorf (1959) on the peer descriptions of physically handicapped children mentioned briefly that they used fewer concepts than their healthy peers. Kelly et al. (1960), commenting on this finding, suggested:

"This may be a sign of focussed concern (though the categories they do use do not indicate this very clearly), or a sign of blunting of interpersonal perception as a function of perceptual defence, or a result of the meager information presented by the normative reactions

of others."

In a later report (of possibly the same study) Richardson, Hastorf and Dornbusch (1964) gave details of how they asked 126 boys (63 handicapped and 63 non-handicapped) and 109 girls (44 handicapped and 65 non-handicapped) aged 9 to 11 years, who were at a summer camp, to provide descriptions of two other children and of themselves. They then content analysed the children's descriptions noting that "to minimize the possible distortion that may have occurred through deductively imposing predetermined categories, we derived an empirically based set of categories from children's descriptions obtained in an exploratory study." They developed 69 categories which could be grouped under fifteen headings: 'demographic variables,' 'organic variables,' 'recreational variables,' 'aggression,' 'quality of interaction,' 'frequency of interaction,' 'interpersonal relations,' 'group status,' 'modes of interaction,' 'moods of interaction,' 'total personality,' 'abilities,' 'norms,' 'possessions' and 'miscellaneous! They also developed 19 second order categories which were somewhat more abstract and emphasized a stylistic component, e.g. 'concern with the future,' 'positive evaluation!

Although Richardson et al. did not provide details of the children's peer descriptions in this report, they did provide details of their self-descriptions. These they considered under three concepts about the consequences of physical disability. Under the first concept (reflection of functional restriction - physical activity), they noted that the children with a handicap talked more about "handicap" and less about "spatial location" in

their descriptions. The handicapped boys talked more about "health" and less about "physical ability" and "occupation of the child". The handicapped girls talked more about "non-physical recreation."

Under the second concept (social impoverishment) they noted that the handicapped children talked more about "relations with mother" and less about "membership in a specific collective." The handicapped boys talked less about "relations with siblings" and "interpersonal skill."

Finally, under the third concept (reflection of functional restriction - psychological impact), they reported that the handicapped boys and girls talked more about "concern with past" in their self-descriptions. The handicapped boys talked more about "humour" and "confidence" (negative), and less about "social comparison: self with others." The handicapped girls talked more about "excitability" and "undifferentiated negative statements," and less about "age" and "generosity."

Of the categories not considered under the three concepts, they found that the handicapped boys talked more about "general aggression", while the handicapped girls talked less about "general aggression" and "verbal aggression."

In summarizing, Richardson et al. claimed that their results emphasized "the physical functional restrictions imposed by the handicap, its psychological impact, and deprivation of social experience, and the limitations on involvement in the social world."

Although Richardson et al. (1964) did not give details in their report of the children's peer descriptions, a suggestion

that they were similar to the children's self-descriptions was provided by Livesley and Bromley. They referred to another report (Richardson et al, 1961) which they claimed showed that "physically handicapped children used categories related to involvement with peers less frequently than did non-handicapped children, but they made greater use of categories describing relationships with adults."

If this was the case, then we would expect that those children with asthma who were most restricted from social interaction would also display similar characteristics in their peer descriptions. This would suggest that an analysis of peer descriptions of children with asthma using a coding scheme like that devised by Richardson and his colleagues would provide valuable information on the social characteristics of childhood asthma.

#### 8.1.5 Conclusion

Peer relations and friendships play an important role in the social and emotional development of children. The limited empirical evidence about children with asthma has suggested that their psychological development might be adversely affected by limitations on their social interaction. One way the validity of this suggestion could be explored is by an investigation of the children's perceptions of their social relations.

Two comprehensive studies by Livesley and Bromley (1974) and by Peevers and Secord (1974), which analysed children's free descriptions of their peers, revealed clear developmental changes in the use of descriptive concepts by the children. If children with asthma, especially those with most clinical symptoms, are restricted in their social interaction, we would expect this to be apparent in the type of concepts they use to describe their

peers.

It is intended to investigate the social interaction and psychological development of children with asthma using two techniques. The first will be based upon a thorough analysis of the children's descriptions of their friends. The qualitative detail of the classification scheme devised by Peevers and Secord, for the analysis of children's peer descriptions, recommends it as a sensitive tool for investigating possible differences in the children's psychological development which are apparent in their descriptions of their friends.

Since Peevers and Secord's classification scheme was not designed to reveal problems in social interaction peculiar to children with asthma, it would seem necessary to devise an additional way of classifying the children's descriptions in order to investigate the extent of such problems. The work of Richardson and his colleagues has suggested that children with physical handicaps have difficulties in their social interaction. The coding scheme which Richardson et al.(1964) devised for the analysis of children's peer descriptions was more concerned with interpersonal problems and could suggest the dimensions for the additional classification scheme which we mentioned.

The second technique which we will apply to increase our understanding of the social relations of children with asthma will dwell more specifically on certain aspects of their friendships. The definition of friendship provided by Peters(1974), i.e. sharing of activities, a liking or desire for each others company, reciprocal commitment, could provide the basis for such a particular investigation. We would predict that the children with asthma would be least likely to report evidence of mature

friendships.

## 8.2 Method and Results

### 8.2.1 Design of the interviews

There were two sections to this part of the children's interviews. The first section requested the children to provide a description of their three best friends. No specific questions were asked of the children about their friends in this section.

The second section attempted to explore various aspects of the children's friendships using more definite questions. It enquired about the similarity of their interests, their sharing of secrets, and attempted to gauge how close were the relationships between the children and their friends. It also asked the children to provide some estimate of their abilities in comparison with their friends. The basic format of this part of the interviews is given in Appendix 8.2.1

### 8.2.2 Procedure

The children were first asked to name up to three of their best friends. Having obtained one, two, or three names, the investigator asked the children to describe each friend in turn. The request put to each child by the investigator was: "Could you tell me anything about N?" Most of the children then proceeded to describe that particular friend. A few children were a little more hesitant about providing a description. The investigator encouraged these children with various additional requests, such as: "You must know something about N. Tell me anything about him you can think of."

Throughout the children's replies, the investigator remained non-committal, save for the occasional nods and murmurs of

encouragement. When the children had apparently nothing more to add about their first friend, the investigator asked: "Is there anything more you could tell me about N?" When the children's replies to this request were exhausted, the investigator shifted his interest to the second, and then to the third friend. The same procedure was followed by the investigator to obtain descriptions about these other friends.

Having obtained the free descriptions of the children's friends, the investigator then introduced the more specific questions about friendship. During this section of the interview, the investigator included references to the children's own friends in the questions to make the queries seem more relevant to the children.

Most of the children took about fifteen minutes to provide the free descriptions of their friends and to answer the additional questions.

### 8.2.3 First analysis of the children's descriptions of their friends

Having transcribed the children's interviews from tape-recordings, each child's descriptions of his three friends were typed on a separate sheet of paper. Each sentence was given a separate line for ease of analysis. Altogether there were 768 sentences.

Inspection of these sentences revealed that they often contained more than one descriptive idea about a friend. For example: "He doesn't play with me anymore because he plays football." The first clause in that sentence indicates a type of relationship between the child and his friend. The second clause provides

some information about the friend's interest in sports. It would seem that a full analysis of such sentences would necessitate the individual consideration of each descriptive item within a sentence rather than accepting each sentence as a single unit. We can define a descriptive item as any element within the children's descriptions referring directly or indirectly to a single characteristic of the children's friends. Both Livesley and Bromley (1974) and Peeves and Secord (1974) adopted a similar strategy in their analyses of children's peer descriptions.

However, the validity of descriptive items as the basic unit of analysis rests upon the extent to which the sentences can be reliably sub-divided. To cope with this problem, two judges (the investigator and a research psychologist) independently assessed the number of descriptive items within each of the 768 sentences in the children's descriptions. The judges were not concerned with the nature of the items but simply with their number. They found complete agreement between their assessments of the number of items within 749 (97.5%) sentences.

Although this degree of agreement was reassuring as to the apparent discreteness of each descriptive item, the problem of sub-dividing the other 19 sentences remained. This was achieved by the same two judges re-examining those 19 sentences in consultation. Having considered the merit of each other's assessments, they agreed on the number of items in a further 9 sentences. This raised the agreement rate to 98.7%

The remaining 10 sentences, plus the two judges' estimates

of the number of items in each sentence, were then given to a third judge (another research psychologist). The third judge decided which of the previous assessments were the most accurate. This judge's decision was accepted as final.

A total of 864 descriptive items were identified in the 768 sentences. That is, there was an average of 1.125 items per sentence in the children's descriptions.

The 864 items were then coded along the three dimensions devised by Peevers and Secord: descriptiveness, personal involvement, and evaluative tone. Since the fourth dimension of depth had been found to be only of use in the analysis of the peer descriptions of teenage children, it was not used in our analysis where all the participants were less than 12 years of age.

Whereas the content analysis of other parts of the interviews was performed by one judge alone, two judges independently assessed each descriptive item. The reason for the use of two judges was that whereas the coding scheme in previous analyses was basically quantitative, over which there was little doubt about the assignment of items (see section 6.2.3), the Peevers and Secord coding scheme, was qualitative. This meant that to ensure reliable assignment of descriptive items to the various categories in the coding scheme more than one judge had to be employed. Whenever there was disagreement between these two judges in their classification of the items, a third judge reviewed both their assessments and made a final decision.

First, both judges coded each item into one of the four categories of the descriptiveness dimension: undifferentiating, simple differentiating, differentiating, and dispositional. On

the first coding the two judges agreed on the classification of 768 (88.9%) items. The 96 items about which there was disagreement were then reconsidered by the two judges in consultation. This reassessment raised the agreement rate to 819 (94.8%). The remaining 45 items, plus the two judges' classifications, were then given to the third judge. This decision as to which classifications were the more accurate completed the categorization.

The descriptive items were then recoded into the three categories of the personal involvement dimension: egocentric, mutual, and other oriented. Of the 864 items, 779 (90.2%) were assigned to the same categories by the two judges independently. This agreement rate was raised to 830 (96.1%) when the two judges considered the other 85 items together. The remaining 34 items, about which the two judges still disagreed, were assigned to a category by the third judge who considered the other two judges' assessments.

The third classification of the descriptive items was into the positive, negative, and neutral categories of the evaluative tone dimension. This classification achieved the highest agreement between the judges with 825 (95.5%) items coded identically by the two judges independently. This agreement was increased to 846 (97.4%) items after the two judges had discussed together their assessments of those 39 items about which they had disagreed. The remaining 18 items were then assessed by the third judge who considered the accuracy of the first two judges' assessments. The third judge's decision was final.

Having classified the children's descriptions along these

three dimensions it was necessary to prepare the data for statistical analysis. The partial correlation technique, used previously for comparison of groups of data, was again preferred because of its simplicity and power. However, the use of this technique on this particular set of data necessitated a secondary coding scheme for ease of computation. Thus, instead of there being, say, 24 simple differentiating categories to consider the descriptions of those children who had from 1 up to 24 simple differentiating items, the secondary coding scheme had four categories of 1 - 6, 7 - 12, 13 - 18 and 19 - 24 simple differentiating items. This grouping of data provided a more manageable arrangement for computation.

However, basing our analysis simply on the comparison of the total number of descriptive items in each category neglects two important considerations:

(a) three children described only two friends and one child described only one friend. Comparison of those four children's total descriptions with the total descriptions of the other children, who described three friends, would conceal differences in the quality of the descriptions. To accommodate the differences in the number of friends described it was necessary to examine the average number of items used by each child to describe a single friend. This necessitated the design of a parallel secondary coding scheme which grouped together the average number of each type of descriptive item in a few categories.

(b) similarly, some children used only a few items to describe a friend whereas others used many. Thus, comparison of the total descriptions would again conceal the quality of the small descriptions and exaggerate that of the large descriptions. For example, a description of a friend which had 3 out of 10 descriptive items classified as dispositional would be considered similar to another description which had 3 out of 4 items classified dispositional. To compensate for unequal numbers of items in the children's descriptions, it was necessary to consider the proportion of each child's description which was assigned to any particular category. A second parallel coding scheme which grouped the proportions for statistical analysis was devised.

The three secondary coding schemes, together with the number of children who were assigned to each category, are presented in Appendix 8.2.3.

#### 8.2.4 Children's descriptions of their friends (1)

The 60 children used 864 items to describe 175 friends. That is, each child used, on average, 4.9 items to describe a single friend, and 14.4 items in his total description. Partial correlation analysis showed that the children from working class families used a larger number of items in their total descriptions than did children from middle class families (Table 8.2.4A and B). However, neither the social class of the children's families, nor any other classification of the children, was related to the average number of items the children used to describe a single friend.

TABLE 8.2.4A : Relationship of the total and average no. of items in the children's descriptions of their friends to the different classifications of the children

	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items in all descriptions	.15	-.11	-.21*	.01	-.07	.14
Average no. of items per description of friend	.11	-.01	-.07	.04	-.02	-.03

Note: Figures give Kendall's tau values of the relationship of items to the different classifications of the children.

\*  $p < 0.05$ ;    \*\*  $p < 0.01$ ;    \*\*\*  $p < 0.001$ .

TABLE 8.2.4B: Relationship of the total no. of items in all  
descriptions of friends to the social class of the  
children.

	Social class of children	
	<u>Middle class</u>	<u>Working class</u>
At least 20 items in total	0	12(26.1%)

Table 8.2.4C presents the descriptiveness classification of the descriptive items. Simple differentiating items were the most commonly used, followed by the differentiating, the undifferentiating and the dispositional items. Partial correlation analysis revealed that of the 12 descriptiveness classifications of the descriptive items, 8 were significantly related to one or more of the classifications of the children (Table 8.2.4D).

Figure 8.2.4A presents graphically the proportions of the total descriptions by the children with and without asthma which were assigned to the four descriptiveness classifications. The children with asthma used a larger proportion of differentiating, and a smaller proportion of dispositional items in their descriptions (Table 8.2.4E). They also used a larger average number of differentiating items in each description of a single friend.

The older children used a larger total number, a larger average number, and a larger proportion of both simple differentiating and dispositional items (Table 8.2.4F). The children from working class families used a larger proportion of dispositional items (Table 8.2.4G). The boys used a larger proportion of differentiating items than did the girls (Table 8.2.4H).

None of the classifications of the children was related to the undifferentiating classification of the descriptive items (Table 8.2.4D).

Considering the replies of the children with asthma separately, we found that neither the clinical nor the

TABLE 8.2.4C: "Descriptiveness" classification of the children's descriptions of their friends

	Undifferentiating	simple differentiating	Differentiating	Dispositional
Total no. of items	114	465	217	68
Average no. of items per description of friend	0.7	2.7	1.2	0.4
Proportion of total description	13.2%	53.8%	25.1%	7.9%

TABLE 8.2.4D: Relationship of the "descriptiveness" classification of the children's descriptions of their friends to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
<b>(a) Total no. of items</b>						
Undifferentiating	-.01	-.02	-.04	.06	.01	-.08
Simple differentiating	.01	-.21*	-.13	-.14	-.01	-.03
Differentiating	.18	.12	.01	.16	.01	-.07
Dispositional	-.14	-.28*	-.20	-.11	.06	.03
<b>(b) Average no. of items per description of friend</b>						
Undifferentiating	.06	-.02	-.01	.06	.01	-.08
Simple differentiating	.04	-.22*	-.09	-.10	-.11	.12
Differentiating	.22*	.08	-.05	.12	.04	.04
Dispositional	-.14	-.29*	-.22*	-.10	.10	-.01

TABLE 8.2.4D (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Undifferentiating	-.07	-.02	.01	-.04	-.11	-.05
Simple differentiating	.01	-.25*	-.03	-.08	.21	.12
Differentiating	.21*	.16	.11	.21*	.03	-.16
Dispositional	-.25*	-.25*	-.18	-.08	.07	.04

Note: Figures give Kendall's tau values of the relationship of the "descriptiveness" classifications to the different classifications of the children

\*  $p < 0.05$

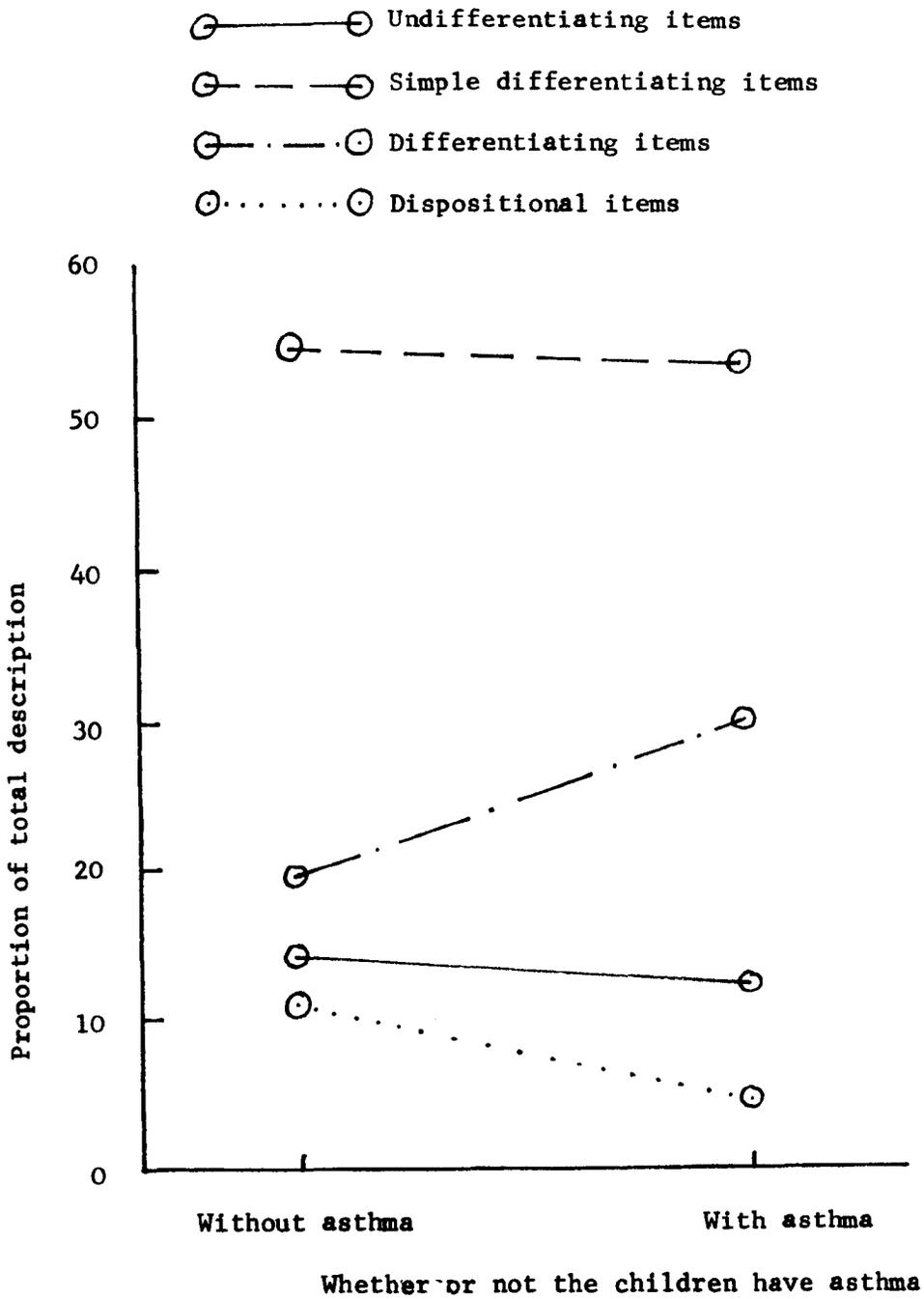


Fig. 8.2.4A: "Descriptiveness" classification of the friend descriptions of the children with and without asthma

TABLE 8.2.4E: Items from the "descriptiveness" classification of the children's descriptions of their friends related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Average No. of items per description of friend		
More than 2 differentiating items	7(23.4%)	3(10 %)
Proportion of total description		
Over 40% differentiating items	9(30 %)	4(13.3%)
Over 10% dispositional items	4(13.3%)	11(36.7%)

TABLE 8.2.4F: Items from the "descriptiveness" classification of the children's descriptions of their friends related to the age of the children

	Age of children	
	<u>Young</u>	<u>Old</u>
Total no. of items		
At least 7 simple differentiating items	15(50 %)	19(63.3%)
At least 1 dispositional item	7(23.3%)	15(50 %)
Average no. of items per description of friend		
More than 2 simple differentiating items	10(33.3%)	18(60 % )
More than 0 dispositional items	7(23.3%)	15(50 %)
Proportions of total description		
Over 40% simple differentiating items	17(56.7%)	28(93.3%)
Over 10% dispositional items	5(16.7%)	10(33.3%)

TABLE 8.2.4G : Items from the "descriptiveness" classification of the children's descriptions of their friends related to the social class of the children's families

	Social class of children's families	
	<u>Middle class</u>	<u>Working class</u>
Average no. of items per description of friend		
More than 0 dispositional items	3(21.4%)	19(41.3%)

TABLE 8.2.4H : Items from the "descriptiveness" classification of the children's descriptions of their friends related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Proportion of total description		
Over 40% differentiating items	11(31.4%)	2( 8 %)

physiological classification of the children was related to any of the descriptiveness classifications of the items.

Table 8.2.4I presents the personal involvement classification of the children's descriptions of their friends. The most common items were the other oriented, followed closely by the egocentric, and then the mutual items. Partial correlation analysis showed that of the nine personal involvement classifications of the descriptive items, three were related to one or more of the classifications of the children (Table 8.2.4J).

Figure 8.2.4B illustrates the proportions of the total descriptions given by the children with and without asthma that were assigned to the three personal involvement classifications of the items. The children with asthma, especially the younger children, used a smaller proportion of other oriented items (Table 8.2.4K and L). The children with asthma also used a larger total number, and a larger average number, but not a larger proportion, of egocentric items in their descriptions.

None of the classifications of the children was related to the mutual classification of the descriptive items (Table 8.2.4J).

Considering the replies of the children with asthma separately we again found that neither the clinical nor the physiological classification of the children's asthma was related to any of the personal involvement classifications of the items (Table 8.2.4J).

Table 8.2.4M presents the evaluative classification of the children's descriptions of their friends. The majority of the items had a positive tone and a large proportion were neutral.

TABLE 8.2.4I : "Personal involvement" classification of the children's descriptions of their friends

	Egocentric	Mutual	Other oriented
Total no. of items	375	112	377
Average no. of items per description of friend	2.1	0.6	2.2
Proportion of total	43.4%	13.0%	43.6%

TABLE 8.2.4J: Relationship of the "personal involvement" classification of the children's descriptions of their friends to the different classifications of the children

Classification of descriptions	Classification of Children					
	<u>Asthma</u>	<u>Age</u>	<u>Social Class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
<b>(a) Total no. of items</b>						
Egocentric	.23*	.02	.11	-.06	-.01	.09
Mutual	.12	-.01	-.10	.09	-.01	.15
Other oriented	-.04	-.15	-.17	-.01	.15	-.13
<b>(b) Average No. of items per description of friend</b>						
Egocentric	.24*	-.06	.04	-.10	-.11	.12
Mutual	.12	-.02	-.09	.10	.03	.12
Other oriented	-.03	-.11	-.14	-.10	.15	-.15
<b>(c) Proportion of total description</b>						
Egocentric	.06	.06	.07	.05	-.01	.14

TABLE 8.2.4J (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Mutual	.14	.02	.04	.06	.07	.14
Other oriented	-.22*	-.22*	-.05	-.10	.06	-.17

Note: Figures give Kendall's tau values of the relationship of the "personal involvement" classifications to the different classifications of the children.

\*  $p < 0.05$

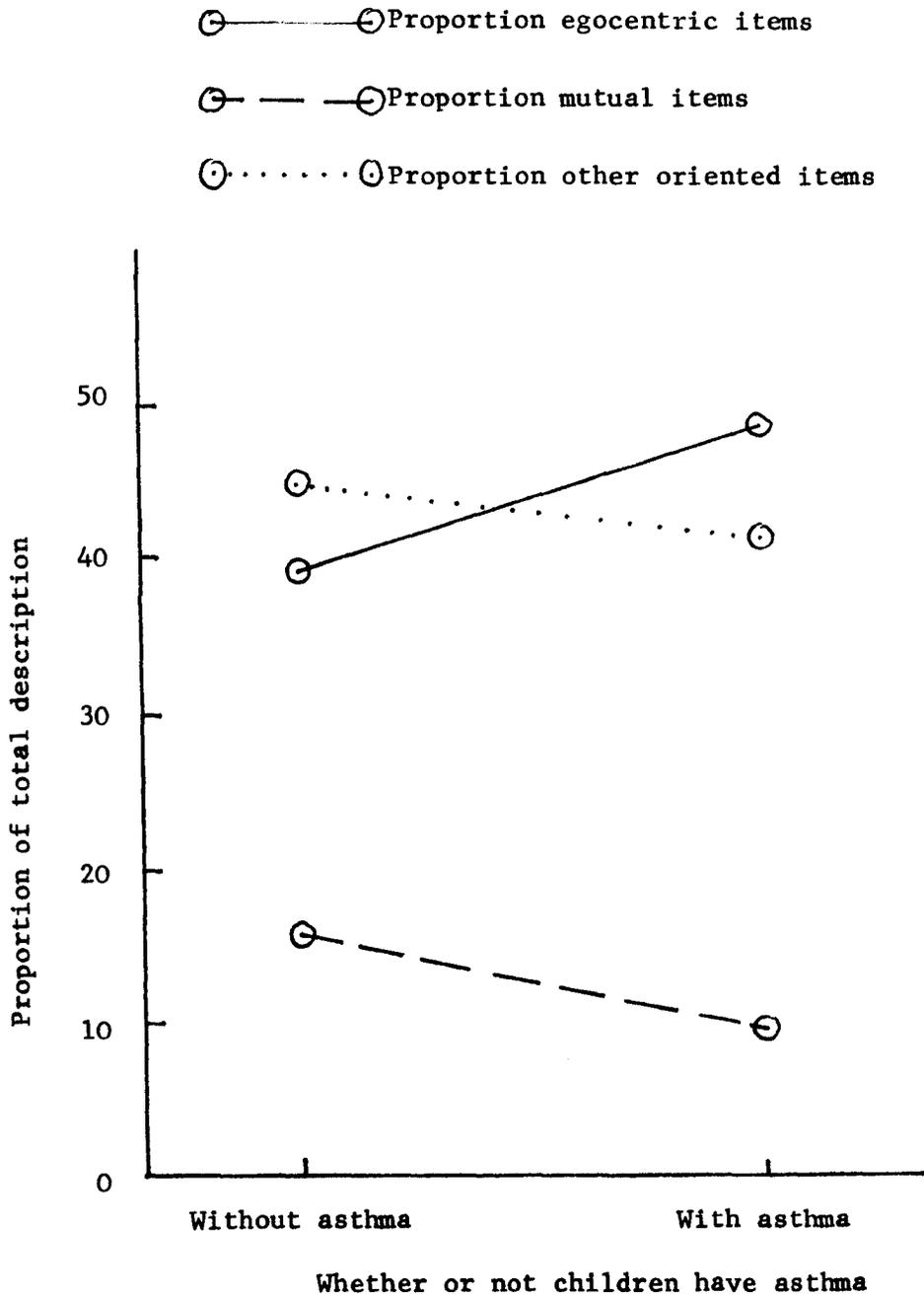


Fig. 8.2.4B: "Personal involvement" classification of the friend descriptions of the children with and without asthma

TABLE 8.2.4K : Items from the "personal involvement" classification of the children's descriptions of their friends related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Total no. of items		
At least 7 egocentric items	15(50 %)	9(30 %)
Average no.of items per description of friend		
More than 2 egocentric items	13(43.3%)	7(23.3%)
Proportion of total description		
Over 40% other oriented items	11(36.7%)	19(63.3%)

TABLE 8.2.4L: Items from the "personal involvement" classification of the children's descriptions of their friends related to the age of the children

	Age of children	
	<u>Young</u>	<u>Old</u>
Proportion of total description		
Over 40% other oriented items	11(36.7%)	19(63.3%)

TABLE 8.2.4M: "Evaluative" classification of the children's descriptions of their friends

	Positive	Negative	Neutral
Total no. of items	463	8	393
Average no. of items per description of friend	2.6	0.05	2.2
Proportion of total description	53.6%	0.9%	45.5%

Very few items were classified as negative in tone. Partial correlation analysis revealed that none of the nine evaluative classifications were related to any of the classifications of the children (Table 8.2.4N).

An evaluative consistency quotient was then calculated for each child as was suggested by Peevers and Secord (1974). This measure was devised by subtracting the number of negative items from the total number of items and dividing by the total number of items. With so few negative items in the calculation the quotient usually worked out at 100%. Thus it was not surprising to find that partial correlation analysis revealed no relationship between the children's evaluative consistency quotients and any of the classifications of the children (Table 8.2.4N).

#### 8.2.5 Second analysis of the children's descriptions of their friends

Although the classification scheme devised by Peevers and Secord was useful for exploring the developmental differences between groups of children in the way they conceptualized their peers, it was not specifically designed to investigate the cognitive conceptualization of children with asthma. Thus, it was possible that certain features peculiar to the way the children with asthma described their friends have not been detected by Peevers and Secord's classification scheme.

The classification scheme devised by Richardson et al (1964) was obtained inductively from a content analysis of the peer descriptions of physically handicapped children. The

TOTAL 8.24N: Relationship of the "evaluative" classification of the children's descriptions of their friends to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Positive	.13	-.06	-.13	.01	.10	-.04
Negative	-.13	-.14	-.17	-.01	.14	-.02
Neutral	.13	.02	-.05	-.01	-.10	-.03
(b) Average no. of items per description of friend						
Positive	.10	-.13	-.04	-.08	-.12	-.01
Negative	-.13	-.14	-.17	-.01	.14	-.02
Neutral	.12	-.02	-.06	-.07	-.05	.08
(c) Proportion of total description						
Positive	.08	-.03	-.15	.20	-.04	.01
Negative	-.14	-.13	-.17	.01	.14	-.02

TABLE 8.2.4N (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Neutral	.19	-.10	-.08	.06	-.04	.01
Evaluative consistency quotient	-.06	-.09	-.13	-.09	.14	-.02

Note: Figures give Kendall's tau values of the relationship of the "evaluative" classifications to the different classifications of the children

categories in this quantitative classification scheme were specifically designed for an analysis of the peer descriptions of that particular group of children. In addition, the categories were poorly defined. Despite these two obstacles, Richardson et al's classification scheme could assist us in the design of a new classification scheme to investigate the way children with asthma describe their friends.

The technique we employed in the design of such a new scheme was based upon a re-analysis of the four descriptiveness categories, bearing in mind the findings of Richardson et al. The reason this method was preferred to a re-analysis of all the items together was that the descriptiveness classification broke the large number of items down into more manageable groups of items whose qualitative content bore some resemblance to the categories devised by Richardson et al. In addition such a re-analysis of the descriptiveness classification could increase our understanding of its developmental characteristics.

Each descriptiveness classification of items was considered in turn bearing in mind the 69 categories devised by Richardson et al. Close examination revealed several new categories within each of the basic classifications which were similar to those reported by Richardson et al.

The 114 undifferentiating items included all those descriptive items referring to the friends' social setting and possessions. In their analysis Richardson et al had found that the handicapped children rarely referred to "spatial location." Noting the frequency of items referring to where the children's friends lived, we devised our first new category:

(1) place of residence: all items referring to where the friend lived. For example: "He lives near me;"

"She lives across the road from me"

The 465 simple differentiating items contained all references to the superficial characteristics, global judgements, and the relationships between the friends and the children. Richardson et al had found that handicapped boys spoke more of "humour."

This finding formed the basis of our second new category:

(2) Humour: all items referring to humour. For example:

"He's a good laugh;" He's good for a laugh."

The 217 differentiating items were concerned with the friends' interests, abilities, and beliefs. Richardson et al had found that handicapped girls spoke more about non-physical recreation, and handicapped boys spoke less about physical ability in their self-descriptions. This information suggested three new categories within the differentiating category:

(3) Physical activity: all items referring to active physical pursuits like football and athletics.

For example: "He likes playing football;"

"He is a professional runner."

(4) Non-physical activity: all items referring to less physical recreation and non-specific games.

For example: "We play long jump round his back;" "We play in the park."

(5) Indoor activity: all items referring to indoor recreation, like playing with toys or model building.

For example: "We play card games;" "We

play dolls up in her room."

The 68 dispositional items referred to descriptions in terms of traits which had implications for the friends' behaviour in various situations. Richardson et al had found that handicapped girls spoke less about generosity in their self descriptions. On the basis of this information we devised a sixth new category:

(6) Helpful: all items referring to assistance provided by the friend. For example: "She always wants to help you;" "He tells you the right things to do."

Although these six new categories do not form a complete re-classification scheme, they do consider those issues which Richardson et al identified as being of particular importance for an understanding of the social relations of handicapped children.

Two judges re-classified the 864 items according to the six new categories. Table 8.2.5 shows the extent of agreement between the two judges in reclassifying the descriptive items. It was only with the differentiating and dispositional items that the two judges could not find complete agreement. A third judge was necessary to re-classify 22 of these items.

Having classified all the items a series of secondary coding schemes was devised to render the data more manageable for computation. Three coding schemes were designed to classify the total number, the average number, and the proportion of the total number of items which were classed in the "place of residence" category. A fourth coding scheme classified the proportion of undifferentiating items which were classed in the "place of residence" category.

TABLE 8.2.5: Intra-judge agreement on the re-classification of the "descriptiveness" categories into the six new categories

Descriptiveness category	Percentage agreement		Items coded by third judge
	1st coding	2nd coding	
Undifferentiating	112 (100%)	-	-
Simple differentiating	462 (99.4%)	465 (100%)	-
Differentiating	194 (89.4%)	201 (92.6%)	16
Dispositional	59 (86.7%)	62 (91.2%)	6

A series of coding schemes repeated this exercise for the other five new categories. One of the coding schemes for each new category was designed to accommodate the proportion of the relative descriptiveness classification which had been classed in that particular new category. All the coding schemes, together with the number of descriptive items in each category, are given in Appendix 8.2.5.

#### 8.2.6 Children's descriptions of their friends (2)

Of the 114 undifferentiating items, 65 (57%) were re-classified as place of residence items. This represented an average of 0.4 place of residence items for each friend described, and 7.5% of the total number of descriptive items.

Partial correlation analysis revealed that two out of the four place of residence classifications were related to the sex of the children (Table 8.2.6A). The girls used a larger total number of place of residence items which formed a larger proportion of the total number of descriptive items (Table 8.2.6B).

The place of residence classification was not related to whether or not the children had asthma nor to either the clinical or physiological classifications of the children with asthma (Table 8.2.6A).

Of the 465 simple differentiating items, 28 (6%) were re-classified as humour items. This represented an average of 0.2 humour items for each friend described and 3.2% of the total number of descriptive items.

TABLE 8.2.6A: Relationship of the "place of residence" classification of the children's descriptions of their friends to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of place of residence items	-.04	.14	.11	-.23*	-.10	.11
Average no. of items per description of friend	-.01	.08	.05	-.19	-.07	.18
Proportion of total description	-.11	.11	.14	-.24*	-.11	.12
Proportion of 'undifferentiating' items	.04	.10	.17	-.20	-.09	.14

Note: Figures give Kendall's tau values of the relationship of the "place of residence" classification to the different classifications of the children

\*  $p < 0.05$

TABLE 8.2.6B : Items from "place of residence" classification of the children's descriptions of their friends related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 2 place of residence items	6(17.2%)	11( 44 % )

Partial correlation analysis revealed that three out of the four humour classifications were significantly related to whether or not the children had asthma but not to any of the other classifications of the children (Table 8.2.6C). The children with asthma used a smaller average number of humour items for each friend described, and their total number of humour items formed a smaller proportion of both the total number of descriptive items and of the simple differentiating items (Table 8.2.6D).

Of the 217 differentiating items, 212 (97.7%) were re-classified into the three activity categories. Table 8.2.6E shows that most of the differentiating items were classified in the physical activity category, followed by the non-physical activity category, and then the indoor activity category. Partial correlation analysis revealed that all twelve of the activity classifications were related to one or more of the classifications of the children (Table 8.2.6F).

Figure 8.2.6 presents graphically the proportion of differentiating items assigned to the three activity categories for children with and without asthma. The children with asthma used a larger total number, and a larger average number per friend described, of both non-physical and indoor activity items which each formed a larger proportion of both the total number of descriptive items and of differentiating items (Table 8.2.6G).

The boys used a larger total number and a larger average number per friend described of physical activity items, which formed a larger proportion of both the total description and of the differentiating items (Table 8.2.6H).

TABLE 8.2.6C: Relationship of the "humour" classification of the children's descriptions of their friends to the different classifications of the children.

Classification of description	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of humour items	-.19	-.20	-.16	.11	.13	-.09
Average no. of humour items per description of friend	-.21*	-.17	-.16	.13	.13	-.12
Proportion of total description	-.22*	-.17	-.15	.10	.13	-.12
Proportion of 'simple differentiating' items	-.21*	-.16	-.14	.11	.13	-.12

Note: Figures give Kendall's tau values of the relationship of the "humour" classification to the different classifications of the children.

\*  $p < 0.05$

TABLE 8.2.6D : Items from the "humour" classification of the children's descriptions of their friends related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Average no. of items per description of friend		
More than 0 humorous items	6 (20 % )	11(36.7%)
Proportion of total description		
Over 10% humorous items	1( 3.3%)	5(16.6%)
Proportion of 'simple differentiating' items		
Over 20% humorous items	1( 3.3%)	4(13.3%)

TABLE 8.2.6E: Reclassification of the differentiating items into the three "activity" categories

	Categories		
	Physical	Non-physical	Indoor
Total no. of items	92	85	35
Average no. of items per description of friend	0.5	0.5	0.2
Proportion of total	10.6%	9.8%	4.1%
Proportion of differentiating items	42.4%	39.2%	16.1%

TABLE 3.2.6F: Relationship of the "activity" classification of the children's descriptions of their friends to the different classifications of the children.

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total No. of items						
Physical activity	-.04	.07	.01	.40***	.12	-.13
Non-physical activity	.24*	.06	.03	-.01	.05	.14
Indoor activity	.27*	-.01	.14	-.11	-.25	-.01
(b) Average no. of items per description of friend						
Physical activity	-.04	.07	.01	.40***	.12	-.19
Non-physical activity	.25*	.05	.06	-.05	.11	.12
Indoor activity	.28*	.01	.16	-.14	-.26	-.02

TABLE 8.2.6F (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Physical activity	-.10	.12	.02	.42***	.25	-.19
Non-physical activity	.29**	.08	.11	-.07	.19	.09
Indoor activity	.27*	.01	.16	-.12	-.25	-.02
(d) Proportion of 'differentiating' items						
Physical activity	-.10	.01	.01	.41***	.21	-.23
Non-physical activity	.23*	-.04	.05	-.16	.25	.18
Indoor activity	.26*	-.03	.16	-.20	-.28	-.04

Note: Figures give Kendall's tau values of the relationship of the "activity" classifications to the different classifications of the children.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$

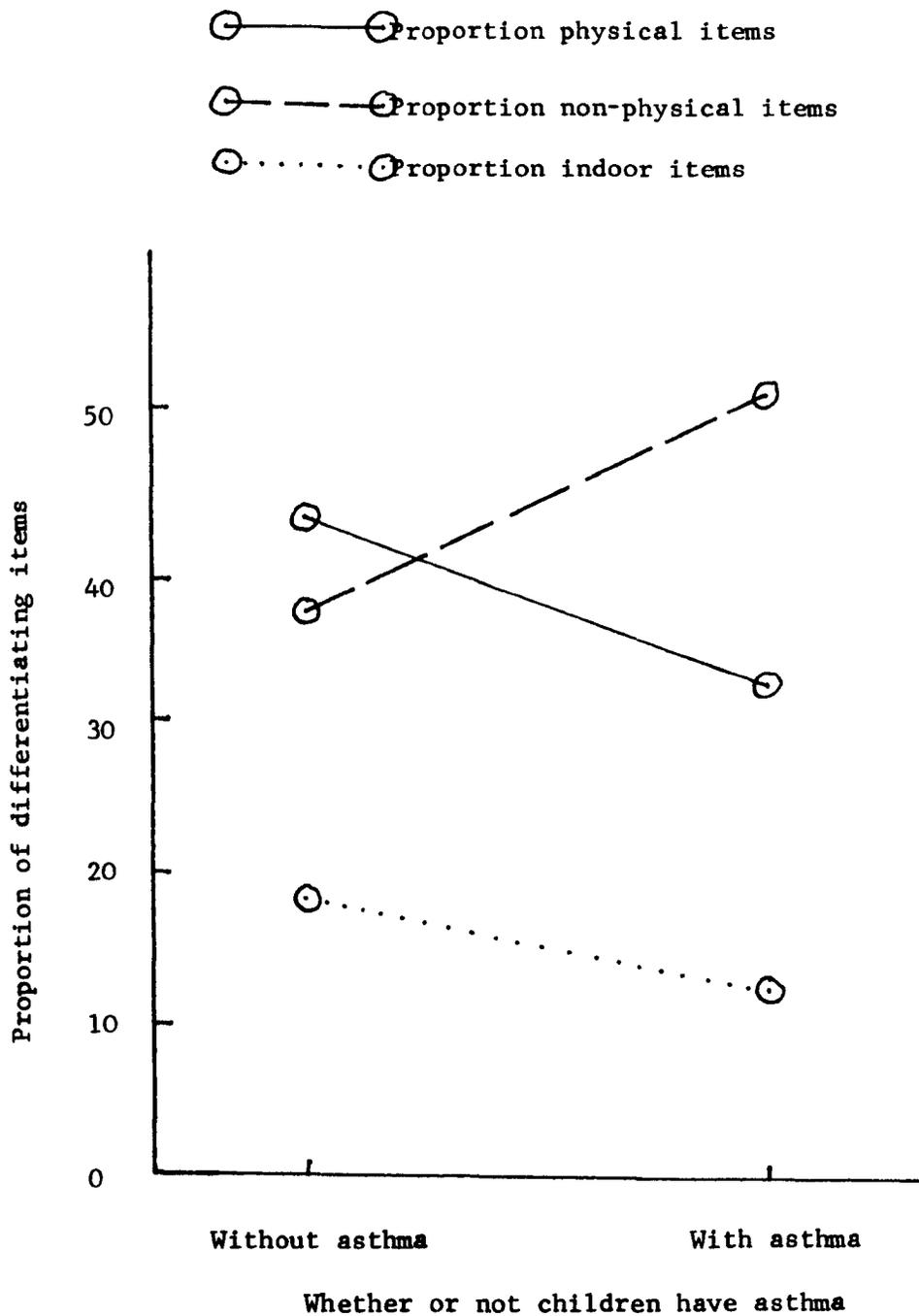


Fig. 8.2.6: "Activity" reclassification of the differentiating items in the friend descriptions of the children with and without asthma

TABLE 8.2.6G: Items from the "activity" classification of the children's descriptions of their friends related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Total no. of items		
At least 5 non-physical items	4(13.3%)	0
At least 1 indoor item	14(43.3%)	7(23.3%)
Average no. of items per description of friend		
More than 1 non-physical item	7(23.3%)	2( 6.7%)
More than 0 indoor item	14(43.3%)	7(23.3%)
Proportion of total description		
Over 10% non-physical items	17(56.7%)	7(23.3%)
Over 10% indoor items	5(16.7%)	2( 6.7%)
Proportion of 'differentiating' items		
Over 40% non-physical items	16(53.3%)	7(23.3%)
Over 20% indoor items	11(36.7%)	6(20 %)

TABLE 8.2.6H: Items from the "activity" classification of the children's descriptions of their friends related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 3 physical items	13(37.1%)	2(8 %)
Average no. of items per description of friend		
More than 1 physical item	13(37.1%)	2( 8 %)
Proportion of total description		
Over 20% physical items	11(31.4%)	1( 4 %)
Proportion of 'differentiating' items		
Over 40% physical items	20(57.1%)	3(12 %)

Considering the replies of the children with asthma separately we found that none of the activity classifications was related to either the clinical or physiological classifications of the children (Table 8.2.6F). There was, however, a tendency for the children with asthma rated clinically severe to report more items concerned with indoor activity.

Of the 68 dispositional items, 44 (64.7%) were reclassified as helpful items. This represented an average of 0.3 helpful items for each friend described and 5.1% of the total number of descriptive items.

Partial correlation analysis revealed that all four helpful classifications were related solely to whether or not the children had asthma (Table 8.2.6I). The children with asthma used a smaller total number, and a smaller average number for each friend described, of helpful items. This formed a smaller proportion of both the total description and of the number of dispositional items (Table 8.2.6J).

Considering the replies of the children with asthma separately, we found that none of the helpful classifications was related to either the clinical or the physiological classification of the children (Table 8.2.6I).

TABLE 8.2.6I: Relationship of the "helpful" classification of the children's descriptions of their friends to the different classifications of the children.

Classification of description	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of helpful items	-.24*	-.14	-.14	-.16	.08	.07
Average no. of helpful items per description of friend	-.25*	-.13	-.16	-.16	.10	.05
Proportion of total description	-.24*	-.11	-.14	-.15	.09	.08
Proportion of 'dispositional' items	-.24*	-.11	-.15	-.15	.11	.04

Note: Figures give Kendall's tau values of the relationship of the "helpful" classification to the different classifications of the children.

\*  $p < 0.05$

TABLE 8.2.6J : Items from the "helpful" classification of the children's descriptions of their friends related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Total no. of items		
At least 1 helpful item	4(13.3%)	11(36.7%)
Average no. of items per description of friend		
More than 0 helpful items	4(13.3%)	11(36.7%)
Proportion of total description		
Over 10% helpful items	2( 6.7%)	10(33.3%)
Proportion of 'dispositional' items		
Over 40% helpful items	4(13.3%)	11(36.7%)

8.2.7 Analysis of the section of the children's interviews  
which sought specific information about their friendships

All the children's replies to this section of the interviews were transcribed from the tape-recordings. Although the format of the interview was different for each child, their replies were arranged in a similar format for ease of analysis (see section 6.2.3). A random sample of ten transcripts was selected and content analysed by the author and a research psychologist. On the basis of this collaborative content analysis, a provisional coding scheme for this section of the children's interviews was devised.

The categories in each frame of this coding scheme were quantitative. This meant that it was possible for the author alone to classify the other fifty transcripts. He found that, save for two coding frames, the provisional coding scheme was sufficient for the classification of all the children's replies.

Those two coding frames which the author found unsatisfactory, together with those children's replies which did not fit, were then discussed with the other judge. On the basis of this discussion, an additional category was added to both of these coding frames, which enabled the content analysis of the children's replies to be completed. The final coding scheme, together with the number of children's replies coded in each category, is presented in Appendix 8.2.7.

Having coded all the children's replies, a partial correlation analysis was performed with the six classifications of the children. Where a coding frame contained a "Don't know" or

a "not relevant" category, details of those children who were classified in these categories were excluded from the analyses.

The last three coding frames are not ordinal in design and hence unsuitable for the Kendals tau analyses. To overcome this problem, certain of the categories were combined into two larger categories upon which the analysis could be performed.

The appendix indicates which categories were excluded from certain analyses, and which categories were combined for other analyses.

#### 8.2.8 Certain other aspects of the children's friendships

Thirteen coding frames were used for the analysis of this section of the children's interviews (Appendix 8.2.7). After excluding from each particular analysis those children who did not give a reply to that question, partial correlation analysis revealed that eight coding frames were related to one or more of the classifications of the children (Table 8.2.8A).

Considering all the children's replies together, we found that two items from the coding scheme were related to whether or not the children had asthma (Table 8.2.8A). Although the majority of children considered they had sufficient friends, the children with asthma were more likely than their healthy peers to admit that they would like a few more friends (Table 8.2.8B). The children with asthma, especially the younger children, were also less likely to report that they usually shared their secrets with their friends (Tables 8.2.8B and C). Having excluded those six children who did not have a sibling, or did not answer the

Table 8.2.8A: Relationship of the items concerning friends from the children's interviews  
to the different classifications of the children

Items	Classifications of the children					
	Asthma	Age	Social class	Sex	Clinical	Physiological
Frequency of meeting friends	-.05	-.04	.04	.11	.09	.06
Similarity of friends' interests	-.06	-.16	.07	.24*	-.15	.08
Shares secrets	-.25*	-.30**	-.03	.08	-.21	.01
Preference for friends	-.05	-.24*	-.03	-.18	-.04	-.03
Desirous of friends	.22*	.09	.19	-.01	-.04	.22
Friends like self	.06	.09	-.08	.13	-.35*	.04
Worried at friends' dislike	-.20	-.11	.25*	-.18	-.05	.22
Worse at sport	.20	-.20	-.05	-.17	-.06	.20
Weaker	.06	-.15	.05	-.26*	-.03	.19
Comparison in general	-	-	-	-	-	-
Called names	.03	.09	.18	.03	-.43**	.12
Ignore name-calling	-.21	-.23*	-.27*	.48***	.56***	-.49**

Table 8.2.8A (cont)

	Asthma	Age	Social class	Sex	Clinical	Physiological
Interpersonal fears	.07	-.09	.11	-.14	.17	-.18

Note: Figures give Kendall's tau values of the relationship of items to the different classifications of the children.

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

Table 8.2.8B: Items concerning friends from the children's interviews related to whether or not the children have asthma

Items	Children	
	With asthma	Without asthma
Shares secrets with friends	17(56.7%)	24(80%)
Desirous of more friends	10(33.3%)	4(13.3%)

Table 8.2.8C: Items concerning friends from the children's interviews related to the age of the children

Items	Age of children	
	Young	Old
Shares secrets with friends	16(53.3%)	25(83.3%)
Prefer siblings to friends	13(50%)	8(28.6%)
Ignore name-calling	12(60%)	18(81.8%)

Table 8.2.8D: Items concerning friends from the children's interviews related to the social class of the children's families

Items	Social class of the children's families	
	Middle class	Working class
Worried if friends dislike self	6(46.2%)	12(26.7%)
Ignore name-calling	6(54.6%)	24(75%)

question, partial correlation analysis revealed that the younger children were more likely to claim that they preferred their friends to their siblings.

Name-calling seemed a frequent occurrence, with 28 (46.7%) children having a nickname, 12 (20%) being sometimes called unpleasant names, and another 2(3.3%) children being called names referring to their physique. Excluding those children who were not called names, partial correlation analysis revealed that the older boys, especially those from working class families, were most likely to not care about, or just ignore, the name-calling (Tables 8.2.8C, D and E).

The boys were more likely to report that their friends had similar interests to their own, and that they themselves were stronger than their friends (Tables 8.2.8A and E). The children's comparisons with their friends of their abilities at sport and in general were not related with any classification of the children (Table 8.2.8A). It was interesting to note that all the children estimated that compared with their friends they themselves were average in their general abilities.

Considering the replies of the children with asthma separately, partial correlation analysis revealed that two items from the coding scheme were related to the clinical classification of the children's asthma, and another item to both the clinical and physiological classifications (Table 8.2.8A). The children with asthma classed as clinically severe were more likely to report that they thought most of their friends liked them (Table 8.2.8F). In addition, those children more frequently

Table 8.2.8E: Items concerning friends from the children's interviews related to the sex of children

Items	Sex of children	
	Boys	Girls
Friends have similar interests	12(34.3%)	3(12%)
Stronger than friends	7(20%)	2(8%)
Ignore name-calling	21(87.5%)	9(50%)

Table 8.2.8F: Items concerning friends from the children's interviews related to the clinical severity of the children with asthma

Items	Clinical severity of children's asthma		
	Mild	Moderate	Severe
Most friends like self	9(90%)	9(100%)	9(100%)
Called denigratory names or names referring to physique	0(0%)	3(30%)	4(40%)
Ignore name-calling	5(100%)	6(66.7%)	3(42.9%)

Table 8.2.8G: Items concerning friends from the children's interviews related to the physiological severity of the children with asthma

Items	<u>Physiological severity of asthma</u>		
	Mild	Moderate	Severe
Ignore name-calling	5(71.4%)	3(42.9%)	6(85.7%)

reported that they were called denigratory names or names referring to their physique by their peers. Excluding those children who were not called names, partial correlation analysis revealed that the children with asthma classed as clinically severe, and as physiologically mild, were also less likely to report that they ignored such name-calling (Tables 8.2.8F and G).

The other two items from the coding scheme which were not related to any classification of the children referred to the amount of contact with friends, and what sorts of events the children were most afraid of. Only 7 (11.7%) children reported that they just met their friends at school, while the others reported that they also met them after school.

Finally, in addition to the 15 (25%) children who could not think of anything they were afraid of, 14 (23.3%) children mentioned animals, 10 (16.7%) interpersonal problems, 4(6.7%) family problems, 9 (15%) the dark, and 8 (13.3%) various other fears. This coding frame was collapsed into two categories of "interpersonal and family problems" and "other fears" for the partial correlation analysis. However, after excluding the fifteen children who did not report any fears from the analysis, we found that the type of fears was not related to any classification of the children.

## 8.3 DISCUSSION

### 8.3.1 General overview

The results have confirmed our prediction that examination of the way children with asthma describe their friends would increase our understanding both of their psychological development and of the social context of childhood asthma. The clear developmental differences between the friend descriptions of the children with and without asthma, revealed by Peevers and Secord's coding guide, indicated the lack of cognitive development of the children with asthma and the extent of the problems in their social interaction. The characteristics of the problematic friendships of the children with asthma was further revealed by the supplementary analysis of their peer descriptions and by the specific queries about friendship. Unfortunately, this investigation did little to increase our understanding of the variations in the clinical severity of childhood asthma. Further details of these findings will be discussed in section 8.3.3

The age differences in the way the children described their friends confirmed the work of Peevers and Secord, and of other researchers, on the development of descriptive concepts and of friendship. The analysis of the children's friend descriptions and of their replies to the specific questions about friendship confirmed that as children grow older their friendships become more established. These findings will be discussed in more detail in section 8.3.4

The social class differences in the children's

descriptions of their friends suggested that children from working class families have more developed cognitive processes and more established friendships than their peers from middle class families. This will be discussed in section 8.3.5.

The sex differences in the children's friend descriptions largely confirmed previous research. The emphasis placed by the boys upon physical activities suggested that their friendships were more unstable than those of the girls. These findings will be discussed further in section 8.3.6.

Besides the findings showing that children differed in the way they described their friends, the overall picture of friend descriptions revealed by the two content analyses is worthy of comment since it helped increase our general understanding of friendship among children. These overall findings will be discussed in the next section.

### 8.3.2 Characteristics of the children's descriptions of their friends

One of the most striking findings was the similarity between the results of Peevers and Secord's original study and our own. For third grade children (aged 8-9 years), Peevers and Secord found that 12% of their friend descriptions were coded as undifferentiating items, 53% were simple differentiating items, 22% were differentiating items, and 13% were dispositional items. The respective percentages obtained when we classified the friend descriptions provided by the children in our study on the descriptiveness dimension were: 13%, 54%,

25% and 8%. Besides the slightly larger proportion of differentiating items, and the smaller proportion of dispositional items (which will be considered further in the next section), it would seem that the coding scheme devised by Peevers and Secord is a reliable method of classifying the peer descriptions of children.

It is obvious that for this age group peer descriptions are largely superficial. Most of the descriptive items were classified into the simple differentiating category, while few were classified into the dispositional category. The emphasis placed upon the variable characteristics of the friends would indicate that, in general, friendships among this age group are relatively unstable. This suggestion was rather confirmed by the children's replies to the specific questions about friendship. Besides those replies which were specifically related to observer characteristics, we found that the majority of children expressed little distress at the idea of problems with their friends which could lead to the possible disintegration of their friendships.

Using the personal involvement classification, Peevers and Secord found that 24% of the third grade children's peer descriptions were assigned to the egocentric category, 12% to the mutual category, and 64% to the other-oriented category. Using the same classification scheme, we found that 43% of the descriptive items provided by the children in our study were egocentric, 13% were mutual, and 44% were other-oriented. Although, like Peevers and Secord, we found that mutual items

composed only a small proportion of the children's descriptions, we found more egocentric items and fewer other oriented items than they reported in their study. A possible explanation for this difference was the definition of egocentric items. Peevers and Secord defined them as all those items "in which a singular personal pronoun is used in such a way as to involve P unilaterally in the descriptive items. These pronouns are I, me, my, mine, and you - when used in the I sense." When the judges examined the friend descriptions provided by the children in our study, they found an excessive use of the pronoun "you", which perhaps reflected a specific characteristic of the children's culture. After discussion, they decided that if the context, that is the previous and sequential items, suggested the "you" referred to the child, then that item was classified as egocentric. In cases of doubt, the judges preferred the colloquial usage of "you" as a personal pronoun. This, perhaps, rather generalised interpretation of the term "you" meant that many items which Peevers and Secord might have classified as other-oriented were classified as egocentric in our study.

This would suggest that the children in our study were not quite so egocentric as the figures might imply. Despite this caution, it was still the case that the children involved themselves to a large extent in their friend descriptions. The characteristics of the friends were often mentioned with reference to the observer. This egocentric nature of their friend descriptions is another indication of the lack of

cognitive development of these children.

The evaluative tone classification of the descriptive items contributed little to our understanding of the children's descriptions. The reluctance of the children in our study to use any negative items in their descriptions was probably due to the interview format. In our study the children were only asked to describe each friend. In Peevers and Secord's study the children were also asked "Is there anything about him that you don't like?" As a result, they found that roughly 10% of the descriptive items they obtained were of a negative tone. It would seem that children are reluctant to express any negative comments about their friends unless specifically asked.

The re-analysis of the descriptiveness classification of the descriptive items, using the coding scheme suggested by the work of Richardson and his colleagues, revealed some interesting information about the characteristics of the children's friendships. Over half (57%) of the undifferentiating items were reclassified into the "place of residence" category. The frequent use of such uninformative items by the children indicate the superficial nature of their descriptions. It also illustrates the importance of proximity in friendship development. Although the distance between the children's and their friends' homes was not considered in this analysis, a post hoc review of the 'place of residence' items revealed how the distance between homes was often used as a criterion of friendship, e.g. "The best thing is she just lives round the corner from me," and "I don't really see her after school because she lives too far away."

Very few (6%) of the simple differentiating items were classified into the 'humour' category. Dornbusch et al (1965) reported that, using the 69 category 'Richardson' coding scheme, the humour category was among the twelve most popular categories in their analysis of children's peer descriptions. However, they also noted that the most popular category (unspecified) only contained 12% of the total number of descriptive items. Apparently, humour is not a crucial dimension in the friend descriptions of children of this age. Perhaps older children and adults might place greater emphasis upon humour in their peer descriptions.

The majority (97.7%) of differentiating items were re-classified into the three activity categories. This would indicate that children of this age have not yet developed the capacity to conceptualize the beliefs, values and feelings of their peers, and, probably, of themselves. To an extent, such characteristics are dispositional in nature since they can be used to predict a person's behaviour in various situations. Beliefs and values are not as 'concrete' as the interest, activity and ability items also classified in the differentiating category. They are of a more 'psychological' nature and were classified by Livesley and Bromley (1973) as 'central' statements. Although they are not as useful predictive devices as dispositional characteristics they become of increasing importance for adolescents and adults in their choice of friends.

Livesley and Bromley (1973) found that the frequency of usage of 'beliefs, attitudes and values' gradually increased

with age. They noted that "it was only in adolescence that these categories were used relatively frequently - reflecting perhaps the adolescent's concern with religious and political values and his search for a relevant value system."

Most of the differentiating items used by the children in our study were concerned with their friends' interests and play activities: 42.4% mentioning 'physical activities', 39.2% 'non-physical activities', and 16.1% 'indoor-activities'. The importance placed by the children on these characteristics would reflect another aspect of the instability of their friendships. A change in the interests of their peers would probably lead to the disintegration of those friendships.

The characteristics of the interests and activities referred to most frequently would indicate that childhood friendships are developed out of doors, which is not unexpected. The restrictions placed upon their social interaction with their peers at home and at school apparently prevents the development of friendships. It is only when the children have freedom to engage in activities outside of home and school that they have the opportunity of developing relationships with their peers.

The majority (64.7%) of dispositional items were re-classified into the 'helpful' category. This would indicate again, that the children in our study were obviously still at an early stage in the development of their friendships. Bigelow and La Gaipa (1975) listed 'friend as a help-giver' as the earliest expectation of friendship recorded in Grade 2

children (6 - 7 year olds). Selman and Jaquette (1977) reported empirical evidence from interviews with children that the first stage in 'friendship awareness' is 'one-way assistance'. Those few dispositional items which young children use to describe their friends could, perhaps, be described as egocentric dispositional items. Although they are useful for predicting the behaviour of their friends, they are concerned with characteristics of the friends which could benefit the observer.

Overall, the analysis using Peevers and Secord's original classification scheme, supplemented with the classification scheme derived from the work of Richardson and his colleagues, was quite effective in revealing various characteristics of the psychological development and social interaction of children of this age group. Our findings suggest that 8-12 year olds do not have stable friendship patterns and this instability is reflected in the type of items they use to describe their friends. We would expect that as children get older their use of the more cognitively developed dispositional items would increase as the extent of the children's interpersonal experiences increase.

### 8.3.3 Relationship of whether or not the children had asthma to how they described their friends

The results of the analysis confirmed our prediction that the children with asthma would not be as developed as their healthy peers in their descriptions of their friends.

The children with asthma used more differentiating items and fewer dispositional items than their healthy peers. This indicates that the children with asthma had not differentiated their friends as fully from their environment as had their healthy peers. In addition, the lesser use of other-oriented items by the children with asthma would indicate that these children had not as fully differentiated their friends from themselves as had their healthy peers.

The effects of this apparent lack of cognitive development on the social interaction of children with asthma could, as we shall see, be immense. In the previous chapter we explained how the assignment of the asthma label to children led to their social exclusion. Our analysis of the peer descriptions of children with asthma would suggest that such social exclusion restricts the development of the 'social intelligence' (Hartup, 1978) essential for successful social interaction. Their original rejection by their peers on the basis of the asthma label would be reinforced by their awkwardness in social interaction due to their under-developed cognitive processes. Thus, the rejected children with asthma could be expected to develop the classical characteristics of the 'asthmatic personality', i.e. introversion and social incompetence. As we shall see, such adverse effects in childhood could also influence their behaviour in adulthood.

Our finding that the children with asthma used few dispositional items to describe their friends would agree with our claim that these children have difficulties with their

social relations. The descriptive items classified in the dispositional category were those "traits which had implications for his (the friend's) behaviour in a wide range of situation" (Peevers and Secord, 1973). According to Heider (1958), the use of such items is important for our social survival since they "make possible a more or less stable, predictable, and controllable world" Unless it is possible to identify these cross-situational dispositional characteristics of a person, then it would be difficult to establish a stable relationship with that person which could carry across situations.

The small proportion of dispositional items in the friend descriptions of the children with asthma would suggest that they would have difficulties in establishing friendships. Their inability to identify the invariant characteristics of potential friends would mean that their reaction to them would vary depending upon those persons' behaviour and the characteristics of the situation. The tendency of children with asthma to react to the variable characteristics of their peers would mean that their side of the friendship would cease once their peers ceased to exhibit the valued behaviour.

In their introduction to their study of peer descriptions, Livesley and Bromley (1973) emphasized that "effective action in personal relationships requires a selective perception of behaviour and a sensitive understanding of the covert psychological processes underlying overt actions." The children with asthma had apparently not developed this sensitivity to identify those covert psychological processes

which would have been classified as dispositional items. This lack of sensitivity would mean that children with asthma would react to the behaviour of their peers in an unsophisticated and rash manner which could repel potential friends.

Finally, because they find it difficult to identify the dispositional characteristics of their friends, children with asthma would tend to react in a similar manner to different individuals. Since success in social interaction requires the ability to identify the particular characteristics of individuals and so adapt our behaviour to those characteristics (Argyle, 1972), children with asthma would find difficulty in establishing friendships.

Our finding, when we re-analysed the dispositional items, that the children with asthma used fewer 'helpful' items underlined the inadequacies of the social relations of those children. The 'helpful' category was suggested by the 'generosity' category in the coding scheme devised by Richardson et al (1964). They found that handicapped girls in their study referred the least to 'generosity' in their self-descriptions. When they considered the direction of the 'generosity' descriptive items they found that "in terms of 'self' and 'other' only non-handicapped girls emphasized the generosity of others." Since our 'helpful' category was defined specifically for descriptions of helpfulness from the friend, our findings agree with those of Richardson et al who, in addition, claimed that their finding was further evidence of

the egocentric character of handicapped children.

This lack of reference by children with asthma to helpfulness from their friends would indicate that they are insensitive to the generosity of their peers. Thus, they would not be expected to acknowledge the provision of assistance by their peers nor to develop the reciprocal characteristics of the relationship by returning the generosity. Aydin (1978) has noted that helpfulness towards peers is a characteristic of popularity. The apparently unhelpful manner of children with asthma would be expected to diminish their degree of popularity and to contribute to their difficulty in forming friendships.

The larger proportion of differentiating items used by the children with asthma in their friend descriptions indicates that these children place greater emphasis on the interests and abilities of their friends. Unlike the dispositional items, differentiating items <sup>are</sup> "temporary states or conditions" which lack predictive power and so are not important in establishing friendships. Rather it would be expected that any friendships which were based upon these differentiating characteristics would be unstable since those characteristics are liable to change over time and situation.

As stated in the previous section, an emphasis upon differentiating items is an indication of undeveloped friendships. Once the peers changed their valued interests and activities, the children with asthma would be likely to cease to consider them as friends.

The characteristics of the instability in the friendships of children with asthma was revealed by the secondary analysis of the differentiating items. This showed that the children with asthma referred more frequently to their friends' non-physical and indoor activities. Such activities are probably preferred by children with asthma because of the limitations, imposed by the illness itself or by their parents or by themselves, on their involvement in physical activities. Their friends, however, might not have such stringent limitations on their involvement in physical activities and might participate in such activities at a later date. In that situation, their friendship with children with asthma would probably cease. This pattern of unstable friendships was illustrated specifically in the peer descriptions of one child with asthma who said: "He doesn't play with me any more because he plays football."

The emphasis upon non-physical and indoor activities in the friend descriptions of the children with asthma would indicate their preference for sedentary play activities. This might be because their illness physically prevented their involvement in active pursuits or that they themselves adopted a very cautious attitude to involvement in them. Alternatively, a generally over-protective attitude on the part of their parents, or a reluctance on the part of their healthy peers to engage an 'at-risk' child in their physical activities, would explain why the children with asthma developed more friendships with those peers who preferred

non-physical activities. The evidence from the previous chapters would suggest that all of these factors interact with each other such that children with asthma are overly restricted from involvement in physical activities.

Although the children with and without asthma used a similar proportion of undifferentiating items in their friend descriptions, when we re-analysed these items we found that the children with asthma used a smaller proportion of 'humour' items. This finding was unexpected since the 'humour' category had been suggested by the work of Richardson and his colleagues who had found that handicapped boys spoke more of humour. They had suggested that a possible reason for this was that handicapped people had traditionally played the role of the jester and the buffoon as a means of gaining social acceptance.

However, in Richardson et al's study the object of the humour items was the handicapped boys themselves. Thus, although it might well be that children with asthma play the jester role themselves, they do not identify the characteristics of the jester in their friends.

The smaller proportion of other-oriented items in the friend descriptions of the children with asthma compliments the small proportion of dispositional items in the descriptiveness classifications of their friend descriptions. The personal involvement classification was based partly on Piaget's theory of cognitive development. According to this theory, in early adolescence children reach the cognitive

stage of formal operations in which they can handle abstract concepts. Applying this theory to the field of social relations, Peevers and Secord emphasized that one of the stages in the development of perceptual categories is our ability to conceptualize our peers in an abstract sense, as divorced from interaction with ourselves. The smaller proportion of other-oriented items used by the children with asthma would suggest that they were not as developed in this stage as the healthy children.

Apparently, children with asthma are confined within an egocentric view of the world and find it difficult to grasp their peers' points of view, or, in the Meadian sense, to "take the role of the other" in interpreting particular situations. In their social interaction, these children would tend to regard their own point of view as the only one and so misunderstand their peers' behaviour. Gottman et al (1975) have argued that it is this ability to grasp others' points of view and to take the role of others which is the hallmark of the socially successful person. Thus, the smaller use of other-oriented items by the children with asthma is another indication of the problems which they face in establishing friendships.

The immature friendship patterns of the children with asthma was confirmed by their replies to the more particular questions on friendship. Our finding that more of the children with asthma reported that they would like other friends and that they were reluctant to share secrets with

their current friends indicates the shallow nature of their friendships. Their greater desire for more friends would suggest that they either have few friends or that they are more dissatisfied with the friends that they do have.

The greater reluctance of the children with asthma to share secrets with their friends would indicate that they had not reached the mature form of friendship which Bigelow (1977) has termed the 'empathic' stage. In this stage children are prepared to disclose their secrets since they are sure of the trustworthiness and loyalty of their secure friendships. Thus, the secretiveness of the children with asthma can be taken as a sign of their feelings of insecurity as regards their friendships.

When we considered separately the friend descriptions of the children with asthma we were disappointed to find that not one single classification of the descriptive items was related to either the clinical or physiological classifications of the children's asthma. We had predicted that those children with the most clinical symptoms would have the most unstable friendships and that this would be reflected in their use of more undeveloped descriptive items. These negative findings would suggest that degree of symptomatology, or of bronchial sensitivity, is not related to the quality of the children's friendships. Rather, it would seem that irrespective of the clinical or physiological status of their asthma, most of these children suffer to an extent from social isolation.

A few items from the specialized part of the interview were found to be related to either the clinical or physiological

classifications of the children's asthma. The children with clinically severe asthma reported being called derogatory/physique names more frequently, and that they, and the children with physiologically mild asthma, more often reacted to this name-calling by either physical or verbal retaliation. If children with clinically severe asthma are more awkward in their social relations, as we suggested, then it was not unexpected to find that they reported more criticism from their peers. Their reported retaliation to name-calling was perhaps an indication of feelings of insecurity which we have suggested could also explain the secretiveness of children with asthma. Thus, there was some evidence to indicate that children with many clinical symptoms have additional inter-personal problems, but not as much as we had predicted.

Overall, our analysis of children's peer descriptions revealed that children with asthma are less developed than their peers in the use of descriptive items. The type of descriptive items which they used would suggest an underdevelopment of their cognitive processes, and problems in the formation of stable friendship patterns. The lasting effect of such interpersonal difficulty in childhood has been referred to by Hartup (1978). He reviewed several studies on friendship patterns and mental health (e.g. Roff, 1961, 1963; Roff et al, 1972) all of which suggested a link between interpersonal problems in childhood and social and emotional problems in adulthood. This would suggest that although many children with asthma might grow out of their illness during adolescence, they

would be less likely to grow out of their social inadequacy.

#### 8.3.4 The relationship of the children's ages to how they described their friends

The results of the content analysis of the children's descriptions of their friends revealed the value of Peevers and Secord's coding scheme in revealing developmental changes in children's conceptualizations of their friends. In general, the older children used more simple differentiating and dispositional items in their friend descriptions than did the younger children. The finding that the older children used more simple differentiating items was somewhat unexpected. According to Peevers and Secord's data there is a tendency for the proportion of simple differentiating items to decline as children develop. However, closer examination of their findings revealed that this developmental change was not smooth. Indeed, between kindergarden and third grade (8 - 9 year olds) Peevers and Secord found a slight increase in the proportion of simple differentiating items used, although after third grade there was a steady decline in the proportion, but not in the number, of these items. Thus, our finding that the older children used more simple differentiating items than the younger children does not conflict completely with Peevers and Secord's findings.

The simple differentiating category contained all the simple, superficial descriptions of the children's friends. Although generally claiming that such descriptions indicated a lack of cognitive development, Peevers and Secord introduced

a qualification in their discussion. They noted that a more detailed analysis of the children's descriptions indicated that "the richest and most vivid person descriptions given by high school and college students employed all of the descriptive categories. In particular, simple differentiating items were used frequently at all levels, even the college level." Indeed, the figures presented in another article (Secord and Peevers, 1974) indicate that the average number of simple differentiating items used to describe a friend is greater than the average number of each of the other types of items at kindergarden, third, seventh and eleventh grades.

It would seem that further consideration should be given to a more detailed analysis of the simple differentiating category to reveal the quality of the items classified into this category.

The larger proportion of dispositional items used by the older children to describe their friends would suggest that older children enjoy more stable friendships than their younger peers. The advantages of identifying the dispositional characteristics of the peers were discussed in the previous section. It would seem that as children grow older they develop the 'social intelligence' necessary for successful social interaction. Their friendships also become less liable to disintegration when the context of the relationships change.

The more mature friendship patterns of the older children was also revealed in their replies to the more specific questions about friendship. According to their reports, the

older children were more likely to share their secrets with their friends. This willingness to share their secrets can be taken as an estimate of the greater intimacy of the more developed friendships. The security provided by such developed friendships would, perhaps, explain why fewer of the older children reported that they reacted, either physically or verbally, to being called names by their peers.

Our finding that the younger children were more likely than their older peers to claim that they preferred their siblings to their friends was not unexpected. If the friendships of the younger children were more unstable, as we have suggested, then it was to be expected that they would prefer the relative security of their siblings with whom they would have greater opportunity to develop more mature relationships. The older children's preference for their friends is probably an indication of the weakening of family ties as the children reach adolescence, and the development of more stable relationships with their peers with whom they share a greater variety of interests.

The smaller proportion of other-oriented items used by the younger children in our study is in agreement with the age differences reported by Peevers and Secord. These children have not yet developed the capacity to differentiate their peers from themselves. In the Piagetian sense, they have not yet reached the stage of formal operations which would allow them to consider the abstract qualities of their peers without reference

to themselves.

Unable to differentiate their peers from themselves, younger children would find it difficult to grasp the perspective of their peers which is essential for successful social relations. Instead, they would substitute their own perspective which could lead to misinterpretations of their peers' behaviour and inappropriate reactions.

Overall, the age differences have confirmed the findings of Peevers and Secord concerning the developmental changes in children's cognitive capacity which indicates that friendships among younger children are rather shallow and unstable.

#### 8.3.5 The relationship of the social class of the children's families to how the children described their friends

The children from working class families used more dispositional items to describe their friends. This would suggest that these children have a more developed 'social intelligence' than their peers from middle class families. The advantages of identifying the dispositional characteristics of their peers (see section 8.3.3) would also enable these children to be more effective in their social relationships. Being able to identify the invariant properties of their peers, children from working class families would be more able to understand their peers' variable behaviour and to react in a more consistent way towards their peers in different situations. Thus, they would be expected to be more popular and to have more established friendships than their peers from middle class

families.

Few studies have considered social class differences in person perception or friendship patterns. Brierley (1966) used the Role Construct Repertory Test and a sentence completion test to study children's personal constructs. He found that it was girls from working class families who used personality constructs most frequently. This would rather agree with our finding.

However, Hartup (1978) reported that "attractive, bright, middle class children have a wider network of best friends than children who are unattractive, dull, and lower class." Although our study only indirectly revealed social class differences in children's friendship patterns, it is still at variance with Hartup's conclusion. It would seem that more detailed examination of friendship patterns, as well as of children's peer descriptions, is necessary to clarify the present state of knowledge.

It is interesting to compare our findings with the linguistic analysis of children's speech patterns reported by Bernstein (1968). His analysis of the verbal and syntactic characteristics of children's speech identified two main patterns: restricted and elaborated codes. The restricted code, which he characterised as predictable, particularistic and context bound, apparently typified the speech of children from working class homes. The elaborated code, which was supposedly flexible, universalistic and context free, was reported more often in the speech of children from middle class families.

According to Bernstein, the outline of these two codes emerged from an inductive analysis of the children's speech. He then inferred from this analysis that the two codes reflected a qualitative difference in the children's cognitive capacity. Apparently, those children with a restricted code had under-developed cognitive processes compared with those who used an elaborated code. However, Labov (1972) and Rosen (1974) have harshly criticised Bernstein's conclusions for various reasons including his content analysis of the children's speech which they claimed merely separated the more direct speech of children from working class families from the "superfluous verbiage" of children from middle class families. Such a classification of the children's speech could not, according to Labov and Rosen, indicate qualitative differences in the children's cognitive capabilities.

Our analysis of the children's friend descriptions was, however, not simply an inductive analysis but rather one based upon the cognitive psychology of Piaget and Heider. According to their work, as the children mature they become more aware of the dispositional characteristics of the people with whom they interact. This greater awareness would indicate a development of cognitive processes.

Thus, our finding that the children from working class families used more dispositional items to describe their friends would suggest that they were more cognitively developed than their peers from middle class families. Obviously, Peever's and Secord's coding scheme provides an excellent avenue for

further investigation of social class differences in children's language and avoids the ambiguities implicit in Bernstein's classification scheme.

#### 8.3.6 The relationship of the sex of the children to how they described their friends

The sex differences in the use of descriptive items by the children in our study were similar to those established in Peevers and Secord's study. They found that girls used more simple differentiating items, while boys used more differentiating items in their descriptions. In our study the boys used more differentiating items but there was no significant sex difference in the usage of simple differentiating items although the trend was in agreement with Peevers and Secord's findings.

Commenting on their finding that the boys used more differentiating items than the girls, Peevers and Secord noted that this revealed the "boys emphasis on individual interests and achievements". Our secondary analysis of the differentiating items used by the children in our study revealed that the sex difference was more specifically due to the greater emphasis the boys placed upon physical activities. While very few girls referred to physical activities when describing their friends, nearly all the boys did.

The emphasis the boys placed upon such temporary characteristics as involvement in various physical activities would suggest that their friendships were more unstable than

those of the girls. Once their peers became disinterested in certain physical activities then their friendship would be vulnerable to disintegration. This would agree with other evidence concerning sex differences in the stability of childhood friendships. Hartup (1970) found fewer changes among the friendship patterns of girls than of boys, irrespective of age. Eder and Halliman (1977) using sociometric tests found more exclusive dyads between girls than between boys.

Hartup (1978) suggested that a possible reason for these sex differences was that "play activities encourage boys to develop non-exclusive social relations while, at the same time, such activities encourage girls to form more intensive social activities." Our evidence would suggest that perhaps the cultural emphasis on physical activities among males would explain this sex difference.

This emphasis upon physical activities could also explain our finding that the boys were more likely to report that they were stronger than their peers. The necessity to emphasize their physical prowess would encourage the boys to claim greater strength, whereas the girls would not consider strength as being of criterial importance and would be more likely to report that they were of average strength compared with their peers.

Although there was no significant difference between the boys and the girls in their use of undifferentiating items, when we reclassified these items we found that the girls used more 'place of residence' items than did the boys. A possible

explanation for this sex difference might lie in the different interests of boys and girls. Whereas boys engage in various physical activities which could take them away from their home environs, e.g. football matches, athletics, girls' lesser involvement in such activities could lead them to develop their friendships among those children who lived nearby. Thus, girls would be expected to refer more frequently to the 'place of residence' of their friends.

In our analysis of the children's replies to the specific questions about friendship we found that the boys more frequently reported that their friends shared their interests. This is not surprising, since their greater use of differentiating items in their friend descriptions has indicated the emphasis which they place upon their friends' interests and activities.

The boys also more frequently reported that they were less concerned about name-calling. The more frequent retaliation by the girls is, perhaps, an indication of the greater importance of body-image to girls since many of the names referred negatively to dress and appearance.

### 8.3.7 Conclusion

Our investigation of the way children describe their friends has revealed the extent of the lack of cognitive development of children with asthma. Due to their poorly developed 'social intelligence' these children would be awkward in their relations with their peers which could lead

to the development of emotional problems in childhood and also in adulthood. These difficulties in social interaction could provide an explanation for the stereotyped image of the 'asthmatic' child as being introverted and shy.

Our analysis of the friend descriptions of the children with asthma did not reveal any relationship with the clinical or physiological classifications of the children's asthma. Apparently, irrespective of the extent of their clinical symptoms, or of their bronchial sensitivity, most children with asthma have certain problems in their social interaction.

The age differences in the children's descriptions confirmed the developmental changes revealed by Peevers and Secord (1974). As children develop, their more mature cognitive processes allow them to perceive their friends as separate from themselves and their environment. This increased cognitive capacity enables them to be more successful in their social interaction and increases their ability to maintain stable friendship patterns.

The social class differences in the children's descriptions revealed the more developed 'social intelligence' of the children from working class families. This more developed cognitive capacity would indicate secure friendships.

The sex differences in the children's descriptions confirmed the previous empirical evidence that girls have more stable friendships than boys. The boys' more unstable friendships might be due to their greater interest in physical play activities.

## CHAPTER IX

### THE CHILDREN AT HOME

#### 9.1.1 Introduction

Much speculation on the aetiology of childhood asthma has centred on the children's homelife. The archetypal "asthmatic family" might be characterised by a web of interpersonal tension and emotional stress. According to Lask (1966) in these families "there is a perpetual struggle, not necessarily obvious, in which emotional pressures, attitudes and drives are at work among the various members."

Such an image, although largely based upon clinical psychoanalytic studies, was strengthened by the empirical evidence which began to emerge in the early fifties showing that sometimes when a wheezy child was removed from his home environment for a period, most of his asthmatic symptoms rapidly diminished. This evidence encouraged the development of a search to isolate the particular psychological components of a certain "asthmatogenic climate" (Peshkin, 1959) which was assumed to be peculiar to these families. The most popular of these components were unsatisfactory parental attitudes and child-rearing practices (e.g. Rees, 1964).

#### 9.1.2 The children and their parents

The early psychoanalysts (e.g. French 1939) contended that it was the overprotective child-rearing attitudes and practices of some mothers which were the prime causal agents in the development of childhood asthma. Many other psychiatrists since then have

claimed that the mothers of children with asthma had a variety of pathopsychological characteristics which had an adverse effect on their children's physical and psychological development (see section 3.4).

These descriptions of the mothers of children with asthma were largely based upon a conception of the mother-child relationship as univalent (with the mother the dominant partner) and divorced from the larger social context. Irrespective of the different characteristics of the children, the social circumstances of the families, and the prevailing societal views about child-rearing and sick children, the traditional psychiatric approach has been "largely limited to investigations of parental or familial roles as etiologic agents or correlates" (Kelman, 1964). The children were considered passive beings whose development was determined by their mothers' behaviour towards them.

Growing evidence has suggested that such a conceptualization of the mother-child relationship is inadequate for a full understanding of the more recently reported findings in developmental psychology (cf. Richards, 1974). While accepting the large influence parents have on their children's development, the active role which children play in the mother-child relationship has now become acknowledged. In a recent review article Schaffer (1978) stated:

"Children, even the very youngest, can determine the behaviour of parents and thereby help to create the atmosphere in which they will be reared."

If we are to understand the mother-child relationship it is necessary to understand how the child perceives his mother.

In 1961 Serot and Teevan found that measures of children's psychological adjustment were highly correlated with those children's own estimates of the type of parent-child relationship they enjoyed. On the other hand, a measure of the mothers' child-rearing practices was not related to their children's adjustment.

In a review of the research on children's perceptions of their parents Goldin (1969) concluded:

"empirical relationships have been established between children's reports of parent behaviour and the child's sex, age, social class, and personality and behaviour."

In his review Goldin used the findings from Seigelman's (1965) factor analysis of children's reports of their parents as a means of conceptualizing the results of over sixty studies in this field. Seigelman's analysis had revealed three main factors in the children's descriptions. The first he termed "loving," which referred to evidence of sharing, expression of affection, support, positive evaluation, and equalitarian treatment. The second factor he termed "demanding", which included references to controlling, demanding, protecting, and intrusive parental behaviours. The final factor was termed "punishment," and referred to the arbitrary use of physical and non-physical punishment.

Goldin identified sex differences on these factors. According to the studies he reviewed, boys perceived their parents as less accepting and loving, more psychologically controlling and demanding, and more punitive than did girls.

These findings tended to agree with the known sex differences in children's socialization. For example, Kagan and Moss (1962) had previously reported that in most families boys are taught to be independent, career oriented, and aggressive, while for girls it is often the reverse.

The social class differences, which Goldin commented on, also seemed to concur with the evidence regarding social class differences in child-rearing practices. The children from working class families tended to see their parents as less accepting and possibly more psychologically controlling.

In agreement with that, Kohn (1963) reported that working class parents place far greater stress on obedience to parental demands than do middle class parents.

Finally, Goldin also mentioned that child guidance patients and maladjusted children perceived their parents as rejecting. In agreement with this, Pinkerton (1971) reported how rejection of children by parents could lead to maladjustment among those children.

Such evidence would suggest that an understanding of how children with asthma perceive their parents' behaviour might increase our understanding of the children's own behaviour. Whether the children with asthma would agree with the psychiatric characterization of their mothers as overprotective and controlling is unknown. One study in a related area has suggested that this may well partly be the case.

Dorner (1976) asked a group of teenagers who had spina bifida how they got on with their parents. He found that they "usually felt they had a reasonably good relationship with their

parents in terms of doing things together and finding them easy to talk to. The most common complaint was that the parents were too protective or did too much for them."

If the parents of children with asthma have different child-rearing practices from the parents of healthy children, we would expect this to be apparent in an analysis of the children's perceptions of their parents. It would seem that an investigation of this area would increase our understanding of the parent-child relationship in the families of children with asthma.

### 9.1.3 The children and their siblings

Besides their parents, the children's siblings play a crucial role in the socialization process. Despite this, psychiatric studies of childhood asthma have often ignored the importance of the sibling relationships. Frequently, investigations of "family pathology" have concentrated on exploring various parental characteristics, while consideration of the siblings was often subsumed within a more general discussion of family characteristics. For example, McNicol et al (1973) reported that in their survey of childhood asthma the children with the greatest amount of wheezing often came from families where there were less joint activities, while those with little wheezing came from the most argumentative families. This approach concealed possible differences between parent-child and sibling-child relationships, knowledge of which might have increased our understanding of the clinical variations of childhood asthma. In one study which did consider

the siblings separately, Rees (1964) reported that although there was psychiatric evidence for the existence of sibling rivalry and jealousy in certain of the families of children with asthma, the incidence of it was no higher than in a control group of families of healthy children.

The evidence on sibling relationships in the families of children with various other disabilities is not consistent. Those researchers who attempted to identify from clinical interviews psychiatric characteristics in the siblings of disabled children were not disappointed. Burton (1968) reported that many of the siblings of sick children often became resentful and angry. She added:

"Frightened of becoming ill themselves, they may taunt the sick child about his illness or develop psychosomatic symptoms in a bid for reassurance and the required attention."

Rosenstein (1970) reported behaviour disorders, resentment and depression among the healthy siblings of children with cystic fibrosis. In their discussion of the families of children with haemophilia Agle and Mattsson (1976) reported:

"The healthy siblings of the haemophiliac experience a lack of parental affection, because of the quantity of care given to their sick brothers. Their understandable envy of this special position may induce anger or eventual strong guilt feeling."

However, those researchers who obtained their evidence from the parents of the sick children often reported findings

quite the reverse of those previously mentioned. Richards and McIntosh (1973) found that the majority of the siblings of children with spina bifida were described by their parents as being generally helpful and understanding towards the handicapped child, and relatively few showed overt jealousy and resentment. Woodburn (1973) reported that many parents of children with spina bifida commented on how much more understanding and sympathetic the healthy siblings had become as a result of their experience with the disabled child. Yet these parental reports should be treated with caution since, as Voysey (1975) has noted:

"in a certain sense, parents' responses tell us nothing about what it is like to have a disabled child in the family, but a lot about other people's ideas of what it ought to be like."

In the same way as the structure of the psychiatric interview might have revealed a picture of sibling relationships that agreed with an assumption about its pathological nature, the mothers may have portrayed the sibling relationships according to what they thought was the societal ideal.

But what of the view of the children with asthma themselves? If their siblings treat them in a manner different from the way siblings treat healthy children, we would expect that the children with asthma would perceive them in a different manner. Although no studies have considered specifically the sibling perception of children with asthma, Dorner's study of teenagers with spina bifida suggests that it would be a worthwhile area to investigate. He found that compared with the teenagers'

relationships with their parents:

"Relationships with siblings were also apparently free of serious difficulty. Only in 2 cases (out of 46) was frequent argument reported, and in some cases it was clear that some brothers and sisters, often adult, were energetic in their efforts to spend time with the handicapped children."

In the previous chapter we found that an investigation of the children's peer perception increased our understanding of the social relations of children with asthma. This would suggest that a similar investigation of the children's sibling perception might help us understand sibling relationships better.

#### 9.1.4 The children and their interests

Empirical evidence (c.f. Brooks-Gunn and Lewis, 1978) has suggested that children's participation in games with their siblings and peers is an important factor in the establishment and maintenance of social relations. Since physical exercise often provokes wheezing in children with asthma (Jones 1966) it would be expected that the extent of their play would be limited. This could adversely affect their development of the social skills essential for satisfactory social interaction.

One of the few studies to consider this aspect of the social relations of children with asthma was that by Mitchell and Dawson (1973). They found that the parents of healthy children were almost twice as likely as the parents of children with asthma

to report that their children participated in "outdoor activities such as field sports, games, or camping." The parents of the children with asthma often reported that their children preferred "quieter and more sedentary hobbies such as model-building, painting, reading, and card games." Whether these apparent differences in the children's interests reflected the true situation, or were merely due to the mothers voicing what they considered to be the societal ideal (Voysey, 1975) was not considered in the report.

However, evidence from studies of children with other disabilities suggests that the findings of Mitchell and Dawson were probably an accurate portrayal of the situation. In his investigation of children with haemophilia Katz (1970) reported the frequent occurrence of restricted play activities. These restrictions, he claimed, could lead to a syndrome of passive dependency which, in turn, could influence the children's later life adjustment. Maddisson and Raphael (1971), in discussing the psycho-social implications of chronic childhood illness in general, noted that those children who did not become involved in physical activities often developed "a deceptive pseudo-maturity and certain scholastic skills motivated by an excessive desire to please adults." Mitchell and Dawson, however, reported little difference between the parents of children with asthma and those of healthy children in their estimates of their children's use of library facilities. The parents of the children with asthma, especially those classed as clinically moderate and severe, did, however, report buying educational magazines for their children more regularly.

Despite such findings, physiological evidence suggests that many children with asthma are capable of participating in various sporting activities, so long as they do not over-exert themselves (Bierman and Pierson, 1975). Thus it may well be the case that certain children by opting out of various physical activities are "overplaying the sick-role". If a child with asthma over-estimated the severity of his problem, we would expect that he would be very cautious in his activities. To clarify this area it would be useful to enquire of the children about their interests and activities.

#### 9.1.5 Conclusion

Although there has been speculation on the psychological components of the "asthmaticogenic" family there has been little attempt to investigate the views of children with asthma of their homelife. The psychiatric descriptions of over-protective parents, pathological sibling relationships, and restricted play activities may not be apparent from the children's perspective. This study will consider the children's views of their parents, their siblings, and their interests.

The emphasis in the literature on "asthmaticogenic" parents has been on the supposed over-protectiveness of the mothers. To clarify the relevance of this to the children themselves, it would be necessary to enquire about the restrictions and degree of control exercised by their parents on their everyday activities. While we might expect the children with asthma to report more restrictions this would be especially apparent with those children classed as clinically severe since they portray the

greatest evidence of sickness.

In our previous chapter we considered the children's free descriptions of their friends. The effectiveness of this approach in increasing our understanding of the peer relations of children with asthma suggests that it might also help us understand their sibling relations. In the analysis of the peer descriptions a two-stage technique was used. The first stage involved the application of the classification scheme devised by Peevers and Secord. This revealed some interesting developmental differences between children with and without asthma. Although this classification scheme was devised for the analysis of peer descriptions it could also be applied to the analysis of sibling descriptions. This would reveal whether or not the developmental differences were only characteristics of peer descriptions, and also would provide us with some insight into the quality of the sibling relationships.

In the second stage of the analysis of the peer descriptions a new classification scheme was devised. This scheme was derived from some of the classification categories devised by Richardson et al (1964) but they were more specifically defined and relevant to the actual descriptions obtained. A similar technique could prove valuable in examining the sibling descriptions. This time it would be useful to specifically explore for evidence of sibling rivalry which has been mentioned several times with reference to childhood asthma. Again we might expect that those children with asthma classed as clinically severe would not only be developmentally immature in their

sibling descriptions, but also portray evidence of sibling tension in their descriptions.

Finally, the type of interests and activities the children enjoy would be expected to be related to whether or not the children had asthma. If clinical severity is an estimate of the extent of sick role we would expect that it would relate to involvement in strenuous activities.

## 9.2 METHOD AND RESULTS

### 9.2.1 Design of the interviews

The section of the children's interviews concerned with their homelife can be considered in three parts. The first part concentrated on the children's views of their parents. It attempted to gain some information on how the parents treated their children. The main emphasis was on parental permissiveness. There were also some enquiries about what kind of childhood behaviour the parents encouraged, and what were their ambitions for their children.

The second part of the interview was concerned with the children's perception of their siblings. There were no specific questions. Rather, the children were asked to give a free description of their brothers and sisters, if they had any.

The third part of the interview asked about the children's activities at home. A series of specific questions enquired about the children's interests and hobbies outside school. There were also a few questions about the sort of activities the children would like to involve themselves in later.

The basic format of this section of the interviews is presented in Appendix 9.2.1.

### 9.2.2 Procedure

The children were usually asked about their parents first. The order and form of the questions were not identical for every child. Rather, the investigator attempted to relate his enquiries to what any particular child had previously spoken about. None of the children showed any hesitancy about answering these

questions.

The investigator then asked the children to describe their brothers and sisters, if they had any. The procedure followed was similar to that outlined for obtaining the children's descriptions of their friends (see section 8.2.2). The investigator began by asking about each sibling in turn: "Could you tell me anything about N?" Throughout the children's replies, which tended to be rather limited, the investigator gave the occasional encouraging nod or phrase but remained non-committal. When a child had stopped describing any particular sibling the investigator encouraged him to continue by asking: "Could you tell me anything more about N?" When the investigator was satisfied the child had completed his description of a particular sibling, he then enquired about the other siblings.

Having obtained the children's descriptions of their siblings, the author then enquired about the children's homelife, their interests and hobbies.

This section of the interview lasted about 10-15 minutes.

### 9.2.3 Analysis of the section of the children's interviews concerning their parents and interests

All the children's replies were transcribed from the tape recording of the interviews. The replies of each child were arranged in a similar format to simplify the task of designing a coding scheme for content analysis (see section 6.2.3). The author and a research psychologist then content analysed ten randomly selected transcripts. On the basis of their content

analysis, a provisional coding scheme was devised for this section of the children's interviews.

Since the categories in each of the coding frames were quantitative, only one judge was necessary for its application to the other fifty transcripts. The provisional coding scheme was found to be sufficient to code the replies of most of the children. Those children's replies which were not classifiable within the provisional coding scheme were considered separately by the two judges. On the basis of the judges' consideration of these children's replies four of the provisional coding frames were amended. The final coding scheme, along with the number of children's replies assigned to each category, is given in Appendix 9.2.4 and 9.2.5.

Having coded all the children's replies to this section of the interview, a partial correlation analysis was performed with the six classifications of the children. Where a coding frame contained a "no reply" or a "not relevant" category the details of the children who were assigned to those categories were excluded from that particular analysis. Also, the categories of those coding frames which were not ordinal were combined so as to be suitable for the partial correlation analyses. The appendices indicate which categories were excluded from certain analyses, and which categories were combined for other analyses.

#### 9.2.4 The children's views of their parents

Eleven coding frames were used in the analysis of this section of the children's interviews (Appendix 9.2.4). Partial

correlation analysis showed that eight of these frames were significantly related to one or more of the classifications of the children (Table 9.2.4A).

When we considered all of the children's replies, we found that only one item was related to whether or not the children had asthma. This relationship showed that those children who had asthma were more likely to report that their parents, at least occasionally, put restrictions on their activities (Table 9.2.4B).

We also found that the older children, especially those from working class families, were more likely to report that their parents regularly gave them tasks to do around the house (Tables 9.2.4C and D). Excluding those children who did not reply, partial correlation analysis revealed that the children from working class families were less likely to claim that their parents usually listened to what they were saying, or that they considered themselves their parents' favourite children.

Fewer boys than girls described their parents as strict (Table 9.2.4E). When we considered, as an example of parental permissiveness, whether the children were allowed to watch television late, we found little difference between those children who replied. Of the 50 children who did answer this query, only 3 (6%) claimed that they were never allowed to watch television late, 22(44%) claimed that they were only allowed to watch it late for special programmes, 15 (30%) were allowed to watch it late at weekends, while the other 10 (20%) children reported that they regularly watched television late at night.

Of those 37 children who attempted to assess their parents'

TABLE 9.2.4A Relationship of the items concerning parents from the children's interviews  
to the different classifications of the children

Items	Classifications					
	Asthma	Age	Social class	Sex	Clinical	Physiological
Household tasks given	.15	-.24*	-.22*	-.08	-.41*	-.32
Ready to do tasks	-.15	.04	.03	-.03	.07	-.44*
Parental discipline severe	.03	.06	-.07	-.22*	-.06	-.25
Parents attentive	.02	-.10	.23*	-.20	-.21	.12
Allowed late t.v.	-.02	.14	-.12	.01	.07	.18
Parent's favourite child:self	.10	.04	.26*	-.10	-.05	-.03
Parents like neatness/ obedience	.03	.04	-.10	.04	-.47**	.16
Parental restrictions	.28*	.04	-.18	.05	-.01	.19
Parental ambitions	.08	-.14	-.12	.23*	-.14	.57***
Mother unaware	.01	-.17	.10	.07	.13	-.12
Parental opinion of child's strength	.08	-.16	.13	.07	-.14	-.05

Note: Figures give Kendall's tau value of the relationship of items to the  
different classifications of the child \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

TABLE 9.2.4B Items concerning parents from the children's interviews related to whether or not the children have asthma

Items	Children	
	With asthma	Without asthma
Parents restrict activities	25(83.3%)	16(53.3%)

TABLE 9.2.4C Items concerning parents from the children's interviews related to the age of the children

Items	Age of children	
	Young	Old
Parents regularly give household tasks	7(23.3%)	12(40 %)

TABLE 9.2.4D Items concerning parents from the children's interviews related to the social class of their parents

Items	Social class of parents	
	Middle class	Working class
Parents regularly give household tasks	1( 7.1%)	18 (39.1%)
Parents usually listen to child	10(76.9%)	25 (54.3%)
Parents' favourite child: self	4(33.3%)	4 ( 9.5%)

ambitions for them, more boys reported that their parents wanted them to have a "good job" or a specific occupation when they were older (Table 9.2.4E).

Two items which were not related to any of the classifications of the children, had only a small number of replies. Of the 17 children who suggested some personal attribute which they thought their parents were aware of, 4 (33.5%) mentioned academic ability, 8 (47.1%) physical ability, and 5 (29.4%) some other specific ability. When we enquired about the parental estimates of the children's physical ability, we found that, of the 33 definite replies only 4(12.1%) children thought their parents considered them weak, while 15 (45.5%) thought their parents considered them strong.

Partial correlation analysis of the replies of the children with asthma revealed that four items, two of which we have already mentioned, were related to either the clinical or the physiological classifications of the children's asthma (Table 9.2.4A). The children with asthma classed as clinically severe were more likely to report that their parents gave them household tasks regularly (Table 9.2.4F).

Of the 48 children, both with and without asthma, who could suggest some personal attribute which they thought their parents especially liked about them, 6 (12.5%) children mentioned neatness or cleanliness, 8 (16.7%) mentioned industriousness, 3(6.3%) obedience, 2 (4.2%) friendliness, 4 (8.3%) physical appearance, 14 (29.2%) helpfulness, and 11 (22.9%) some other more specific ability. When we combined the replies of the first three

TABLE 9.2.4E Items concerning parents from the children's interviews related to the sex of the children

Items	Sex of children	
	Boys	Girls
Parents strict	7(20 %)	10(40 %)
Parent has ambition for child	15(65.2%)	6(42.9%)

TABLE 9.2.4F Items concerning parents from the children's interviews related to the clinical severity of the children's asthma.

Items	Mild	Moderate	Severe
Parents regularly give household tasks	0(0 %)	3(30 %)	6(60 %)
Parent likes neatness/ industriousness/ obedience	1(10 %)	2(20 %)	6(60 %)

TABLE 9.2.4G Items concerning parents from the children's interviews related to the physiological severity of the children's asthma.

Items	Physiological severity of children's asthma		
	Mild	Moderate	Severe
Ready to do household tasks	3(37.5%)	6(60%)	8(80%)
Parent has ambition for child	7(87.5%)	3(60%)	1(20%)

attributes into a neatness/industriousness/obedience category, partial correlation analysis revealed that, of those children with asthma who answered this query, those children with asthma classed as clinically severe were more likely to give a reply which fell into this new category (Table 9.2.4F).

Partial correlation analysis, of those children with asthma who gave a definite reply also revealed that those children with asthma classed as physiologically severe were more likely to report that they were usually ready to do any household chore presented by their parents (Table 9.2.4G). These children were less likely to claim that they thought their parents wanted them to have either a "good job" or a specific occupation in later life (Table 9.2.4G).

Overall, it seemed that children with asthma had more restrictions put on their activities by their parents. In addition, those children with asthma classed as clinically severe seemed to come from a 'semi-spartan' home where they were regularly required to perform various household chores. The children with asthma classed as physiologically severe seemed the most ready to do the household chores requested by their parents, but those same parents were least concerned about their children's future.

### 9.2.5 The children's interests

Eight coding frames were used to analyse this section of the children's interviews (Appendix 9.2.5). Partial correlation analysis revealed that four of these frames were significantly related to one or more of the classifications of the children (Table 9.2.5A).

Considering all the children's replies together, we found that one item was related to whether or not the children had asthma, and to the sex of the children. Another item was related to whether or not the children had asthma, alone. Firstly, the children with asthma, especially the girls, were less likely to report that they engaged in active physical activities, such as football, after school (Tables 9.2.5 B and C). Also, when we excluded those nine children who listed various creative activities, such as model-building, as their favourite activity at home, we found that, of the other 51 children, those with asthma were less likely to list physical activities, such as running, and football, as their favourite activities at home.

When the children were asked to give some details of the sports they played, only 7(11.7%) admitted that they did not enjoy sports at all. On the other hand, 14 (23.3%) children claimed that they enjoyed playing active physical games, such as football and running, regularly, another 21 (35%) children enjoyed playing such games occasionally, and a further 18 (30%) said they enjoyed the less physical pursuits, such as cycling.

Somewhat similarly, when the children were asked to describe any hobbies they had, the biggest proportion (23 children,

TABLE 9.2.5A Relationship of the items concerning interests from the children's interviews  
to the different classifications of the children

Items	Classifications					
	Asthma	Age	Social Class	Sex	Clinical	Physiological
Physical activities after school	-.21*	.02	-.15	.22*	.28	-.32*
Physical activities at home	-.31*	.15	-.02	.14	.30	-.18
Hobbies (physical)	.11	.07	.11	-.06	.29	.17
Sports (physical)	-.09	.08	.07	.21	.10	-.11
Books (don't like)	-.14	.08	-.10	.01	-.17	.09
Would like something	.19	-.01	.20	-.01	-.37*	.07
Dislikes something	.10	-.13	.01	-.17	-.37*	.35*
Ideal self (remain the same)	-.03	-.02	-.06	-.19	-.04	.24

Figures give Kendall's tau values of the relationship of items to the different classifications of the children.

\*p < 0.05; \*\*p < 0.01

TABLE 9.2.5B Items concerning interests from the children's interviews related to whether or not the children have asthma

Items	Children	
	With asthma	Without asthma
Play physical games after school	14 (46.7%)	20 (66.7%)
Physical games favourite activity at home	4 (14.3%)	9 (39.1%)

TABLE 9.2.5C Items concerning interests from the children's interviews related to the sex of the children

Items	Sex of children	
	Boys	Girls
Play physical games after school	23(65.7%)	11 (44%)

38.7%) repeated their interest in physical games, another 10 (16.7%) mentioned more passive pursuits, such as walking, and only 14 (23.3%) reported an interest in one of the more traditional hobbies, such as stamp-collecting or model-building. The other 13 (21.7%) did not have any hobbies.

As regards reading, only 8 (13.3%) children said they did not like books. However, 46 (76.7%) children said they enjoyed reading children's books, 2 (3.3%) enjoyed school books, 3 (5%) non-fiction, and 1 (1.7%) boy preferred more adult fiction. Neither type of hobby nor interest in sports or books was related to any of the classifications of the children (Table 9.2.5A).

When we analysed the replies of the children with asthma separately, we found that three items were related to either the clinical or physiological classification of the children's asthma. More of those children with asthma classed as clinically severe referred in their replies to certain activities which they would have liked to have become involved in but could not for various reasons, including bad health (Table 9.2.5E). Those same children, and also those with asthma classed as physiologically mild (Table 9.2.5F), complained more often of being required by their parents to do certain disliked tasks, especially household chores. Finally, we also found that those children with asthma classed as physiologically severe frequently reported playing physical games after school.

As an addendum we can add that when all of the children were asked to suggest what type of a person they would like to be if they could change, half could not suggest anything or were content to remain the same. Of the others, 11 (36.7%) would have

TABLE 9.2.5D Items concerning interests from the children's interviews related to the clinical severity of the children's asthma.

Clinical severity of children's asthma			
Items	Mild	Moderate	Severe
Would like something particular	2(20%)	6(60%)	6(60%)
Dislike something particular	7(70%)	9(90%)	10(100%)

TABLE 9.2.5E Items concerning interests from the children's interviews related to the physiological severity of the children's asthma.

Physiological severity of children's asthma			
Items	Mild	Moderate	Severe
Play physical games after school	4(40%)	5 (50%)	5 (50%)
Dislike something particular	9(90%)	9(90%)	8(80%)

liked to improve physically, 4 (13.3%) to improve intellectually, 2 (6.7%) to improve morally, another 2 (6.7%) to improve healthwise, and 1 (3.3%) child wanted to improve materially. Three other children claimed that they wanted to be "normal" people, and the remaining 7 (23.3%) children offered a variety of suggestions. In the partial correlation analysis we combined all the children who made a suggestion into one category and compared them with those children who did not know or wished to remain the same. However, the analysis revealed that whether or not the children gave a suggestion was not related to any classification of the children (Table 9.2.5D).

Overall, the children with asthma seemed to be less involved in active physical activities, such as football. More specifically, those children with asthma classed as clinically severe expressed greater dissatisfaction about their inability to pursue certain interests, and more dislike of household chores. Those children with asthma classed as physiologically severe more often reported participation in physical games.

### 9.2.6 First analysis of the children's descriptions of their siblings

The first analysis of the children's descriptions of their siblings followed the technique previously outlined for the analysis of the children's descriptions of their friends (see section 8.2.3). Firstly, each child's description of his or her siblings was typed on a separate sheet of paper with one sentence to a line. There were 227 sentences in all.

Two judges (the investigator and a research psychologist) then independently assessed the number of descriptive items in each sentence. On the first assessment they agreed on the number of items in 220 (96.9%) sentences. On re-examining the remaining 7 sentences together they managed to achieve total agreement as to the number of descriptive items in each. Altogether there were 241 descriptive items in 227 sentences.

Those 241 descriptive items were then classified along the three dimensions of descriptiveness, personal involvement, and evaluative tone devised by Peevers and Secord. Table 9.2.6 presents the degree of agreement between the two judges in their coding, first working independently and then together. Those few items about which the two judges could not agree were re-assessed by a third judge who considered which of the two judges' classifications were the most accurate.

For the statistical analysis of the children's descriptions, a series of secondary coding schemes was devised. As explained in section 8.2.3 three coding schemes are needed to consider not only the total number of items in each category, but also the average number of items in each category for each sibling

TABLE 9.2.6: Degree of agreement between the two judges in their coding of the children's descriptions of their siblings

Coding dimension	Percentage agreement		Items coded by 3rd judge
	1st Coding	2nd Coding	
Descriptiveness	219 (90.9%)	231 (95.9%)	10
Personal involvement	225 (93.4%)	234 (97.1%)	7
Evaluative tone	233 (96.7%)	238 (98.8%)	3

described, and the proportion of the total description classified in any category. The three coding schemes, together with the number of replies in each category, for descriptions of both brothers and sisters, are given in Appendix 9.2.6.

A partial correlation analysis calculated the relationship between the various coding frames and the different classifications of the children. The descriptions of the brothers were considered first, followed by the descriptions of the sisters, and then of both together. Those children who had no brother or sister were omitted from all the analyses. Also, those children who had a sibling, but provided no description, were omitted from all but the initial analysis.

#### 9.2.7 Children's descriptions of their brothers (1)

Of the total sample of 60 children, 37 had one or more brothers. However, 5 of these children did not provide any description of their brothers. The remaining 32 children used 134 items to describe a total of 57 brothers. That is, those children who described a brother used, on average, 2.4 descriptive items on each.

On excluding those 13 children who had no brothers from the partial correlation analysis, we found that neither the children's age, sex, social class, nor whether or not they had asthma, was related to the total number of descriptive items used to describe their brothers (Table 9.2.7A). When we considered the replies of the children with asthma separately, we found that those with asthma classed as physiologically severe used a larger total number of items in their descriptions (Table

9.2.7B). However, on excluding those five children who had a brother but provided no description from the analysis, we found that the average number of descriptive items per brother was related neither to the four classifications of all the children nor to the two additional classifications of the children with asthma (Table 9.2.7A). The remaining analyses reported in this section were confined to the replies of those 32 children who provided descriptions of their brothers.

The descriptiveness classification of the descriptive items is presented in Table 9.2.7C. This shows that the simple differentiating and differentiating items accounted for over ninety per cent of the total descriptions. On performing the partial correlation analysis, we found that the boys used a larger total number, a larger average number, and a larger proportion of differentiating items in their descriptions (Tables 9.2.7D and E). None of the descriptiveness classifications of the brothers' descriptions was related to whether or not the children had asthma, nor to either the clinical or physiological classifications of the children with asthma (Table 9.2.7D).

Table 9.2.7F presents the personal involvement classification of the descriptive items. The egocentric items were used most frequently, followed by the other oriented, and then the mutual items. Partial correlation analysis showed that the boys used a larger total number, a larger average number, and a larger proportion of other oriented items to describe their brothers than did the girls (Table 9.2.7G and H).

None of the personal involvement classifications of the

TABLE 9.2.7A: Relationship of the total and average no. of items in the children's descriptions of their brothers sisters and siblings to the different classifications of the children

	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
<b>(a) Description of brothers</b>						
Total no. of items	.16	-.13	.03	.15	-.09	-.46*
Average no. of items per description of brother	.02	.10	.28	.23	.33	-.37
<b>(b) Description of sisters</b>						
Total no. of items	-.10	-.27	-.09	-.30*	.10	.35
Average no. of items per description of sister	.01	-.13	-.10	-.11	.02	.48
<b>(c) Description of siblings</b>						
Total no. of items	.11	-.19	-.09	-.01	-.04	-.16
Average no. of items per description of sibling	.17	-.15	-.03	.03	.12	.14

Note: Figures give Kendall's tau values of the relationship of items to the different classifications of the children. \*  $p < 0.05$ .

Table 9.2.7B: Relationship of the total number of items in the children's descriptions of their brothers to the physiological severity of the children with asthma

	Physiological severity of asthma		
	Mild	Moderate	Severe
At least 5 items in total			
description	2(22.2%)	3(37.5%)	4(80%)

TABLE 9.2.7C: "Descriptiveness" classification of the children's descriptions of their brothers

	Undifferentiating	Simple differentiating	Differentiating	Dispositional
Total no. of items	7	93	29	5
Average no. of items per description of brother	0.1	1.6	0.5	0.1
Proportion of total description	5.2%	69.4%	21.6%	3.7%

TABLE 9.2.7D: Relationship of the "descriptiveness" classification of the children's descriptions of their brothers to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Undifferentiating	.24	-.09	.04	-.27	.23	-.36
Simple differentiating	.19	-.08	-.23	.02	.07	-.38
Differentiating	.01	.02	.16	.49**	-.24	-.15
Dispositional	.23	.25	-.02	-.09	.11	-.04
(b) Average no. of items per description of brother						
Undifferentiating	.24	-.09	.04	-.27	.23	-.36
Simple differentiating	.14	-.09	-.06	.01	.21	-.41
Differentiating	-.01	.04	.14	.51**	-.23	-.15
Dispositional	.23	.25	-.02	-.09	.11	-.04

TABLE 9.2.7D(cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Undifferentiating	.25	-.07	.05	-.28	.26	-.34
Simple differentiating	-.03	-.02	-.12	.26	-.25	.31
Differentiating	-.08	.01	.16	.48**	-.22	-.11
Dispositional	.23	.25	-.02	-.09	.11	-.04

Note: Figures give Kendall's tau values of the relationship of the "descriptiveness" classifications to the different classifications of the children.

\*\*  $p < 0.01$

TABLE 9.2.7E: Items from the "descriptiveness" classification of the children's description of their brothers related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 1 differentiating item	12(57.1%)	0
Average no. of items per description of brother		
More than 0 differentiating items	12(57.1%)	0
Proportion of total description		
Over 1% differentiating items	12(57.1%)	0

TABLE 9.2.7F: "Personal involvement" classification of the childrens descriptions of their brothers

	Egocentric	Mutual	Other oriented
Total no. of items	71	8	55
Average no. of items per description of brother	1.2	0.1	1.0
Proportion of total description	53.0%	6.0%	41.0%

brothers' descriptions was related to whether or not the children had asthma (Table 9.2.7G). However, considering the replies of the children with asthma separately, we found that those children with asthma classed as clinically mild used a larger total number, a larger average number, and a larger proportion of mutual items in their descriptions (Table 9.2.7G and I).

The evaluative classification of the descriptive items is presented in Table 9.2.7J. This shows that the positive items were the most frequently used, followed by the neutral, and then the negative items. Using the partial correlation analysis, we found that the boys used a larger total number and a larger average number, but not a larger proportion, of positive items in their descriptions than did the girls (Tables 9.2.7K and L). None of the evaluative classifications of the descriptive items was related to any of the other classifications of the children (Table 9.2.7K).

When we devised an evaluative consistency quotient for each child's description we found that it, too, was not related to any classification of the children (Table 9.2.7K).

Overall, it would seem that there was little difference between the children with and without asthma in their descriptions of their brothers. The most striking finding was the clear sex difference, with the boys using the more developed descriptive concepts to describe their brothers.

Considering the children with asthma separately, the most obvious feature was that those with asthma classed clinically mild used more mutual items to describe their brothers.

TABLE 9.2.7G: Relationship of the "personal involvement" classification of the children's descriptions of their brothers to the different classification of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Egocentric	.14	.15	.08	-.02	.08	-.35
Mutual	.06	.27	.24	-.02	.52*	-.18
Other oriented	.05	-.19	-.15	.35*	-.18	-.18
(b) Average no. of items per description of brother						
Egocentric	.03	.09	.13	.02	.21	-.24
Mutual	.06	.27	.24	-.02	.52*	-.26
Other oriented	.01	-.14	-.11	.32*	-.07	-.26

TABLE 9.2.7G(cont)

(c) Proportion of total description	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Egocentric	-.02	.21	.12	-.22	.08	-.01
Mutual	.05	.27	.24	-.06	.54*	-.27
Other oriented	-.01	-.29	-.19	.32*	-.29	.09

Note: Figures give Kendall's tau values of the relationship of the "personal involvement" classifications to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.7H: Items from the "personal involvement" classification of the children's descriptions of their brothers related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 3 other oriented items	8(38.1%)	1( 9.1%)
Average no. of items per description of brother		
More than 2 other oriented items	4(19.1%)	1( 9.1%)
Proportion of total description		
Over 60% other oriented items	8(38.1%)	1( 9.1%)

TABLE 9.2.7I: Items from the "Personal involvement" classification of the children's descriptions of their brothers related to the clinical classification of the children with asthma

	Clinical classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 1 mutual item	3(50%)	1(11.1%)	0
Average no. of items per description of brother			
More than 0 mutual items	3(50%)	1(11.1%)	0
Proportion of total description			
Over 1% mutual items	3(50%)	1(11.1%)	0

TABLE 9.2.7J: "Evaluative" classification of the children's descriptions of their brothers

	Positive	Negative	Neutral
Total no. of items	73	12	49
Average no. of items per description of brother	1.3	0.2	0.9
Proportion of total description	54.5%	9.0%	36.6%

TABLE 9.2.7K: Relationship of the "evaluative" classification of the children's descriptions of their brothers to the different classifications of the children

Classification of description	Classification of the children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Positive	-.02	.02	.08	.36*	.11	-.39
Negative	.05	.25	-.01	-.24	-.09	-.02
Neutral	.15	-.05	-.08	.29	-.05	-.38
(b) Average no. of items per description of brother						
Positive	-.17	.01	.24	.38*	.30	-.25
Negative	.04	.26	-.06	-.19	-.08	.01
Neutral	.15	-.04	-.03	.25	-.02	-.29

TABLE 9.2.7K (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Positive	-.14	-.07	.14	.13	.07	-.10
Negative	.05	.28	.01	-.27	-.10	.06
Neutral	.08	-.11	-.21	.24	-.15	-.03
Evaluative consistency quotient	.02	-.16	.05	.11	.22	.10

Note: Figures give Kendall's tau values of the relationship of the "evaluative" classification to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.7L : Items from the "evaluative" classification of the children's descriptions of their brothers related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 3 positive items	12(57.1%)	2(18.2%)
Average no. of items per description of brother		
More than 2 positive items	7(33.3%)	1( 9.1%)

### 9.2.8 Children's descriptions of their sisters (1)

Of the 60 children in the total sample, 36 had sisters. Thirty three of these children used 107 items to describe 47 sisters. That is, each of those 33 children used, on average, 2.3 items to describe a single sister.

Considering only those 36 children who had sisters, partial correlation analysis showed that the girls used a larger number of items in total (Tables 9.2.7A and 9.2.8A). However, when we excluded from the analysis those three children who did not describe their sisters, we found that the average number of items used to describe a single sister was not related to any of the classifications of the children (Table 9.2.7A). The other partial correlation analyses reported in this section were performed only on those 33 children who provided descriptions of their sisters.

Table 9.2.8B shows that, in the descriptiveness classification of the items, the simple differentiating items were the most common, followed by the dispositional, the differentiating, and then the undifferentiating items. Partial correlation analyses showed that the girls, especially the older ones, used a larger total number, a larger average number, and a larger proportion of differentiating items than did the boys (Tables 9.2.8C, D and E). The girls also used a smaller proportion of simple differentiating items in their descriptions.

None of the descriptiveness classifications of the items was related to whether or not the children had asthma (Table 9.2.8C). However, when we considered the replies of

Table 9.2.8A : Relationship of the total number of items in the children's descriptions of their sisters related to the sex of the children.

	Sex of children	
	Boys	Girls
At least 5 items in total description	1(6.3%)	4(23.5%)

TABLE 9.2.8B: 'Descriptiveness' classification of the children's descriptions of their sisters

	Undifferentiating	Simple differentiating	Differentiating	Dispositional
Total no. of items	7	77	9	14
Average no. of items per description of sister	0.2	1.6	0.2	0.3
Proportion of total description	6.5%	72.0%	8.4%	13.1%

TABLE 9.2.8C : Relationship of the "descriptiveness" classification of the children's descriptions of their sisters to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Undifferentiating	.19	.01	-.05	-.26	.46	.09
Simple differentiating	-.01	-.01	-.12	-.11	.25	.45
Differentiating	.17	-.35*	.12	-.30*	.39	-.55*
Dispositional	.21	-.05	-.15	-.12	-.35	.53*
(b) Average no. of items per description of sister						
Undifferentiating	.18	.02	-.03	-.26	.46	.09
Simple differentiating	.14	.04	-.04	-.01	-.10	.33
Differentiating	.17	-.35*	.12	-.30*	.39	-.55*
Dispositional	.22	-.05	-.17	-.13	-.35	.53*

TABLE 9.2.8C(cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Undifferentiating	.17	.01	-.03	-.26	.44	.07
Simple differentiating	-.25	.26	-.04	.34*	-.03	-.02
Differentiating	.17	-.34*	.11	-.29*	.43	-.55*
Dispositional	.20	-.06	-.15	-.10	-.41	.42

Note: Figures give Kendall's tau values of the relationship of the "descriptiveness" classifications to the different classifications of the children.

\*  $p < 0.05$

the children with asthma separately, we found that those children with asthma classed as physiologically severe used a larger total number, a larger average, and a larger proportion of differentiating items. They also used a smaller total number and a smaller average number, but not a smaller proportion, of dispositional items (Tables 9.2.8C and F).

The personal involvement classification of the children's descriptions of their sisters is presented in Table 9.2.8G. This shows that the egocentric items were the most frequently used, followed by the other oriented, and then the mutual items.

Partial correlation analysis showed that none of the four classifications of all the children were related to any of the personal involvement classifications of the descriptions of the sisters (Table 9.2.8H). However, when we analysed the replies of the children with asthma separately, we found that both the children with asthma classed clinically mild and those with asthma classed physiologically severe used a larger total number, a larger average number, and a larger proportion of mutual items (Tables 9.2.8H, I and J). However, since there was only 1 mutual item, out of a total of 107 items, we should not place too much emphasis on these two findings.

Considering the evaluative classification of the descriptive items, we found that positive items were used most frequently in the descriptions of the sisters, followed by neutral and then negative items (Table 9.2.8K). Partial correlation analysis showed that the girls, especially the older ones, used a larger total number, a larger average number, and a larger

TABLE 9.2.8D: Items from the "descriptiveness" classification of the children's descriptions of their sisters related to the age of the children

	Age of children	
	<u>Young</u>	<u>Old</u>
Total no. of items		
At least 1 differentiating item	0	5 ( 25%)
Average no. of items per description of sister		
More than 0 differentiating item	0	5 ( 25%)
Proportion of total description		
Over 20% differentiating items	0	5 ( 25%)

TABLE 9.2.8E : Items from the "descriptiveness" classification of the children's descriptions of their sisters related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 1 differentiating item	1 ( 6.3%)	4 (23.5%)
Average no. of items per description of sister		
More than 0 differentiating items	1 ( 6.3%)	4 (23.5%)
Proportion of total description		
Over 80% simple differentiating items	11 (68.8%)	6 (35.3%)
Over 20% differentiating items	1 ( 6.3%)	4 (23.5%)

TABLE 9.2.8F : Items from the "descriptiveness" classification of the children's description of their sisters related to the physiological classification of the children with asthma

	Physiological classification;		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 1 differentiating item	0	0	3(42.9%)
At least 2 dispositional items	1(33.3%)	1(25 %)	0
Average no. of items per description of sister			
More than 0 differentiating items	0	0	3(42.9%)
More than 1 dispositional item	1(33.3%)	1(25 %)	0
Proportion of total description			
Over 20% differentiating items	0	0	3(42.9%)

TABLE 9.2.8G: "Personal involvement" classification of the children's descriptions of their sisters

	Egocentric	Mutual	Other oriented
Total no. of items	56	1	50
Average no. of items per description of sister	1.2	0.02	1.1
Proportion of total description	52.3%	0.9%	46.7%

TABLE 9.2.8H : Relationship of the "personal involvement" classification of the children's descriptions of their sisters to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Egocentric	-.11	-.07	-.11	-.11	.28	.43
Mutual	.18	-.14	-.14	.17	.61*	-.59*
Other oriented	.06	-.20	-.16	-.20	.13	.09
(b) Average no. of items per description of sister						
Egocentric	-.08	-.03	-.09	-.08	.28	.43
Mutual	.18	-.14	-.14	.17	.61*	-.59*
Other oriented	.06	-.27	-.26	-.17	.08	.04

TABLE 9.2.8H(cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Egocentric	-.10	-.01	.06	-.01	.05	.19
Mutual	.18	-.14	-.14	.17	.61*	-.59*
Other oriented	.04	-.01	-.05	-.04	-.12	-.07

Note: Figures give the Kendall's tau values of the relationship of the "personal involvement" classifications to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.8I: Items from the "personal involvement" classification  
of the children's descriptions of their sisters  
related to the clinical classification of the  
children with asthma

	Clinical classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 1 mutual item	1(25 %)	0	0
Average no. of items per description of sister			
More than 0 mutual items	1(25 %)	0	0
Proportion of total description			
Over 30% mutual items	1(25 %)	0	0

TABLE 9.2.8J : Items from the "personal involvement" classification of the children's descriptions of their sisters related to the physiological classification of the children with asthma

	Physiological classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 1 mutual item	0	0	1(14.3%)
Average no. of items per description of sister			
More than 0 mutual item	0	0	1(14.3%)
Proportion of total description			
Over 30% mutual items	0	0	1(14.3%)

TABLE 9.2.8K: 'Evaluative' classification of the children's descriptions  
of their sisters

	Positive	Negative	Neutral
Total no. of items	47	22	38
Average no. of items per description of sister	1	0.5	0.8
Proportion of total description	43.9%	20.6%	35.5%

TABLE 9.2.8L: Relationship of the "evaluative" classification of the children's descriptions of their sisters to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no..of items						
Positive	.17	-.43* *	-.07	-.55***	-.33	-.06
Negative	.08	-.12	-.01	.26	.19	.43
Neutral	-.01	.40*	-.03	.01	.29	.61*
(b) Average no. of items per description of sister						
Positive	.16	-.39*	-.12	-.50**	-.18	-.05
Negative	.10	-.10	-.01	.25	.19	.33
Neutral	-.19	.45**	-.19	.02	.23	.35

TABLE 9.2.8L(cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Positive	.06	-.44**	.05	-.36*	-.38	-.37
Negative	.05	-.10	-.02	.30*	.22	.33
Neutral	-.07	.53***	-.18	.10	.30	.19
Evaluative consistency quotient	-.06	.10	.01	-.30*	-.23	-.35

Note: Figures give the Kendall's tau values of the relationship of the "evaluative" classification to the different classifications of the children.

\*p < 0.05; \*\*p < 0.01; \*\*\*p < 0.001

TABLE 9.2.8M: Items from the "evaluative" classification of the children's descriptions of their sisters related to the sex of the children

	Sex of the children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 3 positive items	0	5(29.4%)
Average no. of items per description of sister		
More than 2 positive items	0	3(17.7%)
Proportion of total description		
Over 60% positive items	5(31.3%)	8( 47 %)
Over 40% negative items	4( 25 %)	0
Evaluative consistency quotient		
Less than 60	4( 25 %)	0

TABLE 9.2.8N: Items from the "evaluative" classification of the children's descriptions of their sisters related to the age of the children

	Age of children	
	<u>Young</u>	<u>Old</u>
Total no. of items		
At least 3 positive items	0	5( 25 %)
At least 3 neutral items	3(23.1%)	1( 5 %)
Average no. of items per description of sister		
More than 2 positive items	0	3( 15 %)
More than 0 neutral items	12(92.3%)	10( 50 %)
Proportion of total description		
Over 60% positive items	1( 7.7%)	12(60 % )
Over 40% neutral items	11(84.6%)	4( 20 %)

TABLE 9.2.80: Items from the "evaluative" classification of the children's descriptions of their sisters related to the physiological classification of the children with asthma

	Physiological classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 3 neutral items	0	0	1(14.3%)

proportion of positive items (Tables 9.2.8L, M and N). The younger children used a larger total number, a larger average number, and a larger proportion of neutral items. By subtracting the number of negative items from the total number of items and dividing by the total number of items we obtained an evaluative consistency quotient for each child's description of his or her sisters. Partial correlation analysis with this new variable revealed that the girls had a higher evaluative consistency quotient (Tables 9.2.8 L and M).

None of the evaluative classifications was related to whether or not the children had asthma (Table 9.2.8L). However, when the replies of the children with asthma were considered separately, partial correlation analysis revealed that those children with asthma classed as physiologically mild used a larger total number of neutral items (Tables 9.2.8 L and O).

In summary, it would seem that there was no clear difference between the sister descriptions of the children with and the children without asthma. The most apparent findings were the age and sex differences. The older girls used the most conceptually developed terms to describe their sisters. Considering the children with asthma separately, the most definite finding was the greater use of differentiating items by the children with asthma classed as physiologically severe.

#### 9.2.9 Children's descriptions of their siblings (1)

Combining the children's descriptions of their brothers and sisters we found that, of the 55 children with siblings, 49

TABLE 9.2.9A: "Descriptiveness" classification of the children's descriptions of their siblings

	Undifferentiating	Simple differentiating	Differentiating	Dispositional
Total no. of items	14	170	38	19
Average no. of items per description of sibling	0.1	1.6	0.4	0.2
Proportion of total description	5.8%	70.5%	15.8%	7.9%

described 104 siblings with 241 items. That is, each child used 2.4 items to describe a sibling.

Considering all 55 children with siblings, partial correlation analysis revealed that the total number of descriptive items used was not related to any classification of the children (Table 9.2.7A). When we excluded from the analysis those 6 children who did not describe their siblings, we again found that the average number of items used to describe a single sibling was not related to any of the classifications of the children (Table 9.2.7A).

The descriptiveness classification of the items used to describe the siblings is presented in Table 9.2.9A. This shows that the simple differentiating items were used most frequently, followed by the differentiating, the dispositional, and then the undifferentiating items.

Partial correlation analysis revealed that the children with asthma, especially the girls, used a larger total number, a larger average number, and a larger proportion of undifferentiating items to describe their siblings (Tables 9.2.9B, C and E). The children with asthma also used a larger average number of simple differentiating items to describe a single sibling. The children from working class families used a larger total number of simple differentiating items in their descriptions (Tables 9.2.9B and D). The boys used a larger total number, a larger average number, and a larger proportion of differentiating items to describe their siblings (Tables 9.2.9B and E).

TABLE 9.2.9B : Relationship of the "descriptiveness" classification of the children's descriptions of their siblings to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Undifferentiating	.27*	.01	.04	-.26*	.31	-.22
Simple differentiating	.12	.01	-.27*	.06	.04	-.10
Differentiating	.15	-.19	.11	.24*	-.09	-.18
Dispositional	.13	-.01	-.12	-.11	-.16	.21
(b) Average no. of items per description of sibling						
Undifferentiating	.28*	.02	.05	-.27*	.32	-.22
Simple differentiating	.29*	-.11	-.19	-.10	-.06	.25
Differentiating	.14	-.18	.09	.24*	-.07	-.20
Dispositional	.15	-.01	-.14	-.12	-.16	.21

TABLE 9.2.9B (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Undifferentiating	.27*	.02	.05	-.28*	.32	-.22
Simple differentiating	-.06	.11	-.13	.09	-.12	.11
Differentiating	.09	-.01	.10	.23*	-.10	-.15
Dispositional	.12	-.03	-.12	-.11	-.17	.24

Note: Figures give Kendall's tau values of the relationship of the "descriptiveness" classifications to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.9C: Items from "descriptiveness" classification of the children's descriptions of their siblings related to whether or not the children have asthma

	children	
	<u>With asthma</u>	<u>Without asthma</u>
Total no. of items		
At least 1 undifferentiating item	7(28 %)	2( 8.4%)
Average no. of items per description of sibling		
More than 0 undifferentiating item	7(28 %)	2( 8.4%)
More than 2 simple differentiating item	6(24 %)	2( 8.4%)
Proportion of total description		
Over 1% undifferentiating items	7(28 %)	2( 8.4%)

TABLE 9.2.9D : Items from the "descriptiveness" classification of the children's descriptions of their siblings related to the social class of the children's families

	Social class of children's families	
	<u>Middle class</u>	<u>Working class</u>
Total no. of items	-	
At least 3 simple differentiating items	4(30.8%)	21(58.3%)

TABLE 9.2.9E : Items from the "descriptiveness" classification of  
the children's descriptions of their siblings  
related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Total no. of items		
At least 1 undifferentiating item	3(10.7%)	6(28.6%)
At least 1 differentiating item	13(46.4%)	4(19 % )
Average no. of items per description of sibling		
More than 0 undifferentiating item	3(10.7%)	6(28.6%)
More than 0 differentiating items	13(46.4%)	4( 19 % )
Proportion of total description		
Over 1% undifferentiating item	3(10.7%)	6(28.6%)
Over 1% differentiating items	13(46.4%)	4(19 % )

Considering the replies of the children with asthma separately we found that none of the descriptiveness classifications of the items was related to either the clinical or the physiological classification of the children's asthma (Table 9.2.9B).

Table 9.2.9F shows the personal involvement classification of the siblings' descriptions. The egocentric items were most frequently used, followed by the other oriented and the mutual items.

Partial correlation analysis showed that none of the personal involvement classifications of the siblings' descriptions was related to any of the four classifications of all the children (Table 9.2.9G). However, considering the replies of the children with asthma separately, we found that those children with asthma classed as clinically mild used a larger total number, a larger average number, and a larger proportion of mutual items in their sibling descriptions (Tables 9.2.9G and H).

The evaluative classification of the descriptive items is presented in Table 9.2.9I. This shows that the positive items were the most common, followed by the neutral, and then the negative items.

Partial correlation analysis revealed that the boys used a larger average number of neutral items to describe a single sibling (Tables 9.2.9J and K). The older children used a larger proportion of positive items in their sibling descriptions (Tables 9.2.9J and L).

TABLE 9.2.9F: "Personal involvement" classification of the children's descriptions of their siblings

	Egocentric	Mutual	Other oriented
Total no. of items	127	9	105
Average no. of items per description of sibling	1.2	0.09	1.01
Proportion of total description	52.7%	3.7%	43.6%

TABLE 9.2.9G: Relationship of the "personal involvement" classification of the children's descriptions of their siblings to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Egocentric	.04	.07	-.15	-.07	.06	-.06
Mutual	.10	.18	.09	.05	.44*	-.16
Other oriented	.14	-.15	-.12	.06	-.19	-.06
(b) Average no. of items per description of sibling						
Egocentric	-.06	.03	-.15	-.16	.03	.07
Mutual	.10	.19	.10	.05	.43*	-.12
Other oriented	.12	-.17	-.06	.06	-.15	-.04

TABLE 9.2.9G(cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Egocentric	-.09	.06	-.07	-.16	.02	.06
Mutual	.11	.19	.10	.04	.45*	-.15
Other oriented	.06	-.12	.01	.15	-.15	.01

Note: Figures give the Kendall's tau values of the relationship of the "personal involvement" classifications to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.9H: Items from the "personal involvement" classification  
of the children's descriptions of their siblings  
related to the clinical classification of the children  
with asthma

	Clinical classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
<b>Total no. of items</b>			
At least 1 mutual item	3(42.9%)	1( 10 %)	0
<b>Average no. of items per description of sibling</b>			
More than 0 mutual items	3(42.9%)	1( 10 %)	0
<b>Proportion of total description</b>			
Over 30% mutual items	3(42.9%)	1( 10 %)	0

TABLE 9.2.9I: "Evaluative" classification of the children's descriptions  
of their siblings

	Positive	Negative	Neutral
Total no. of items	120	34	87
Average no. of items per description of sibling	1.2	0.3	0.8
Proportion of total description	49.8%	14.1%	36.1%

None of the evaluative classifications of the items used to describe all the siblings was related to whether or not the children had asthma, nor to the sub-classifications of the children with asthma (Table 9.2.9J). In addition, when the evaluative quotient was derived for the sibling descriptions it was found not to be related to any classification of the children.

Having combined the descriptions of the brothers and sisters a difference was finally revealed between the children with and without asthma. In the descriptiveness dimension the children with asthma used the more conceptually undeveloped items. Considering the children with asthma separately it was found that the difference revealed in the brothers' descriptions was maintained. Those children with asthma classed as clinically mild used more mutual items in their sibling descriptions. Most of the sex differences revealed in the previous two sections were concealed in this section. Only in the descriptiveness dimension was the difference obvious with the boys using more differentiating items.

TABLE:9.2.9J Relationship of the "evaluative" classification of the children's descriptions of their siblings to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(a) Total no. of items						
Positive	.09	-.20	-.09	.03	-.06	-.25
Negative	.06	-.01	-.02	-.01	.06	.12
Neutral	.06	.17	-.17	.17	.05	-.12
(b) Average no. of items per description of sibling						
Positive	.01	-.23	.02	-.07	-.07	.02
Negative	.06	-.01	-.03	-.03	.04	.12
Neutral	.09	.17	-.09	.25*	-.04	-.03

TABLE 9.2.9J (cont)

	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
(c) Proportion of total description						
Positive	-.05	-.26*	-.02	-.18	-.04	-.27
Negative	.05	.01	-.02	-.01	.01	.17
Neutral	.01	.22	-.08	.22	.12	-.05
Evaluative consistency quotient	-.06	-.04	.02	.01	-.02	-.14

Note: Figures give Kendall's tau values of the relationship of the "evaluative" classification to the different classifications of the children.

\* $p < 0.05$

TABLE 9.2.9K : Items from the "evaluative" classification of the children's descriptions of their siblings related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Average no. of items per description of sibling		
More than 2 neutral items	4(14.3%)	1( 4.8%)

TABLE 9.2.9L : Items from the "evaluative" classification of the children's descriptions of their siblings related to the age of the children

	Age of children	
	<u>Young</u>	<u>Old</u>
Proportion of total description		
Over 60% positive items	5(23.8%)	13(46.4%)

#### 9.2.10 Second analysis of the children's descriptions of their siblings

The second analysis considered further the quality of the 170 simple differentiating items in the sibling descriptions. This re-analysis was performed in an attempt to increase our understanding of the sibling relationships in the families of children with asthma. Previous evidence has suggested that certain types of sibling relationship may be associated with childhood asthma (see section 9.1.3). Since the simple differentiating category of descriptive items contained all references to the characteristics of the sibling-child relationships we concentrated our re-analysis on those particular items.

Two new categories for coding these items were partly suggested by the work of Richardson et al (1964). They had found that physically handicapped boys referred more frequently to aggression in their self-descriptions, while handicapped girls rarely referred to generosity. Since aggression and generosity could be considered the positive and negative dimensions of rivalry, which has been used to characterize the sibling relationships of children with asthma, it seemed a valuable exercise to classify the simple differentiating items into two such categories.

Inspection of the simple differentiating items by the author revealed two new categories, which although based upon the aggression and generosity categories designed by Richardson et al, were more specifically defined and suitable for the classification

of the sibling descriptions given by the participants in this study.

The two new categories were:

- (1) Hostility: all items referring to verbal and physical aggression, friction or rivalry between the sibling and the child. For example: "I fight with him sometimes;" "She gets on my nerves."
- (2) Co-operative: all items referring to evidence of assistance rendered to the child by the sibling. For example: "He tells me wee stories when I'm sick;" "She helps me with my homework."

Two judges then assessed which of the 170 simple differentiating items could be classified into the hostility and co-operative categories. On the first independent assessment they agreed on the classification of 154 (90.6%) items. After discussion they agreed on the classification of a further 7 items, raising the agreement rate to 94.2%. The other 9 items were classified by a third judge who decided which of the first two judges' assessments were the most accurate.

For statistical analysis of this new classification of the children's descriptions a secondary coding scheme was devised. Three coding frames were designed to classify the total number of hostility items, the average number of hostility items per description of a sibling, and the proportion of the

total number of items classified into the hostility category. A further coding frame classified the proportion of the simple differentiating items which were classified as hostility items. Another four coding frames repeated this exercise for the co-operative items. The full coding scheme, together with the number of descriptive items in each category, for descriptions of both brothers and sisters, is given in Appendix 9.2.6.

The partial correlation analyses reported in the following three sections were performed only on those children who had provided descriptions of their siblings. The analyses excluded all information about those children who had siblings but did not describe them.

#### 9.2.11 Children's descriptions of their brothers (2)

The hostility and co-operative classifications of the children's descriptions of their brothers are presented in Table 9.2.11A. This shows that the number of hostility and co-operative items combined comprised over one quarter of the total descriptions, and almost 40% of the simple differentiating items.

Considering the hostility classification first, a partial correlation analysis revealed that the children with asthma used a larger total number and a larger average number of hostility items in their descriptions (Tables 9.2.11B and C). However, the hostility items did not form a larger proportion of the total description or of the simple differentiating classification of items for the children with asthma.

TABLE 9.2.11A: "Hostility" and "co-operative" classification of the children's descriptions of their brothers

	Hostility	Co-operative
Total no. of items	14	21
Average no. of items per description of brother	0.2	0.4
Proportion of total description	10.4%	15.7%
Proportion of simple differentiating items	15.1%	22.6%

TABLE 9.2.12A: "Hostility" and "co-operative" classifications of the children's descriptions of their sisters

	Hostility	Co-operative
Total no. of items	16	16
Average no. of items per description of sister	0.3	0.3
Proportion of total description	15.0%	15.0%
Proportion of simple differentiating items	20.8%	20.8%

TABLE 9.2.13A: "Hostility" and "co-operative" classifications of the children's descriptions of their siblings

	Hostility	Co-operative
Total no. of items	30	37
Average no. of items per description of sibling	0.3	0.4
Proportion of total description	12.4%	15.4%
Proportion of simple differentiating items	17.6%	21.8%

TABLE 9.2.11B: Relationship of the "hostility" classification of the children's descriptions  
of their brothers to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	.82***	-.04	.03	-.11	-.12	.09
Average no. of items per description of brother	.83***	.11	-.10	-.01	-.12	.09
Proportion of total description	.05	.26	-.01	-.22	-.14	.07
Proportion of 'simple differentiating' items	.06	.26	-.01	-.21	-.14	.07

Note: Figures give the Kendall's tau values of the relationship of the "hostility" classification to the different classifications of the children.

\*\*\*p < 0.001

TABLE 9.2.11C: Items from the "hostility" classification of the children's descriptions of their brothers related to whether or not the children have asthma

	Children	
	<u>With asthma</u>	<u>Without asthma</u>
Total no. of items		
At least 3 hostility items	2(10.5%)	0
Average no. of items per description of brother		
More than 1 hostility item	2(10.5%)	1( 7.7%)

The hostility classification of the brothers' descriptions was not related to any other classification of the children (Table 9.2.11B).

Considering the co-operative items, partial correlation analysis revealed that none of the four classifications of all the children were related to this classification of the items (Table 9.2.11D). However, when we analysed the replies of the children with asthma separately we found that those children with asthma classed as physiologically severe used not only a larger total number and a larger average number of co-operative items, but these items formed a larger proportion of the total description and of the simple differentiating classification of their brothers' descriptions (Tables 9.2.11D and E).

Overall, it seemed that although the children with asthma used many hostility items to describe their brothers, proportionately they did not use any more of such items than did the children without asthma. However, the children with asthma classed as physiologically severe used more co-operative items in their brother descriptions, proportionately they used more such items than did the other children with asthma.

#### 9.2.12 Children's descriptions of their sisters (2)

The hostility and co-operative classifications of the children's descriptions of their sisters are presented in Table 9.2.12A. Combining the number of these items we find that they comprise almost one third of the total description of

TABLE 9.2.11D: Relationship of the "co-operative" classification of the children's descriptions of their brothers to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	.03	.26	.01	-.25	.13	-.64**
Average no. of items per description of brother	.03	.26	.01	-.25	.19	-.71**
Proportion of total description	-.13	-.17	-.22	-.01	.13	-.64**
Proportion of 'simple differentiating' items	-.16	-.23	-.22	-.03	.15	-.67**

Note: Figures give the Kendall's tau values of the relationship of the "co-operative" classification to the different classifications of the children.

\*\*p < 0.01

TABLE 9.2.11E: Items from the "co-operative" classification of the children's descriptions of their brothers related to the physiological classification of the children with asthma

	Physiological classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 1 co-operative item	0	1(12.5%)	4( 80 %)
Average no. of items per description of brother			
More than 0 co-operative items	0	1(12.5%)	4( 80 %)
Proportion of total description			
Over 1% co-operative items	0	1(12.5%)	4( 80 %)
Proportion of 'simple differentiating' items			
Over 1% co-operative items	0	1(12.5%)	4( 80 %)

TABLE 9.2.12 B: Relationship of the "hostility" classification of the children's descriptions of their sisters to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	.17	-.05	-.01	.26	-.01	.61*
Average no. of items per description of sister	.18	-.04	-.01	.26	-.01	.61*
Proportion of total description	.16	-.04	-.01	.29*	.02	.58*
Proportion of 'simple differentiating' items	.18	-.05	-.01	.29	.04	.60*

Note: Figures give the Kendall's tau values of the relationship of the "hostility" classification to the different classifications of the children

\*  $p < 0.05$

TABLE 9.2.12C: Items from the "hostility" classification of the children's descriptions of their sisters related to the sex of the children

	Sex of children	
	<u>Boys</u>	<u>Girls</u>
Proportion of total description		
Over 10% hostility items	6(37.5%)	2(11.8%)

TABLE 9.2.12D: Items from the "hostility" classification of the children's descriptions of their sisters related to the physiological classification of the children with asthma

	Physiological classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Total no. of items			
At least 3 hostility items	2(66.7%)	0	0
Average no. of items per description of sister			
More than 1 hostility item	2(66.7%)	0	0
Proportion of total description			
Over 10% hostility items	3(100 %)	1( 25 %)	1(14.3%)
Proportion of 'simple differentiating' items			
Over 40% hostility items	3(100 %)	1( 25 %)	0

TABLE 9.2.12E: Relationship of the "co-operative" classification of the children's descriptions of their sisters to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	-.12	-.13	-.08	-.21	.06	.12
Average no. of items per description of sister	-.09	-.10	-.05	-.24	.06	.12
Proportion of total description	-.14	-.08	-.01	-.18	.02	.01
Proportion of 'simple differentiating' items	-.15	-.09	-.01	-.18	.06	.06

Note: Figures give the Kendall's tau values of the relationship of the "co-operative" classification to the different classifications of the children.

sisters and over 40% of the simple differentiating items.

Partial correlation with the hostility items showed that the boys used a larger proportion of hostility items (Tables 9.2.12 B and C). Although this classification of the items was not related to whether or not the children had asthma when we analysed the replies of the children with asthma separately we found that those classed as physiologically mild used more hostility items overall (Table 9.2.12D).

Partial correlation with the co-operative items found that none of the classifications of the children was related to this classification of the items (Table 9.2.12E).

In summary, the two main findings were that the boys, and those children with asthma classed as physiologically mild, used more hostility items to describe their sisters.

### 9.2.13 Children's descriptions of their siblings (2)

Combining the brothers' and sisters' descriptions, we found that hostility and co-operative items made up over one quarter of the total description of the siblings and almost two fifths of the simple differentiating items (Table 9.2.13A).

Partial correlation with the hostility items revealed that this classification of the descriptions was not related to any of the four main classifications of the children (Table 9.2.13B). Considering the children with asthma separately we found that those classed as physiologically mild used more hostility items on average (Table 9.2.13C).

TABLE 9.2.13B: Relationship of the "hostility" classification of the children's descriptions of their siblings to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	.11	.08	-.01	-.04	-.10	.31
Average no. of items per description of sibling	.13	.09	-.03	-.05	-.15	.35*
Proportion of total description	.13	.07	-.03	-.04	-.10	.28
Proportion of 'simple differentiating' items	.15	.07	-.03	-.06	-.11	.27

Note: Figures give the Kendall's tau values of the relationship of the "hostility" classification to the different classifications of the children.

\*  $p < 0.05$

TABLE 9.2.13C: Items from the "hostility" classification of the children's descriptions of their siblings related to the physiological classification of the children with asthma

	Physiological classification		
	<u>Mild</u>	<u>Moderate</u>	<u>Severe</u>
Average no. of items per description of sibling			
More than 1 hostility item	2(28.6%)	1(11.1%)	0

TABLE 9.2.13D: Relationship of the "co-operative" classification of the children's descriptions of their siblings to the different classifications of the children

Classification of descriptions	Classification of children					
	<u>Asthma</u>	<u>Age</u>	<u>Social class</u>	<u>Sex</u>	<u>Clinical</u>	<u>Physiological</u>
Total no. of items	-.12	-.10	-.14	-.09	-.04	-.27
Average no. of items per description of sibling	-.14	-.12	-.13	-.17	-.10	-.22
Proportion of total description	-.16	-.13	-.09	-.13	-.09	-.31
Proportion of 'simple differentiating' items	-.17	-.11	-.08	-.14	-.09	-.30

Note: Figures give the Kendall's tau values of the relationship of the "co-operative" classification to the different classifications of the children.

With the co-operative items we found that none of the classifications of the children was related to this classification of the descriptions (Table 9.2.13D).

It would seem that analysing the descriptions of the brothers and sisters together concealed the various relationships established in the previous two sections. The only finding that was maintained from our analysis of the sisters descriptions was that those children with asthma classed as physiologically mild used, on average, more hostility items to describe a single sibling.

### 9.3 DISCUSSION

#### 9.3.1 General overview

The results of our analysis of the children's homelife have not been as definite as expected. There was some further evidence from our analysis of the children's sibling descriptions that children with asthma have a less developed cognitive capacity than their peers, indicating a more unstable relationship with their siblings. In addition, the children's replies to the questions about homelife provided some confirmatory evidence for the claim that children with asthma lead a more sedentary life. Considering the replies of the children with asthma separately, we found some relationships with the clinical severity of the children's asthma which might help us understand the clinical nature of childhood asthma. We also found some intriguing relationships with the physiological severity of the children's asthma which will be discussed further in section 9.3.3

The few age differences in the children's descriptions of their family and homelife, although not as definite as the age differences in the children's descriptions of their friends, indicated the lack of cognitive development of the younger children. These differences will be discussed in section 9.3.4

There were a few insights into the social class differences in the children's homelife which we will discuss in section 9.3.5

The most significant findings were the sex differences in the children's descriptions of their siblings. The sex by sex interaction indicates that sibling relationships are largely

confined within sexes at this age. These findings will be discussed in section 9.3.5.

First, however, we will consider, in general terms, the children's descriptions of their family and homelife and contrast these with their descriptions of their friends.

### 9.3.2 Characteristics of the children's descriptions of their siblings and homelife

Since a number of children did not have siblings (5), or did not describe the siblings they did have (6), the amount of information from which we had to infer some picture of the characteristics of different sibling relationships was limited. In addition, those children who did describe their siblings only used a few descriptive items. Whereas we obtained 864 descriptive items from 60 children in their descriptions of 175 friends, i.e. 4.9 items per friend, we only obtained 241 items from 49 children to describe 104 siblings, i.e. 2.4 descriptive items per sibling.

This lack of descriptive information is, perhaps, an indication of how little the children had differentiated their siblings from their environment and from themselves. Using Peevers and Secord's descriptiveness classification, we found that 5.8% of the items used in the sibling descriptions were classified as undifferentiating, 70.5% as simple differentiating, 15.8% as differentiating, and 7.9% as dispositional. The respective figures for the classification of the friend descriptions were 13.2%, 53.8%, 25.1% and 7.9%. The

smaller proportion of differentiating items and the larger proportion of simple differentiating items used in the sibling descriptions is an indication of how the children did not differentiate their siblings from their environment as much as they did their friends.

The simple differentiating items were re-analysed to increase our understanding of the characteristics of the sibling relationships. This revealed that 17.6% of the simple differentiating items were re-classified into the new 'hostility' category, and a further 21.8% were re-classified into the new 'co-operative' category. The similar proportions of 'hostility' and 'co-operative' items used by the children is an indication of the balanced nature of the sibling relationships. Although there was a certain amount of conflict between the siblings they still helped each other.

Our classification of the descriptive items according to Peevers and Secord's 'personal involvement' dimension revealed how the children differentiated their siblings to a smaller extent from themselves than they differentiated their friends. Whereas the children used 52.7% egocentric items, 3.7% mutual items, and 43.6% other oriented items in their sibling descriptions, they used 43.3% egocentric items, 13% mutual items, and 43.6% other-oriented items in their friend descriptions. The larger proportion of egocentric items used in the sibling descriptions indicates the smaller extent to which they have differentiated their siblings from themselves.

In our discussion of the personal involvement classification of the children's friend descriptions (see section 8.3.2) we mentioned that because certain children were unable to adopt their friends' viewpoints, they would substitute their own. The greater use of egocentric items in the sibling descriptions would indicate that children would frequently substitute their perspectives for their siblings'. This would lead to more misinterpretation of siblings' behaviour than of friends' behaviour and, perhaps, explain the frequency of family quarrels.

In our analysis of the evaluative tone of the children's descriptions of their friends, we found that less than 1% of the descriptive items were classified as negative. However, in the children's descriptions of their siblings 14.1% of the items were classified as negative in tone, although the interview format for obtaining the descriptions was the same in both instances. This indicates that whereas friendships are predominately positive in tone, sibling relationships can sometimes be negative. Whereas children have a certain amount of choice in selecting their friends and so select those who they enjoy most, they have no choice in selecting their siblings and must interact with them despite possible dislike for them.

The children provided only a limited amount of information on their homelife. Most of the children presented a favourable image of their parents. Few reported that their parents were strict, which was apparent in how frequently

they were allowed to watch television late. Few children reported that their parents were not aware of their various abilities and few reported that their parents thought them weak.

These findings were not unexpected. Children of this age are largely dependent upon their parents for physical and psychological survival. It is not until they have obtained a certain amount of independence from their parents that they can adopt a more critical attitude towards them.

Harris and Tseng (1957) reported a study in which children of various ages were asked to describe their parents. They found that there was a steady increase in the proportion of negative characteristics attributed to the parents by the children from third to fifth grade, but this was followed by a slight decrease up to twelfth grade.

Although we did not find any age difference in the children's perception of their parents, the generally positive tone of their remarks is an indication of their youth.

Most of the children reported that they engaged in some kind of physical play activity. Indeed, only seven reported that they did not enjoy sports at all. Since childhood peer relations are established in play (Brooks-Gunn and Lewis, 1978), children who are restricted from involvement in the most popular form of childhood play (physical activities and games) would also be restricted from the opportunity of establishing stable friendships.

Those children who were restricted from involvement in

physical play activities would be expected to engage in more individually based pursuits. Because of the small number of children who did not enjoy some kind of sporting activity, it was not surprising to find that less than a quarter of the children referred to a traditional hobby, such as stamp-collecting, as a pastime. Most of the children did, however, enjoy reading books, at least occasionally.

Overall, the findings have indicated the lack of cognitive development of these children and the qualitative differences between friendships and sibling relationships. The importance of physical games to this age group would predict adverse effects on the social and psychological development of children who were excluded from such games.

### 9.3.3 Relationship of whether or not the children had asthma to how they described their siblings and homelife

Only one classification of the children's descriptions of their siblings was related to whether or not the children had asthma. This showed that the children with asthma used more undifferentiating items to describe their siblings. Since the undifferentiating items are the most undeveloped descriptive items, in which the sibling is "not differentiated from his environment" but is described "in terms of his possessions or his social setting", this relationship is an indication of the lack of cognitive development of the children with asthma.

The consequences of such a lack of cognitive development

have already been discussed with reference to the children's friendships (see section 9.3.3). In this case, it would imply that the sibling relationships of children with asthma are more unstable than those of their healthy peers.

The few items concerning homelife which were related to whether or not the children had asthma were not unexpected. Our finding that the children with asthma more frequently reported that their parents restricted them from involvement in various activities is an indication that the 'over-protection' thesis which we criticised in section 9.1.2 might have some substance. However, whereas previous empirical evidence for the 'over-protection' thesis has been inferred from clinical interviews with the mothers, our evidence is derived directly from the children's own reports of their parents' restrictiveness. Nevertheless, the exact details of such over-protection and the reasons for it can only be inferred from other comments which the children made.

Fewer of the children with asthma reported involvement in physical activities. Besides being excluded from various social activities by their peers (see section 7.3.3), an added reason why these children do not play physical games regularly is probably the nature of asthma itself. In section 6.2.4 we reported that nearly all the children with asthma, and their mothers, mentioned that exertion contributed to the development of asthmatic attacks. It is probable that, realising this relationship, many children with asthma are reluctant to engage in strenuous physical activities lest an

attack is precipitated. Their mothers would, also, be expected to discourage them playing games for this reason.

The social and psychological development of children with asthma would be adversely affected because of this lack of involvement in physical play activities which are the most popular form of childhood social interaction. In section 8.3.3 we referred to our finding that children with asthma more frequently mentioned non-physical and indoor activities in their descriptions of their friends. Restricted from involvement in physical play activities, the children with asthma develop friendships with those peers who involve themselves in the less popular non-physical and indoor play activities. However, the friendships which the children with asthma develop with healthy peers during involvement in non-physical games would be liable to disintegration once those peers began to engage in more physical games (see section 8.3.3). Thus, children with asthma only have the opportunity of developing stable friendships with either other sick children or with those children who, for various reasons, prefer non-physical activities.

If children with asthma are to have the opportunity of developing their cognitive capacities and, also, a wider, and more stable, selection of friendships they must be advised of the various play activities which while popular among children are not precipitous of wheezing. The most obvious example is swimming which although a popular physical activity does not particularly irritate the bronchi of

children with asthma.

Our finding that the children with asthma classed as clinically severe less frequently used mutual items in their sibling descriptions indicates a particular quality of their sibling relationships. Mutual items are those which describe the sibling "in terms of his relationship" to the child. Thus, those children with severe clinical asthmatic symptoms would be less likely to be involved regularly in joint activities with their siblings.

McNicol et al (1973) reported a similar finding from their analysis of clinical interviews with children who had asthma and their mothers. They noted that "study of the sharing of activities and conflict between members of families showed a trend for the families of grade D children (those with frequent asthmatic attacks) to have fewer joint activities." Whether social exclusion from joint activities is in some way linked to the development of severe clinical symptoms, or vice versa, is not apparent from our findings. However, no matter what was the original direction of the causal relationship, exclusion from mutual activities with their siblings would further retard the social and psychological development of children with clinically severe asthma and so lead to their greater social isolation.

Analysis of the children's comments on their homelife provided some evidence to indicate that the parents of children with clinically severe asthma were more strict. Those children more frequently reported that their parents

regularly gave them household chores, which they especially disliked doing, and that their parents liked them to be either neat, industrious, or obedient.

From their longitudinal analysis of child-rearing practices, Sears et al (1957) concluded that 'restrictive' mothers tended to demand neatness and obedience of their children, and, in addition, to prohibit house play, discourage noise, value successful school performance, use physical punishment, and discourage aggression between siblings. These characteristics might describe further the child-rearing practices of children with clinically severe asthma.

In another study of child-rearing practices, Greenberg and Davidson (1972) contrasted the family backgrounds of high achieving and low achieving Harlem schoolchildren. They found that those children with high achievements at school more frequently came from clean and neat homes where they led a more ordered life, often being assigned home duties. From this finding we could infer that not only are the mothers of children with clinically severe asthma more restrictive on certain of their children's activities but they might also encourage scholastic achievement in their children more forcefully.

However, the reason why the mothers should adopt such child-rearing practices remains unclear. In section 6.3.3 we suggested that it was the mothers of children with clinically severe asthma who were the most unsure about

the nature of the illness. It might be that these mothers adopt a very cautious approach to their children because of this lack of understanding. Alternatively, their children's severe and unpredictable clinical symptoms might encourage the mothers to exert greater control over their environment and to organise a very ordered home routine in the hope that their children's asthmatic attacks would become less frequent. It is only by understanding further the mothers' perspective that we could explain the different family organizations.

The number of classifications of the sibling descriptions related to the physiological severity of the children's asthma was more than expected. Two classifications of the brother descriptions, five of the sister descriptions, and one of the sibling descriptions were significantly related to this classification of the children's asthma. However, examination of the characteristics of these classifications revealed that five of them were classifications of either the total or average number of descriptive items while only three were classifications of the proportion of descriptive items.

The children with asthma classed physiologically severe used a larger total number of items to describe their brothers, and a larger total number of dispositional and neutral items to describe their sisters. Since the children with physiologically severe asthma more frequently came from larger families (see section 5.6), it was to be expected

that they would use a larger total number of items in general and, thus, a larger number of a particular classification of items. Such findings do not increase our understanding of the quality of the particular sibling relationships.

Similarly, the children with asthma classed physiologically severe used a larger average number of dispositional items to describe a sister and a larger average number of hostility items to describe a sibling.

This would indicate that the children with physiologically severe asthma have a greater fluency in the use of dispositional and hostility items. The reason for such greater fluency is not apparent.

In addition, although the children with physiologically severe asthma used a statistically significant larger proportion of mutual items to describe their sisters, since only one mutual item was used by all the children with asthma, the significance of the relationship cannot be considered satisfactory.

The children with physiologically severe asthma did, however, use a larger proportion of differentiating items to describe their sisters. The differentiating items were those which were especially concerned with their sisters' interests and abilities. The greater use of these items and also the smaller (non-significant) use of dispositional items would indicate that children with physiologically severe asthma are less cognitively developed. Why cognitive

development should be related to the bronchial sensitivity of these children is not clear. Since our analysis of the friend descriptions of the children with asthma revealed no such relationship, we can only consider the present finding inconclusive.

Although the proportion of simple differentiating items used to describe brothers and sisters was not related to the physiological severity of the children's asthma, the categories used in the re-classification of those items were related. Those children with physiologically severe asthma used a larger proportion of 'co-operative' items to describe their brothers and a smaller proportion of 'hostility' items to describe their sisters. In addition, there was a non-significant tendency for those children to use more 'co-operative' items and fewer 'hostility' items in their sibling descriptions. This would rather suggest that, for some reason, children with physiologically severe asthma enjoyed a more equitable relationship with their siblings.

These children also reported a greater readiness to do household chores and complained less of having to do things they disliked. Taken together with their sibling descriptions, these two findings would suggest that children with physiologically severe asthma enjoy a more contented family life.

Although this relationship was not predicted it is interesting to compare it with the findings obtained by McNicol et al (1973). They found that "families of grade

A children (those with few asthmatic attacks) were the most argumentative and likely to act out." This finding, taken together with our own findings, would suggest an almost psychoanalytic formulation of children's bronchial sensitivity. That is, those children who do not complain have the most sensitive bronchi, while those children who 'act out' have the least sensitive bronchi. The explanation for such a relationship is not apparent.

Overall, these findings have revealed that children with asthma, and in particular those with many clinical symptoms, have, for various reasons, less opportunity of engaging in social activities with their siblings. These restrictions inhibit the development of their cognitive processes such that they are less able to develop stable relationships with their siblings. In addition, the children with physiologically severe asthma tend to be those children who do not complain and remain co-operative.

#### 9.3.4 Relationship of the children's ages to how they described their siblings and homelife

The detailed age differences in the children's descriptions of their friends were not maintained in our analysis of their sibling descriptions, although there was a similar tendency. The older children used a larger proportion of differentiating items in their sister descriptions, whereas the younger children tended (non-significantly) to use more simple differentiating items in

their sister descriptions. Although neither of these relationships applied in the brother descriptions, or in the descriptions of the brothers and sisters combined, it does provide some evidence that the cognitive capacity of the older children was more developed.

Analysis of the evaluative tone of the items revealed that the older children used more positive items and fewer neutral items to describe their sisters, and more positive items to describe both their brothers and sisters. This would suggest that as children develop they begin to evaluate the qualities of their siblings rather than accepting them as neutral. This is, perhaps, a component of the differentiation process which is more developed in older children. One further indication of the greater social maturity of the older children was that they more frequently mentioned that their parents gave them household chores.

#### 9.3.5 Relationship of the social class of the children's families to how the children described their siblings and homelife

The only classification of the children's sibling descriptions related to the social class of their families revealed that the children from working class families used a larger total number of simple differentiating items. Since this relationship was not maintained when we examined the average number and the proportion of simple differentiating items used, it does not provide evidence to support the

conclusions drawn in the previous chapter that children from working class families are more cognitively developed. Some social class differences in the children's family organization were, however, revealed from our analysis of the children's comments on family life.

We mentioned earlier (see section 9.1.2) how Goldin (1969), in his review of children's views of their parents, noted that the most consistent social class difference was that children from working class families tended to perceive their parents as less accepting and more controlling. Perhaps an indication of this social class difference was that fewer of the children from working class families reported that their parents listened to what they had to say and fewer thought themselves to be their parents' favourite child.

Kohn (1963) reported that working class parents value obedience, neatness, and cleanliness in their children, more so than do middle class parents. Although we did not find a significant relationship between these characteristics and the children's social background, there was a tendency for more of the children from working class families to report that their parents liked those characteristics. In addition, our finding that those children more frequently mentioned that they were given household chores is, perhaps, an indication of the greater discipline working class parents impose upon their children.

9.3.6 Relationship of the sex of the children to how they described their siblings and homelife

The sex differences in the children's descriptions of their brothers and sisters indicate that within families, at least, play patterns often involve children of one sex only. The boys used a larger proportion of differentiating items to describe their brothers while the girls used a larger proportion of differentiating items to describe their sisters. Since differentiating items are those concerned with the siblings' interests and activities, this relationship indicates the single sex character of the children's play patterns. This agrees with the various studies of child development which have shown how children learn at an early age a preference for people of their own sex and a preference for interests and activities identified with their own sex (see Hutt, 1978). The smaller use of simple differentiating items by the girls in their descriptions of their sisters is an indication of how much more they have differentiated those siblings with whom they interact most.

A consequence of this separateness in play patterns would be the development of rivalry and hostility between the boys and girls. Thus it was not unexpected to find that the boys used more positive items to describe their brothers while the girls used more positive items to describe their sisters. In addition, when we re-analysed the simple differentiating items we found that the boys used more 'hostility' items to describe their sisters, while there was a non-significant tendency for the girls to use more 'hostility' items to describe their brothers.

Overall, the boys used a larger proportion of differentiating items in their sibling descriptions than did the girls. This is in agreement with their friend descriptions and indicates the boys' greater interest in the abilities and activities of their siblings. The boys also reported more involvement in physical play activities. Since these activities usually take place out of doors, they indicate the greater independence the boys have obtained from their parents, relative to the girls. Their greater independence probably explains their smaller use of the less developed undifferentiating items in their sibling descriptions. With fewer parental restrictions the boys can enjoy more unsupervised play with their siblings and so develop their social intelligence more rapidly.

#### 9.3.7 Conclusion

This investigation of the children's family life has provided us with some further information which might help us gain a greater understanding of childhood asthma. Primarily it confirmed the difficulties in the social and psychological development of children with asthma which is partly due to the nature of asthma itself limiting the involvement of those children in popular physical play activities. It would also seem that the children with clinically severe asthma are most adversely affected, being excluded from play with their siblings and having restrictions imposed by their parents.

The greater cognitive and social development of the older children, especially the boys, might contain an explanation

for the decline in the clinical severity of childhood asthma during adolescence, especially among boys. Whether it is because these children have gained greater independence from their families and gained greater control over their environment that they learn to exert greater 'control' over their asthma, or that the decline in their asthmatic symptoms allows them greater independence, remains unclear.

## CHAPTER X

### THE CHILDREN AT SCHOOL

#### 10.1.1 Introduction

Outside their homes, the school is probably the most important social institution in children's lives. Most children largely develop in the seclusion of their families until the age of four or five years. In those early years the children have limited social contact with other children or adults besides their siblings and parents. On joining school the children find themselves thrust into a bustling world of, at first, strange people. For the next ten years, at least, the children spend a large proportion of their time in this environment.

Despite the length of time which children spend at school, the psychological investigation of its internal dynamics has been rather limited. In a strongly worded critique of current research, Hamilton and Delamont (1974) noted:

"it remains the case that the classroom has customarily been a 'black box' for researchers - providing merely a vehicle for 'input - output' experimental designs or a captive population for psychometric testing programmes."

Traditionally, children have been expected to attend school, and there to be industrious, passive, and obedient (Kohl, 1970). Parsons (1952) noted how the ideal pupil had often been defined in terms of two components: the cognitive and the moral. Good pupils were expected to be bright and responsible.

Bad pupils were those who, according to the teachers, deviated from this desired mean.

Although schools have changed since the fifties, Parson's basic two component definition of pupils is still sufficient to conceptualize most psychological research on children with asthma at school.

#### 10.1.2 The Cognitive Component

There have been several studies which have attempted to investigate the cognitive characteristics of schoolchildren with asthma. Most of this research has been particularly concerned with assessing the children's performance on various intelligence tests.

In the extensive Isle of Wight survey of physical disability the results of the performance of children with asthma on two different intelligence tests were reported. Graham et al (1967) reported that children with asthma had a higher mean score than the general population on the N.F.E.R. non-verbal tests of intelligence.

In 1970, Rutter et al reported the performance of children with asthma on the shortened version of the Wechsler Intelligence Scale for Children (W.I.S.C.). This test had two components: the verbal and the spatial performance sub-tests. Results showed that the children with asthma had a significantly higher score than the general population on the verbal sub-test, but not on the spatial performance test. Noting the small size of the difference, the authors concluded:

"Such a small difference is not of great practical significance and it is likely that the asthmatic child's slightly higher intelligence is a reflection of his superior social background."

They had previously noted a higher incidence of asthma among children from middle class families than from working class families, and also a slightly higher incidence of high I.Q. scores among middle class children generally.

In a survey carried out in Aberdeen, Mitchell and Dawson (1973) reported that, on the Moray House Picture Intelligence Test, the children with asthma scored, on average, seven points above the mean for the general population. They added that this higher score was evident within each social class, but especially among children from working class families.

Haskell et al (1973), in a survey of boys with asthma attending a residential school, found that the boys scored higher than average on the S.R.A. Primary Mental Ability Test. According to Pilling (1975), the children at this school tended to come from middle class families.

An American study did not, however, find that children with asthma scored higher than the average on I.Q. tests. Rawls et al (1971) compared 371 children diagnosed as having an allergic disorder (asthma, hay fever, skin disorders) with over 700 healthy children. He found that on the W.I.S.C. (Vocabulary and Block Design sub-tests) and on the Goodenough Draw-a-Man Test there was no significant difference between the two groups. He

did not consider the children with asthma separately.

Overall, the evidence is equivocal. Apparently, there is a slight tendency for children with asthma to score above average on intelligence tests, but this tendency is confounded by the social class of the children's parents. Researchers have also investigated the academic performance of children with asthma. They were particularly concerned with revealing whether children with asthma were better or worse academically than would be expected from estimates of their intelligence.

In the early report from the Isle of Wight survey, Graham et al (1967) claimed that the children with asthma tended to perform slightly better than average on the N.F.E.R. tests of sentence reading and mechanical arithmetic. However, they noted that this was "perhaps very slightly under-achieving in relation to their level of general intelligence." They suggested that the frequent short periods of absence from school was probably an explanation for the supposed "under-achievement."

In a later report from this survey (Yule and Rutter, 1970) it was noted that the children with asthma tended to perform below average on the Neale Analysis of Reading Ability test. Up to 11.11% of children with asthma were rated as having specific reading retardation of at least 28 months compared with only 5.4% of the control population. Analysis of the absenteeism of the children showed that those with the greater number of absences were more likely to be rated as being retarded in their reading ability. Yule and Rutter concluded that this finding was "entirely out of keeping with the commonly

held view that asthmatic children are often 'over-achievers' with unusually high academic achievement. On the contrary it was evident that a disproportionate number of them were 'under-achievers' with considerable scholastic problems."

However, the results of other studies were not as definite. Haskell et al, in their survey of children with asthma at boarding school, found that the children scored about average on the Neale Analysis of Reading Ability and only slightly below average on the Vernon Arithmetic Test. Haskell et al claimed that this was a great improvement on the children's initial performance on entering school.

In the American survey, however, Rawls et al found no difference between the allergic and healthy children in their performances on the Wide Range Achievement Test which measured reading and arithmetic ability.

Finally, Geubelle et al (1967) in a study of the academic performance of twenty children with severe asthma estimated that 16 had fallen 1-3 years behind in their schoolwork. They considered that this was due either directly to poor health or to interrupted schooling.

Overall, the evidence suggests that children with asthma score either about average, or just below average, on various tests of academic performance.

However, the validity of the psychometric approach to the investigation of children's cognitive and academic development has been strongly criticised. The I.Q. test, especially, has been pillared for its methodological and theoretical deficiencies.

Since "the selection of items for an I.Q. test is not influenced by any theoretical view of how children develop with age " (Ryan, 1972) the test is not a good assessment of children's cognitive development. In addition, because the test scores are often validated against academic achievement, those children who perform well academically, for various reasons, also obtain good I.Q. scores. Thus, it was to be expected that the middle class children in the Isle of Wight study, who would be expected to achieve higher academic success, would also obtain higher I.Q. scores.

Other criticisms have attacked the limitations of I.Q. tests because of their mathematical properties. For example, some of the research noted earlier compared the I.Q. scores of groups of children with and without asthma. Yet this is arithmetically incorrect since "the I.Q. is in the form of what is known as an ordinal scale and not an interval scale ... (such that) we cannot obtain average I.Q. for a group from individual I.Q.s of the group" (Ryan 1972).

One major theoretical criticism of the psychometric approach is that it abstracts the children's test performances out of their social context and so implies that the test scores are a true reflection of stable individual characteristics of the children. Yet there is evidence to suggest that children's performances on such tests are a variable quantity influenced by many factors, such as the children's motivation and expectations (Watson, 1972) which are, in turn, influenced by the parents' and teachers' expectations of the children.

The validity of the last assertion has been illustrated by the work of Rosenthal and Jacobson (1968). They gave some teachers false information about the supposed exceptional ability of a few pupils. At the end of the year those supposedly exceptional pupils performed better than average on various intelligence and academic tests. Although there have been various criticisms about the design of this particular study (e.g. Thorndike, 1968), other reports (e.g. Burstall, 1970) have tended to support Rosenthal and Jacobson's assertion that it was the teachers' expectations of the children's ability which, not only influenced the teacher-child interaction throughout the year, but also, the children's performances on various tests.

A study which illustrated the influence of stereotyped conceptions of certain children on teacher expectations was that by Canning and Mayer (1966). They looked at the difference in acceptance rates of obese and non-obese children to college. They found that although there was no difference between the two groups on academic criteria or application rates, significantly fewer obese children were accepted to college. The authors concluded that there is a "strong possibility... that a form of unconscious prejudice towards obese adolescents is exercised by high school teachers in writing recommendations, or by college interviewers, or both."

It is known that children quickly become aware of their teachers' expectations. By comparing pupils' self-ratings of their class positions with their teachers' ratings, Nash (1973) found that "children aged as young as eight gave themselves positions

which correlated highly with those assigned them by their teacher."

Since there is a "commonly held view that asthmatic children are both above average in intelligence and over-achievers" (Pilling, 1975) it would be expected that not only would teachers have an impression of children with asthma as being academically superior to other children, but that children with asthma would have a heightened "academic self-concept." Investigation of both the teachers' and the childrens' assessments of the childrens' school performance might prove a valuable approach to explaining the reported differences in the children's performances on various psychometric tests.

### 10.1.3 The Behavioural Component

Educational psychologists have also been concerned with the classroom behaviour of children with asthma. The most popular method of investigation was to ask the teachers to rate the children's behaviour on various scales. Again, however, the findings using this technique have not been conclusive.

In the Isle of Wight study each teacher rated twenty six items of classroom behaviour according to whether it was considered applicable for a particular child. Rutter et al (1970) reported that although there was a tendency for the children with asthma to obtain a higher overall score on this scale, i.e. they were more likely to be rated as having a "psychiatric disorder", there was no significant difference between the scores of the children with asthma and the scores of general population. Only two fairly innocuous items differentiated significantly between

the two groups. According to the teachers, the children with asthma tended to worry more and were more absent for trivial reasons.

Earlier, however, Burton (1968) found several significant differences between the teachers' ratings of the classroom behaviour of children with asthma and their ratings of a control group of children. The teachers were asked to complete the Bristol Social Adjustment Guide for each child. Burton found that according to the teachers, the children with asthma were significantly more unforthcoming, showed a greater number of nervous symptoms, were more withdrawn, affection seeking and unconcerned about adult approval. In her conclusion she added:

"in school asthmatic children appear to be inhibited, lethargic and lacking in interest. There appears to be an inhibition in their 'normal striving for personal affectiveness' (Stott, 1964). They appear to defend themselves against any new experiences, and generally to lack confidence in all challenging situations. They were often described as 'being outsiders'. They were thought to be 'on the fringe' of classroom cliques."

However, one important aspect differentiated the children with asthma studied in this survey from those in the previous survey. Burton noted that her children were drawn from either a desensitizing clinic or hospital admissions. This would suggest that the children in Burton's study had more asthmatic symptoms

than the children in the Isle of Wight survey who were selected from a more general sample.

In McNicol et al's (1973) survey, the teachers were asked to complete "standardized questionnaires relating to specific aspects of the child's school behaviour." They compared children classified as having severe asthmatic symptoms with those classified as mild. They found few differences in the teachers' rating of the childrens' classroom behaviour, although the children classed as mild were, according to the teachers' assessments, more likely to exhibit aggressive behaviour, whilst those classed as severe tended to worry more.

Overall, the evidence suggests that children with asthma, especially those with many clinical symptoms, are likely to be described by their teachers as exhibiting a limited amount of deviant behaviour. However, the validity of these findings can be criticised on several grounds. First, regarding the construction of the tests used. For example, Rutter et al claimed that a demonstration of the value of their scale was its effectiveness in identifying a high proportion of children referred to a child guidance clinic. Yet, over forty years ago, McFie (1934) voiced concern about the selection of children for such clinics. He questioned "whether the children singled out for treatment are not, in an unduly high proportion, those who are a nuisance to parents or teachers rather than those making unsatisfactory social or personal adjustment." Even earlier, Wickman (1928) carried out a survey of the pupil behaviour which teachers considered most problematic. The most frequently

mentioned items all involved behaviour which "violates the teachers principles of morality, her authority, the school or classroom order, the required standards of study, or disturbs through difficulties with other children." A brief review of the 'Rutter' scale suggests that the items selected for it tend to define the traditional image of the pupil in terms of the moral behaviour component outlined by Parsons (1952) and others.

Rutter et al separated the scale into six sections (p 317). The first they called 'motor and cognitive' and was concerned with whether the child was 'restless', 'fidgety' or had 'poor concentration'. None of these items would describe the docile but attentive ideal pupil defined by Becker (1952). The second category was called 'mood disorders' and listed 'irritable', 'miserable', 'worried', 'fearful', 'fussy' and 'school tears' as items. Again these could not be described as the satisfied accommodative behaviour of the good pupil. The next category was described as 'psychosomatic complaints', the fourth as 'classroom habits', the fifth as 'relationships', and the last as 'anti-social behaviour'. Expression of any of these behaviours would tend to lead to some sort of classroom disruption.

This suggests that such a behavioural scale actually defines the limits of a certain ideal pupil behaviour as outlined by the traditional teacher. Since such an ideal child would tend to come from a middle class family (Becker, 1952) the scale has a built-in bias to identify more frequently children from a working class family as exhibiting "psychiatric disorders". Also, since girls are more likely to exhibit the ideal pupil behaviour

(Davis and Slobodian, 1967), boys would tend to be identified on the Rutter scale as having some psychiatric disorder.

Another criticism against accepting the scoring of a behaviour scale at its face value is the realisation that teachers do not necessarily give some sort of an impartial objective report on their pupils' behaviour. Earlier (section 3.6) we emphasized that the observer is actively involved in the perception process. For this reason, stereotyped images of certain people would be expected to influence our perception and description of other, similar, people. Delamont (1976) noted that within schools the use of pupil stereotypes by teachers is, to an extent, essential if teachers are to maintain a relationship with other teachers.

Thus, it could be expected that teachers' assessments of the classroom behaviour of children with asthma would be influenced by the "commonly held view that asthmatic children are above average in intelligence and over-achievers" (Pilling, 1975). It would, however, be possible to expose the existence of such a stereotyped image by comparing the teachers' assessments of children they knew had asthma with their assessments of children they did not know had asthma.

In our discussion of children's performance on school tests we emphasized the value of understanding the children's academic self-concept (cf. Nash, 1973). To understand children's classroom behaviour it would be useful to investigate further the children's self-concept. Although Wylie (1974) has extensively catalogued the methodological problems involved in assessing self-concept,

Felsenthal (1972) has suggested a rather simple preliminary technique by which an observer (e.g. a teacher) could begin to become aware of a child's self-concept. He suggested that the observer should attempt to answer the following questions about the child:

1. Does the child appear to have self-confidence?
2. Is the child fearful of new experiences?
3. How does the child handle failure?
4. Does the child make up tales to enhance his status?
5. Does the child constantly need encouragement?
6. How does the child feel about his physical appearance?
7. Is the child possessive of material objects?
8. Does the child seek opportunities for independence?
9. Is the child willing to express his own ideas?
10. How does the child handle responsibility?

Although answers to such questions would not form a complete understanding of a child's self-concept they might provide sufficient information to help understand his classroom behaviour.

An alternative approach to the understanding of children's classroom behaviour would begin by investigating the children's own perspective. The few studies which have attempted to achieve this have revealed that school was often held in a rather negative light by many children.

Tenenbaum (1940) asked over 600 sixth and seventh grade pupils to write an essay entitled "Do you like school?" On content analysing the replies he found that whilst 58.8% of the children

claimed they did, 17.1% admitted they did not, and 24.1% had mixed feelings. The boys were more likely than the girls to express dissatisfaction with school which would explain partially the predicted sex difference in classroom behaviour. Tenenbaum also administered a short questionnaire about school satisfaction the results of which confirmed his previous analysis. He found that 21% of the children were sad at the thought of going to school, 22.2% said they did not like school, 23% would rather work than go to school, while 8% said they disliked their present teacher, and 6% disliked all teachers. Tenenbaum concluded:

"The study reveals the seriousness of children excepting in infrequent instances. They do not look at school as a place of joy or pleasure. There is no exuberant enthusiasm displayed. There is no zestful approach to the school situation. The children attend school with consciousness that it will help them out in later life. School is not pleasurable for itself. It is important for its future promise."

Leifold (1957) and Sister Josephina (1959) carried out studies similar to Tenenbaum's and obtained similar findings. Jackson (1968), on reviewing these reports, suggested that the dissatisfaction of the pupils may be greater than that expressed since "Children, for the most part, like to please adults, and adults, for the most part, like to hear that children are enjoying school." If this is the case, it is surprising that the

typical teacher does not report more "disturbed" behaviour in the classroom.

Investigation of the differences in children's views of school life would help provide an understanding of the reported differences in their classroom behaviour.

#### 10.1.4 Conclusion

Previous attempts to investigate the school life of children with asthma have tended to accept uncritically the results of various psychometric tests. They have largely ignored the complexities of the classroom social interaction, and have failed to <sup>consider</sup> the importance of the possible contrast between the teachers' and the pupils' perspectives.

Delamont (1976), in her criticism of contemporary classroom research noted:

"Rarer still is the study which uses pupils' classroom behaviour and questions them about their perspectives and strategies in school. Yet what is needed is a body of research where pupils are observed and interviewed, so that what they do, and how they account for it, can be analysed... "

In this study we shall adopt such an approach. First we shall examine the teachers' assessments of the health and behaviour of the children with and without asthma using a modified version of the scale designed by Rutter et al (1970). The results of this assessment will be interpreted with

reference to the teachers' assessments of the children's self-concepts (using a short scale suggested by Felsenthal's questions), together with information derived from an open-interview with the children about their school-life.

We would predict that the children with asthma, especially those with clinically severe asthma, would be assessed by their teachers as exhibiting certain types of deviant behaviour. We would also predict that this assessment of the children would be partly explained by a stereotyped image of children with asthma held by teachers. The behaviour unexplained by such a stereotyped image will partly be explained by an understanding of the children's self-concepts and of the children's own views about school.

## 10.2 METHOD AND RESULTS

### 10.2.1 Design of the teachers' questionnaires and the children's interviews

The teachers' questionnaires were composed of three parts. The first part was concerned with the general health of the children and the children's school attendances. It was largely a shortened version of the Teachers' Child Health Form used in the Isle of Wight study (see Rutter et al, p 430) with the questions about physical handicaps such as fits and diabetics omitted and two questions about the children's home background added.

The second part was composed of the behaviour questionnaire used in the Isle of Wight study (Rutter et al, p 410) modified to include eight of the questions which Felsenthal (1972) had considered important in gathering information about children's self-concept. Two of Felsenthal's list of ten questions were omitted (Is the child fearful of new situations? and Does the child make up tales to enhance his status?). These two questions were dropped because it was thought that they were already incorporated in the rest of the questionnaire as items 17 (Tends to be fearful or afraid of new things and situations) and 19 (Often tells lies). The eight questions were phrased in a similar manner as the original 26 items in the 'Rutter' scale. Three questions about the children's school performance were also added.

The last part of the questionnaire concentrated on the

teacher's awareness of whether the children had asthma. It also sought some information on whether the children with asthma put certain demands on the teacher in school. This third part of the questionnaire was only given to those teachers who were rating the children with asthma. The three parts of the teachers' questionnaires are given in Appendix 10.2.1A.

The children's interview format consisted of about a dozen questions. It was concerned with what the children thought of their school, their teacher, and their own place in school. The basic structure of this interview is given in Appendix 10.2.1B.

#### 10.2.2 Procedure

When the author visited the school to interview the children, he asked the teachers individually to complete the questionnaire. The teachers were asked to follow the instructions on the questionnaire, and were assured of complete confidentiality for their replies. No time limit was set on the completion of the questionnaires by the teachers. All teachers returned the questionnaires to the school office when completed. The school office forwarded them to the author.

The children were questioned about their school life towards the end of the full interview. As with the previous description of the format of the children's interviews (see section 6.2.2) the questions were not asked in a fixed order. Rather, the interviewer attempted to introduce the questions without disrupting the flow of the children's conversation.

Information was obtained from each child on all of the main areas probed. This part of the main interview usually lasted between ten to fifteen minutes.

### 10.2.3 Analysis of the questionnaires and interviews

Since the replies of the teachers to the first part of the questionnaire were limited because of the actual structure of the questions themselves, a fairly simple coding scheme was devised for the analysis. The method involved in the design of this scheme followed the procedures outlined in section 6.2.3. The coding scheme devised is included in Appendix 10.2.3A along with the number of replies in each category of each frame. A partial correlation analysis was then performed between the coded replies and the six classifications of the children.

The second part of the questionnaires was analysed according to the instructions given by Rutter et al (1970). Tabulation of the teachers' replies is given in Appendix 10.2.3A. To obtain an overall score for each child on the original 26 behavioural items, the three alternative replies to each item of "certainly applies" "applies somewhat" and "doesn't apply" were given a weight of 2,1 and 0 respectively. This meant that we had a possible range of 0-52 for the total score of each child. Those children who scored 9 or above were described as having a "psychiatric disorder" by Rutter et al, and so were listed separately. In addition, each behavioural item was considered separately for the partial correlation analysis with

the six classifications of the children.

Similarly, each "self-concept" item in this part of the teachers' questionnaires was considered separately for the partial correlation analysis. The teachers' replies to these eight items are tabulated in Appendix 10.2.3A.

The teachers' three estimates of the childrens' academic abilities were also considered separately in the partial correlation analysis. Once again, the teachers' replies to these three items are tabulated in Appendix 10.2.3A.

The final part of the teachers' questionnaires involved five questions for which there was only a YES/NO alternative for the answer. This meant that no coding scheme was necessary for the analysis. The number of alternative replies given to each question is presented in Appendix 10.2.3A. All the teachers' replies were partially correlated with the six classifications of the children with asthma.

It was necessary to devise a coding scheme for the analysis of the children's interviews. This involved transcription of the recorded interviews followed by a careful content analysis of the children's replies. Seventeen coding frames were necessary to satisfactorily cover all the replies given by the children. The coding scheme along with the number of replies in each category of each frame are given in Appendix 10.2.3B. Since the coding frames were quantitative it was only necessary for one judge to classify all the children's replies.

Having coded all the childrens replies to this section of the interview, a partial correlation analysis was performed

with the six classifications of the children. Where a coding frame contained a "don't know" category the details of the children assigned to that category were excluded from the partial correlation analysis with that category. Also, the categories of those coding frames which were not ordinal were combined in a way which was suitable for the partial correlation analyses. The appendices indicate which categories were excluded from certain analyses, and which were combined for other analyses.

#### 10.2.4 Teachers' replies to Part A of their questionnaires

Twelve coding frames were used to analyse this part of the teachers' questionnaires. Seven of these were related to one or more of our classifications of the children (Table 10.2.4).

Considering all of the teachers' replies first, partial correlation analysis revealed that the children with asthma, especially the older ones, were more likely to be absent from school (Tables 10.2.4A and B). The children with asthma frequently cited their illness as an explanation for their absences. The other major explanations given by children for their absences were minor ailments and holidays. The teachers also more frequently reported that the children with asthma had had a bout of wheezing in school at some time, but only one child had been sent home because of such a bout. These children were more often exempted from physical education classes, usually after advice from their mothers.

Besides the 8(13.3%) children who were rarely absent,

Table 10.2.4: Relationship of items from Part A of the Teachers' questionnaire to the classifications of the children

Items	Asthma	Age	Social class	Sex	Physiological	Clinical	Knowledge of asthma
Absent more than 16% of year	.33**	-.24*	-.02	-.19	-.04	-.35*	.33*
Absent for lengthy periods	-.02	.03	-.14	-.35**	-.30	-.09	.21
Seasonal absences	-.11	-.10	.34**	-.01	-.18	-.01	.28
Reason for absence : asthma	.59***	-.08	-.11	-.13	.13	-.18	.51**
Teacher supervises medication	.16	.01	.16	-.11	.07	-.03	.11
Restrictions on P.E.	.29*	-.01	-.10	.02	.17	-.18	.16
Wheezy bouts at school	.39**	.12	-.09	.20	-.15	-.13	.35*
Sent home because of wheeze	.15	.12	-.03	-.18	.08	-.18	.06
Skinrash	.01	.20	-.19	-.05	-.40*	-.13	.28
Headache	-.04	-.22	-.11	-.05	-.01	.13	.13
Parents interested	-.06	.01	.17	-.10	.02	.10	-.15
Home problems	.06	-.01	-.18	.10	-.12	-.21	.15

Note: Figures give Kendall's tau values of items to the different classifications of the children

\*  $p < 0.05$ ; \*\*  $p < 0.01$ ; \*\*\*  $p < 0.001$ .

22 (26.7%) were absent for short periods, 19 (31.7%) for isolated lengthy periods, and the other 11 (18.3%) were absent for both short and lengthy periods. According to the teachers, more girls than boys were absent for either isolated lengthy periods or both short and lengthy periods (Table 10.2.4C). There was no variation between the different groups of children in the seasonality of their absences.

When we considered the replies of the teachers of the children with asthma separately, we found that the children with asthma classed as clinically severe were the most frequently absent from school (Table 10.2.4D). The children with asthma classed as physiologically severe were more likely to have some skinrash reported by their teachers (Table 10.2.4E). There was not, however, any difference between the sub-groups of the children with asthma concerning the administration of drugs in school. Only 2 (3.3%) teachers reported that they had had to supervise drug-taking by a child.

We then checked to see whether the teachers' knowledge of the children's asthma was related to their replies to any of the questions. From their replies to Part C of this questionnaire, we found that 25 (83.3%) teachers were aware that the children had asthma. Partial correlation analysis with this new classification revealed that those teachers who knew the children had asthma were more likely to report that those children were frequently absent from school, that the reason for their absence was their asthma, and that those children had had a bout of wheezing in the classroom (Table 10.2.4F).

Table 10.2.4A: Items from Part A of the teachers' questionnaire related to whether or not the children have asthma

Items	Children	
	With asthma	Without asthma
Absent more than 16% of year	8 (26.7%)	2 (6.7%)
Asthma is reason for absence	16 (53.3%)	0 (0 %)
Restricted from P.E. at school	8 (26.7%)	0 (0 %)
Had wheezy bouts at school	12 (40 %)	0 (0 %)

Table 10.2.4B: Items fro Part A of the teachers' questionnaire related to the age of the children

Items	Age of children	
	Young	Old
Absent for more than 16% of year	4 (13.3%)	8(26.7%)

Table 10.2.4C: Items from Part A of the teachers' questionnaire related to the sex of the children

Items	Sex of children	
	Boys	Girls
Absent either isolated lengthy periods or both short and long periods	12 (34.3%)	18 (72%)

Three other items from this part of the teachers' questionnaire were not related to any classification of the children. These were:

1. headaches: 2 (3.3%) teachers reported that severe headaches were a problem of the child being assessed;
2. parental interest: 5 (8.3%) teachers described a child's parents as being disinterested in their child's school performance;
3. family problems: 5 (8.3%) teachers reported that they were aware of certain family problems which might adversely affect the development of the child being assessed.

In summary, it seemed that the teachers were not aware of any major differences between those children with and those without asthma in their health and social background. Not unexpectedly, the children with asthma were more frequently absent from school and participated less in physical exercises. Finally, as regards the teachers' awareness of the children's asthma, it seemed that wheezing in the classroom, and regular absences because of asthma, alerted the teachers to the problem.

#### 10.2.5 Teachers' replies to Part B of the questionnaires

This part of the questionnaire fell into three sections: an assessment of the children's behaviour, self-concept, and

TABLE 10.2.4D Items from Part A of the teachers' questionnaire related to the clinical severity of the children with asthma

Clinical severity of children's asthma			
Items	Mild	Moderate	Severe
Absent more than 16% of year	1(10%)	2(20%)	6(60%)

TABLE 10.2.4E Items from Part A of the teachers' questionnaire related to the physiological severity of the children with asthma

Physiological severity of children's asthma			
Items	Mild	Moderate	Severe
Has skin rash	0( 0%)	1(10%)	3(30%)

TABLE 10.2.4F Items from Part A of the teachers' questionnaire related to whether or not the teachers knew of the children's asthma

Teachers' knowledge of children's asthma		
Items	Knew	Didn't know
Absent more than 16% of year	9(36%)	0( 0%)
Asthma reason for absence	16(64%)	0( 0%)
Had wheezy bouts at school	12(48%)	0( 0%)

school performance. For ease of exposition we shall consider each in turn.

(i) Behavioural assessment

Of the 26 items and the overall score of the children's behaviour questionnaires devised by Rutter et al, 15 were related to one or more of our classifications of the children (Table 10.2.5). Considering all of the children together, partial correlation analysis revealed that five items were related to whether or not the children had asthma alone. According to the teachers' reports, the children with asthma were more restless in class, seemed to worry more, were more solitary, had poorer concentration in class, and seemed to be more fearful of new situations (Table 10.2.5A). In addition, the children with asthma especially those from working class families (Table 10.2.5C) were reported as biting their nails more.

Four items were related to the age of the children alone. According to the teachers, the younger children tended to fight more, to be more unpopular, to be more irritable, and to bully other children more than did the older children (Table 10.2.5B). The younger children, especially the boys, also tended to tell more lies and to stutter more (Table 10.2.5D). The boys were also more likely to play truant, and to be disobedient in class.

Finally, although only one item was specifically related to social class, showing that the children from working class families were more likely to bite their nails, overall, more of these children obtained a total scale score of more than 9. Thus, according to Rutter et al's criterion, the children from

TABLE 10.2.5 Relationship of items from Part B of the Teachers' questionnaire  
to the classification of the children.

(i) 'Behaviour' Items	Asthma	Age	Social class	Sex	Physiological	Clinical	Knowledge of asthma
Restless	-.34**	.22	.07	-.04	-.22	.08	.04
Truants	-.03	.10	-.16	.24*	-.19	-.18	.16
Squirmy	-.11	.04	-.14	.07	.13	.18	.25
Destroys	.09	.15	-.09	.13	-.04	-.02	.11
Fights	-.07	.46***	.09	.02	-.21	.03	.30
Not liked	.11	.43***	-.06	.06	-.25	-.02	-.24
Worries	.35**	-.10	-.18	-.03	.22	-.13	-.11
Solitary	.44***	.09	.16	.04	.43*	-.17	-.10
Irritable	.16	.26*	.02	.21	-.04	-.05	.25
Miserable	.15	.03	-.15	-.14	-.07	-.09	.24
Twitches	.18	-.23	-.12	-.09	-.01	-.08	.10
Sucks thumb	.09	.15	-.09	.13	.01	.01	-
Bites nails	.35**	-.03	-.25*	-.02	-.01	-.18	-.26
Absent	.14	-.01	-.20	.04	-.31	-.05	-.05

TABLE 10.2.5 (cont.)

Disobedient	.19	.17	-.20	.25*	.11	.20	.21
Poor concentration	.37**	-.14	-.16	.21	-.18	-.03	.10
Fearful	.35**	-.10	-.14	-.19	.16	.02	.06
Fussy	.18	.23	-.16	-.06	.31	.13	.20
Liar	.10	.29*	-.08	.32*	-.19	.03	.30
Steals	-.09	.01	-.13	.20	-.04	-.02	.11
Wets/Soils self	-	-	-	-	-	-	-
Complains of aches	.20	.04	-.20	-.03	.01	.02	-.01
Tearful	-	-	-	-	-	-	-
Stutters	.17	.28*	-.16	.23*	.21	.26	.19
Speech defect	.21	-.13	.21	-.01	.03	.05	-.12
Bullies	.09	.35**	-.01	.16	-.20	.02	.30
Total 'Behaviour' Score over 9	.16	.06	-.25*	.22	-.01	.13	.27

TABLE 10.2.5 (cont.)

(ii) 'Self-concept' Items

Little self-confidence	.52***	-.25*	-.16	.01	.07	-.02	-.10
Strives for perfection	-.27**	.26*	-.06	-.33**	-.03	-.04	-.13
Ashamed of appearance	-.05	.20	-.08	-.01	-	-	-
Unwilling to express ideas	.33**	-.29*	-.12	-.07	.04	-.04	.20
Possessive	.30**	.10	-.18	-.10	.29	.05	.21
Doesn't seek independence	.41***	-.07	-.14	-.07	.07	.02	.22
Needs encouragement	.28*	-.30*	-.01	-.05	-.12	-.09	.22
Won't accept responsibility	.36***	-.17	-.24*	.06	-.11	-.06	.14

(iii) Academic Items

School performance (high)	-.09	.08	-.23*	-.18	.25	.23	-.05
Intelligence (high)	.02	.32*	-.14	-.13	.17	.37*	-.09
Motivation (high)	-.21	-.17	.16	-.25*	-.01	.29	.04

Note: Figures give Kendall's tau value of the relationship of items to the different classifications of the children. \*p<0.05; \*\*p<0.01; \*\*\*p<0.001

TABLE 10.2.5A Items from Part B of the teachers' questionnaire  
related to whether or not the children have asthma

	Children	
	With asthma	Without asthma
(i) 'Behaviour' items		
Restless	6(20 %)	12(40 %)
Worries	17(56.7%)	9(30% )
Solitary	13(43.3%)	0( 0 %)
Bites nails	8(26.7%)	0( 0 %)
Poor concentration	15(50 % )	3(10 %)
Fearful of new situations	15(50 % )	5(16.7%)
(ii) 'Self-concept' items		
Little self-confidence	17(56.7%)	2( 6.7%)
Strives for perfection	9(30 % )	17(56.7%)
Unwilling to express ideas	14(46.7%)	5(16.7%)
Possessive	6(20 % )	0( 0 % )
Doesn't seek independence	13(43.3%)	1( 3.3%)
Needs encouragement	14(46.7%)	7(23.3%)
Won't accept responsibility	11(36.7%)	2( 6.7%)

TABLE 10.2.5B Items from Part B of the teachers' questionnaire  
related to the age of the children

	Age of children	
	Young	Old
(i) 'Behaviour' items		
Often fights	11(36.7%)	0( 0% )
Tells lies	6(20 % )	1(3.3%)
Irritable	7(23.3%)	2(6.7%)
Not liked	10(33.3%)	0( 0% )
Bullies	6(20 % )	0( 0% )
Stutters	4(13.3%)	0( 0% )
(ii) 'Self-concept' items		
Little self-confidence	6(20 % )	13(43.3%)
Strives for perfection	18(60 % )	8(26.7%)
Unwilling to express ideas	6(20 % )	13(43.3%)
Needs encouragement	6(20 % )	15(50 % )
(iii) Academic items		
Above average intelligence	12(40 % )	6(20 % )

working class families were more likely to have some behavioural disorder (Table 10.2.5C).

Considering the children with asthma separately, we found that none of the items on the scale was related to the clinical classification of the children. The children with asthma classed as physiologically mild were more likely to be described by their teachers as being solitary (Table 10.2.5E).

We then tested to see whether the teachers' knowledge as to whether or not a child had asthma was related to their descriptions. Partial correlation analysis revealed that no one item was significantly related to the variable.

It should be noted, however, that twelve behavioural items in the scale were not related to any of the classifications of the children. These were:

1. Squirmy: 13 (21.7%) children were considered somewhat squirmy or fidgety in class;
2. Destroys belongings: only 1(1.7%) child was reported by his teacher as sometimes destroying his own or other's belongings;
3. Miserable: 6(10%) children were described as sometimes appearing miserable, unhappy, tearful or depressed in class;
4. Twitches: 2(3.3%) children were reported as having twitches and mannerisms;
5. Thumb sucker: only 1(1.7%) child apparently sucked his thumb in class;

6. Absences: 7(11.7%) children were described as being absent for trivial reasons;
7. Fussy: 7(11.7%) children were described as being fussy or over-particular;
8. Stealer: 2(3.3%) children apparently stole things in class;
9. Enuresis: No children were reported as having wet or soiled themselves at school that year;
10. Complainer: 9(15%) children were described as often complaining of aches and pains;
11. Tearful: Again, none of the children had any tears on arrival at school;
12. Speech difficulty: only 4(6.7%) children had some speech difficulty other than stuttering.

In summary, it seemed that more children with asthma had certain behavioural characteristics, which were apparent to the teachers irrespective of whether or not they knew these children had asthma. There were also some age, sex and social class variations in the teachers' descriptions of the children. However, there were no behavioural characteristics related to the clinical classifications of the children with asthma, and only one to the physiological classification of these children.

#### (ii) Self-concept assessment

Of the eight items in this section of the questionnaire, all but one were significantly related to one or more of the classifications of the children (Table 10.2.5). Considering

TABLE 10.2.5C Items from Part B of the teachers' questionnaire  
related to the social class of the children's families

	Social class of children's families	
(i) 'Behaviour' items	Middle class	Working class
Bites nails	0(0 % )	8(17.4%)
Total score over 9	0(0 % )	8(17.4%)
 (ii) 'Self-concept' items		
Won't accept responsibility	1( 7.1%)	12(26.1%)
 (iii) Academic items		
Above average school performance	1(7.1%)	15(32.6%)

TABLE 10.2.5D Items from Part B of the teachers' questionnaire  
related to the sex of the children

	Sex of children	
	Boys	Girls
(i) 'Behaviour' items		
Disobedient	5(14.3%)	0(0 % )
Truants	3( 8.6%)	0(0 % )
Tells lies	7(20 % )	0(0 % )
Stutters	4(11.4%)	0(0 % )
 (ii) 'Self-concept' items		
Strives for perfection	9(25.7%)	17(68% )
 (iii) Academic items		
Above average work motivation	11(31.4%)	13(52% )

TABLE 10.2.5E Items from Part B of the teachers' questionnaire related to the physiological severity of the children with asthma

Physiological severity of children's asthma			
(i)'Behaviour' items	Mild	Moderate	Severe
Solitary	7(70%)	4(40%)	2(20%)

TABLE 10.2.5F Items from Part B of the teachers' questionnaire related to the clinical severity of the children with asthma

Clinical severity of children's asthma			
(iii) Academic items	Mild	Moderate	Severe
Above average intelligence	4(40%)	4(40%)	1(10%)

all of the children first, we found that two items were related to whether or not the children had asthma alone. The children with asthma were more likely to be described as being possessive of material objects, and unwilling to seek opportunities for independence (Table 10.2.5A).

Besides this, we found that the children with asthma, especially the older children (Table 10.2.5B), were more often described as having little self-confidence, as being unwilling to express their own ideas, and to constantly need encouragement. Also, the children with asthma, especially the older boys (Table 10.2.5D), were less likely to be described as striving for perfection in their school work. Finally, the children with asthma, especially those from working class families (Table 10.2.5C), were more likely to be described by their teachers as being unwilling to accept responsibility.

Considering the children with asthma alone, we found that none of the items in this section was related to the clinical or physiological classifications of the children. Similarly, we found that none of the items was related to whether or not the teachers knew of the children's asthma (Table 10.2.5).

The only item which was not related to any of the classifications of the children was personal appearance. Only 2(3.3%) of the children were described by their teachers as being ashamed of their personal appearance.

In summary, nearly all the 'self concept' items were related to childhood asthma, but not to whether or not the teachers knew of the children's asthma, suggesting that the

children with asthma did have a poor self-concept. There were also some age, sex and social class variations in the teachers' ratings of these items. However, none of the items were related to the clinical or physiological classifications of the children's asthma.

(iii) Academic performance

All three of the items about the children's academic performance, which the teachers were asked to score, were related to one or more of our classifications of the children. Considering all of the children first, we found that the teachers were more likely to rate the younger children as being of above average intelligence (Table 10.2.5B), the children from working class families as being above average in their school performance (Table 10.2.5C), and the girls as being above average in their work motivation (Table 10.2.5D). It should also be noted that there was a tendency by the teachers to rate very few of the children as being below average on any of the three characteristics.

Considering the children with asthma separately, we found that those children with asthma classed as clinically mild were more likely to be rated as above average in intelligence (Table 10.2.5F). However, none of the items were related to whether or not the teachers knew of the children's asthma.

In summary, it seemed that although none of the academic performance items were related directly to whether or not the children had asthma, or to whether the teachers were aware of the children's asthma, the three items were related to the

age, sex and social class of the children. However, the teachers were also more likely to rate the children with asthma classed as clinically mild as being of above average intelligence.

#### 10.2.6 Teachers' replies to Part C of the questionnaire

Of the five items in this part of the questionnaire, two were related to the different classifications of the children with asthma (Table 10.2.6). This showed that teachers were more likely to know that the children with asthma classed as clinically severe had asthma, and to rate their asthma as severe (Table 10.2.6A). Not surprisingly, the only item related to the teachers' knowledge of asthma was their estimate of the severity of the children's asthma: the teachers who knew a child had asthma were more likely to rate it as severe (Table 10.2.6B).

The three items which were not related to any of the classifications showed that only 2(6.7%) teachers reported that the children with asthma ever sought concessions, only 1(3.3%) reported ever giving concessions, and none reported that other children treated the children with asthma differently.

Overall, the teachers were more aware that the children with asthma classed as clinically severe had asthma, and tended to rate their asthma as severe. However, very few teachers reported that these children asked for concessions, and even fewer that they ever gave any concessions to these children.

TABLE 10.2.6 Relationship of items from Part C of the teachers' questionnaire to the classifications of the children with asthma

Items	Classifications		
	Physiological	Clinical	Knowledge of asthma
Knowledge of asthma	.29	-.32*	-
Severe asthma	-.14	-.36*	.35*
Child seeks concessions	.03	-.11	.09
Child given concessions	-.22	.15	.21
Child treated differently by other children	-	-	-

Note:

Figures give the Kendall's tau value of the relationship of items to the different classifications of the children.

\* $p < 0.05$ ;

TABLE 10.2.6A Items from Part C of the teachers' questionnaire related to the clinical severity of the children with asthma

Items	Clinical severity of children		
	Mild	Moderate	Severe
Knowledge of asthma	7(70%)	9(90%)	9(90%)
Severe asthma	2(20%)	0( 0%)	5(50%)

TABLE 10.2.6B Items from Part C of the teachers' questionnaire related to whether or not the teachers know of children's asthma

Item	Teachers' knowledge of children's asthma	
	Knew	Didn't know
Severe asthma	7(28%)	0( 0%)

### 10.2.7 Children's opinions of school

Seventeen coding frames were used for our analysis of this section of the children's interviews (Appendix 10.2.3B). Partial correlation analysis revealed that fifteen of these items were related to one or more of our classifications of the children (Table 10.2.7).

Considering all of the children first, we found that four items were related to whether or not the children had asthma alone (Table 10.2.7A). Regarding what they found difficult at school, 27(45%) children reported nothing, 23(28.3%) referred to various academic problems, 4(6.7%) mentioned sporting activities, and the other 6(10%) referred to a variety of problems. When we considered academic problems separately, we found that it was the children with asthma who were the least likely to report these. They were also less likely to report that they ever worried about their schoolwork. However, of the 22(36.7%) children who claimed that they considered their teacher unaware of their activities, 10 (44.5%) mentioning physical activities, 8(36.4%) certain specific activities, 1 (4.5%) a more general ability, and 3(13.6%) mentioning academic abilities), it was the children with asthma who were the more likely to claim that their teachers were unaware of their academic abilities. Also, of the 17(28.3%) children who provided an estimate, those with asthma were more likely to report that they thought their teachers underestimated their strength. In addition, of the 44(73.3%) children who referred to their parents, it was again the

TABLE 10.2.7 Relationship of items concerning school from the children's interview  
to the classifications of the children

Items	Asthma	Age	Social class	Sex	Physiological	Clinical
Likes school	-.19	-.11	.01	-.07	-.25	.34*
Likes school subjects	-.09	.09	-.24*	-.08	-.16	-.16
Dislikes school subjects	.12	-.01	.13	-.02	.12	.17
Likes teacher	-.01	.08	-.13	-.01	.06	-.01
Fairness of teacher	.04	-.14	-.07	-.12	-.27	.34*
Place in class : good	-.14	.19	-.15	.13	-.18	-.07
Worry over schoolwork	-.38***	-.05	-.02	-.11	-.09	-.13
Plays active games	-.10	-.22*	.05	.03	.08	.13
Academic tasks difficult	.25*	.13	.05	.18	.07	.18
Comparison with peers	.07	-.31**	.04	.01	.04	.14
Parents' opinion of child : good	-.24*	.01	-.11	-.49***	-.30	-.12
Teacher's opinion of child : good	-.08	-.12	.03	-.45***	-.10	.21
Teacher's opinion of child's strength : good	-.25**	-.14	-.09	-.18	-	-

TABLE 10.2.7 (cont.)

Motivation(practise if poor)	-.07	.23*	-.21*	.12	.04	-.03
Motivation from teacher	.12	.03	-.05	.08	-.12	-.41**
Annoyance at failure	-.14	-.27*	-.12	.04	-.10	-.10
Teacher unaware of abilities	.21*	-.15	-.07	-.13	-.17	-.50**

Note: Figures give the Kendall's tau value of the relationship of items to the different classifications of the children.

\* $p < 0.05$ ; \*\* $p < 0.01$ ; \*\*\* $p < 0.001$

TABLE 10.2.7A School items from children's interview related to whether or not the children have asthma

Items	Children	
	With asthma	Without asthma
Sometimes worries		
about school	15(50 %)	25(83.3%)
Finds academic		
tasks difficult	8(26.7%)	15(50 % )
Teacher thinks		
child weak	2(40 % )	0( 0 % )
Teacher unaware of		
academic abilities	3(16.7%)	0( 0 % )
Parents think child		
above average		
academically	8(34.8%)	14(66.7%)

TABLE 10.2.7B School items from child's interview related to the social class of the children's families

Items	Social class of children's families	
	Middle class	Working class
Prefers non-		
academic subjects	4(28.6%)	29(63.0%)
Usually practise,		
if poor	12(85.7%)	32(69.6%)

children with asthma, especially the boys (Table 10.2.7B), who were more likely to claim that their parents did not think them clever.

Concerning what they liked best about school, the majority of children (51, 85%) mentioned particular set subject areas (academic or otherwise). When we combined those categories which only mentioned specific subjects into one category, we found that it was the children from middle class families who were more likely to list these subjects as that which they liked best about school. The children from working class families were more likely to refer to sports, social activities or their teacher, besides the different subjects (Table 10.2.7B). On the other hand, what the children did not like about school was not related to any classification, although 26(43.3%) children listed particular subjects as their major dislike about school, 10(13.3%) referred to interpersonal conflict, 8(13.2%) to their teacher and classroom discipline, 4(6.7%) to a range of other factors, and 5(8.3%) children could not think of anything they disliked about school. The working class children were also more likely to report that they would not always practise at some task which they found difficult, and this was especially the case for the older children (Table 10.2.7C).

Concerning estimates of class grading, there was rather a skewed distribution with only 1(1.7%) child claiming that he considered himself near the bottom, whereas 29(48.3%) considered themselves in the 'top group' in the class. However,

TABLE 10.2.7C School items from children's interview related to the age of the children

Items	Age of Children	
	Young	Old
Doesn't play active games	0(0 % )	3(10 % )
General better than other children at school	18(60 % )	9(30 % )
Usually practise, if poor	25(83.3%)	19(63.3%)
Usually annoyed at failure	8(26.7%)	16(53.3%)

TABLE 10.2.7D School items from children's interview related to the sex of the children

Items	Sex of Children	
	Boys	Girls
Parents think child above average academically	8(29.6%)	14(82.4%)
Teacher thinks child above average academically	6(31.6%)	11(78.6%)

when the children gave an estimate of their ability at school compared with their peers, although a similar skew appeared, this time the older children were less likely to rate themselves above average. Yet, the older children were more likely to report that they often became annoyed if they found they could not do something in their schoolwork. Finally, although most children (57, 95%) reported involving themselves in various physical activities at school, it was again the older children who were least likely to report this (Table 10.2.7C).

Considering the sex of the children, we found that the boys were less likely to claim that their teachers thought them clever (Table 10.2.7D).

When we examined the replies of the children with asthma separately, we found that four items were related to the clinical classification of these children's asthma but none to the physiological classification. The children with asthma classed as clinically severe were more likely to dislike school and to consider their teacher unfair. As an aside, it is worth noting that only 2(2.3%) out of all the children, expressed dislike for their teachers, although another 50(83.3%) held some reservations about them. The children/classed clinically severe were also more likely to report that they would not necessarily practise some task they found difficult, despite encouragement from their teacher. Finally, more of the children with asthma classed as clinically severe considered their teacher unaware of their academic abilities (Table 10.2.7 E).

To summarize, it seemed that the children with asthma

TABLE 10.2.7E School items from children's interview related to the clinical severity of children with asthma

Items	Clinical Severity of children's asthma		
	Mild	Moderate	Severe
Dislikes school	0(0 % )	1(10 % )	1(10 % )
Consider teacher unfair	0(0 % )	0(0 % )	1(10 % )
Usually practise after teacher encourages	8(88.9%)	9(100% )	4(44.4%)
Teacher unaware of academic abilities	0(0 % )	0(0 % )	3(42.9%)

considered that both their parents and teachers did not think much of their academic talents, yet these children were least concerned about their schoolwork. Further, those children with asthma classed as clinically severe expressed the most dissatisfaction with their schools and teachers. There were also some interesting age, sex and social class differences in the children's reports of their school life.

## 10.3 DISCUSSION

### 10.3.1 General overview

Some of the characteristics which we found that the teachers frequently attributed to particular children could, to an extent, be said to be a consequence of the children's different social interaction patterns, which we explored in the three previous chapters. Irrespective of whether or not the teachers knew certain children had asthma, they still more frequently described those children as having certain 'abnormal' behaviour characteristics and as having signs of a poor self-concept. In section 10.3.2 we shall attempt to explain these behavioural differences with reference to our previous findings and with reference to the children's own descriptions of their school life. We shall also attempt to explain the few characteristics related to the clinical classification of the children's asthma.

The differences in the teachers' descriptions of the young and old children were both unexpected and did not confirm the findings of the study by Rutter et al. Possible explanations for these surprising findings will be considered in section 10.3.3.

Our finding that children from working class families more frequently obtained an overall score indicating behavioural abnormality on the teachers' questionnaires was expected. In section 10.3.4 we shall discuss whether this presents an accurate description of social class differences in the children's classroom behaviour.

Similarly, our finding that the teachers attributed more 'abnormal' behavioural characteristics to the boys than to the girls confirmed our prediction. In section 10.3.5 we shall compare our findings with those reported by Rutter et al and discuss, with reference to the children's own views of their schoolwork, the reasons for such differences.

#### 10.3.2 Differences in the behaviour and school life of children with and without asthma

The extent of the restrictions involved in having asthma was revealed in the poorer school attendance of children with asthma and in their more frequent exemption from games at school. This largely agrees with the findings of Rutter et al (1970) which showed that children with asthma were absent from school more often, although it was not reported whether or not they were absent significantly more often.

The teachers in our study were alerted to the fact that certain children had asthma by their more frequent absences from school, often because of asthmatic attacks, and by those children having bouts of wheezing at school. Since absenteeism was more common among the children with clinically severe asthma, it was not surprising to find that the teachers were more aware that those children had asthma and that they considered their asthma severe.

This relationship between our classification of the clinical severity of the children's asthma and their extent of absenteeism and their teachers' awareness of the illness and

estimate of its severity, indicates the range of clinical severity. It shows that the more severe the children's asthma was according to our clinical classification, the more likely they were to be absent from school frequently and to be identified by their teachers as having asthma which their teachers often classified as severe.

Although the teachers' replies to the two questions about the children's health were not related to whether or not the children had asthma, the teachers more frequently reported that the children with physiologically severe asthma had skin rashes. Since further details of the skin rashes were not requested, it is not clear whether the teachers were referring to evidence of eczema, which according to the children's and their mothers' reports (see section 5.7) was not related to the physiological severity of the asthma, or perhaps to some other sort of rashes which might be associated with the children's bronchial sensitivity.

In the Isle of Wight study Rutter et al found that, according to the teachers' reports, the children with asthma only differed from healthy children on two behavioural factors: they were more absent for trivial reasons and they were more often worried. The relationship between the children having asthma and being absent for trivial reasons was not confirmed in our study by the teachers' replies to the second part of the questionnaire. This was probably due to the fact that most of the teachers, in our study, were aware which children had asthma and probably excused their absenteeism on the

grounds of sickness. However, there is evidence to suggest that in the Isle of Wight study some of the children's asthma was so mild that their teachers were probably not aware of it and probably would not have excused their absences as readily.

Rutter et al went to considerable lengths to identify every child aged between 10-12 years on the Isle of Wight who had asthma. From the register of physically handicapped children compiled by the school medical authorities they identified 57 children who definitely had asthma. In addition, a review of the individual school medical records of all the children in this age group revealed "nine children with definite asthma and a further ten who had probably suffered from asthma during the past year." Explaining why these 19 children had not been listed on the register of physically handicapped, Rutter et al referred to administrative problems, but also added that "it appeared likely that in many cases the school medical officer who conducted the medical examination did not feel that the asthma was sufficiently severe to be reported." Thus, their final sample of 76 children, whose behaviour the teachers assessed, included several children with very mild symptoms about whose illness many teachers were probably unaware.

The teachers in our study, most of whom were aware if a child had asthma, more frequently attributed the characteristics 'worried', 'solitary', 'nail-biting', 'lacking in concentration' and 'fearful of new situations', and less frequently attributed the characteristic 'restless' to the children with asthma in general. Since there was no

difference between the descriptions of the children who knew if a child had asthma and those who did not know, it is probable that the children with asthma in our study did have these behavioural characteristics.

The fact that Rutter et al found little difference between the teachers' assessments of the behaviour of children with and without asthma is probably due to the fact that many of the children with asthma in their sample had very mild clinical symptoms. In a study in Belfast, Burton (1968) found that teachers described a group of children with asthma as lethargic, withdrawn, lacking in interest and having various nervous symptoms. This is very similar to the characteristics attributed to the children with asthma in our study. Commenting on Burton's study (see section 10.1.3), we earlier noted that the reason why she had identified behavioural characteristics in her sample of children with asthma whereas Rutter et al had not was that her sample contained more children with severe clinical symptoms.

Further evidence to suggest that a similar reason explains the difference between the Isle of Wight findings and our own was provided by Rutter et al themselves. They intensively investigated 57 of the children with asthma for more definite evidence of psychiatric disorder. They found that those children who were most disabled by the illness (those who we would classify as clinically severe) were more frequently described as having a psychiatric disorder. Thus, it is perhaps the case that it is not that all children with

asthma have certain 'abnormal' behavioural characteristics, but that the children in our study, few, of whom had mild clinical symptoms, had these characteristics.

The greater frequency with which the teachers attributed various behavioural indicators of poor self-concept to the children with asthma confirms the findings of Burton (1968) that children with asthma, or at least those who participated in her study and in this study, tend to have a poor self-concept. Such a poor self-concept would have developed out of, and in turn would have contributed to, the various problems in the social interaction of children with asthma which we revealed in the three previous chapters.

Felsenthal (1972) defined self-concept as "a learned constellation of perceptions, cognitions and values and an important part of this learning comes from the reactions one gets from other persons." In section 7.3.3 we revealed how healthy children perceive children with asthma as people to be avoided since they "take all the praise and none of the blame." This rejective attitude of their peers would lead children with asthma to develop an image of themselves as outcasts. This image of themselves as outcasts would increase the extent of their social isolation such that it was not surprising that their teachers described them as solitary.

Their feeling of isolation would be exacerbated by their inability to achieve in the most popular of children's games - physical activities. In contrasting the different

forces in the family with those in the peer group which contribute towards the development of a child's self-concept, White (1948) emphasized the importance of the child's performance in play activities. He noted:

"On the playground the values are different: he must be respect-worthy, able to command respect because he shows competence and handles himself with ease ... They must now show what they have in the way of physical prowess, courage, manipulative skill, outgoing friendliness, all in direct comparison with children of his own age. The penalties for failure are humiliation, ridicule, rejection from the group."

The inability of children with asthma to achieve in an activity which was valued by their peers would lead them to develop a feeling of inadequacy compared with their peers, such that they would become "unwilling to express their own ideas" and "constantly need encouragement."

Rosenberg's (1965) description of the person with a low-esteem seems not only to agree largely with the teachers' description of the child with asthma but also to summarize several of the characterizations of the child with asthma with which we have emerged in the past three chapters and from the children's own comments in this chapter. He noted:

"according to the person with low self-esteem's own report, he is more vulnerable in interpersonal relations (deeply hurt by criticisms, blame or

scolding); he is relatively awkward with others (finds it hard to make talk, does not initiate contacts, etc); he assumes others think poorly of him or do not particularly like him; he has low faith in human nature; he tends to put up a "front" to people; and he feels relatively isolated and lonely."

Our finding in section 7.3.3 that children with asthma were reluctant to attribute blame agrees with Rosenberg's first component of low self-esteem. It was their feeling of personal inadequacy which encouraged them to reject the blame for negative effects. The teachers' description of them as "unwilling to accept responsibility" agrees with this relationship, although it might well have been that the teachers were not referring to unwillingness to accept blame but rather unwillingness to accept praise. More precise wording of this phrase to offer the teachers two alternatives would clarify which quality of responsibility the teachers were referring to.

The second component of low self-esteem (awkwardness in social relations) was revealed in section 8.3.3 as being typical of children with asthma. There we explained how their poorly developed cognitive processes would restrict the ability of children with asthma from developing stable friendships. Their inability to grasp the point of view of their peers would create various problems in their social relationships causing discomfort to the children with asthma and their peers.

Rosenberg's third component of low self-esteem (low estimate of others' assessments of them) agrees with the children's comments on schoolwork. More of the children with asthma thought their teachers considered them weak and were unaware of their academic abilities. This belief that their talents were not being recognised would be expected to lead to a certain amount of frustration such that they would be less likely to "strive for perfection" in their schoolwork.

Whether or not the children with asthma have low faith in human nature is not apparent from our findings. In fact, in section 7.3.3 we discussed the rather optimistic view that children with asthma had of their peers in attributing more responsibility to them for positive effects. However, their reluctance to attribute blame either to actors with or without asthma indicates their rather fatalistic approach to negative events, which would perhaps explain their 'fear of new situations' which might contain unavoidable mishaps.

Rosenberg's claim that people with low self-esteem put up a "front" to other people, perhaps, explains why fewer of the children with asthma reported that they found their schoolwork difficult or worried about it. The teachers description of children with asthma as 'worried', 'unwilling to express ideas' and 'constantly needs encouragement' does not agree with the image of competence portrayed by the children themselves. Admittedly the children's reports might be an expression of their disinterest in schoolwork due to regular absences. As we shall see, this was the case for

children with clinically severe asthma.

Finally, Rosenberg's claim that people with low self-esteem have feelings of isolation and loneliness would agree with the teachers' description of the child with asthma as being solitary. As explained earlier, these feelings would develop as a result of rejection by their peers for various reasons. As a result of this rejection, the development of their social intelligence would be retarded such that they would be incompetent in social relations and unable to develop friendships.

Rosenberg (1965) also added that "it seems reasonable to assume that not only is low self-esteem a psychologically distressing state in itself, it also tends to set in motion a chain of events which leads to a state at least equally distressing, viz. feelings of anxiety." This would explain why the children with asthma were more frequently described as "worried", "fearful" and "nail biting".

Thus, the various 'abnormal' behavioural characteristics attributed to the children with asthma have an explanation. As we emphasized in section 3.6, it is not simply that the children have some particular personality type which 'causes' them to behave in a particular manner. Rather, it would seem that because of various problems in their early social interaction these children become withdrawn and introverted, and more incapable of successfully interacting with their peers. Whether it is possible to prevent or to reverse this process will be discussed in the next chapter.

Our finding that none of the behavioural or self-concept items in the teachers' questionnaires was related to the clinical severity of the children's asthma was contrary to our predictions. However, if, as we have just suggested, our sample of children with asthma contained very few with mild clinical symptoms, unlike the Isle of Wight study, then this null relationship is explicable. It is not that all children with asthma have the various characteristics which we have just detailed, but rather that the children with more clinically severe asthma, who predominated in this sample had such characteristics.

The teachers did, however, tend to rate the children with clinically severe asthma as being below average in intelligence. This characterization is, to an extent, explained by the children's views of school. Those children with clinically severe asthma more frequently stated that they disliked school, that they considered their teachers unfair, that they thought their teachers unaware of their abilities, and that they did not feel motivated to practise despite encouragement from their teachers. That is, those children with severe clinical asthma, perhaps because of their frequent absenteeism, reported the most dissatisfaction with school and, in turn, were described by their teachers as below average in intelligence.

Overall, the picture of the child with asthma which has emerged from this study is of a withdrawn and inadequate child. However, comparison of our findings with those of Rutter et al (1970) and of Burton (1968) has suggested that these

characteristics may not be typical of children with very mild clinical symptoms. Those children with severe asthmatic symptoms were most frequently absent from school and expressed most dissatisfaction with it.

### 10.3.3 Differences in the behaviour and school life of young and old children

Contrary to the Isle of Wight study, the teachers in our study attributed more 'abnormal' behavioural characteristics to the younger children than to the older children. When Rutter et al examined the teachers' descriptions of 10, 11 and 12 year old children they found significant differences on eight characteristics. However, five of these characteristics had a curvilinear relationship with age and were not easily explained. Two of the characteristics ('wet their pants', 'suck their thumbs') decreased with age, and one ('fussy') increased with age. None of these characteristics were related to the age of the children in our study. Rather the teachers described the younger children as more often 'fighting', 'bullying', 'lying', 'stuttering', 'irritable', and 'unpopular'. Why the younger children in our study should have so many anti-social characteristics is unclear.

The age differences revealed in the teachers' replies to the self-concept section of the questionnaire were rather consistent with their replies to the behaviour section. The older children were more frequently described as having 'little self-confidence', as being 'unwilling to express their

own ideas' and as 'constantly needing encouragement'. If these descriptions of the children's behaviour are accurate, this would suggest that the older children, being more unsure of themselves, are less likely to engage in anti-social activities and are more likely to conform to the acquiescent pupil role.

The agreement between some of the children's comments on their schoolwork and the teachers' assessments of the children's behaviour would suggest that the teachers have provided an accurate image of age differences in the children's behaviour in school. More of the younger children thought themselves better than their peers at their schoolwork and claimed they usually practised at things they found difficult. In agreement with this, their teachers more often described them as above average in intelligence, and as 'striving for perfection'. The older children, with their poor self-concept, more frequently reported that they were annoyed at failure. Perhaps the greater self-consciousness among the older children as they approached adolescence explained their rather withdrawn behaviour. A sample of children drawn from a wider age range would reveal whether such behaviour decreased during adolescence.

#### 10.3.4 Difference in the behaviour and school life of children from middle and working class families

Although the teachers only attributed one particular behavioural characteristic (nail biting) more frequently to the children from working class families, there was a significant overall tendency for more of these children to be

defined as having psychiatric problems. In the Isle of Wight study, Rutter et al found that twice as many children from working class as from middle class families were identified by the teachers' questionnaire as having psychiatric problems. When they considered the individual items in the questionnaire, controlling for the children's I.Q., they found that only one characteristic (absent for trivial reasons) was more frequently attributed to the children from working class families. It would seem that, although the teachers did not differentiate the children from working class families from those from middle class families on any particular behavioural characteristic, there was an overall tendency for them to attribute more psychiatric behavioural characteristics to the children from working class families.

In section 10.1.3 we explained that the teachers' questionnaire defined a particular type of ideal pupil who was more likely to come from a middle class family. For this reason, children from working class families, who were less likely to conform to the industrious, passive and obedient ideal pupil model (Becker, 1952), would be identified more frequently by the teachers' questionnaire as having a psychiatric disorder.

Some confirmation of this claim that children from working class families are less likely to conform to the ideal pupil model was provided by the children's own views on schoolwork. The children from working class families preferred the non-academic component of school life, such as

games and socializing with their friends, and revealed their disinterest in schoolwork by stating that they rarely practised at the problems which they found difficult. In addition, although the teachers did not report more frequent absences for trivial reasons among the children from working class families, there was a non-significant tendency in that direction indicating a greater dislike for school among those children.

These remarks would support our contention that the results of the teachers' questionnaire did not reveal that psychiatric disorder was more common among children from working class families but that, rather, those children were less likely to conform to the idealized pupil model preferred by their teachers.

#### 10.3.5 Differences in the behaviour and schoollife of boys and girls

In the Isle of Wight study, Rutter et al found that the teachers' replies to the questionnaire defined more boys than girls as having a 'psychiatric' problem. In particular, the teachers attributed sixteen behavioural characteristics more frequently to the boys. In our study, we found that four behavioural characteristics ('disobedience', 'truanting', 'lying', 'stuttering') were attributed more frequently to the boys, although there was a non-significant tendency for several other of the 16 characteristics, which Rutter et al had pinpointed, to differentiate between boys and girls.

In section 10.1.3 we suggested that because boys are less likely to conform to the ideal pupil model they would be identified as having a 'psychiatric disorder' by the teachers' questionnaire. Three of the four characteristics ('disobedience', 'truanting', 'lying') which the teachers attributed more frequently to the boys could be said to be characteristics, not of psychiatric disorder, but of the risk-taking or bravado component of the developing masculine sex role. They are examples of the boys' greater reluctance to conform to the ideal pupil role.

The teachers' replies to the rest of the questionnaire indicated how the girls conformed more to the industrious image of the ideal pupil role. The girls were more frequently described as 'striving for perfection' and as having 'above average work motivation'. The girls themselves agreed with this industrious pupil image reporting that they considered that both their teachers and parents thought their schoolwork above average.

These findings would agree with our claim that it was not that the boys exhibited more 'psychiatric' behaviour in the classroom but that rather they deviated more from the ideal pupil role as a means of expressing their masculinity.

#### 10.3.6 Conclusion

This study of the children's school life has revealed various differences in the behaviour and attitudes of the children with asthma which are largely consistent with the

results of the previous chapters. In addition, comparison of our findings with those of other studies has suggested a reassessment of the composition of the sample of children with asthma who participated in this study which might help explain why some of our earlier predictions were not confirmed.

The social class and sex differences in the children's behaviour was partly explained by <sup>the</sup> design of the teachers' questionnaire and by the greater reluctance of boys from working class families to conform to the ideal pupil role.

## CHAPTER XI

## A SOCIAL PSYCHOLOGICAL UNDERSTANDING OF CHILDHOOD ASTHMA

11.1 Introduction

The five previous studies were conducted in an attempt to increase our understanding of the psychological characteristics of children with asthma, and, more specifically, of the clinical and epidemiological variations in the severity and prevalence of the illness. Our review of previous psychological research into childhood asthma led us to conclude that the development of a greater understanding was impaired by restricting investigation within the medical model with its emphasis upon the individualist and passive nature of Man and the positivist method of enquiry.

An alternative approach was to conceive of Man as a socially active being who behaves according to his own socially learned interpretation of the world, and to conceive of illness as a psycho-social, as well as a physiological, construction. We predicted that the clinical severity of the children's asthma would not be explained by its physiological characteristics but by the social psychological characteristics of the children and of their world, the investigation of which required a phenomenological method of enquiry.

Our findings have revealed that although in many instances the clinical severity of the children's asthma was related to particular psycho-social characteristics of the children's world, these relationships were not as extensive as we had expected. Instead we found that whether or not the children had asthma was

the major variable differentiating the social psychological characteristics of the children. In addition, we found that certain of these characteristics were related to the children's ages and sex, and to their families' social class.

Although the strong relationship between the characteristics of the children's world and whether or not the children had asthma was unexpected, the final study, reported in the previous chapter, suggested that this might have been due to the limited number of children with mild clinical asthma who participated in the study. In the next section we shall reassess the possible range of clinical severity present in our sample of children with asthma in an attempt to explain some of the disparities between our predictions and our findings.

#### 11.2 Re-assessment of the clinical characteristics of the children with asthma

In section 3.2, we dismissed the validity of the findings of many earlier psychological studies of childhood asthma on the grounds that "they were carried out on small, unrepresentative samples of children, hospitalized with severe clinical asthma, who had often been specifically referred for psychiatric assistance." To avoid a similar bias in our sample, we restricted our selection of children with asthma to those referred from a health centre and an out-patient clinic. Comparison of the reported extent of hospitalization of these children with that of our sample of healthy children confirmed that the children with asthma who participated in our study

had been confined to hospital no more frequently than their healthy peers (see section 5.7). If we assume that the clinical severity of childhood asthma ranges from very mild to very severe, our exclusion of those children with very severe clinical symptoms necessitating hospitalization meant that children from the upper range of the clinical symptomatology spectrum were not included in our sample.

In addition, the evidence presented in the previous chapter suggested that few children from the very mild segment of the clinical symptomatology spectrum were included in our sample of children with asthma. Consideration of the criteria used to assess the clinical severity of the children's asthma confirmed this. Only one child with asthma who participated in this study was not receiving some form of asthmatic drug therapy regularly. In addition only one child considered his asthma mild, and only four mothers considered their children's asthma mild.

The smallness of the number of children with mild clinical asthma who were included in our sample is probably a reflection of the clinical diagnosis process. Since there is no clear clinical divide between a few bouts of wheezy bronchitis and asthma, it is probable that physicians are only prepared to diagnose a child as having asthma if that child has had a series of wheezy bouts. Thus, it is possible that many children with asthmatic bronchi but few clinical symptoms would not be diagnosed as having asthma. A recent study by Gooch and Bartley (1978) provided some empirical evidence to support this

suggestion. They found that of 42 children diagnosed as having asthma, according to lung function tests, only 25 (60%) reported they had asthma and only 17(40%) of their mothers agreed with the diagnosis. Many of the children who did not report having asthma had experienced wheeziness.

The exclusion of children with very mild and very severe clinical asthma from our sample would mean that we only examined the psychological characteristics of children from a small range of the clinical symptomatology spectrum. Confirmation of the reality of at least a limited range was provided by the relationship between the children's clinical classification and the frequency of their absences from school.

If, as we predicted, the psychological characteristics of children with asthma is related to the clinical severity of their illness, the extent of this relationship would probably have been concealed in our study because of the limited range of clinical severity. Thus, our basic prediction has not been negated. Indeed, the few relationships which we did establish, despite the small range of clinical severity, could be taken as a portent of further relationships which might be revealed if the psychological characteristics of a sample of children with a wider range of clinical severity were considered.

The characteristics which we found to be related to whether or not the children had asthma must now be reassessed in the light of this claim that the sample of children with asthma which we considered contained a limited range of clinical severity. The characteristics which we found typical of the

children with asthma in our sample should only be considered as typical of children who have had recurrent bouts of wheeziness which have been diagnosed as asthma. They may not be typical of children with few and mild bouts of wheeziness which have not been diagnosed as asthma, or of children with severe bouts of asthmatic wheezing requiring hospitalization.

Despite these limitations, our findings have increased substantially our understanding of the psychological characteristics of children diagnosed as having asthma but not necessitating hospitalization. Indeed, it is still possible to suggest social psychological explanations of the clinical and epidemiological variations in the severity and prevalence of childhood asthma by a careful re-examination of our findings. Such explanations should, of course, be considered as merely tentative and could only be substantiated by a more precise investigation of a carefully selected sample of children with asthma.

### 11.3 A social psychological understanding of childhood asthma

Every child is born as a biological being with a "predisposition towards sociality" (Berger and Luckmann, 1971). Each newly born infant has certain biological characteristics which differentiate him from every other infant. There is no firm evidence to suggest that the child who will be later diagnosed as having asthma has any peculiar biological characteristics at birth, besides his sensitive bronchi. Even the existence of sensitive bronchi at birth has not been confirmed.

From birth, each child develops in "an objective social structure within which he encounters the significant others who are in charge of his socialization" (Berger and Luckmann). These significant others, who are usually his biological parents, have certain views on children and child-rearing, in general, and on each child, in particular. The way the parent-child relationship develops is dependent upon the characteristics of both parties (cf. Shaffer, 1978).

There is little evidence to suggest that children who will later be diagnosed as having asthma have a peculiar relationship with their parents in the early years of life. Admittedly, Rees (1963) and Burton (1968) did suggest that certain maternal child-rearing practices antedated the onset of asthma in children. However, the retrospective nature of their investigations render their conclusions insubstantial.

Evidence from epidemiological studies, such as those reported by Smith (1976) and Nathanson and Rhyne (1970), revealing social variations in the distribution of asthma, does give some support to the claim that asthma develops in particular family structures. However, notwithstanding this possibility, the question as to why such peculiarities should develop only in certain families, remains unanswered.

This is not to deny the probability that if parents expect their child to develop asthma then their perceptions of that child and their reactions to him will be different. Parents, as members of society, have assimilated the societal image of the child with asthma and of the child-rearing practices socially expected of the parents of such a child.

However, there is no reason to believe that such images influence the parent-child interaction until the child is identified as having asthma.

Other factors, such as the sex of the child and the social class of the parents do, however, influence the character of the early parent-child interaction. From a very early age, parents tend to encourage greater independence in their sons than in their daughters (Baumrind and Black, 1967). While in middle class families there is a greater tendency for parents to encourage their children to adopt a more independent role (Kohn, 1963).

"Wheezing in infancy is very common but it is generally agreed that only a small proportion of these infants continue to have attacks of wheezing and become frankly asthmatic" (Godfrey, 1974). Whether or not there is a sex difference in the prevalence of wheezy babies has not been reported. Our data, however, suggest that more boys than girls, diagnosed as having asthma, wheezed before the age of four years. This might be due to the greater readiness of physicians to diagnose asthma in boys. However, taken together with the greater overall prevalence of asthma in boys, and the fact that no sex difference in the prevalence of other respiratory disorders has been reported, it probably reflects a particular tendency for boys to be more vulnerable to asthma. Hutt (1978) has noted that males generally have a greater biological susceptibility to a variety of stressful and noxious agents which, she claimed, explains why they tend to be over-represented in many categories of physical and psychological illness or disability.

The sex difference in the prevalence of childhood asthma would thus seem to be a confirmation of this general tendency.

Once the diagnosis of childhood asthma has been confirmed by the physician, it is then that parent-child interaction, and more especially the mother-child interaction can be expected to change. As we have emphasized, the mother's reaction to her child is conditioned by the social definition of that child and of her responsibilities as a mother. The mother can now identify the child, diagnosed as having asthma, as belonging to a special category of children who are socially expected to behave in a certain manner and to be treated in a certain manner.

Although we obtained little information from the mothers on their views of children with asthma, in general, it would be expected that they would have assimilated the social definition of such children partly revealed in the children's replies to the attribution of responsibility tests. As Roskies (1972) has emphasized, "any attempt to separate the child's status in the family from his social role in the community is an arbitrary one."

Our interpretation of the way healthy children attributed responsibility to children who they knew had asthma suggested that the social role of the latter was as outcasts rejected by their peers. Since association with 'asthmatic children' increased the risk of healthy children being accused of negative effects they did not intend and reduced their chances of being praised for positive effects they did intend, healthy children would be expected to exclude them from their company.

Roskies (1972), in her discussion of the problems facing the mothers of thalidomide children, suggested that one strategy which helped these mothers to cope was the extent to which they dwelt upon the normality of their children. Applying such a conceptualization to the mothers of children with asthma, we would expect that those mothers who dwelt upon the normality of those children would be the most competent.

Few of the mothers in our study seemed to adopt this approach. Instead, we found that many held a rather confused and pessimistic view of the nature of the illness, and exerted various restrictions on their children's everyday activities. It is possible, however, that the mothers of children who have had a few mild bouts of wheezing which have not been diagnosed as asthma would dwell upon the normality of their children. These mothers, believing that their children's wheezing was merely an indication of some minor respiratory infection, would not define their children as chronically sick and so would be unlikely to impose restrictions on those children's activities.

However, the mothers who are informed that their children have asthma, and whose children have at least moderate clinical symptoms to legitimize the sick role (cf. Aubert and Messinger, 1958), as were all the mothers in our study, would be more likely to treat their children as abnormal, believing them to be seriously ill. These mothers would not encourage the normal characteristics of child development. Rather they would treat their children according to the expectations of a society which "does not give the handicapped an opportunity to develop initiative, judgement and responsibility and few

opportunities ... to 'give' himself rather than to receive from others" (Richardson, 1972).

In our study, the extent to which mothers' 'control' the life of children with asthma was implied by the way those children attributed responsibility differently to boys and girls, whereas healthy children did not. The children with asthma attributed more responsibility to girls than to boys, suggesting that girls were perceived by those children as origins of their behaviour rather than as the societal image of women as pawns. We suggested that this was probably due to the dominant position of mothers in the lives of children with asthma.

This controlling attitude of their mothers would encourage children with asthma to become dependent upon them as they begin to substitute the "less obvious gratifications of passivity and being cared for by others" for the "normal drive toward the obtainment of independence and autonomy," (Agle and Mattsson, 1976).

André Maurois (1962) has provided some impressive insights into the psychology of the person with asthma in his biography of Marcel Proust, who suffered from it. Describing the lasting effects of Proust's early dependency, Maurois noted:

"We know what torments he endured whenever his mother was absent. All through his life he remained a man who felt he was dependent on others."

After diagnosis, the mothers and the children acquire additional information about the nature and the treatment of the illness from a variety of sources. By explaining the usual

self-limiting nature of the illness and the beneficial effects of various therapies, it is possible that physicians could help dispel some of the fears and worries that the mothers and children might have about asthma. The few critical comments which some mothers and children made about their family doctor would suggest that this is frequently not the case.

Our finding that it was the mothers of the children with the more severe clinical asthma, and the children themselves, who were the most confused and pessimistic about the nature and treatment of the illness indicates the possibility that a lack of understanding could exacerbate the wheezing. Maternal concern lest her child's slight wheeze develop into an uncontrollable asthmatic attack may create anxiety in the child, and further bronchoconstriction via the 'psychosomatic' process which we shall consider later.

These feelings of fear and anxiety on the part of children with asthma and their parents may be part of what early psychiatrists described as the asthmatogenic climate. However, this is not to say that such a climate is a natural characteristic of the families of children with asthma. Rather, it is probably a consequence of the social definition of asthma as a frightening and sometimes fatal illness, and the paltry provision of alternative advice to the children with asthma and their parents.

In those families where fear of an asthmatic attack developing has assumed exaggerated importance, certain peculiarities in the family dynamics would be expected to arise.

Our finding that children with more severe clinical asthma came from very ordered homes is, perhaps, an indication of the precautions taken by certain mothers in an attempt to prevent the development of the feared wheezing. Whatever the initial cause of this maternal over-concern, it would, in turn, encourage even greater dependency in the children with asthma.

In addition, our finding that the children with the more severe clinical asthma used fewer mutual items to describe their siblings is a further indication of the dislocation in the social relations of their families. Although exclusion of the child with asthma is implicit in the social definition of such children, it may be encouraged by the healthy siblings' fear that they might provoke an attack of asthma and so attract the wrath of their anxious mothers.

In such a situation, it would not be unexpected that a child with asthma, realising his central role in the family, would become rather manipulative by using the threat of an attack to obtain certain benefits from his family. Although other researchers (e.g. Burton, 1968) have reported that such manipulatory tactics were typical of children with asthma, we found little confirmatory evidence. Admittedly, there was a tendency for the children with more severe clinical asthma to report that their illness sometimes helped them to avoid participation in certain disliked activities, but active manipulation of their parents or siblings was not reported. Perhaps such manipulation is only typical of chronic cases requiring hospitalization and, even, psychiatric assistance.

Various other factors such as the age and sex of the children and social class of their families would be expected to influence the normality/abnormality balance in the socialization of children with asthma. The more sophisticated understanding of the different usages of the concept responsibility by the older children in our study is an indication of their greater awareness of themselves as being autonomous intentional beings. There was some evidence to suggest that this was especially the case in middle class families and that whereas boys learnt to conceive of themselves as being successes, girls began to consider themselves failures.

These general developmental changes would apply to children with asthma as well as to healthy children. Thus, we would expect a gradual developmental tendency for the parents of children with asthma to shift the emphasis from abnormal to normal in their approach to those children. This would be especially the case for boys from middle class families.

This expected developmental change in the attitude of mothers towards their children with asthma was reflected in the different ways in which the mothers in our study perceived the illness. There was a tendency for the mothers of the older children, especially the middle class mothers of boys, to adopt a more optimistic and sophisticated view of the nature of their children's asthma.

Similarly, the more independent attitude of older children with asthma, especially of boys from middle class families, was, to an extent, reflected in the views of the

children in our study. They tended to have a more sophisticated understanding of their illness and seemed less dependent upon medical care and maternal support. Since this more sophisticated view was more apparent in those children with fewer clinical symptoms it poses the question as to whether the increased independence of older children not only enable them to reject the social characteristics of the sick role, i.e. dependency, but also the clinical characteristics, i.e. asthmatic symptoms. We shall return to this point later.

Outside their homes, the problems encountered by children with asthma continue. Once they have been identified by their peers as having asthma, a process of social exclusion can be expected to follow. Although children with asthma may be rejected by their peers for a variety of reasons, the evidence we obtained from the children's replies to the attribution of responsibility tests imply that once the asthma identification has been made by their peers, the social exclusion is more definite. Thus, it may well be that some children with asthmatic bronchi, who for various reasons have not been identified by their peers as having asthma, may escape this social rejection. These are the children whom Goffman (1968) has characterised as discreditable - as long as their weakness is concealed, they can pass as normal.

Those children who have been identified as having asthma are rejected by their peers and become outsiders. Our findings have shown that one of the components of this social exclusion is that children with asthma are frequently praised but rarely

blamed by their peers. This form of overprotection by their peers would encourage children with asthma to become very passive in their relations with others. They would be pervaded by a feeling that even if they tried hard to achieve some positive effect they would receive no more praise than if they had been merely associated with such an effect, whereas they would frequently escape the blame for negative effects they could have foreseen. Perhaps, this explains Maurois's comment on Proust:

"We know that 'abdication of the will' was the central feature of Marcel's personal dreams, and in Les Plaisirs et les jours it is shown as that of a young girl's. 'What really displeased my mother was my lack of will. Whatever I did, I did on the impulse of the moment. So long as my life was under the influence of heart and spirit, it could not be wholly bad... "

At the same time it would seem that their peers' tendency to praise every action of children with asthma is reflected in an excessive use of flattery by those children. Again, this explains Maurois's descriptions of Proust:

"He was always anxious to please, always thoughtful of the needs and desires of others. He overwhelmed his friends with gifts ... He was a trifle too suave, too complimentary..."

It is possible that this over-indulgence could adversely

affect the development of satisfactory social relations as peers begin to devalue the quality of praise so frequently given.

In addition, the experience of constantly receiving praise, even for effects they did not intend, may encourage children with asthma to demand more and more praise, as was the case with Proust:

"To be loved, praised, desired, was the prime need of his being. He never felt safe unless he could call upon more than the normal amount of affection" (Maurois).

The extent of their social isolation has dramatic effects on the cognitive development of children with asthma. Restricted from social interaction these children do not have the opportunity of developing the cognitive processes necessary to differentiate their peers from their environment and from themselves. This was revealed in the way the children with asthma, in our study, described their friends.

Their lack of cognitive development would increase the problems in the social interaction of children with asthma and impair the development of stable and secure friendships. Instead, their relationships with their peers would be tenuous and subject to regular change. In writing a 'pen-portrait' of Proust, Fernand Gregh noted a similar instability:

"Fabrice craves the affection of others and has it... Everyone who has known him has been, in turn, his friend. But because he loves,

not so much his friends as his own image in them, he quickly tires and can terminate a friendship with an ease which is equalled only by the pain he formerly took to begin it..." (Maurois).

The effectiveness of the social exclusion of children with asthma by their peers is compounded by the lack of involvement of the former in physical play activities. This lack of involvement is probably due to a fear on the part of the children and their mothers that the exertion involved in such activities may provoke an asthmatic attack. Deprived of the opportunity of participating in activities highly valued by their peers, the self-esteem of the children with asthma will become more deflated. As we stated in section 10.3.2, "the inability of children with asthma to achieve in an activity which was valued by their peers would lead them to develop a feeling of inadequacy compared with their peers, such that they would become 'unwilling to express their own ideas' and 'constantly need encouragement.' "

The development of the social interaction problems of children with asthma could be characterized as a degenerating spiral. Initially the extent of their social relations may be limited because of their lack of involvement in popular physical play activities. However, this social isolation is strengthened once their peers have identified them as 'asthmatic.' Restricted from interaction with their peers, their cognitive processes develop at a slower pace making

them awkward in social relations. To prevent this unpleasantness, the children with asthma, themselves, become reluctant to engage in social interaction, such that their isolation becomes self-imposed. As Wilson (1979) stated recently: "With popularity as with academic achievement, nothing succeeds like failure. The experience and expectation of rejection confirms itself."

Rejected by their peers and failing to achieve in popular play activities, children with asthma gradually withdraw from social interaction and develop a poor self-esteem. These characteristics were apparent in the teachers' descriptions of the children with asthma who participated in our study. Their behaviour at school was introverted and lacking in confidence. However, it should be emphasized that these characteristics should not be considered innate personality traits. Rather, our evidence would suggest that they develop out of the social meaning of childhood asthma, as a chronic illness necessitating the social exclusion of the sufferers.

Whereas a similar social and psychological deterioration could be expected in children with other illnesses, the 'psychosomatic' nature of asthma adds another dimension. As explained in section 2.7, bronchoconstriction in children with asthmatic bronchi can be provoked by enervation of the vagal reflex, a component of the autonomic nervous system. In section 2.8 we continued: "if the nervous system is the intermediate controller between physiological potential and clinical symptoms, what regulates the operation of the nervous system?" Perhaps the answer to this question lies in the

children's feelings of dependency and inadequacy.

Our evidence would suggest that the feelings of dependency and inadequacy of children with asthma would make them less able than their healthy peers to cope with various situations in their world. Their resultant anxiety would lead to arousal of the autonomic nervous system, including the vagal reflex. Although this process might not directly cause an attack of wheezing, it would, at least, prime the bronchial tract such that other provocatants could more easily stimulate bronchoconstriction. The existence of such a psychophysiological process would help explain the epidemiological variations in the prevalence of childhood asthma.

The tendency for children to "grow out of" their asthma during adolescence could, perhaps, be due to a decline in the level of anxiety caused by growing independence and the development of a greater capacity to cope with different experiences. The earlier development of independence among boys than among girls could explain why boys "grow out of" their asthma more frequently than do girls. Finally, the greater independence of children from middle class families would predict that their lowered anxiety levels would encourage the "growing out of" asthma. The confirmation of this last prediction would provide some support for the existence of such a psychophysiological process.

Although we did not find that the clinical severity of the children's asthma was related to the children's feelings of dependency and inadequacy, we did find, despite the small range of clinical symptomatology, a tendency for the children with

the more clinically mild asthma to have a more developed and sophisticated view of their illness and to have fewer family problems. However, the more frequent occurrence of a similar view of asthma among the older boys from middle class families would suggest that those children with fewer clinical symptoms would also have greater feelings of independence and self-esteem. Thus, the explanation for the individual variations in clinical severity might also lie in a psychosomatic model of greater feeling of competence and greater understanding of the illness leading to less anxiety in the face of various events, including wheezing, such that the bronchial tract would be less primed to bronchoconstriction via enervation of the vagal reflex.

The existence of such clinical and epidemiological relationships would suggest that therapeutic techniques aimed at solving the social and psychological problems of children with asthma may also help diminish the extent of their clinical symptoms. Further, evaluation of the effectiveness of such techniques in reducing clinical symptoms would clarify the validity of the relationships suggested.

One strategy which might help discourage the development of the social and psychological problems in children diagnosed as having asthma would be to discourage doctors from attributing the label asthma to children who have periodic bouts of wheezing and breathlessness. We suggested earlier that those children who avoid asthma diagnosis, despite having bouts of wheeziness, would be less likely to develop the various problems because their family and peers would consider them normal.

Admittedly, repeated attacks of wheezing might be perceived by the family and peers as a chronic illness, no matter whether it was named asthma or not. Further research comparing the social and psychological characteristics of wheezy children who have not been diagnosed as having asthma with those who have would help clarify the value of such a therapeutic strategy.

However, since many of the children diagnosed as having asthma come from families with previous experience of asthma, many children would be labelled as asthmatic by their parents no matter what their doctors' advice. In these cases where asthma diagnosis is unavoidable, steps could be taken to prevent the lay definition of asthma impairing the social and psychological development of those children. The importance of this strategy of challenging misunderstandings about the nature of childhood illness by family members was emphasized by Foster and Lomas (1978) in their discussion of mental illness:

"... interventions which challenge shared family ideas of disability may represent the single most potent therapeutic technique for changing dysfunctional family systems... Failure to challenge ideas of disability may serve to reinforce erroneous family convictions and thereby strengthen family defenses against change."

This strategy would involve detailed counselling of the parents and children as to the nature of childhood asthma and the alternative therapeutic techniques. Such advice would also be of benefit to those parents who have not had their children

diagnosed as asthmatic. An understanding of how an attack of wheezing developed would help ease their anxieties and so, possibly, prevent any exacerbation of the wheezing.

To prevent the development of dependency, the parents would need to be discouraged from treating their children as abnormal. This would be difficult since "a parent may enjoy doing for his child and want to do as much as he can not realizing that "doing for" may in the long run be "doing against" (Wright, 1960). To challenge this genuine concern of many parents to do the best for their sick children, it would be necessary to not only explain the nature of the illness but, also, to emphasize the value to their children, both psychologically and clinically, of increased independence. Reversing Richardson's (1972) criticisms, the parents should be encouraged to allow their children opportunities "to develop initiative, judgement and responsibility." According to Roskies (1972), this process would be made much easier if the parents were constantly reminded of the normality of their children.

However, the development of such a parental attitude would be impaired by the apparent difficulty their children may have participating in popular play activities. Indeed, no matter whether or not a wheezy child is diagnosed as having asthma, the physical characteristics of the illness may restrict his involvement in popular games, with the resultant social and psychological problems. For this reason, attempts need to be made to identify those activities which while popular among children are less likely to provoke wheezing. Swimming is the most obvious example (Fitch et al, 1976), although there are

probably other such safe activities.

Finally, it is probable that despite such strategies many wheezy children will develop difficulties in their social interaction and the resultant psychological problems. The lasting effects of these problems into adulthood emphasize the necessity for some type of intervention strategy to develop these children's social relations. One strategy would be to improve the quality of the children's 'social intelligence.' Livesley and Bromley (1973) have suggested the value of such an approach, advocating "the development of training techniques for improving person perception and hence increasing the effectiveness and sensitivity of interpersonal relationships." An alternative approach would be to concentrate on the improvement of the children's social skills. Trower et al (1978) have provided details of the value of this approach in improving the mental health of socially incompetent individuals.

The therapeutic value of each of these strategies is unknown. However, investigation of their effectiveness would not only reveal whether social and psychological skills could help where medical skills have failed, but could also help develop a social psychological model of illness.

#### 11.4 Conclusion

The remark by the Stoic philosopher Epictetus that "Men are disturbed not by things but by the view which they take of them" aptly summarizes the adverse effect which the social meaning of asthma has on the social and psychological development,

and, perhaps, on the clinical status, of children diagnosed as having asthma. Despite the periodic nature of their illness, these children are labelled as sick and are treated as sick by their family and peers. The resultant social exclusion, which is exaggerated by their inability to participate in popular games, retards the development of the cognitive processes and social skills essential for successful social interaction. As a consequence the children with asthma become withdrawn and lacking in confidence.

Whereas with other childhood illnesses a similar progression could be expected, the 'psychosomatic' nature of childhood asthma adds another dimension. It is possible that the lack of psychological development of children with asthma and their feelings of inadequacy and dependency will leave them less able to cope with various situations which they encounter. Their resultant anxiety in these situations would be expected to prime their bronchial tract such that it would become more susceptible to bronchoconstriction. It is for this reason that attempts to prevent the development of social and psychological problems in children with asthma may actually lead to an improvement in their clinical status.

Perhaps, this thesis ends by asking more questions than it answered. But, as Brown (1976) stated:

"Research is difficult; progress is made by the error of others. We avoid mistakes only because others have already made them, and the best that we can hope is that others will

find our mistakes interesting enough  
to be worth correcting."

Hopefully, others will find the questions asked above interesting  
enough to attempt to answer.

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Appendix 5.2: Comparison of the two measures of the physiological severity of the children's asthma.

According to their Actual/Predicted F.E.V.% measurements eight of the twenty children reassessed were classified as having severe, five were classified as having moderate, and seven were classified as having mild asthma. For the sake of comparison, we used the same ratio (8:5:7) to reclassify these children's asthma according to their Actual/Predicted P.E.F.R.% measurements which ranged from 26% to 97%. Tables A5.2A, A5.2B, and A5.2C show how the children's asthma was reclassified.

Table A5.2A: Reclassification of those children's asthma previously classified as physiologically severe.

Subject No.	3	4	5	6	7	8	9	10
Actual/Predicted								
P.E.F.R.%	70	49	57	83	26	68	58	64
Reclassification	S	S	S	Mo	S	S	S	S

Table A5.2B: Reclassification of those children's asthma previously classified as physiologically moderate.

Subject No.	15	16	17	19	20
Actual/Predicted P.E.F.R.%	74	76	59	97	83
Reclassification	Mo	Mo	S	Mi	Mo

Table A5.2C: Reclassification of those children's asthma  
previously classified as physiologically mild.

Subject No.	24	25	26	27	28	29	30
Actual/Predicted PEFr%	80	96	84	88	87	95	95
Reclassification	Mo	Mi	Mi	Mi	Mi	Mi	Mi

(Note: In tables A5.2A - C, S = Severe. Mo= Moderate; and  
 Mi = Mild, according to Actual/Predicted PEFr%.)

The old and the new classifications of the physiological severity of the children's asthma were then compared using a Kendall's tau test of relationship. The two classifications were found to be significantly related ( $\tau = 0.82$ ,  $p < 0.001$ )

This suggests that the old classification of the children's asthma using Actual/Predicted FEV% is a good estimate of the children's bronchial resistance.

Appendix 5.6: Coding frames used for background details

		No. of replies in category
1. Ordinal position of child in family	Youngest	15(25%)
	(C) only child	6(10%)
	(C) Middle child	13(21.7%)
	Oldest	26(43.3%)
2. Number of children in family	One or two	31(51.7%)
	Three	14(23.3%)
	Four or more	15(25%)
3. Broken family	Both parents at home	56(93.3%)
	Mother only at home	3( 5.0%)
	Neither parents at home	1( 1.7%)
4. Size of home	One bedroom	1( 1.7%)
	Two bedrooms	15(25%)
	Three bedrooms	39(65%)
	Four or more bedrooms	5(8.3%)
5. Shares bedroom	Own room	26(43.3%)
	Shares with one other	23(38.3%)
	Shares with two others	11(18.3%)

(Note: C = new category formed for analysis)

Appendix 5.7A: Coding frames used for that section of the  
children's interview concerned with their general  
health

			No. of replies in category
1.	Sleep problems:	No	31 (51.7%)
		Sometimes	27 (45.0%)
		Frequently	2 ( 3.3%)
2.	Hand trembling:	No	47 (78.3%)
		Sometimes	12 (20.0%)
		Frequently	1 ( 1.7%)
3	Heart Palpitations:	No	13 (21.7%)
		Sometimes	47 (78.3%)
		Frequently	0
4	Nightmares:	Never	52 (85.7%)
		Sometimes	6 (10.0%)
		Frequently	2 ( 3.3%)
5	Sweaty hands:	Never	17 (28.3%)
		Sometimes	42 (70.0%)
		Frequently	1 ( 1.7%)

6	General health:	Very healthy	0
		Medium/Normal	56 (93.3%)
		Sometimes unhealthy	4 (6.7%)
		Generally unhealthy	0
7.	Likes doctor:	Not at all	6 (10.0%)
		Some	50 (83.3%)
		A lot	4 (6.7%)
8.	Been in hospital:	No	34 (56.7%)
		Once	19 (31.7%)
		Several times	7 (11.7%)
9.	Likes hospital	No	23 (38.3%)
		Only when necessary	30 (50.0%)
		Yes	7 (11.7%)
10	Minor illness:	No	52 (86.7%)
		Yes	8 (13.3%)
11.	Hayfever:	No	47 (78.3%)
		Yes	13 (21.7%)
12	Eczema:	No	47 (78.3%)
		Infantile	2 (3.3%)
		Yes	11 (18.3%)

13. Nervous :	No	25 (41.7%)
	Sometimes	35 (58.3%)
	Frequently	0
14. Headaches :	No	26 (43.3%)
	Occasionally	33 (55.0%)
	Frequently	1 (1.7%)
15. Bedwets:	Never	53 (88.3%)
	Sometimes	6 (10.0%)
	Frequently	1 (1.7%)
16. Asthma in family :	No	50 (83.3%)
	Yes	10 (16.7%)
17. Visits doctor often :	Rarely	10 (16.7%)
	Occasionally	33 (55.0%)
	Often	17 (28.3%)

Appendix 5.7B Coding frames used for that section of the  
mothers' interview concerned with the children's  
general health

		No. of replies in category
1. Minor Illness:	No	29 (96.7%)
	Yes	1 ( 3.3%)
2. Hayfever :	No	17 (56.7%)
	Summer sneezes	9 (30 % )
	Yes	4 (13.3%)
3. Eczema:	No	21 (70 % )
	Infantile eczema	8 (26.7%)
	Yes	1 ( 3.3%)
4. Nervous:	No	13 (43.3%)
	Shy	7 (23.3%)
	Nervous	10 (33.3%)
5. Headaches :	No	21 (70 % )
	Sometimes	9 (30 % )
	Frequently	0
6. Bedwets:	No	25 (83.3%)
	Sometimes	5 (16.7%)
	Frequently	0

7. Asthma in family: No	20 (66.7%)
Yes	10 (33.3%)

Appendix 6.2.1A Basic structure of the part of the children's  
interviews concerned with asthma

Do you know when you had your first attack of asthma?

Do you think you will grow out of it?

How are you between attacks?

Do you think your asthma is very bad?

Do you know anyone else with asthma?

Do you think your asthma is worse than their's?

How do you rate your general health other than asthma?

Does anyone else in your family have asthma?

Does your asthma stop you from doing things you would like to do?

Does your asthma help you get out of things you don't like doing?

Do you know when you are going to have a bad attack?

What do you think brings an attack on?

Have you tried to stop an oncoming attack?

What do you do during an attack?

Do you visit the doctor or does he visit you when you have an  
attack?

What brings an attack to an end?

What do you think of your doctor?

Do you take the medicines he prescribes?

Do you think these medicines are any good?

Do you think these medicines are necessary?

What is the best treatment for asthma?

Are you receiving any special treatment?

Appendix 6.2.1A (cont.)

What does your family think about your asthma?

Do you sometimes try to hide your asthma from them?

Do they ever treat you any different because of your asthma?

Do your friends know you have asthma?

What do your friends think about your asthma?

Appendix 6.2.1B Basic structure of the mothers' interview

When did your child have his/her first attack of asthma?

How is he/she between attacks?

Do you think his/her asthma is very bad?

Do you think he/she will grow out of it?

Does anyone else in the family have asthma?

What do you think starts an attack in your child?

What does your child do during an attack?

What brings an attack to an end?

How often does he/she go to the local doctor?

Do you think the doctor understands your child's asthma?

Do you think the medicines are any good?

Do you think he/she could get over an attack without medicines?

What do you think is the best treatment for asthma?

Appendix 6.2.4A Coding frames used for that section of the children's interview concerned with asthma in general

			No. of replies in category
1.	Wheezy between attacks:	No	27 (90 % )
		A little	3 (10 % )
2.	Comparison with other child who has asthma :	I'm worse	4 (13.3%)
		Same/Don't know	7 (23.3%)
		I'm better	10 (33.3%)
		(E) Not relevant	9 (30.0%)
3.	Asthma prevents activities :	No	6 (20 % )
		Some	21 (70.0%)
		A lot	3 (10.0%)
4.	Asthma aids avoidance of certain disliked activities :	No	14 (46.7%)
		Sometimes	16 (53.3%)
5.	Health rating without asthma :	Normal/Healthy	28 (93.3%)
		Sick	2 ( 6.7%)

## Appendix 6.2.4A (cont.)

6.	Onset before	Yes	19 (63.3%)
	4 years :	No	11 (36.7%)
7.	Severity of asthma:	Mild	1 ( 3.3%)
		Moderate	20 (66.7%)
		Severe	9 (30 % )
8.	Asthma in family:	Yes	10 (33.3%)
		No	20 (66.7%)
9.	Will grow out	Yes	23 (76.7%)
	of asthma:	No	3 (10 % )
		(E) Don't know	4 (13.3%)

Note: E = category excluded from analysis

Appendix 6.2 4B Coding frames used for that section of the  
mothers' interview concerned with asthma in  
general

		No. of replies in category
1.	Onset before 4 years:	No Yes
		16 (53.3%) 14 (46.7%)
2.	Details of asthma onset:	(C) After infection (C) On holiday (C) On moving house (C) Always 'chesty' (C) Various Don't know
		8 (26.7%) 1 ( 3.3%) 1 ( 3.3%) 3 (10 % ) 5 (16.7%) 12 (40 % )
3.	Severity of asthma:	Mild Moderate Severe
		4 (13.3%) 15 (50 % ) 11 (36.7%)
4.	Asthma in family:	No Yes
		14 (46.7%) 16 (53.3%)
5.	Will grow out of asthma:	No Maybe Yes
		2 ( 6.7%) 20 (66.7%) 8 (26.7%)

## Appendix 6..2.4B (cont.)

6.	Reasons for pessimism:	(C)No improvement	4 (13.3%)
		(C)Family experience	1 ( 3.3%)
		Not relevant/No reasons	25 (83.3%)
7.	Reasons for optimism:	(C)Improvement	6 ( 20 %)
		(C)Doctor	10 (33.3%)
		(C)Family or neighbour	3 ( 10 %)
		(C)Other	2 ( 6.7%)
		No reasons	9 (30 % )
8.	Wheezy between attacks	No	22 (73.3%)
		A Little	8 (26.7%)

Note: C = new category for analysis

Appendix 6.2.5A Coding frames used for that section of the  
children's interview concerned with an asthmatic  
attack

		No. of replies in category
1.	Season of attack:	
	(C) Mostly in spring	0
	(C) Mostly in summer	9 (30 % )
	(C) Mostly in autumn	0
	(C) Mostly in winter	3 (10 % )
	Throughout the year	18 (60 % )
2.	Aware of	No
	approaching attack:	Sometimes
		18 (60 % )
		12 (40 % )
3.	Tried to stop	No
	an attack:	Sometimes
		6 (20 % )
		22 (73.3%)
	(E) No reply	2 ( 6.7%)
4.	Method of stopping	(C) Breathing exercises
	an attack:	(C) Medicines
		Rest
		(C) Other
		(E) No reply
		4 (13.3%)
		4 (13.3%)
		6 (20 % )
		8 (26.7%)
		8 (26.7%)
5.	Methods effective:	No
		Sometimes
		(E) No reply/Not relevant
		4 (13.3%)
		16 (53.3%)
		10 (33.3%)

## Appendix 6.2.5A (cont.)

6.	Weather a	No	16 (53.3%)
	precipitant:	Sometimes	14 (46.7%)
7.	Exertion a	No	4 (13.3%)
	precipitant:	Sometimes	26 (86.7%)
8.	Excitement a	No	23 (76.7%)
	precipitant:	Sometimes	7 (23.3%)
9.	Emotions a	No	26 (86.7%)
	precipitant :	Sometimes	4 (13.3%)
10.	Laughing a	No	27 (90 % )
	precipitant:	Sometimes	3 (10 % )
11.	Pollens a	No	24 (80 % )
	precipitant :	Sometimes	6 (20 % )
12.	Colds a precipitant:	No	28 (93.3%)
		Sometimes	2 ( 6.7%)
13.	Dust a precipitant:	No	27 (90 % )
		Sometimes	3 (10 % )

## Appendix 6.2.5A (cont.)

14. Lists additional precipitant:	No	25 (83.3%)
	Yes	5 (16.7%)
15. Activity during an attack :	(C) Usually go to bed	11 (36.7%)
	(C) Sometimes go to bed	3 (10 % )
	(CI) Lie on couch	4 (13.3%)
	(CI) Sit and rest	12 (40 % )
16. Thoughts during attack:	(C) Wish asthma would go	10 (33.3%)
	(C) Think I'm going to die	3 (10 % )
	(C) School	1 ( 3.3%)
	(C) Other	5 (16.7%)
	Don't know	11 (36.7%)
17. Mother's reaction to attack:	Ensures medicine taken	15 (50 % )
	(C) Encouraged relaxation	4 (13.3%)
	(C) Provides distraction	3 (10 % )
	(C) Encourages breathing exercises	1 (3.3%)
	(C) Suggests "Give yourself a shake"	1 ( 3.3%)
	(C) Various	6 (20 % )
18. Doctor visits during an attack:	No	11 (36.7%)
	Sometimes	18 (60 % )
	Frequently	1 ( 3.3%)

## Appendix 6.2.5A (cont.)

19.	Visits doctor	Rarely	7 (23.3%)
	during an attack:	Sometimes	19 (63.3%)
		Frequently	4 (13.3%)
20.	What ends an	(C) Medicine	8 (26.7%)
	attack:	Relaxation	8 (26.7%)
		(C) Medicine and relaxation	2 (6.7%)
		(C) Good nights sleep	3 (10%)
		(C) Other	5 (16.7%)
		(E) Don't know	4 (13.3%)

Note: E = category excluded from analysis

C = new category for analysis

CI = second new category for analysis

Appendix 6.2.5B Coding frames used for that section of the  
mothers' interview concerned with an asthmatic  
attack

			No. of replies in category
1.	Weather a	No	7 (23.3%)
	precipitant:	Sometimes	23 (76.7%)
2.	Exertion a	No	8 (26.7%)
	precipitant:	Sometimes	22 (73.3%)
3.	Excitement a	No	13 (43.3%)
	precipitant:	Sometimes	17 (56.7%)
4.	Emotions a	No	12 (40 % )
	precipitant:	Sometimes	18 (60 % )
5.	Laughing a	No	21 (70 % )
	precipitant:	Sometimes	9 (30 % )
6.	Pollens a	No	12 (40 % )
	precipitant:	Maybe	5 (16.7%)
		Yes	13 (43.3%)
7.	Colds a	No	12 (40 % )
	precipitant:	Sometimes	18 (60 % )

## Appendix 6.2.5B (cont.)

8.	Dust a	No	21 (70 % )
	precipitant:	Sometimes	9 (30 % )
9.	Activity during	Goes to bed	7 (23.3%)
	an attack:	(C) Lies on couch	6 (20 % )
		(C) Sits and rests	12 (40 % )
		(C) Various	5 (16.7%)
10.	Visits doctor	Rarely	5 (16.7%)
	during an attack:	Occasionally	17 (56.7%)
		Usually	8 (26.7%)
11.	What ends an	(C) Medicine	6 (20 % )
	attack:	Relaxation	9 (30 % )
		(C) Parental Care	2 ( 6.7%)
		(C) 'It runs its cycle'	9 (30 % )
		(C) Other	2 ( 6.7%)
		(E) Don't know	2 (6.7% )

Note C= New category in analysis

E= category excluded from analysis

Appendix 6.2.6A Coding frames used for that section of the  
children's interview concerned with the  
treatment of asthma

		No. of replies in category
1.	Doctor unhelpful:	
	Unhelpful	2 ( 6.7%)
	Quite helpful	25 (83.3%)
	(E) No reply	3 (10 % )
2.	Medicine not taken:	
	Never	17 (56.7%)
	Occasionally	13 (43.3%)
3.	Receiving	
	No	19 (63.3%)
	desensitization:	
	Yes	11 (36 7%)
4.	Medicines effective:	
	Ineffective	2 ( 6 7%)
	Partially effective	28 (93 3%)
5.	Medicines essential:	
	Yes	21 ( 70 %)
	Not always	3 (10 % )
	(E) No reply	6 (20 % )
6.	Doctor knowledgeable:	
	Little understanding	2 ( 6.7%)
	Quite understanding	9 (30 % )
	(E) Don't know/No reply	19 (63.3%)

## Appendix 6.2.6A (cont.)

7. Best treatment:	(C) Tablets	10 (33.3%)
	(C) Inhaler	7 (23.3%)
	(C) Injections	3 (10%)
	(CI) Relaxation/Rest	3 (10%)
	(CI) Breathing exercises	2 (6.7%)
	(C) Medicine and breathing exercises	2 (6.7%)
	(CI) Other	2 (6.7%)
	(E) Don't know	1 (3.3%)

Note: E: category excluded from analysis

C : new category for analysis

CI : second new category for analysis

Appendix 6.2.6B Coding frames used for that section of the  
mothers' interview concerned with the treatment  
of asthma

			No. of replies in category
1.	Receiving	No	19 (56.7%)
	desensitization:	Yes	11 (36.7%)
2.	Medicines effective:	Ineffective	3 (10.0%)
		Partially effective	22 (73.3%)
		Effective	5 (16.7%)
3.	Medicines essential:	No	3 (10.0%)
		Sometimes/Don't know	7 (23.3%)
		Yes	20 (66.7%)
4.	Doctor	Not understanding	5 (16.7%)
	Knowledgeable:	Quite understanding	20 (66.7%)
		Very understanding	5 (16.7%)
5.	Best treatment:	(C)Medicine	8 (26.7%)
		(C)Relaxation	5 (16.7%)
		(C)Medicine and relaxation	2 (6.7%)
		(C)Other	4 (13.3%)
		Don't know	11 (36.7%)

Appendix 6.2.7 Coding frames used for that section of the  
children's interviews concerned with asthma  
and others

		No. of replies in category
1.	Asthma annoys parents:	
	No	14 (46.7%)
	Sometimes	13 (43.3%)
	(E) No reply	3 (10 % )
2.	Parents complain about asthma:	
	No	21 (70 % )
	Sometimes	7 (23.3%)
	(E) No reply	2 ( 6.7%)
3.	Hides asthma from parents:	
	Never	13 (43.3%)
	Sometimes	17 (56.7%)
4.	Reasons for hiding asthma:	
	Not to annoy parents	9 (30 % )
	(C) Not serious	3 (10 % )
	(C) Didn't want restrictions	1 ( 3.3%)
	(E) No reply	17 (56.7%)
5.	Parents treat child differently:	
	No	19 (63.3%)
	Parents a little kinder	11 (36.7%)
6.	Parents different during an attack:	
	No	5 (16.7%)
	Parents a little kinder	25 (83.3%)

## Appendix 6.2.7 (cont.)

7.	Friends know	No	2 ( 6.7%)
	about asthma:	Some	12 (40 % )
		Most	16 (53.3%)
8.	Self told friends	No, someone else did	9 (30 % )
	about asthma:	Yes	17 (56.7%)
		(E) Not relevant/No reply	4 (13.3%)
9.	Friends reaction	They don't comment on	
	to this information:	it	10 (33.3%)
		They occasionally	
		mention it	5 (16.7%)
		(E) No reply	15 (50 % )
10	Concern at friends	Don't care	18 (60 % )
	knowing about asthma:	Prefer they didn't know	7 (23.3%)
		(E) No reply	5 (16.7%)

Note: E = Category excluded from analysis

C = New category for analysis

## Appendix 7.2.4: Attribution of responsibility test (Part 1)

INSTRUCTIONS

On the next pages there are some stories about some boys and girls. One of the boys, called James, and one of the girls, called Jane, have asthma. That means they find it difficult to breathe sometimes. The other boys and girls in the stories don't have asthma.

You have to read each story and decide :

- 1) who is responsible for what happens in each story;
- 2) how much that person is responsible.

If a person is responsible for something that means we would blame him for it if it was bad and thank him for it if it was good.

\*\*\*\*\*

EXAMPLES

1. James, who has asthma, watched the toast while it was in the grill.

Is James responsible for the toast not being burnt?

YES/ NO

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2. Tracy used Jill's pen to do her sums and got them all right.

Is Jill responsible for Tracy getting her sums right?

YES / NO

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1. Ann fell off her friend Jill's bicycle and cut her knee.

Is Jill responsible for Ann's sore knee?

YES / NO

<input type="checkbox"/>				
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2. When Jane, who has asthma, called her dog the shout made Tracy turn round just in time to see that the milk was almost boiling over on the cooker. Tracy switched the cooker off.

Is Jane responsible for saving the milk?

YES / NO

<input type="checkbox"/>				
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3. John threw a stone at William. It missed him and broke a window.

Is John responsible for the broken window?

YES / NO

<input type="checkbox"/>				
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4. James, who has asthma, told his dog to bite Peter.

Is James responsible for Peter been bitten?

YES / NO

<input type="checkbox"/>				
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5. Jill's father made her clean her shoes before she went out.

Is Jill responsible for her clean shoes?

YES / NO

<input type="checkbox"/>				
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6. Anne blotted her writing book with Jane's pen.

Is Jane, who has asthma, responsible for Anne's book being dirty?

YES / NO

<input type="checkbox"/>				
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7. When John rang the doorbell the dog started barking which made the baby cry.

Is John responsible for making the baby cry?

YES / NO

Five empty boxes for rating responsibility.

8. When James, who has asthma, pushed the horn while playing in his father's car, the noise frightened off Alec who was about to scratch the boot.

Is James responsible for saving the car?

YES / NO

Five empty boxes for rating responsibility.

9. Jill closed the car window when she noticed the rain starting.

Is Jill responsible for the inside of the car being dry?

YES / NO

Five empty boxes for rating responsibility.

10. Anne locked Jane, who has asthma, in a shed and Jane had to break the window to get out.

Is Jane responsible for the broken window?

YES / NO

Five empty boxes for rating responsibility.

11. Francis used John's pen to do his sums and got them all right.

Is John responsible for Francis getting his sums right?

YES / NO

Five empty boxes for rating responsibility.

12. When James, who has asthma, telephoned Peter the ringing phone startled Peter causing him to drop a cup he was holding.

Is James responsible for the broken cup?

YES / NO

Five empty boxes for rating responsibility.

13. Jill opened the door to let Anne in out of the rain and her dog came in as well.

Is Jill responsible for the dog not getting wet?

YES / NO

<input type="checkbox"/>				
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14. Jane, who has asthma, held the newspaper before the fire to help it light up.

Is Jane responsible for the fire being well lit?

YES / NO

<input type="checkbox"/>				
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15. A bull chased John round the field and John had to break down a fence to escape.

Is John responsible for the broken fence?

YES / NO

<input type="checkbox"/>				
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16. Peter swam a length of the swimming pool wearing James's swimming trunks.

Is James, who has asthma, responsible for Peter swimming the length?

YES / NO

<input type="checkbox"/>				
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17. When Jill telephoned Anne the ringing phone woke her mother who was dozing with a lighted cigarette in her hand.

Is Jill responsible for Anne's mother not being burnt?

YES / NO

<input type="checkbox"/>				
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18. When Jane, who has asthma, turned up the sound of the television her little sister woke up and began to cry.

Is Jane responsible for her sister crying?

YES / NO

<input type="checkbox"/>				
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19. John opened the window and let Robert's budgie fly away.

Is John responsible for Robert losing his budgie?

YES / NO

<input type="checkbox"/>				
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20. James's mother made him make his bed before going to school.

Is James, who has asthma, responsible for the bed being made?

YES / NO

<input type="checkbox"/>				
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21. Anne cut her finger while using Jill's knife to sharpen her pencil.

Is Jill responsible for Anne's cut finger?

YES / NO

<input type="checkbox"/>				
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22. When Jane, who has asthma, slammed the door, the noise made Tracy look up from her work and to see that a piece of coal had just fallen out of the fire. Tracy lifted it quickly.

Is Jane responsible for saving the carpet?

YES / NO

<input type="checkbox"/>				
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23. John was throwing apples down from the tree into a box.

One of the apples hit Peter and bled his nose.

Is John responsible for Peter's nose bleeding?

YES / NO

<input type="checkbox"/>				
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24. James, who has asthma, kicked Alec's ball into the road so as a car would run over it.

Is James responsible for Alec's ball being burst?

YES / NO

<input type="checkbox"/>				
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25. Jill's mother would not let her go out to play until she had done her homework neatly.

Is Jill responsible for her neat homework?

YES / NO

Five empty square boxes for a Likert scale response.

26. Anne kicked Jane's ball through a window.

Is Jane, who has asthma, responsible for the broken window?

YES / NO

Five empty square boxes for a Likert scale response.

27. When John opened the cupboard, a glass, which was lying inside, rolled out and smashed on the floor.

Is John responsible for breaking the glass?

YES / NO

Five empty square boxes for a Likert scale response.

28. When James, who has asthma, closed the window to keep the rain out this kept the heat in the room.

Is James responsible for the room being warm?

YES / NO

Five empty square boxes for a Likert scale response.

29. Jill pulled the shoe out of the dog's mouth when she saw that the dog was chewing it.

Is Jill responsible for saving the shoe?

YES / NO

Five empty square boxes for a Likert scale response.

30. Jane's big sister made her throw a stone through a window.

Is Jane who has asthma, responsible for the broken window?

YES / NO

Five empty square boxes for a Likert scale response.

31. Anne wore Jill's jersey for the netball match and scored a point.

Is Jill responsible for Anne scoring the point?

YES / NO

Five empty boxes for rating responsibility.

32. When James, who has asthma, rang the bell, it made the baby cut himself with a sharp knife he had picked up unnoticed.

Is James responsible for the baby cutting himself?

YES / NO

Five empty boxes for rating responsibility.

33. Jill decided not to have a bath since she was in a hurry to go out, so her brother had a bath instead.

Is Jill responsible for her brother being able to have a bath?

YES / NO

Five empty boxes for rating responsibility.

34. Jane, who has asthma, watched the toast while it was in the grill.

Is Jane responsible for the toast not being burnt?

YES / NO

Five empty boxes for rating responsibility.

35. Alec twisted John's left arm making him drop the glass he was holding in his right hand.

Is John responsible for the broken glass?

YES / NO

Five empty boxes for rating responsibility.

36. Peter wore James's shorts in the school race and came first.

Is James, who has asthma, responsible for Peter winning the race?

YES / NO

Five empty boxes for rating responsibility.

37. When John rang Robert's doorbell the sound woke his brother so that he had just enough time to catch the last bus to work.

Is John responsible for Robert's brother getting to work?

YES / NO

<input type="checkbox"/>				
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38. Jane, who has asthma, was cleaning the house and she threw an aerosol into the fire by mistake. The aerosol exploded scattering coal into the room.

Is Jane responsible for dirtying the carpet?

YES / NO

<input type="checkbox"/>				
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39. John knocked the comic out of Alec's hand so as it would fall in the gutter.

Is John responsible for dirtying Alec's comic?

YES / NO

<input type="checkbox"/>				
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40. James's mother made him brush his teeth before going to bed.

Is James, who has asthma, responsible for his teeth being good?

YES / NO

<input type="checkbox"/>				
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1. Ewan fell off his friend John's bicycle and cut his knee.

Is John responsible for Ewan's sore knee?

YES / NO

2. When James, who has asthma, called his dog, the shout made Peter turn round just in time to notice that the milk was almost boiling over on the cooker. Peter switched the cooker off.

Is James responsible for saving the milk?

YES / NO

3. Jill threw a stone at Anne. It missed her and broke a window.

Is Jill responsible for the broken window?

YES / NO

4. Jane, who has asthma, told her dog to bite Tracy.

Is Jane responsible for Tracy been bitten?

YES / NO

5. John's father made him clean his shoes before he went out.

Is John responsible for his clean shoes?

YES / NO

6. Ewan blotted his writing book with James's pen.

Is James, who has asthma, responsible for Ewan's book being dirty?

YES / NO

7. When Jill rang the doorbell the dog started barking which made the baby cry.

Is Jill responsible for making the baby cry?

YES / NO

<input type="checkbox"/>				
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8. When Jane, who has asthma, pushed the horn while playing in her father's car, the noise frightened off Anne who was about to scratch the boot.

Is Jane responsible for saving the car?

YES / NO

<input type="checkbox"/>				
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9. John closed the car window when he noticed the rain starting.

Is John responsible for the inside of the car being dry?

YES / NO

<input type="checkbox"/>				
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10. Ewan locked James, who has asthma, in a shed and James had to break the window to get out.

Is James responsible for the broken window?

YES / NO

<input type="checkbox"/>				
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11. Tracy used Jill's pen to do her sums and got them all right.

Is Jill responsible for Tracy getting her sums right?

YES / NO

<input type="checkbox"/>				
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12. When Jane, who has asthma, telephoned Anne, the ringing phone startled Anne causing her to drop a cup she was holding

Is Jane responsible for the broken cup?

YES / NO

<input type="checkbox"/>				
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13. John opened the door to let Ewan in out of the rain and his dog came in as well.

Is John responsible for the dog not getting wet?

YES / NO

<input type="checkbox"/>				
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14. James, who has asthma, held the newspaper before the fire to help it light up.

Is James responsible for the fire being well lit?

YES / NO

<input type="checkbox"/>				
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15. A bull chased Jill round the field and Jill had to break down a fence to escape.

Is Jill responsible for the broken fence?

YES / NO

<input type="checkbox"/>				
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16. Ann swam a length of the swimming pool wearing Jane's bathing costume.

Is Jane, who has asthma, responsible for Ann swimming the length?

YES / NO

<input type="checkbox"/>				
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17. When John telephoned Ewan the ringing phone woke his mother who was dozing with a lighted cigarette in her hand.

Is John responsible for Ewan's mother not being burnt?

YES / NO

<input type="checkbox"/>				
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18. When James, who has asthma, turned up the sound of the television his little brother woke up and began to cry.

Is James responsible for his brother crying?

YES / NO

<input type="checkbox"/>				
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19. Jill opened the window and let Tracy's budgie fly away.

Is Jill responsible for Tracy losing her budgie?

YES / NO

20. Jane's mother made her make her bed before going to school.

Is Jane, who has asthma, responsible for the bed being made?

YES / NO

21. Alec cut his finger while using John's knife to sharpen his pencil.

Is John responsible for Alec's cut finger?

YES / NO

22. When James, who has asthma, slammed the door the noise made Alec look up from his work and to see that a piece of coal had just fallen out of the fire. Alec lifted it quickly.

Is James responsible for saving the carpet?

YES / NO

23. Jill was throwing apples down from the tree into a box.

One of the apples hit Anne and bled her nose.

Is Jill responsible for Anne's nose bleeding?

YES / NO

24. Jane, who has asthma, kicked Tracy's ball into the road so as a car would run over it.

Is Jane responsible for Tracy's ball being burst?

YES / NO

25. John's mother would not let him go out to play until he had done his homework neatly.

YES / NO

Is John responsible for his neat homework?

Five empty boxes of increasing size for a Likert scale response.

26. Robert kicked James's football through a window.

YES / NO

Is James, who has asthma, responsible for the broken window?

Five empty boxes of increasing size for a Likert scale response.

27. When Jill opened the cupboard, a glass, which was lying inside, rolled out and smashed on the floor.

YES / NO

Is Jill responsible for breaking the glass?

Five empty boxes of increasing size for a Likert scale response.

28. When Jane, who has asthma, closed the window to keep the rain out this kept the heat in the room.

YES / NO

Is Jane responsible for the room being warm?

Five empty boxes of increasing size for a Likert scale response.

29. John pulled the shoe out of the dog's mouth when he saw that the dog was chewing it.

YES / NO

Is John responsible for saving the shoe?

Five empty boxes of increasing size for a Likert scale response.

30. James's big brother made him throw a stone through a window.

YES / NO

Is James, who has asthma, responsible for the broken window?

Five empty boxes of increasing size for a Likert scale response.

31. Peter wore John's jersey for the football match and scored a goal.

Is John responsible for Peter scoring the goal?

YES / NO

32. When Jane, who has asthma, rang the bell, it made the baby cut himself with a sharp knife he had picked up unnoticed.

Is Jane responsible for the baby cutting himself?

YES / NO

33. John decided not to have a bath since he was in a hurry to go out, so his brother had a bath instead.

Is John responsible for his brother being able to have a bath?

YES / NO

34. James, who has asthma, watched the toast while it was in the grill.

Is James responsible for the toast not being burnt?

YES / NO

35. Ann twisted Jill's left arm making her drop the glass she was holding in her right hand.

Is Jill responsible for the broken glass?

YES / NO

36. Kathy wore Jane's shorts in the school race and came first.

Is Jane, who has asthma, responsible for Kathy winning the race?

YES / NO

37. When Jill rang Tracy's doorbell the sound woke her sister so that she had just enough time to catch the last bus to work.

Is Jill responsible for Tracy's sister getting to work?

YES / NO

<input type="checkbox"/>				
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38. James, who has asthma, was cleaning the house and he threw an aerosol into the fire by mistake. The aerosol exploded scattering coal into the room.

Is James responsible for dirtying the carpet?

YES / NO

<input type="checkbox"/>				
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39. Jill knocked the comic out of Ann's hand so as it would fall in the gutter.

Is Jill responsible for dirtying Ann's comic?

YES / NO

<input type="checkbox"/>				
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40. Jane's mother made her brush her teeth before going to bed.

Is Jane, who has asthma, responsible for her teeth being good?

YES / NO

<input type="checkbox"/>				
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Appendix 7.2.4 (cont): Key to the contextual levels of the stories  
in the attribution of responsibility tests

<u>Contextual levels</u>	<u>Story numbers</u>							
Association	1	6	11	16	21	26	31	36
Commission	2	7	12	17	22	27	32	37
Foreseeability	3	8	13	18	23	28	33	38
Intentionality	4	9	14	19	24	29	34	39
Justification	5	10	15	20	25	30	35	40

APPENDIX 8.2.1 Basic structure of that part of the children's  
interviews concerned with their friends

What is the name of your three best friends?

Could you tell me anything about N?

How often do you see your friends?

Do they share your interests?

Would you share your secrets with them?

Do you prefer your friends to your siblings?

Do you think your friends like you?

Would you like some more friends?

Are you worried if they dislike you?

How are you compared with your peers as regards sports, strength,  
general?

Are you called names by your peers?

What do you do when they call you names?

What are you most afraid of?

Appendix 8.2.3 Coding frames used for the analysis of that section  
of the children's interviews concerned with the  
description of their friends

1.1 Total no. of items used to describe all friends	1 - 10 %	19(31.7%)
	11 - 20 %	29(48.3%)
	21 - 30 %	11(18.3%)
	31 - 40 %	1( 1.7%)
1.2 Average no. of items used to describe a single friend	1 - 4	30( 50 %)
	5 - 8	26(43.3%)
	9 - 12	4( 6.7%)
2.1 Total no. of undifferentiating items	0	13(21.7%)
	1 - 4	44(73.3%)
	5 - 8	2( 3.3%)
	9 - 12	1( 1.7%)
2.2 Average no of undifferentiating items per description of friend	0	12(21.7%)
	1 - 2	46(76.7%)
	3 - 4	1( 1.7%)

## APPENDIX 8.2.3 (cont)

2.3 Proportion of total description undifferentiating items	0%	13(21.7%)
	1 - 20%	35(58.3%)
	21 - 40%	8(13.3%)
	41 - 60%	3( 5 % )
	61 - 80%	1( 1.7%)
	81 - 100%	
3.1 Total no. of simple differentiating items	0	1( 1.7%)
	1 - 6	25(41.7%)
	7 - 12	27( 45 %)
	13 - 18	6( 10 %)
	19 - 21	1( 1.7%)
3.2 Average no. of simple differentiating items per description	0	1( 1.7%)
	1 - 2	31(51.7%)
	3 - 4	23(38.3%)
	5 - 6	4( 6.7%)
	7 - 8	1( 1.7%)

## APPENDIX 8.2.3 (cont)

3.3 Proportion of total  
description simple  
differentiating items

0 %	1( 1.7%)
1 - 20 %	1( 1.7%)
21 - 40 %	13(21.7%)
41 - 60 %	25(41.7%)
61 - 80 %	17(28.3%)
81 - 100%	3( 5 % )

4.1 Total no. of differentiating  
items

0	11(18.3%)
1 - 4	32(53.3%)
5 - 8	13(21.7%)
9 - 12	1( 1.7%)
13 - 16	3( 5 % )

4.2 Average no. of differentiating  
items per description

0	11(18.3%)
1 - 2	39( 65 %)
3 - 4	8(13.3%)
5 - 6	2( 3.3%)

## APPENDIX 8.2.3 (cont)

4.3 Proportion of total description differentiating items	0 %	11(18.3%)
	1 - 10 %	6( 10 %)
	11 - 20 %	14(23.3%)
	21 - 30 %	9( 15 %)
	31 - 40 %	7(11.7%)
	41 - 50 %	8(13.3%)
	51 - 60 %	2( 3.3%)
	61 - 70 %	1( 1.7%)
	71 - 80 %	2( 3.3%)
5.1 Total no. of dispositional items	0	38(63.3%)
	1 - 4	18( 30 %)
	5 - 8	3( 5 % )
	9 - 12	0
	13 - 16	1( 1.7%)
5.2 Average no. of dispositional items per description	0	38(63.3%)
	1 - 2	21(35 % )
	3 - 4	0
	5 - 6	1( 1.7%)

## APPENDIX 8.2.3 (cont)

5.3 Proportion of total description dispositional items	0 %	38(63.3%)
	1 - 10 %	7(11.7%)
	11 - 20 %	7(11.7%)
	21 - 30 %	5( 8.3%)
	31 - 40 %	2( 3.3%)
	41 - 50 %	0
	51 - 60 %	1( 1.7%)
6.1 Total no. of egocentric items	0	1( 1.7%)
	1 - 6	35(58.3%)
	7 - 12	21( 35 %)
	13 - 18	1( 1.7%)
	19 - 21	2( 3.3%)
6.2 Average no. of egocentric items per description	0	1( 1.7%)
	1 - 2	39( 65 %)
	3 - 4	17(28.3%)
	5 - 6	2( 3.3%)
	7 - 8	1( 1.7%)

## APPENDIX 8.2.3 (cont)

6.3 Proportion of total  
description egocentric  
items

0 %	1( 1.7%)
1 - 20 %	5( 8.3%)
21 - 40 %	18( 30 %)
41 - 60 %	26(43.3%)
61 - 80 %	7(11.7%)
81 - 100%	3( 5 % )

7.1 Total no. of mutual  
items

0	23(38.3%)
1 - 4	30( 50 %)
5 - 8	6( 10 %)
9 - 10	1( 1.7%)

7.2 Average no. of mutual  
items per description

0	23(38.3%)
1 - 2	32(53.3%)
3 - 4	5( 8.3%)

7.3 Proportion of total  
description mutual items

0 %	23(38.3%)
1 - 20 %	24( 40 %)
21 - 40 %	11(18.3%)
41 - 60 %	1( 1.7%)
61 - 80 %	1( 1.7%)

## APPENDIX 8.2.3 (cont)

## 8.1 Total no. of other oriented items

0	2( 3.3%)
1 - 6	33( 55 %)
7 - 12	22(36.7%)
13 - 18	1( 1.7%)
19 - 21	2( 3.3%)

## 8.2 Average no. of other oriented items per description

0	2(3.3%)
1 - 2	37(61.7%)
3 - 4	18( 30 %)
5 - 6	2( 3.3%)
7 - 8	1( 1.7%)

## 8.3 Proportion of total description other oriented items

0 %	2( 3.3%)
1 - 20%	9( 15 %)
21 - 40%	19(31.7%)
41 - 60%	19(31.7%)
61 - 80%	9( 15% )
81 - 100%	2( 3.3%)

## APPENDIX 8.2.3 (cont)

<b>9.1 Total no. of positive items</b>	0	1( 1.7%)
	1 - 6	20(33.3%)
	7 - 12	31(51.7%)
	13 - 18	7(11.7%)
	19 - 24	1( 1.7%)
<b>9.2 Average no. of positive items per description</b>	0	1( 1.7%)
	1 - 2	30( 50 %)
	3 - 4	24( 40 %)
	5 - 6	5( 8.3%)
<b>9.3 Proportion of total description positive items</b>	0%	1( 1.7%)
	1 - 20%	2( 3.3%)
	21 - 40%	12( 20 %)
	41 - 60%	25(41.7%)
	61 - 80%	13(21.7%)
	81 - 100%	7(11.7%)
<b>10.1 Total no. of negative items</b>	0	56(93.3%)
	1	1( 1.7%)
	2	2( 3.3%)
	3	1( 1.7%)

## APPENDIX 8.2.3 (cont)

10.2 Average no. of negative items per description	0	56(93.3%)
	< 1	3( 5 % )
	1	1( 1.7%)
10.3 Proportion of total description negative items	0 %	56(93.3%)
	1 - 10%	2( 2.3%)
	11 - 20%	2( 3.3%)
11.1 Total no. of neutral items	0	4( 6.7%)
	1 - 6	32(53.3%)
	7 - 12	17(28.3%)
	13 - 18	7(11.7%)
11.2 Average no. of neutral items per description	0	4( 6.7%)
	1 - 2	34(56.7%)
	3 - 4	18( 30 %)
	5 - 6	4( 6.7%)
11.3 Proportion of total description neutral items	0 %	4( 6.7%)
	1 - 20%	1( 1.7%)
	21 - 40%	12( 20 %)
	41 - 60%	25(41.7%)
	61 - 80%	12( 20 % )
	81 - 100%	6( 10 % )

## APPENDIX 8.2.3 (cont)

11.4 Evaluative consistency quotient	100	57( 95% )
	<100	3( 5% )
12.1 Total no. of place of residence items	0	22(36.7%)
	1	21( 35 %)
	2	9( 15 %)
	3	6( 10 %)
	4	2( 3.3%)
12.2 Average no. of place of residence items per description	0	22(36.7%)
	1	36( 60 %)
	1	2( 3.3%)
12.3 Proportion of total description place of residence items	0 %	22(36.7%)
	1 - 10%	24( 40 %)
	11 - 20%	8(13.3%)
	21 - 30%	4( 6.7%)
	31 - 40%	2( 3.3%)

## APPENDIX 8.2.3 (cont)

12.4 Proportion of undifferentiating items place of residence items	0 %	22(36.7%)
	1 - 20 %	2( 3.3%)
	21 - 40 %	3( 5 % )
	41 - 60 %	9( 15% )
	61 - 80 %	5( 8.3%)
	81 - 100%	19(31.7%)
13.1 Total no. of humour items	0	43(71.7%)
	1	9( 15% )
	2	5( 8.3%)
	3	3( 5% )
13.2 Average no. of humour items per description	0	43(71.7%)
	1	17(28.3%)
	1	
13.3 Proportion of total description humour items	0 %	43(71.7%)
	1 - 10 %	11(18.3%)
	11 - 20 %	5( 8.3%)
	21 - 30 %	1( 1.7%)
13.4 Proportion of simple differentiating items humour items	0 %	43(71.7%)
	1 - 20 %	12( 40 %)
	21 - 40 %	3( 5% )
	41 - 60 %	2( 3.3%)

## APPENDIX 8.2.3 (cont)

14.1	Total no. of physical activity items	0	26(43.3%)
		1 - 2	19(31.7%)
		3 - 4	10(16.7%)
		5 - 6	4( 6.7%)
		7 - 8	1( 1.7%)
14.2	Average no. of physical activity items per description	0	26(43.3%)
		1	19(31.7%)
		2	10(16.7%)
		3	4( 6.7%)
		4	1( 1.7%)
14.3	Proportion of total description physical activity items	0 %	26(43.3%)
		1 - 20 %	22(36.7%)
		21 - 40 %	10(16.7%)
		41 - 60 %	1( 1.7%)
		61 - 80 %	0
		81 - 100%	1( 1.7%)

## APPENDIX 8.2.3 (cont)

14.4	Proportion of differentiating items physical activity items	0 %	26(43.3%)
		1 - 20 %	2( 3.3%)
		21 - 40 %	9( 15 %)
		41 - 60 %	8(13.3%)
		61 - 80 %	6( 10 %)
		81 - 100%	9( 15 %)
15.1	Total no. of non-physical activity items	0	26(43.3%)
		1 - 2	23(38.3%)
		3 - 4	7(11.7%)
		5 - 6	2( 3.3%)
		7 - 8	2( 3.3%)
15.2	Average no. of non-physical activity items per description	0	26(43.3%)
		1	25(41.7%)
		2	7(11.7%)
		3	2( 3.3%)
15.3	Proportion of total description non-physical activity items	0 %	26(43.3%)
		1 - 10 %	10(16.7%)
		11 - 20 %	18( 30 %)
		21 - 30 %	5( 8.3%)
		31 - 40 %	1( 1.7%)

## APPENDIX 8.2.3 (cont)

15.4	Proportion of differentiating items non-physical activity items	0 %	26(43.3%)
		1 - 20%	4( 6.7%)
		21 - 40%	7(11.7%)
		41 - 60%	11(18.3%)
		61 - 80%	5( 8.3%)
		81 - 100%	7(11.7%)
16.1	Total no. of indoor activity items	0	39( 65 %)
		1	13(21.7%)
		2	4( 6.7%)
		3	2( 3.3%)
		4	2( 3.3%)
16.2	Average no. of indoor activity items per description	0	39( 65 %)
		1	19(31.7%)
		1	2( 3.3%)
16.3	Proportion of total description indoor activity items	0 %	39( 65 %)
		1 - 10 %	14(23.3%)
		11 - 20 %	5( 8.3%)
		21 - 30 %	1( 1.7%)
		31 - 40 %	1( 1.7%)

## APPENDIX 8.2.3 (cont)

16.4 Proportion of differentiating items indoor activity items	0 %	39( 65 %)
	1 - 20 %	4( 6.7%)
	21 - 40 %	11(18.3%)
	41 - 60 %	2( 3.3%)
	61 - 80 %	1( 1.7%)
	81 - 100 %	3( 5 %)
17.1 Total no. of helpful items	0	45( 75 %)
	1 - 2	7(11.7%)
	3 - 4	5( 8.3%)
	5 - 6	2( 3.3%)
	7 - 8	1( 1.7%)
	17.2 Average no. of helpful items per description	0
	1 - 2	14(23.3%)
	3 - 4	1( 1.7%)
17.3 Proportion of total description helpful items	0 %	45( 75 % )
	1 - 10 %	3( 5 %)
	11 - 20 %	7(11.7%)
	21 - 30 %	4( 6.7%)
	31 - 40 %	1( 1.7%)

## APPENDIX 8.2.3 (cont)

17.4 Proportion of dispositional items helpful items	0 %	45( 75 %)
	1 - 20%	0
	21 - 40%	0
	41 - 60%	2( 3.3%)
	61 - 80%	3( 5% )
	81 - 100%	.10(16.7%)

Appendix 8.2.7: Coding frames used for the analysis of that section of the children's interviews concerned with aspects of their friendship

1. How often do you see your friends	Only at school	7(11.7%)
	After school, as well	53(88.3%)
2. Friends have similar interests	No	3( 5 % )
	Some	43(70 %)
	Yes	15(25 % )
3. Share secrets with friends	No	19(31.7%)
	Sometimes	35(58.3%)
	Usually	6(10 %)
4. Preference for friends or siblings	Prefer friends	21(35 %)
	Prefer siblings	27(45 %)
	Like both	6(10 %)
	(E) Not relevant/No siblings	6(10 %)
5. Desirous of more friends	Have enough	44(73.3%)
	Would like more	14(23.3%)
	(E) Don't know	2( 3.3%)
6. Friends liking for self	Some do	3( 5 %)
	Most do	55(91.7%)
	(E) Don't know	2( 3.3%)

7. Worried if friends disliked self	No	40(66.7%)
	A little	13(21.7%)
	Very much	5( 8.3%)
	(E) Don't know	2( 3.3%)
8. Comparison with peers at sport	Better	22(36.7%)
	Average	23(38.3%)
	Worse	15(25 %)
9. Comparison with peers in strength	Stronger	9(15 %)
	Average	42(70 %)
	Weaker	9(15 %)
10. Comparison with peers in general	Better	0
	Average	60(100 %)
	Worse	0
11. Called names by peers	(C) No	18(30 % )
	(C) Nickname	28(46.7%)
	(C1) Denigratory name	12(20 %)
	(C1) Name referring to physique	2( 3.3%)
12. Response to name- calling	(C) Don't care	9(15 %)
	(C) Ignore them	21(35 %)
	(C1) Call them names	10(16.7%)
	(C1) Physical retaliation	2( 3.3%)
	(E) Not relevant	18(30 %)

## Appendix 8.2.8 (cont)

13.Fears	(C) Family problems	4( 6.7%)
	(C) Interpersonal problems	10(16.7%)
	(C1) The dark	9(15 %)
	(C1) Animals	14(23.3%)
	(C1) Other	8(13.3%)
	(E) None	15(25 %)

Note: E = Category excluded from analysis

C = New category for analysis

C1 = Second new category for analysis

APPENDIX 9.2.4 Coding frames used for the analysis of that section  
of the children's interviews concerned with their  
parents

		No. of replies in category
1. Parents present Household tasks	No	5( 8.3%)
	Occasionally	36(60 %)
	Regularly	19(31.7%)
2. Readiness to do tasks	Complain sometimes	19(31.7%)
	Usually do them freely	39(65 %)
	(E) Not relevant/no reply	2( 3.3%)
3. Parental discipline	Both parents strict	3( 5 %)
	Father strict	8(13.3%)
	Mother strict	6(10 %)
	Both average	12(20 %)
	Both easy going	31(51.7%)
4. Parents listen	Sometimes	24(40 %)
	Usually	35(58.3%)
	(E) No reply	1( 1.7%)
5. Allowed watch t.v. late	Never	3( 5 %)
	Only at weekends	15(25 %)
	Special programmes	22(36.7%)
	Regularly	10(16.7%)
	(E) Don't know/not relevant	10(16.7%)

## APPENDIX 9.2.4 (cont)

6. Parents' favourite child	Self for mother	3( 5 %)
	Self for father	4( 6.7%)
	Self for both	1( 1.7%)
	Someone else	6(10 %)
	All the same/Don't know	40(66.7%)
	(E) Not relevant	6(10 %)
7. Parents likes about child	(C) Neatness/cleanliness	6(10 %)
	(C) Industriousness	8(13.3%)
	(CI)Friendliness	2( 3.3%)
	(C) Obedience	3( 5 %)
	(CI)Specific abilities	11(18.3%)
	(CI)Physical appearance	4( 6.7%)
	(CI)Helpfulness	14(23.3%)
	(E) Don't know	12(20 %)
8. Parental restrictions on activities	Very little	19(31.7%)
	Sometimes	41(68.3%)
9. Parents ambition for child	None - it's up to self	16(26.7%)
	(C) Good job	5( 8.3%)
	(C) Specific occupation	16(26.7%)
	(E) Don't know/no reply	23(38.3%)

10. Abilities mother	(C) Academic	4(6.7%)
unaware of	Physical	8(13.3%)
	(C) Specific ability	4(6.7%)
	(C) Other	1(1.7%)
	(E) None/No reply	43(71.7%)
11. Parents' opinion	Strong	15(25%)
of childs' strength	Average	14(23.3%)
	Weak	4(6.7%)
	(E) Don't know/No reply	27(45%)

Note: E = Category excluded from analysis

C = New category for analysis

CI = Second new category for analysis

APPENDIX 9.2.5: Coding frames used for the analysis of that section of the children's interviews concerned with their interests

		No. of replies in category
1. Activities after school	Physical activities	34 (56.7%)
	Less physical	15 (25 % )
	Indoor	11 (18.3%)
2. Favourite activities at home	Physical	13 (21.5%)
	Less physical	38 (63.3%)
	(E) Creative	9 (15 % )
3. Hobbies	Physical games	23 (38.3%)
	Less physical	10 (16.7%)
	Traditional	14 (23.3%)
	(E) None	13 (21.7%)
4. Sports	Active physical - frequently	14 (23.3%)
	Active physical - occasionally	21 (35 % )
	Less physical	18 (30 % )
	(E) Don't like sports	7 (11.7%)
5. Books	(C) Don't like books	8 (13.3%)
	(CI)School books	2 ( 3.3%)
	(CI)Children's books	46 (76.7%)
	(CI)Adult fiction	1 ( 1.7%)
	(CI)Non-fiction	3 ( 5 % )

## APPENDIX 9.2.5 (cont)

6. Activities child would like	Nothing	40(66.7%)
	(CI) Something particular	18(30 %)
	(CI) Something poor health prevents	2( 3.3%)
7. Disliked activities	(C) Nothing	8(13.3%)
	(CI) Household tasks	34(56.7%)
	(CI) Schoolwork	6(10 %)
	(CI) Games	3( 5 %)
	(CI) Other	9(15 %)
8. Ideal type	(C) An ordinary/normal person	3( 5 %)
	(C) To improve physically	11(18.3%)
	(C) To improve healthwise	2( 3.3%)
	(C) To improve morally	2( 3.3%)
	(C) To improve intellectually	4( 6.7%)
	(C) To improve materially	1( 1.7%)
	(C) Other	7(11.7%)
	(CI) Don't know/remain the same	30(50 %)

Note: E = Category excluded from analysis  
 C = New category for analysis  
 CI= Second new category for analysis

Appendix 9.2.6 : Coding frames used for the analysis of that section  
of the children's interviews concerned with the  
description of their brothers and sisters.

		<u>Brothers</u>	<u>Sisters</u>
1.1 Total no. of items used to describe all siblings	No description	5( 8.3%)	3( 5% )
	1 - 4	19(31.7%)	28(46.7%)
	5 - 8	11(18.3%)	5( 8.3%)
	9 - 12	1( 1.7%)	0
	13 - 14	1( 1.7%)	0
	No sibling	13(21.7%)	14(23.3%)
1.2 Average no. of items used to describe a single sibling	1 - 2	17(53.1%)	19(57.6%)
	3 - 4	10(31.3%)	11(33.3%)
	5 - 6	5(15.7%)	1( 3% )
	7 - 8	0	2 ( 6.1%)
2.1 Total no. of undifferentiating items	0	27(84.4%)	28(84.8%)
	1	4(12.5%)	5(15.2%)
	2	0	0
	3	1( 3.1%)	0
2.2 Average no. of undifferentiating items per description	0	27(84.4%)	28(84.8%)
	1	4(12.5%)	4(12.1%)
	2	1( 3.1%)	1( 3 %)

## Appendix 9.2.6 (cont)

2.3	Proportion of total description undifferentiating items	0 %	27(84.4%)	28(84.8%)
		1 - 20 %	3( 9.4%)	1 ( 3%)
		21 - 40 %	0	3( 9.1%)
		41 - 60 %	2( 6.3%)	0
		61 - 80 %	0	0
		81 - 100%	0	1 ( 3%)
3.1	Total no. of simple differentiating items	0	3( 9.4%)	3( 9.1%)
		1 - 2	16( 50 %)	17(51.5%)
		3 - 4	6(18.8%)	11(33.4%)
		5 - 6	5(15.6%)	2( 6.1%)
		7 - 8	2( 6.3%)	0
3.2	Average no. of simple differentiating items per description	0	3( 9.4%)	3( 9.1%)
		1 - 2	22(68.7%)	21(63.6%)
		3 - 4	6(18.8%)	7(21.2%)
		5 - 6	1( 3.1%)	2( 6.1%)
3.3	Proportion of total description simple differentiating items	0 %	3( 9.4%)	3( 9.1%)
		1 - 20%	1( 3.1%)	1( 3 %)
		21 - 40%	0	0
		41 - 60%	4(12.5%)	4(12.1%)
		61 - 80%	7(21.9%)	8(24.2%)
		81 - 100%	17(53.1%)	17(51.5%)

## Appendix 9.2.6 (cont)

4.1	Total no. of differentiating items	0	20(62.5%)	28(84.8%)
		1 - 2	9(28.1%)	4(12.1%)
		3 - 4	1( 3.1%)	0
		5 - 6	1( 3.1%)	1( 3%)
		7 - 8	1( 3.1%)	0
4.2	Average no. of differentiating items per description	0	20(62.5%)	28(84.8%)
		1 - 2	10(31.3%)	4(12.1%)
		3 - 4	1( 3.1%)	0
		5 - 6	1( 3.1%)	1( 3% )
4.3	Proportion of total description differentiating items	0 %	20(62.5%)	28(84.8%)
		1 - 20%	3( 9.4%)	0
		21 - 40%	3( 9.4%)	2( 6.1%)
		41 - 60%	4(12.5%)	2( 6.1%)
		61 - 80%	0	0
		81 - 100%	2( 6.3%)	1( 3%)
5.1	Total no. of dispositional items	0	30(93.8%)	25(75.8%)
		1	1( 3.1%)	4(12.1%)
		2	0	2( 6.1%)
		3	0	2( 6.1%)
		4	1 ( 3.1%)	0

## Appendix 9.2.6(cont)

5.2 Average no. of dispositional items per description	0	30(93.8%)	25(75.8%)
	1	1( 3.1%)	4(12.1%)
	2	0	3( 9.1%)
	3	0	1( 3 %)
	4	1( 3.1%)	0
5.3 Proportion of total description dispositional items	0 %	30(93.8%)	25(75.8%)
	1 - 20%	1( 3.1%)	1( 3 %)
	21 - 40%	0	3( 9.1%)
	41 - 60%	0	2( 6.1%)
	61 - 80%	1( 3.1%)	0
	81 - 100%	0	2( 6.1%)
6.1 Total no. of egocentric items	0	5(15.6%)	6(18.2%)
	1 - 2	14(43.8%)	20(60.6%)
	3 - 4	9(28.1%)	5(15.2%)
	5 - 6	3( 9.4%)	2( 6.1%)
	7 - 8	1( 3.1%)	0
	6.2 Average no. of egocentric items per description	0	5(15.6%)
1 - 2		21(65.6%)	21(63.6%)
3 - 4		5(15.6%)	4(12.1%)
5 - 6		1( 3.1%)	2( 6.1%)

## Appendix 9.2. 6(cont)

6.3	Proportion of total description egocentric items	0 %	5(15.6%)	6(18.2%)
		1 - 20%	2( 6.3%)	2( 6.1%)
		21 - 40%	3( 9.4%)	4(12.1%)
		41 - 60%	9(28.1%)	5(15.2%)
		61 - 80%	3( 9.4%)	5(15.2%)
		81 - 100 %	10(31.3%)	11(33.3%)
7.1	Total no. of mutual items	0	26(81.3%)	32( 97%)
		1	5(15.6%)	1( 3%)
		2	0	0
		3	1( 3.1%)	0
7.2	Average no. of mutual items per description	0	26(81.3%)	32( 97%)
		1	5(15.6%)	1( 3%)
		2	0	0
		3	1( 3.1%)	0
7.3	Proportion of total description mutual items	0 %	26(81.3%)	32( 97%)
		1 - 10%	1( 3.1%)	0
		11 - 20%	1( 3.1%)	0
		21 - 30%	1( 3.1%)	0
		31 - 40%	0	1( 3%)
		41 - 50%	3( 9.4%)	0

## Appendix 9.2.6 (cont)

8.1	Total no. of other oriented items	0	10(31.3%)	10(30.3%)
		1 - 2	13(40.6%)	14(42.4%)
		3 - 4	5(15.6%)	7(21.2%)
		5 - 6	3( 9.4%)	2( 6.1%)
		7 - 8	0	0
		9 - 10	1( 3.1%)	0
8.2	Average no. of other oriented items per description	0	10(31.3%)	10(30.3%)
		1 - 2	17(53.1%)	19(57.6%)
		3 - 4	4(12.5%)	3( 9.1%)
		5 - 6	1( 3.1%)	1( 3%)
8.3	Proportion of total description other oriented items	0 %	10(31.3%)	10(30.3%)
		1 - 20 %	5(15.6%)	1( 3%)
		21 - 40 %	2( 6.3%)	5(15.2%)
		41 - 60 %	6(18.8%)	5(15.2%)
		61 - 80 %	5(15.6%)	4(12.1%)
		81 - 100%	4(12.5%)	8(24.2%)
9.1	Total no. of positive items	0	7(21.9%)	10(30.3%)
		1 - 2	11(34.4%)	18(54.5%)
		3 - 4	9(28.1%)	4(12.1%)
		5 - 6	5(15.6%)	0
		7 - 8	0	1( 3%)

## Appendix 9.2.6(cont)

9.2 Average no. of positive items per description	0	7(21.9%)	10(30.3%)
	1 - 2	17(53.1%)	20(60.6%)
	3 - 4	6(18.8%)	2( 6.1%)
	5 - 6	2( 6.3%)	0
	7 - 8	0	1( 3%)
9.3 Proportion of total description positive items	0 %	7(21.9%)	10(30.3%)
	1 - 20 %	1( 3.1%)	1( 3%)
	21 - 40 %	2( 6.3%)	5(15.2%)
	41 - 60 %	10(31.3%)	4(12.1%)
	61 - 80 %	4(12.5%)	5(15.2%)
	81 - 100 %	8( 25%)	8(24.2%)
10.1 Total no. of negative items	0	22(68.8%)	21(63.6%)
	1	8( 25%)	7(21.2%)
	2	2( 6.3%)	2( 6.1%)
	3	0	2( 6.1%)
	4	0	0
	5	0	1( 3%)
10.2 Average no. of negative items per description	0	22(68.8%)	21(63.6%)
	1	10(31.3%)	8(24.2%)
	2	0	1( 3%)
	3	0	2( 6.1%)
	4	0	0
	5	0	1( 3%)

## Appendix 9.2.6. (cont)

10.3	Proportion of total description negative items	0 %	22(68.8%)	21(63.6%)
		1 - 20 %	2( 6.3%)	0
		21 - 40 %	1( 3.1%)	8(24.2%)
		41 - 60 %	5(15.6%)	3( 9.1%)
		61 - 80 %	1( 3.1%)	0
		81 - 100 %	1( 3.1%)	1( 3%)
11.1	Total no. of neutral items	0	8( 25%)	10(30.3%)
		1 - 2	17(53.1%)	19(57.6%)
		3 - 4	4(12.5%)	2( 6.1%)
		5 - 6	3( 9.4%)	2( 6.1%)
11.2	Average no. of neutral items per description	0	8( 25%)	11(33.3%)
		1 - 2	21(65.6%)	21(63.6%)
		3 - 4	3( 9.4%)	1( 3%)
11.3	Proportion of total description neutral items	0 %	8( 25%)	10(30.3%)
		1 - 20 %	5(15.6%)	3( 9.1%)
		21 - 40 %	4(12.5%)	5(15.2%)
		41 - 60 %	10(31.3%)	5(15.2%)
		61 - 80 %	3( 9.4%)	4(12.1%)
		81 - 100 %	2( 6.3%)	6(18.2%)

## Appendix 9.2.6 (cont)

11.4 Evaluative consistency quotient	0 %	0	1( 3%)
	1 - 20 %	0	1( 3%)
	21 - 40 %	1( 3.1%)	0
	41 - 60 %	5(15.6%)	2( 6.1%)
	61 - 80 %	1( 3.1%)	8(24.2%)
	81 -100 %	25(78.2%)	21(63.6%)
12.1 Total no. of hostility items	0	22(68.8%)	25(75.8%)
	1	6(18.8%)	4(12.2%)
	2	2( 6.3%)	1( 3%)
	3	2( 6.3%)	3( 9.1%)
12.2 Average no. of hostility items per description	0	22(68.8%)	25(75.8%)
	1	7(21.9%)	5(15.2%)
	2	3( 9.4%)	3( 9.1%)
12.3 Proportion of total description hostility items	0 %	22(68.8%)	25(75.8%)
	1 - 10 %	1( 3.1%)	0
	11 - 20 %	1( 3.1%)	5(15.2%)
	21 - 30 %	6(18.8%)	1( 3%)
	31 - 40 %	0	2( 6.1%)
	41 - 50 %	2(6.3%)	0

## Appendix 9.2.6 (cont)

12.4 Proportion of simple differentiating items hostility items	0 %	22(68.8%)	25(75.8%)
	1 - 20%	1( 3.1%)	0
	21 - 40 %	1( 3.1%)	2( 6.1%)
	41 - 60 %	6(18.8%)	4(12.1%)
	61 - 80 %	0	2( 6.1%)
	81 - 100%	2( 6.3%)	0
13.1 Total no. of co-operative items	0	22(68.8%)	21(63.6%)
	1	4(12.5%)	8(24.2%)
	2	4(12.5%)	4(12.1%)
	3	1( 3.1%)	0
	4	1( 3.1%)	0
13.2 Average no. of co-operative items per description	0	22(68.8%)	21(63.6%)
	1	6(18.8%)	9(27.3%)
	2	4(12.5%)	3( 9.1%)
13.3 Proportion of total description co-operative items	0 %	22(68.8%)	21(63.6%)
	1 - 10 %	3( 9.4%)	0
	11 - 20 %	4(12.5%)	6(18.2%)
	21 - 30 %	1( 3.1%)	2( 6.1%)
	31 - 40 %	0	0
	41 - 50 %	2( 6.3%)	4(12.1%)

## Appendix 9.2.6 (cont)

13.4 Proportion of simple differentiating items co-operative items	0 %	22(68.8%)	21(63.6%)
	1 - 20%	3( 9.4%)	0
	21 - 40%	2( 6.3%)	3( 9.1%)
	41 - 60%	3( 9.4%)	4(12.1%)
	61 - 80%	0	0
	81 - 100%	2( 6.3%)	5(15.2%)

CHILD HEALTH FORM (TEACHER'S)

STRICTLY CONFIDENTIAL

PART A.

Name of child .....

Date of birth .....

Instructions

Please answer all questions on the form by putting a number or cross as appropriate in the boxes by each question.

Please give approximate numbers if you are uncertain.

1. How much schooling has the child missed for any reason in the present school year (i.e. since September 1975)?

Possible attendances (half-days)

Total absences (half-days)

If total absences are more than 10(half-days) please specify whether the child is absent for regular short periods(less than 6 half-days)  or more isolated lengthy periods .

Are these absences more prevalent in any particular term?  
.....

Specify reason for absences, if known .....  
.....

2. Has the school staff had to supervise in the present school year any taking of tablets or medicine?

Yes  No

Specify reasons for tablets or medicines, if known:  
.....

3. Are there any school activities in which he/she is not allowed to take part?

Yes  No

If 'Yes', please specify activity and reasons for not taking part:  
.....

If 'Yes', by whose authority is he/she not allowed to take part (parent, teacher, doctor, etc.)  
.....

4. Have any other special arrangements been made for this child whilst attending school?

Yes  No

If 'Yes', please specify .....

5. Has he/she had any asthma or attacks of wheezing at school in the present school year? (include wheezing on exercise)

Yes  No

If 'Yes', (a)How often have they occurred at school in the present school year?

(number of times)

(b)How often in this period has he/she been sent home after an attack?

(number of times)

6. As far as you know has he/she suffered from any skin rash or spots since September 1975?

Yes  No

7. In the present school year has he/she had any severe headaches at school (sufficient to affect his/her concentration)?

Yes  No

If 'Yes', on how many days have they occurred at school this year?

(number of days)

8. Are there any other problems in the health or education of this child?

.....

9. Do the child's parents appear interested in his/her school Performance?

Yes  No

10. Are there any adverse conditions in the child's home background which might affect his/her general development?

Yes  No

If 'Yes', please specify .....

PART B.

Below are a series of descriptions of behaviour often shown by children. After each statement are three columns: 'Doesn't Apply', 'Applies Somewhat', and 'Certainly Applies'. If the child definitely shows the behaviour described by the statement place a cross in the box under 'Certainly Applies'. If the child shows the behaviour but to a lesser degree or less often place a cross in the box under 'Applies Somewhat'. If, as far as you are aware, the child does not show the behaviour put a cross in the box under 'Doesn't Apply'. Please put ONE cross against EACH statement.

STATEMENT	DOESN'T APPLY	APPLIES SOMEWHAT	CERTAINLY APPLIES
1. Very restless. Often running a bout or jumping up and down. Hardly ever still.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Truants from school.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Squirmy, fidgety child.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Often destroys own or other's belongings.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Frequently fights with other children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Not much liked by other children.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7. Often worried, worries about many things.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Tends to do things on his own - rather solitary.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Irritable. Is quick to 'fly off the handle'.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Often appears miserable, unhappy, tearful or distressed.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
11. Has twitches, mannerisms or tics of the face or body.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Frequently sucks thumb or finger.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Frequently bites nails or fingers.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
14. Tends to be absent from school for trivial reasons.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
15. Is often disobedient.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
16. Has poor concentration or short attention span.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
17. Tends to be fearful or afraid of new things or new situations.	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

STATEMENT

DOESN'T APPLIES CERTAINLY  
APPLY SOMEWHAT APPLIES

- 18. Fussy or over-particular child.
- 19. Often tells lies.
- 20. Has stolen things on one or more occasions.
- 21. Has wet or soiled self at school this year.
- 22. Often complains of pains or aches.
- 23. Has had tears on arrival at school OR has refused to come into the building this year.
- 24. Has a stutter or stammer.
- 25. Has other speech difficulty.
- 26. Bullies other children.
- 27. Has little self-confidence.
- 28. Constantly strives for perfection.
- 29. Ashamed of his/her physical appearance.
- 30. Unwilling to express own ideas or opinions.
- 31. Possessive of material objects
- 32. Doesn't seek opportunities for independence.
- 33. Constantly needs encouragement.
- 34. Unwilling to accept responsibility.

<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
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<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

.....

Give a rough rating of 1-5 on the following attributes of the child. 1 is the minimum score, and 5 is the maximum.

- Scholastic performance
- Intellectual ability
- Work motivation

<input type="checkbox"/>
<input type="checkbox"/>
<input type="checkbox"/>

Thank you.

PART C.Instructions

Please answer all questions on the form by putting a cross in one of the boxes by each question.

1. Did you know that this child has asthma?  
Yes  No
2. Do you think this child's asthma is serious?  
Yes  No
3. Does he/she ever ask for concessions because of his asthma?  
Yes  No
4. Do you ever grant him/her concessions (unasked) because of his/her asthma?  
Yes  No
5. Do you notice if he is treated differently by the other children because of his asthma?  
Yes  No

Appendix 10.2.1B Basic structure of the part of the  
children's interview concerned with school

Do you like school?

What do you like/dislike about school?

Do you like the teacher?

What place are you in the class?

Do you worry about your schoolwork?

What games do you play at school?

What things do you find hard to do?

Are you better than the other children at school?

Do your parents/teacher think you are clever/strong?

If you're not good at something will you practise?

Does it annoy you when you fail at something?

Is there something you're good at your teacher doesn't know  
about?

APPENDIX 10.2.3A Coding frames used for teachers'  
questionnaire

(i) Part A		No. of replies in category
1. School absences	: 0-3%	11(18.3%)
	4-7%	14(23.3%)
	8-11%	12(20 % )
	12-15%	11(18.3%)
	16+ %	12(20 % )
2. Periods of absence	: Rarely absent	8(13.3%)
	Regular short periods	22(36.7%)
	Isolated lengthy periods	19(31.7%)
	Both short and lengthy periods	11(18.3%)
3. Season of absence	(C) Spring	11(18.3%)
	(C) Summer	1( 1.7%)
	(C) Winter	15(25 % )
	No particular season	33(55 % )
4. Reason for absence	: Asthma	16(26.7%)
	(C) Minor complaints	19(31.7%)
	(C) Holidays	5( 8.3%)
	(C) Other	5( 8.3%)
	(C) No reason	15(20 % )

## Appendix 10.2.3A (cont.)

5. Supervision of medicines	: No	58(96.7%)
	Yes	2( 3.3%)
6. Restrictions on school activities	: None	50(83.3%)
	(C) Occasionally misses P.E.	4( 6.7%)
	(C) Often misses P.E.	4( 6.7%)
	(C) Misses other classes	2( 3.3%)
7. Who advises restrictions	: Parent	8(13.3%)
	Doctor	1( 1.7%)
	Child	1( 1.7%)
	(E) Not relevant	50(83.3%)
8. Wheezy bouts at school	: None	48(80 % )
	Rarely	9(15 % )
	Many times	3( 5 % )
9. Sent home because of wheeze	: Never	59(98.3%)
	Several times	1( 1.7%)

## Appendix 10.2.3A (cont.)

10. Skinrash	: No	50(83.3%)
	Yes	10(16.7%)
11. Headaches	: No	58(96.7%)
	Yes	2( 3.3%)
12. Parental interest	: No	5( 8.3%)
	Yes	55(91.7%)
13. Home problems	: No	55(91.7%)
	Yes	5( 8.3%)

Note: E = Category excluded from analysis

C = New category for analysis

## Appendix 10.2.3A

## (ii) Part B

	No. of replies in each category		
	Doesn't apply	Applies somewhat	Certainly applies
1. Very restless	42(70%)	16(26.7%)	2(3.3 % )
2. Truants from school	57(95%)	1( 1.7%)	2(3.3 % )
3. Squirmy, fidgety child	47(78.3%)	13(21.7%)	0
4. Often destroys belongings	59(98.7%)	0	1(1.7 % )
5. Frequently fights	49(81.7%)	7(11.7%)	4(6.7 % )
6. Not much liked	50(83.3%)	9(15.0%)	1(1.7 % )
7. Often worried	34(56.7%)	24(40 % )	2(3.3 % )
8. Rather solitary	47(78.3%)	11(18.3%)	2(3.3 % )
9. Irritable	51(85 % )	7(11.7%)	2(3.3 % )
10. Miserable	54(90 % )	6(10 % )	0
11. Has twitches	58(96.7%)	0	2(3.3 % )
12. Sucks thumb	59(98.3%)	1(1. 7%)	0
13. Bites nails	52(86.7%)	8(13.3%)	0
14. Absent for trivial reasons	53(88.3%)	4( 6.7%)	3( 5 % )
15. Disobedient	55(91.6%)	3( 5 % )	2( 3.3%)
16. Poor concentration	42(70 % )	15(25 % )	3( 5 % )
17. Fearful of new things	40(66.7%)	17(28.3%)	3( 5 % )
18. Fussy	53(88.3%)	6(10 % )	1( 1.7%)
19. Tells lies	53(88.3%)	6(10 % )	1( 1.7%)
20. Has stolen things	58(96.7%)	2( 3.3%)	0

## Appendix 10.2.3A (cont)

## (ii) Part B

21. Has wet or soiled self	60(100%)	0	0
22. Complains of aches	51(85 %)	7(11.7%)	2( 3.3% )
23. Tearful on arrival at school	60(100%)	0	0
24. Stutters	56(93.3%)	4( 6.7%)	0
25. Other speech difficulty	56(93.3%)	1( 1.7%)	3( 5 % )
26. Bullies other children	54(90 % )	3( 5 % )	3( 5 % )
27. Little self confidence	41(68.3%)	19(31.7%)	0
28. Strives for perfection	34(56.7%)	21(35 % )	5( 8.3%)
29. Ashamed of appearance	58(96.7%)	2( 3.3%)	0
30. Unwilling to express ideas	41(68.3%)	17(28.3%)	2( 3.3%)
31. Possessive of material objects	54(90 % )	5( 8.3%)	1( 1.7%)
32. Doesn't seek independence	46(76.7%)	12(20 % )	2( 3.3%)
33. Needs encouragement	39(65 % )	17(28.3%)	4( 6.7%)
34. Unwilling to accept responsibility	47(78.3%)	12(20 % )	1( 1.7%)
35. Total 'Rutter' score :	Under nine		52(86.7%)
	Over nine		8(13.3%)

## Appendix 10.2.3A (cont)

## (ii) Part B

36. Scholastic performance	Below average	7(11.7%)
	Average	36(60 %)
	Above average	17(28.3%)
37. Intellectual ability	Below average	8(13.3%)
	Average	34(56.7%)
	Above average	18(30 %)
38. Work motivation	Below average	10(16.7%)
	Average	26(43.3%)
	Above average	24(40 %)

## Appendix 10.2.3A

## (iii) Part C

		No. of replies in category
1. Knowledge of asthma :	No	5(16.7%)
	Yes	25(83.3%)
2. Severity of asthma :	Mild	23(76.7%)
	Severe	7(23.3%)
3. Child seeks concessions:	No	28(93.3%)
	Yes	2( 6.7%)
4. Child given concessions:	No	29(96.7%)
	Yes	1( 3.3%)
5. Child treated differently by other children :	No	30(100 %)
	Yes	0

Appendix 10.2.3B Coding frames used for that section of the  
children's interview concerned with their  
view of school

		No.of replies in category
1. Likes school :	No	3( 5 % )
	Sometimes	54(90 % )
	Usually	3( 5 % )
2. Particular likes in school :	(C) Academic subjects	14(23.3%)
	(C) Other subjects	4( 6.7%)
	(C1) Games, sports	2( 3.3%)
	(C) Academic and other subjects	9(15 % )
	(C) Academic subjects and games	8(13.3%)
	(C) Other subjects and games	11(18.3%)
	(C1) Social activities and games	2( 3.3%)
	(C) Academic subjects and social	5( 8.3%)
	(C1) Teacher	5( 8.3%)
3. Particular dislikes in school :	(c) Nothing	5( 8.3%)
	(C) General workload	7(11.7%)
	(C) Academic subjects	24(40 % )
	(C) Other subjects	2( 3.3%)
	Interpersonal conflict	10(16.7%)

## Appendix 10.2.3B (cont)

3. Particular dislikes in school :	(C) Teacher and discipline	8(13.3%)
	(C) Other	4( 6.7%)
4. Liking for teacher :	No	2( 3.3%)
	Some	50(83.3%)
	Yes	8(13.3%)
5. Fairness of teacher:	Unfair	3( 5 % )
	Quite fair	56(93.3%)
	Very fair	1( 1.7%)
6. Place in class :	Near the top	29(48.3%)
	Average	30(50 % )
	Less than average	1( 1.7%)
7. Worry over schoolwork:	No	21(35 % )
	A little	39(65 % )
	A lot	0
8. Games played at school:	Active physical	16(26.7%)
	Less physical	41(68.3%)
	Indoor	1( 1.7%)
	None	2( 3.3%)

## Appendix 10.2.3B (cont.)

9. Difficult school tasks :	(C) Nothing	27(45 % )
	Academic subjects	23(38.3%)
	(C) Exercise	4( 6.7%)
	(C) Other tasks	6(10 % )
10. Comparison with peers at school tasks:	Better	27(45 % )
	Average	32(53.3%)
	Worse	1( 1.7%)
11. Parents' opinion of child at school :	Better than others	22(36.7%)
	Average	22(36.7%)
	Poor	0
	(E) Don't know/no reply	16(26.7%)
12. Teachers' opinion of child at school :	Better than others	17(28.3%)
	Average	15(25 % )
	Poor	1( 1.7%)
	(E) Don't know/No reply	27(45 % )
13. Teachers' opinion of child's strength :	Stronger	6(10 % )
	Average	9(15 % )
	Weaker	2( 3.3%)
	(E) Don't know/No reply	43(71.7%)

## Appendix 10.2.3B (cont).

14. Motivation	:	Usually practise, if poor	44(73.3%)
		Sometimes practise, if poor	9(15 % )
		Rarely practise, if poor	7(11.7%)
15. Motivation from teacher	:	Usually practise	43(71.7%)
		Sometimes practise	5( 8.3%)
		Rarely practise	9(15 % )
		(E) Don't know/No reply	3( 5 % )
16. Annoyance at failure:		Usually	24(40 % )
		Sometimes	13(21.7%)
		Rarely	23(38.3%)
17. Abilities teacher isn't aware of	:	Academic	3( 5 % )
		(C) Physical	10(16.7%)
		(C) Specific ability	8(13.3%)
		(C) Other	1( 1.7%)
		(E) None/No reply	38(63.3%)

Note: E = Category excluded from analysis

C = New category for analysis

C1 = Second new category for analysis