

**ECONOMIC COGNITION AMONG SCOTTISH PRIMARY SCHOOL PUPILS  
BETWEEN THE AGES OF FIVE AND ELEVEN**

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**DECLARATION**

**I declare that the work carried out in this thesis was  
carried out entirely by myself.**

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## Abstract

This dissertation attempts to analyse how children comprehend economic concepts between the ages of five and eleven years of age. Drawing upon the techniques of genetic epistemology this study attempts to build up a cognitive profile of children's responses to a variety of economic questions at three age levels - five, eight and eleven years.

Four economic categories, goods, value, exchange and labour have been singled out for special consideration and the child's comprehension of these economic concepts has been investigated by means of the clinical interview.

The responses have been used as the empirical data for presenting an overview of the development of the child's understanding of these economic ideas and relationships. Close attention has been given to the modes of reasoning used by the children to justify their responses. Lastly, careful consideration has been given to how age factors have affected the quality of economic responses. In short the major part of this analysis has been to establish a simple ontogenetic profile in these four categories and to identify significant associations between economic responses and children's chronological development.

While close parallels between maturational development and economic comprehension have been observed similar to those detected by Piaget in comprehension of the physical sciences, interesting variations have also been identified within the three age ranges. These have prompted further investigation into the influence exerted by a number of biographical variables such as sex, social class background and academic attainment on the development of economic cognition.

In addition to the cross sectional analysis mentioned above, a longitudinal study was also conducted involving two groups of children. Children aged five were reinterviewed at eight and those aged eight were re-examined at eleven. Comparative analyses were made of their responses with those obtained in the cross sectional study.

On the basis of these findings a number of hypotheses has been advanced pertaining to the structural characteristics of the child's developing conceptions of economic ideas. At the same time Piagetian theory of cognitive stage development has been analysed and its relevance to the evolution of economic cognition examined.

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## Introduction

A number of different reasons has initiated this inquiry into economic cognition among primary school children. Firstly, it has emerged as a logical extension of an M.Ed dissertation entitled "Teaching Economics in Scottish Primary School" 1979. This inquiry was into the feasibility of teaching economic concepts to pupils at the primary six and seven stages in a number of selected Scottish primary schools. Significant gains in pupils' economic comprehension were recorded. Both qualitative and quantitative assessments substantiated the view that 'pupils' economic understanding had been substantially increased as a result of teaching economic concepts. These findings prompted further interest in the process by which children conceive of basic economics from their earliest schooling and socialisation.

A second influence upon the direction and scope of this inquiry was American example and teaching practice. Economic concepts are being taught in a vast number of American elementary schools on the presumption that these children are capable of assimilating them in a meaningful way. No such extensive curricular development has occurred in this country: indeed such a development would be regarded as educationally misguided. It was felt to be a useful exercise to investigate how economically literate young children are without teaching intervention. The

levels of literacy revealed by this inquiry, might have some bearing upon future teaching provision in the area of environmental studies in this country.

A third reason for this study was an interest in developmental psychology and its relevance to economic cognition. A considerable amount of research has been concentrated on how and when young children conceive of concepts of time, number and physical causality, but very little attention has been given to cognitive development in the social sciences. In a small way this investigation attempts to remedy that deficiency by analysing economic cognition in terms of Piagetian cognitive developmental stages.

## CHAPTER 1

### PIAGET AND COGNITIVE DEVELOPMENT

#### Introduction

This research is a compendium of two separate elements, one educational, the other psychological.

The former stems from a study previously undertaken by this researcher into the feasibility of the teaching of economic concepts in the upper primary school in Scotland. Economics for all its prominence in social science faculties of higher education has a lowly status in Scottish secondary school curricula. It is only rarely taught before S.III in secondary schools and only a small minority of pupils are presented at the "O" and "H" grade examinations. As a subject, it is generally felt to be appropriate only to the upper reaches of the secondary school and unsuited by reason of its content and methodology for the majority of children. The primary study was designed to test out these assumptions with a much younger age group, as this researcher was much impressed by American educational practice and precept which have demonstrated that the subject can be taught to children at the elementary or primary levels in the United States. The dissertation not only involved the teaching of economic concepts in a systematic manner in five Scottish primary schools but also the assessment of their comprehension through objective test procedures.

In carrying out this investigation this researcher became interested in how and when children acquired economic concepts throughout their early school life as the great majority were not taught formal economics. In spite of this lack of economic education, however, children are required to make economic decisions at an early age. At what ages do children make economic sense of their environment? This question set the researcher a number of interesting problems. Firstly, he had to conceptualise economics in simple terms appropriate to the age, aptitude, and ability of the children being studied. Secondly, he had to collect data in sufficient quantities to establish patterns of economic awareness, or lack of it, across an age range extending from five to eleven years.

The first problem was overcome through breaking down the discipline into a few easily recognisable conceptual areas with which children were familiar, the second was met by using the clinical interview which provided a flexible instrument for eliciting a wide range of responses from the children.

The lack of structure and definition in the educational dimension prompted the researcher to study the work of the educational psychologist in the field of cognitive development. Piagetian research, particularly in the

area of stage development, appeared to be particularly appropriate in providing a heuristic framework within which a child's economic comprehension might be assessed.

The fact that no Piagetian investigation had been conducted into the development of economic cognition among young children in this country also provided an additional stimulus to this research endeavour. In short, Piagetian hypotheses in the field of cognitive development were used as the primary theoretical and methodological resource for the empirical investigation.

## CHAPTER 2

### PIAGET AND ECONOMIC COGNITION

As can be seen from the titles of Piaget's books, (1951, 1952, 1960, 1964, 1969, 1970), his research has concentrated almost wholly upon those notions and operations employed by the physical sciences, with a child's conception of number, geometry, movement, time and physical causality extensively investigated. Conspicuously absent is any research into a child's conception of his or her social environment. The physical sciences provided him with such a fertile field for examination it is not surprising that Piaget did not explore that of the social sciences. There appears to be no reason however why his methods could not be applied equally fruitfully to studying the development of cognitive structures for the representations of economic ideas and relationships. Such a study might have important implications for theories of conceptual development which tend to draw their strength from investigations of the child's thinking about the physical world alone. W A Wallach counsels caution in using Piagetian findings to explain the child's comprehension of social, economic concepts when he writes:

"In our examination of current research on the development of children's thinking we obviously have concentrated on the child's knowledge of the physical world, ie. the traditional definition of thinking as reasoning, problem solving and understanding, concerning the non-social environment. The extent to which thinking about the social environment follows similar or different ontogenetic patterns must remain an open question at this point." (1963 )

Others have shared Wallach's scepticism and have attempted to apply Piagetian theory to studying the development of cognitive structures for the representation of social and economic relationships. In this field the work of Danziger (1958) in Australia is of pioneering importance. His study involved Australian primary children who were questioned using the clinical interview method.

The investigation concentrated on three specific questions. In the first, the child was questioned about the meaning of rich and poor, in the second on the uses of money, and in the third about the role of the "boss" at work. 41 Australian pupils were involved, (20 boys and 21 girls) with 2 age divisions, one of eight year olds and one of children aged five and seven. The age division was used in the light of Piaget's studies which support the view that a fundamental change takes place in children's thinking at these ages. All pupils attended the same school in Melbourne and the social mix of their parents was seventy per cent manual, twenty per cent professional and ten per cent entrepreneurial.

Analysis of the responses revealed there was for each question an age distribution of the replies which suggests a developmental sequence. In addition, the differing levels of intrinsic complexity and richness of the responses in themselves reveal a clear progression

from simple to complex types. The uses of money inquiry demonstrates these developmental stages. At stage one the child conceived of money in a ritualistic manner with no rational purpose being served, with buyer and seller merely interchanging money. The only explanation offered by the child for this action is to categorise non-compliance as immoral - as stealing.

Only at a later stage did the child grasp the importance of the reciprocal element in the exchange of money between buyer and seller, and saw the money as the medium of exchange. At this point the objective explanation superseded the subjective one and the conception of an economic act was understood. This pattern of development is similar to that described in Danziger's earlier paper on kinship relationships, (1957) where the child begins to regard himself in a system of relationship rather than as an isolated individual.

In like manner the child, in answering questions relating to production, showed no understanding of specific economic relationships, with the "boss" having no economic functions and it is arguable that this represents the precategorical stage. At the second stage the children stated that money was obtained for work done and that it was handed over by the "boss", but still no connection is perceived by the children between these two facts. The same lack of reciprocity exists here as was

previously described in the area of money circulation. The moral determination of the situation is shown by the belief of the child that "the harder one works the more money one gets". As Danziger aptly puts it, "both acts are given a voluntaristic explanation". The worker gets more money by working harder and the boss assumes his function purely by an act of will or of choice. This being the case the source of the employer's money must necessarily be something of a mystery.

The subjectivist explanation then gave place to the objectivist with the child seeing the "boss" as a categorical concept with the "boss" defined in terms of his special relationship to the worker. At the final stage the "boss" is seen to derive his money from the sale of goods produced for him by the workers. One has now entered a stage where purely rational explanations of economic processes can be made. It seems unlikely that any of the children involved in Danziger's study had reached this stage of development.

Kourilsky, (1974, 1976, 1979) in contrast to Danziger, however, reports that pupils at ages of five and six are able to understand economic relationships through the operation of the 'Kinder Economy'. How fundamental is this difference between them is difficult to determine; it may well merely turn on their definitions of "economic understanding". Danziger has used the "clinical" method

to probe pupil comprehension of these specific areas, while Kourilsky has listed nine separate conceptual areas and then tested pupil understanding under each of these headings. (1979) It is doubtful if each investigator is researching in a comparable way. In both qualitative and quantitative ways each is testing different facets of academic understanding and they may be much closer than their findings indicate.

Danziger's work stimulated further research and Sutton (1961, 1963, 1964) extended the investigation into the development of social science concepts at the elementary school level.

Eschewing the theoretical models developed by Navarra (1955), Russell (1956) and Piaget (1960) in connection with physical concepts, Sutton agrees with Danziger and Miller and Horn (1955) that economic concepts evolve in a different way. Working on the presumption that children's development of economic thought was obstructed by lack of external stimuli, she selected eighty five children from six typical elementary public schools in north-east Georgia. These children were drawn from Grades one to six. They were then asked twelve questions relating to the uses and supply of capital in the following terms:

1. Do you like to earn money?

2. How do people get money?
3. What will money buy?
4. What does money do for a person?
5. What can be used in place of money?
6. What is a bank?
7. Why do people like to have money in a bank?
8. What happens to money in a bank?
9. Are there other places to put money?
10. Why do they draw it out?
11. How do people put money in a bank?
12. Why do people save?

One thousand and twenty replies of the eighty-five children were then analysed into categories, and a pattern of development similar to that found by Danziger emerged. A pre-categorical stage involving 63% of all replies was identifiable where children named a thing with little understanding of economic meaning. Eighteen per cent of responses fall into the category of goodness or badness, moral or immoral, irrespective of economic function. Another category emerged, where two isolated acts or factors were connected but there was no economic connection existing eg.

"Some of us save, just to be saving" and twelve per cent were involved here.

Clearly the majority of replies were at the pre-categorical level. Age, intelligence and

socio-economic background had little effect on the understanding of the production credit of money. To most children money was a thing to spend for immediate use. Older children, of higher intelligence tended to moralise. Pupils' replies indicated they were at the initial stages of conceptualisation and suggested the need for more external stimuli in the development of economic concepts.

Burriss's research (1976) brings to a focus the disparate work of Danziger, Sutton, and Williams (1969, 1970) in applying Piagetian genetic epistemology (1972) to elementary economic understanding among children in the four to twelve age range. Using the clinical interview, Burriss set out to investigate how children acquired economic concepts, how they used these in interpreting economic phenomena, and at what ages these concepts developed and in what ways they were expressed. A basic presumption underpinning the research was that no scientific description, analysis or explanation of the orderly nature of social phenomena was possible which did not at least as a preliminary step give fundamental consideration to social meanings and their process of construction.

In the development of cognitive socialisation Berger and Luckmann (1967) cite three interdependent processes which they regard as essential to the maintenance of a common

stock of everyday social knowledge - externalisation, objectivisation and internalisation. It is with the last of these that Burris's work is concerned, the process by which each generation continually reproduces the process of social meaning and explanations. It is through this process that the objective world of social objects, relations and institutions make sense, ie. become subjectively meaningful to the individual. Economics is considered to be one specific and limited domain in everyday life where one may study the ontogenesis of the social stock of knowledge as it develops.

The following groups of children were studied: nursery aged 4 to 5 years, second grade 7 to 8 years: grade five aged 10 to 12 years, as these were thought to correspond with Piaget's developmental sequence. Nursery and grade two children were drawn from predominantly white middle class areas in Princeton, New Jersey, while grade five children came from a predominantly black working class school in Trenton, New Jersey.

A number of important economic concepts, including commodity, exchange, value, and work, were selected for analysis and children from all groups were interviewed individually in a 30 to 45 minute interview with the researcher attempting to produce a basic ontogenetic profile in each of the economic categories.

While space forbids detailed descriptions of each conceptual area all exhibited recurring features which formed distinctive patterns of development. The child's conception of exchange might be used to illustrate these characteristics. Analysis of exchange transactions and of the circulation of money showed a progression through discrete stages of development from limited individual-centered modes of representation towards a more extended and a more clearly social cognitive perspective. Three distinct stages emerged in the child's conception. At the first level the child viewed exchange from the perspective of a single individual, being unable to conceptualise the reciprocity between buyer and seller, with payment isolated from the receipt of goods. The concept was explained in terms of moral or legal imperatives. At the second stage, an awareness of the totality of the exchange transaction had begun to dawn with second grade pupils linking together the acts of the buyer and seller in terms of their reciprocity. The rationality of the total relationship had become more apparent. At the fifth grade level, the responses indicated that this total relationship had been integrated into still broader patterns of relationships, with individual exchange transactions co-ordinated with one another so as to form an entire system of relations. The rationality of this system - that of circulation - had become the primary basis for explaining exchange operations. In short, the eleven year olds had an

economic construct of exchange which embraced interacting variables and linkages between buyer and seller which made sense of commercial transactions.

This developmental process would appear to meet each of Piaget's four criteria for the identification of cognitive - developmental stages. Firstly, qualitatively different types of responses and modes of reasoning were found as a result of the interviews. Secondly, the distribution of replies in relation to age level provided evidence for the hypothesis that these different types of responses constituted sequential stages. Thirdly, these stages may be interpreted as hierarchical integrations - forming an order of increasingly complex, increasingly differentiated and integrated frameworks of thought. Burriss refers to this progression from the more to the less complex modes of representations as a series of "nestings". Finally, it was hypothesised that these stages reflected general or universal features in the development of social - relational concepts. Danziger (1957) had identified similar stages in the child's concept of human relationships. Research by Adelson and O'Neill (1966) has suggested parallel trends in the acquisition of political concepts at comparable ages. While the evidence at present is too limited to advance definitive conclusions there is obvious need for further research in this area, and some attempt will be made to replicate Burriss's procedures in Scottish primary

schools. The empirical data deriving from this investigation will be used to test the hypotheses mentioned above and to advance others relating to cognitive development in the area of economic understanding.

In using these Piagetian criteria for measuring attainment of cognition one is however conscious of their limitations. His theory derived from a number of simple scientific experiments and its implications were extended, often mistakenly, by other workers to other areas of the curriculum. Sometimes this is due to a too literal and rigid application of Piaget's views. Not surprisingly a number of other researchers such as Peel (1971) and Sutherland (1982) have raised doubts about the general efficacy and appropriateness of Piaget's classificatory criteria. Peel's research in geography and Sutherland's in biology have led to the description of more fully developed category systems.

Peel presented these different categories in terms of a series of developmental stages in adolescent thinking. What is more significant is that Peel also recognised that the range of categories identified and the distribution of replies was also influenced by the nature of the passage or subject content, and by the specific type of question asked. More directive or

structural questions elicited more explanatory responses.

Marton (1981) and Karplus (1981) have also challenged the acceptance of the stage concept with the latter arguing the case for "classifying the application of a reasoning pattern rather than the developmental level of an individual".

What they are contending is that performance levels should be expected to vary across "contrasting subject areas and across different tasks".

As a result of this research Biggs and Collis have developed a classificatory framework designed specifically for assessing qualitative differences in responses to questions set. The reasons for such a taxonomy are set out in the following terms by Collis:

"In producing a response, two related phenomena appear to be involved. First there is an underlying phenomenon that defines the individual's cognitive limits termed the hypothetical cognitive structure (HCS), eg. Piaget's stages of cognitive development. The second phenomenon, which is a function of the hypothetical cognitive structure and of experience in a content area is termed the structure of the learned

outcome (SOLO)". (1982).

The former is characterised by its fixed nature which the latter is flexible and alterable by instruction.

This distinction between HCS and SOLO is extremely important in understanding the relationship between developmental stage and the quality of learning. It allows one to resolve many of the anomalies that have been commented on by critics such as Brown and Desforges (1979) and Brainerd (1978). By drawing upon this distinction between describing people and describing responses Piagetian supporters can offer explanations why a child who "should" be formal-operational on the basis of his age or performance on some tasks, appears to be concrete-operational or occasionally even pre-operational, in others. While the detailed framework of this taxonomy appeared too late to be of major importance to this inquiry it did influence the researcher's interpretation of this study's data.

It is now necessary to examine the basic features of the SOLO Taxonomy as outlined in Table 3.1

Table 3.1

Base Stage of Cognitive Development and Response Description				
Developmental base stage with minimal age	SOLO description	1 Capacity	2 Relating operation	3 Consistency and closure
Concrete Generalization (13 - 15 years)	Relational	High: cue + relevant data + interrelations	Induction. Can generalize within given or experienced context, using related aspects	No inconsistency within the given system, but since closure is unique so inconsistencies may occur when he goes outside the system.
Middle Concrete (10-12 years)	Multistructural	Medium: cue + isolated relevant data	Can 'generalize' only in terms of a few limited and independent aspects	Although has a feeling for consistency can be inconsistent because closes too soon on basis of isolated fixations on data, and so can come to different conclusions with same data.
Early Concrete (7-9 years)	Unistructural	Low: cue + one relevant datum	Can 'generalize' only in terms of one aspect	No felt need for consistency, thus closes too quickly jumps to conclusions on one aspect, and so can be very inconsistent
Pre-operational (4-6 years)	Prestructural	Minimal: cue and response confused	Denial, tautology transduction Bound to specifics	No felt need for consistency Closes without even seeing the problem.

On the extreme left of the grid is the developmental base stage which may possibly be the upper limit to a SOLO level, together with the age levels at which the stage usually occurs. Next comes the SOLO descriptor of the level of response that is isomorphic to, but not identical with, its corresponding developmental stage. Columns one to three describe the essential features that are used to categorise the quality of responses in terms of "capacity", "relating operation" and "consistency and closure".

While the SOLO taxonomy post dated the beginning of this enquiry, it contains important criteria for analysing response data deriving from the interview schedule (Appendix A). One must apologise for presenting these findings in advance of the comprehensive analysis of the following chapters, but these preliminary comments will be substantially amplified in the later chapters.

At the prestructural levels there are examples of tautological responses and closure without an awareness of the problem prompting the question. In the question relating to why so many things can be bought with money a common explanation for the youngest children was to introduce factors quite unrelated to the question. Some children explain this in terms of there being a lot of shops while others simply said people had a lot of money. In explaining why some goods cost a lot of money, some children offer the explanation "because they are dear". It should be noted that only a minority of responses fell into the prestructural category and this may have attributed to the fact that the youngest children interviewed were already six years of age.

At the uni-structural level, responses are marked by an undue dependence upon "one relevant datum" and there are numerous examples of this in three of the

substantive areas including commodity, value and exchange. A good's saleability is commonly rejected on the grounds of its physicality, particularly its size and immobility. The monetary value of goods is intimately connected by many children with its physical attributes, especially size. In exchange, the predominant reason for the payment of money in a commercial transaction is the moral imperative, otherwise the consumer would be guilty of stealing. The early closure and fixation upon one overriding characteristic impairs the child's capacity for consistency.

Multi-structural responses involve two or more variables or data and although there is a greater feeling for consistency and an ability to marshall several of the relevant features there is still a failure to link them up in a meaningful manner. This capacity to compound a number of different factors is evidenced in a number of the substantive areas, particularly those of value, exchange and labour.

In justifying differential values the child lengthens the list of variables to embrace not only physical attributes but also a functionality and durability, but still neglects the demand side of the price equation and makes no mention of scarcity. In exchange, the

child is again able to list a number of things the storekeeper does with the money he receives from purchases, ranging from using the till to the bank, but still fails to see the interrelationships involved in the circular flow of money the transaction generates. Lastly, in justifying differential incomes, the child increases the aggregate of variables from those stressing quantitative factors such as greater effort and longer hours to those emphasising danger, functionality, responsibility and skills.

Relational type responses appear in a minority of cases but are there in sufficient numbers to occasion the researcher some concern given the narrow chronological limits of the SOLO taxonomy. In a number of the substantive areas there are indications of children's understanding of relationships between economic variables. How much these examples are in conflict with the findings of Biggs and Collis is difficult to say. The interview method and the context of the discipline examined may have an important bearing up the quality and nature of the responses. The interview elicits different responses from those elicited by written tests and offers the opportunity for testing responses more fully and developmentally. Written tests tend to suffer from the problems of "early closure" while the interview allows the researcher to

probe the levels of knowledge underpinning responses. There is evidence among the responses of more generalisations being made on the basis of relevant data, more contrasts being drawn and more attempts being made to reconcile conflicting evidence. There are examples that some children are able to make correct deductions on differential prices having considered demand and supply variables. It is also true that their understanding of these relationships is not sufficiently internalised to enable them to make correct responses in all the questions involving demand and supply factors. In the sphere of exchange there are examples of relational answers involving profit and interest although the more subtle aspects of financial justification for risk taking were imperfectly apprehended. Finally, in the sections relating to occupational classification and income differentiation there are further examples of relational thinking. In the former - children offer balanced responses justifying a "medium" ranking for some of the occupations, while in the latter they construct simple hierarchies of rewards by comparing and contrasting the merits of different occupations. What is typical of these answers is the manner in which a number of previously isolated facts featured in multi-structural responses are linked together. Conclusions are drawn upon the reconciliation of data and, while inaccuracies

and inconsistencies occur, simple interactions and casual relationships are examined.

The composite research of Peel, Marton, Sutherland, Biggs and Collis therefore offers the researcher another means of characterising qualitatively different levels of response to questions involving explanation. The SOLO taxonomy also allows qualitative judgements to be made not only on the manner in which the child constructs his or her responses but also on the intellectual skills brought into play in making conclusions. Unlike the Piagetian stage framework, this classificatory framework allows one to take account of differences in responses that occur within substantive areas of economic ideas as well as across these areas.

A final qualification must be appended lest these categories be taken as representing clearly definable entities. Sometimes responses do not match exactly the different levels. Transitional responses are often inconsistent and confused. "It is as if the student is often handling more information than he can cope with in his working memory and he loses track of the argument" (Collis 1982). This instability and confusion is particularly evident as the child moves from the multi-structural to the relational level.

As a footnote to this chapter, it seems apposite to refer in greater detail to the considerable amount of research in the United States into young children's conception of economic ideas. While most of these studies have investigated economic comprehension resulting from the implementation of teaching economics programmes, their findings have some relevance to this dissertation. The work of Kourilsky previously alluded to is particularly important in that it challenges the views of developmental psychologists in the following terms:

"Piagetian theory would indicate that the average child cannot acquire sophisticated concepts until about the third grade. Piaget's work in particular shows that all problem solving in the primary grade evolves thorough trial and error, rather than through the internalisation of concepts and the rationalisation of a logical solution based on those concepts".

Her study posited three questions:

1. Is the child's success in economic decision-making and analysis related to instructional intervention or to increased variety inherent in the passage of time?
2. To what extent and degree, through instructional

intervention, are children able to master concepts that, psychologically, are considered too young to learn?

3. What type of school, home and personality variables are predictors of success in economic decision making and analysis?

Substantial differences in test performance were recorded between control and experimental groups of children. Sex and socio-economic variables were of far less significance in pupil test performance.

On the evidence of these questions on her "Kinder Economy" programme she contends that the "abstract process of decision-making through rationalisation is achieved by her five and six year olds". In nine definable economic areas including scarcity, production, specialisation, distribution, consumption, savings, demand/supply, business and money she offers statistical evidence of pupil comprehension.

Spear's work (1967) involving one hundred and six children from the first grade produced similar findings. His conclusion was that "given appropriate instructional programmes pupils can learn sophisticated economic concepts".

While the work of Kourilsky, Spears, and others differs from this enquiry in that they have introduced a teaching interventionist element it does have a relevance to this investigation in that their evidence is in conflict with Piagetian stage theory.

A number of other American researchers who have made substantial contributions in the field of elementary economic education, merit acknowledgement. While their research is not directly pertinent to this inquiry, their work has influenced this researcher in his general thinking on economic cognition, and their investigations may provide other researchers with useful exemplars of experimental programmes, involving both economic concepts and their assessment in the American elementary schools.

Included among these reports are the following:

Dawson, G (1969); Larkins, G A and Shaver, J P (1968), (1969); Psychological Corporation (1970); Saunders, P (1964); Spears, S (1967); Sulkin, H A and Pranis, R W (1969); and Washington (1966).

## CHAPTER 3

### RESEARCH OBJECTIVES AND METHODOLOGY

#### 3.1 Research Objectives

The major aim of this study is to examine when and how children between the ages of five and eleven make economic sense of their environment.

To achieve this outcome the researcher will direct his investigation to the attainment of two subsidiary objectives. The first of these is the presentation of a descriptive overview of how and when children between these ages represent economic ideas and relationships. This description will emerge from their consideration of a number of interview questions relating to central economic concepts. Careful consideration will be given to the concepts and modes of reasoning used by them to explain economic activities and relationships, and to the ages at which they develop. Attention will be given both to the quantitative as well as the qualitative aspects of these responses. The outcome of this part of the enquiry will be a general description of the nature of economic cognition typical of children at ages five,

eight and eleven years of age.

The second subsidiary objective derives from the descriptive overview and is designed to produce an analytical and comparative study which forms the major part of this investigation. The empirical data provided in the preliminary descriptive stage will be used in the following three ways. Firstly, it will provide evidence for identifying important structural characteristics relating to childrens' economic conceptions. Secondly, it will furnish evidence for making a qualitative analysis of the economic reasons advanced by the children to justify their responses. Finally, it will be used to make a comparative examination of the evolution of economic reasoning in relation to the children's ages with special reference to Piaget's cognitive stage hypothesis.

As an outcome of these analyses a number of hypotheses will be advanced relating to the relevance and applicability of Piagetian concepts of stage development to economic comprehension among young children.

This is perhaps an appropriate time to disclaim any attempt to enter into the highly

controversial area involving cognitive stage development hypotheses. The design and purpose of this research endeavour are not suited to prove or disprove the existence of discrete cognitive stages. The Piagetian stages merely provided the researcher with an heuristic framework within which the empirical data could be located and evaluated.

### 3.2 The Method

In deciding upon the method of inquiry consideration was given to both the clinical interview much favoured by Piaget and also to the questionnaire.

The first was considered inappropriate and rejected for a variety of reasons. Its implementation was thought to be too time-consuming, given the number and width of the questions being asked. Its effectiveness is also dependent upon very close rapport being developed with the interviewees and this was not possible in the inquiry. The researcher's main objective was to elicit a representative sample of children's responses across a wide range of questions relating to economic topics. The deeply exploratory approach of the clinical

interview would not have served these particular needs.

The questionnaire on the other hand was considered but found to be too rigid and prescriptive. Its lack of flexibility and impersonality could have been prejudicial to this inquiry especially as the interviewees were of such tender years.

As a compromise it was decided to use the interview. Its strength lies in its adaptability which allowed the researcher to match his questions and tasks to suit the subject's pattern of responses. The advantages of this exploratory approach will be exemplified later in this chapter where a sample interview will be examined. Further evidence of the interview's facility for eliciting widely differing responses across the different age groups is presented in three specimen interviews included in the appendices (D1 to D3).

Questions relating to the various concepts were asked of all children and their answers were tape recorded and typewritten transcripts produced.

The answers to each set of questions were then examined for each age-group. This examination led to the generation of a number of categories relating to the nature of the responses, and, frequencies, indicating the distribution of these replies, were recorded in tabular form. A number of descriptive norms appeared which are represented later in the study.

The youngest children were asked fewer questions and generally answered more briefly. Primary three and Primary six children were asked the full set and their interviews took between thirty and forty minutes.

### 3.2.1 The Sample

Interviews were conducted with sixty pupils divided among the three age levels; Primary one (five years), Primary three (eight years) and Primary six (eleven years). These age divisions were determined by the Piagetian element inherent in the research and they correspond closely with the age groups examined by that researcher in his developmental research.

These interviews provided the researcher with a cross-sectional sample of the nature of economic

awareness typical of children across the three age groups. They did not however take account of the developmental aspects of economic cognition. In order to achieve this the researcher introduced a longitudinal study into the investigation.

Ideally the children in Primary one should have been reinterviewed later at Primary three and Primary six, but the time scale involved in such a procedure was outwith the limits of this research programme: nor was it possible to examine the other two groups of children fully in a longitudinal manner. It was therefore decided to retest Primary one children at the Primary three level, and Primary three children at the Primary six level. A sub-sample of ten children from Primary one and Primary three were therefore retested. The responses derived from this retesting were then compared with those deriving from the previous interviews, and with the cross-sectional findings alluded to above.

The children interviewed were drawn from a number of distinctly different school environments in the Lothian and Fife Regions:

#### School A

Is located in a highly regarded residential area of Edinburgh with the majority of parents employed in professional, managerial and skilled occupations. The school is a feeder primary to a well-appointed secondary school which is noted for its academic achievements.

#### School B

Is located in a relatively deprived area of the city where there is a predominance of council housing. Parents are employed in manual occupations and there were fairly high levels of unemployment in the area.

#### School C

Is located in an environmentally deprived part of Fife. The housing is mainly council property. Manual labour is the main occupation of parents and there is little parental encouragement to improve pupil achievement.

#### School D

Is located in a small town near Edinburgh. This is a large primary school and parental occupations are varied, ranging from the professional and managerial to the manual occupations.

### School E

Is located in a mining area, which is fairly adjacent to Edinburgh. There are few environmental amenities and the parents are dependent upon manual activities. Parents tend to have low academic aspirations for their children.

The sample cannot claim to be a random one of the primary school population. The time consuming nature of the extended interview required concentration on a small number of schools in fairly close proximity to the researcher's college base.

### 3.2.2 Biographical Variables

While the main consideration of this inquiry has been to examine relationships between children's ages and their economic awareness with a view to advancing hypotheses on these associations, the researcher has noted a considerable degree of variation in the responses of children within each of the specific age groups. It is possible that an explanation for these variations may be attributable to the influence of biographical facts which include sex, age, level of academic

ability and parental socio-economic status. It is proposed therefore to examine these variables and to attempt to assess their significance in the understanding of particular economic concepts within the different age groups.

### 3.3 The Interview Schedule

The Interview Schedule contained forty two questions (see App. A). Some variation was allowed in the arrangement of questions in the interview itself. The format was not rigidly prescriptive but served as a guide for questions and many of the children's responses were probed with supplementary questions.

In compiling an interview schedule designed to assess economic understanding, the research is very conscious of the difficulty of selecting a representative sample of what makes up the discipline's content. Definitions of economics abound and they range from the extremely narrow to the highly general. The advice of Cairncross (1973) has much to commend it: "The best course is to accept that economics is what economists write about and then to see what they do write about by studying the table of contents of some text books". While it is arguable that this

approach begs the question of "economics", it does have obvious merits in that identifiable topics can be examined fairly easily and decisions on content can also be justified.

A standard university text book was therefore taken as the point of departure for deciding what was to be included in the interview schedule. Two were selected as being highly regarded and authoritative, both having been extremely influential in shaping economic understanding in higher education over the last four decades. The "Introduction to Economics" by A. Cairncross (1950) and an "Introduction to Positive Economics" by R. Lipsey (1975) are the two mentioned above. Both have run to numerous editions, with the former widely used in the fifties and sixties and the latter current in the last decade.

A content scan of the former reveals that economics is grouped under the following main section headings:

1. Industrial Organisation
2. Supply and Demand
3. Distribution of Income
4. Income, Employment and Money

5. International Trade and Finance
6. Economic Policy

Lipsey's major divisions comprise the following:

- Part 1 Scope and Method
- Part 2 The Elementary Theory of Price
- Part 3 The Intermediate Theory of Demand
- Part 4 The Intermediate Theory of Supply
- Part 5 The Theory of Distribution
- Part 6 The Economy as a Whole
- Part 7 The Circular Flow of Income
- Part 8 The Importance of Money and the Circular Flow
- Part 9 The International Economy
- Part 10 Growth and Development
- Part 11 Macro-Economic Policy

A first inspection reveals some differences in the major headings and also in sub-headings. Cairncross devotes considerable space to the analysis of the factors of production while Lipsey makes only passing reference to this topic. On the other hand, the latter allocates much greater attention to the topics such as economic growth and general macro-economic policy. Substantial differences also exist in the analytical treatments of similar conceptual

ideas.

Despite these and other dissimilarities, there are fundamental similarities between the major conceptual areas identified in the two texts. A more detailed consideration distinguishes a number of essential economic concepts that form core elements for both economists. These include:

1. Supply and Demand
2. Money and income
3. Circular flow
4. Distribution
5. Economic policy
6. International trade

A similar content analysis can be extended to the standard school text as typified by G. Stanlake's "Introductory Economics" (1967)

- Part 1 Introduction - nature, scope and methods of economics
- Part 2 The Factors of Production
- Part 3 the Organisation and Scale of Production
- Part 4 Population
- Part 5 Prices and Markets
- Part 6 The National Income and the Distribution

- Part 7 Money and Banking
- Part 8 Changes in the Value of Money
- Part 9 International Trade, Finance and  
Co-operation
- Part 10 Public Finance
- Part 11 Managing the Economy

Substantial changes have occurred in the content over the four editions as the preface by the author to the final edition attests: "The treatment of monetarism and the international sector and recent fundamental changes in the performance of the UK economy and in governments' economic policy have been incorporated in the text" (1984). In these modifications this text approximates more closely to Lipsey, especially in its amplification of macro-economic topics, but it still retains some similarities to Cairncross in parts 2 - 4 where factors of production are given prominence.

Again the recurring themes identified in the Cairncross-Lipsey analysis emerge, and the previous composite list, including: supply and demand; money and income; circular flow; distribution; economic policy and international trade supplemented by factors of production,

could be said to embrace the essential economic elements common to all three texts.

Having identified this set of essential economic concepts it was necessary to consider these ideas within the context of the primary school. To this end the work of three sources was reviewed.

The first of these has already been alluded to in Chapter Two and involved the research endeavours of Danziger, Sutton, Williams and Burris. Their checklist of essential economic concepts included:

Exchange, Money, Banking, Value, Work and Commodity.

All of these, with the exception of "commodity" and "value" have appeared in the chapter lists of the text books. The inclusion of "commodity" may occasion some surprise but its justification lies in its every-day usage. It provides a particularly useful starting point for examining children's concept of a good, produced and exchanged within a market economy and further reference will be made to its usefulness as a unifying concept later in this chapter.

The second conceptual exception is that of value. As an economic concept its pedigree is lengthy stretching back to Adam Smith and his paradox of value. The theory of value and the theory of distribution together form the theory of price. Burriss skilfully couples the commodity schema with the theory of value in his study of how children develop their construct of economic value. In this investigation he examines the ways in which the child comes to terms with the commodity's value in use and its value in exchange. The effectiveness of this approach in eliciting meaningful responses from the children provided this researcher with a helpful exemplar.

While there is no intention to reiterate the detailed consideration accorded the work of these researchers it should be stressed that they have significantly influenced the conceptual selection in the final interview schedule. They have successfully contextualised economic ideas in the primary school and their questions have elicited fertile responses from young children. The comprehensive sweep of their investigations into economic understanding provided the researcher with a number of

unifying economic constructs for developmental examination.

The second influential source was the work of Professor L. Senesh exemplified in the diagram of "Fundamental Idea Relationships of Economic Knowledge" (1963) (See Appendix F). This has provided the basic organic curriculum in economics which has been used extensively in elementary schools across the United States.

The economic principles identified in the diagram are sequentially connected in the following ways.

The basic problem of scarcity is mediated initially through specialisation at geographical, occupational and technological levels. This division of labour leads to a greater degree of interdependence which paves the way for the market. Within the market the forces of supply and demand interact and the exchange process operates. To facilitate its operation the need for a medium of exchange in the form of money is generated. The incomes accruing to the factors of production in their turn determine spending and saving patterns. Simple flows and interconnections are developed

through these basic ideas.

The second outline is that used by Linton (1979) (see Appendix G) as the organising vehicle for the economic education of primary six and seven pupils in Scottish schools.

Linton's framework, while different in structure from that outlined above, also attempts to create a number of simple economic linkages. A child's standard of living, as exemplified through a number of goods and services, provides a relevant starting point for examining the basic economic problem of scarcity. Money's role as a medium of exchange, and as a store and measure of value are then examined. The financial returns deriving from work provide the basis for investigating the rationale for other financial returns of rent, profit and interest. The prices of goods and services were next examined in terms of demand and supply variables.

Both these researchers have attempted to reduce the economic content to meet the requirements of young children. Their common list includes the following topics - scarcity, standard of living, money, price, supply, demand, specialisation,

production and work.

While this content scan of text books and research literature provided the researcher with significant guidelines for the selection of economic concepts for the final interview schedule, it still did not give due regard to two important constraints peculiar to this investigation.

Firstly, it should be remembered that the researcher is dealing with young children who have not been taught economics and have only a very limited experience of economic activities and institutions. A number of concepts of a highly abstract nature especially in the area of macro economics are clearly beyond their understanding and will be excluded. The complexities of international trade also warrant its exclusion from the interview schedule in its final form.

A second constraint is imposed by the Piagetian dimension inherent in the study. The developmental aspects of the Piagetian stage hypotheses require that pupils' responses should be examined at all three stages. This could only be achieved by ensuring that questions were

couched in simple terms, allowing the children the scope to expand and modify their responses at different ages.

While none of these sources provided a set of economic concepts specifically tailored to the needs of this inquiry, they did supply the essential elements from which the interview schedule derived. After due consideration, four economic constructs were chosen to unify and articulate the interview questions, and the economic rationale justifying their inclusion is outlined below.

The inclusion of 'commodity' as an organising structure for the initial questions in the interview may appear surprising. On the face of it the concept's economic potentialities may appear rather restricted. Closer inspection belies this conclusion and reveals important reasons for its examination. In the first place it is a physical entity in the child's everyday life and therefore carries some meaning for all three age groups. It can also be examined as the outcome of a chain of productive processes. Yet again it can be studied as an object of utility whose value is determined by a number of interacting variables. Finally it has a

relevance in the sphere of labour where the commodity aspects appear in terms of differential rewards for human effort. Making use of these various interconnections and relationships the interview schedule was able to range across the four main divisions in economic thought, consumption, production, exchange, and distribution, taking samples of children's economic understanding in each of these major areas.

In selecting value as the second unifying economic concept one is not primarily concerned with the abstract elements implicit in the concept but rather with the "empiric indicants" (Kaplan) that can be used to represent it, particularly those relating to a child's idea of price.

Its linkage with the commodity schema derives from the fact that a good's utility expresses its value in two distinct aspects, a value in use-utility, and a value in exchange, and it is with both these criteria that this chapter is concerned. Silvermann (1944) has no reservations about the significance of value. "the most fundamental problem in exchange and, indeed, in the whole of economic science, is the

determination of the principles governing the exchange power, or value, of a commodity or service". Questions involving price indices of different goods were designed to provide insights into how children develop a construct of value. Additional questions highlighting price variations were asked to assess the range and width of their causal explanations in terms of demand and supply variables. Finally, an attempt was made to ascertain at what ages the children ascribed meaningful monetary value to a variety of different commodities.

Of central significance in economics is the concept of exchange and questions twenty-one to thirty were grouped under this chapter heading. It is obviously definable in commodity terms, involving as it does the transfer of a good or service from one person or institution to another in return for a good, service or money. Starting from the simple apparently self-evident act of exchange, within the context of the store, questions were asked to examine how fully the child grasped the economic implications of the exchange process. These questions related to the reciprocal obligations existing within a money economy and the notion of circular flow

inherent in economic transactions. The locus of the store also provided an appropriate area for examining the child's concept of profit and hypothetical situations were used to see at what ages children legitimized profit. Using another institution, that of the bank, the interviewer examined its role, both as a depository for, and as a lender of, money. Interest was also investigated in a similar way to that relating to profit. These questions were constructed to examine the child's concept of circular flow in terms of the Piagetian stage hypothesis.

The final section in the schedule focused on labour and comprised questions thirty-one to forty-one. Its connections within the commodity schema lie in the physical and mental inputs required to bring the good to fruition, and in the returns it commands in the market place, which returns make possible the consumption of goods. These economic relationships are difficult to comprehend unless one has some understanding of reciprocity. The initial questions were designed to examine when a child's concept of work in an economic sense had developed. It is only possible to ask meaningful economic questions relating to



differential incomes when children have clearly differentiated work from leisure. Questions on occupational status were couched in general terms to investigate what currency children gave to economic factors in determining their occupational hierarchies. Further questions demanded that they allocate differential incomes to specific workers, providing justifications for their decisions.

#### Content Description

Questions 1 - 7 were designed to elicit responses relating to money as a purchasing agent in the buying process. Buying goods is not as simple a process as an adult conceives it to be and children's responses to those questions highlight some of the conceptual difficulties young children experience in the acquisition of goods in the market place.

Questions 8 - 11 analyse the second conceptual area that of value. Children were asked to make differential valuation of goods, providing reasons for their responses.

Questions 12 - 30 examine children's concepts of exchange, using the store as the starting point

for investigation. The questions then probed their awareness of supply and demand variables as they related to commodities with which they were familiar. An attempt was also made to test their knowledge of monetary value (Q 24). Finally in this section questions relating to profit and interest were asked (Q 25 - 30) with the intention of examining their understanding of these concepts.

Questions 31 - 42 ranged widely across the labour concept and examined children's ideas of their different aspects of labour:

- (1) Questions 31 - 34 related to the child's concept of work
- (2) Questions 35 - 38 asked the child to offer occupational classifications backed by explanations.
- (3) Questions 39 - 42 required the child to justify differential incomes for a wide variety of occupations, using pictorial situations and examples.

#### 3.4 The Economic Rationale of the Questions

While brief reference has previously been made to the economic rationale underlying the questions asked in the interview, it remains to make more detailed observations upon the major conceptual areas in terms of their arrangement and structure. Money questions (1-7) preceded those

relating to (8-11) value, which were followed by those concerning exchange (12-30) which were in turn succeeded by those involving incomes/labour (31-42). This sequence was designed to move from less difficult to more complex economic questions. Those relating to money and buying were designed to present children with some easy and general introductory questions, involving little relational thinking. Monetary cost assessment was then followed by a number of questions relating to exchange value. Explanations in this section demand a greater capacity to generalise. Relational thinking, involving reference to the interaction of market forces such as supply and demand, is required to make sense of price differentiation. A similar higher order of explanation is needed to justify income differentials in the final section where rewards for labour are considered.

While the questions in the exchange and labour sections do not appear to differ appreciably from those asked in the money/buying, and value (cost) sections, they do make much greater demands upon the children's capacity to think more comprehensively and to compound and compare abstract factors. These qualitative changes in economic cognition will be more fully examined

when the empirical data, arising from the interviews, is analysed in later chapters.

As the empirical data underpinning this study derives directly from interview responses (see Appendices D(1), D(2), D(3)) it is necessary to refer at some length to the procedures used in the interview itself. The appendices mentioned above present sample interviews with primary one, three and six children. These should not be regarded as a typical interview for each age group. They do, however, contain a number of responses which might be said to be typical of each age group.

#### ECONOMIC RATIONALE of SPECIFIC QUESTIONS

It should also be pointed out that the interview was slightly modified in the course of the investigation. The first 4 questions elicited very similar responses from the great majority of children with few of them unable to offer meaningful replies. Question 5 proved to be much more discriminating, both in the number of correct responses elicited, and in the reasons advanced by the interviewees in justifying non-saleability criteria. Only if the child rejected a good as unsaleable was a reason asked for. It was assumed that a positive response implied an awareness of the reasons for the

good's saleability.

Question 6 proved more difficult than was expected, especially for the youngest children. "Don't know" responses were more common within this age group and the structure of the question may be partly blamed for this. Implicit within it is a concept of money as a medium of exchange, a construct that the youngest children do not appear to have grasped. The notion that money is a valuable good to other people apart from the interviewee is not used by these children in their explanations of why money has such wide usage. The answer deriving from this question were not used as the basis for analysis in the later chapters because of these difficulties.

Question 7 went beyond the recognition limits of the previous question and demanded that the child cite an example of something that could not be bought or sold. This proved to be a difficult question, even for children who had previously given reasons why some goods could not be bought (see question 5). Children at the primary one and three levels experienced problems of applying these criteria to examples outwith those given,

especially if they were asked to produce their own examples.

Questions 8 and 9 allowed children a wide scope and responses were fairly predictable, with the respondents placing a heavy reliance upon quantitative differences. The word "little" may have conditioned this emphasis.

The responses to question 10 were more interesting and revealing. The 14 goods were in no way unusual to any of the children interviewed. The pairing was designed to demand a comparative assessment of monetary worth. In the seven comparisons an attempt was made to vary the dimensions of the objects. In some cases size and value are correlated, but in others the reverse is true. The example with the peach and apple was introduced to present two commodities of similar size.

Question 11 relating to diamonds was an explicit attempt to force the child to evaluate a specific good, which he or she knew to be valuable, in terms of criteria other than size, a factor which much influenced their evaluations in previous questions.

Questions 12 to 19 were of a similar nature and were an attempt to probe children's awareness of factors affecting price. The child's conception of supply and demand variables emerges in the responses elicited by this set of questions.

The examples chosen were thought to be reasonably close to children's every day experience. Those questions were asked only of primary three and six children, as the youngest children were unable to offer meaningful responses.

Question 20 was designed to investigate the child's awareness of monetary worth and it presented him/her with a number of prices against which goods had to be matched. For the youngest children this matching of price/goods relationships proved very difficult. Because of these difficulties the researcher devised a visual test involving card matching (see Appendix E).

Questions 21 to 29 relate to the concepts of exchange, profit, and interest. The first three focus on the store, on the assumption that this commercial location was familiar to most children. The questions probed the child's awareness of economic linkages in the exchange

process. Questions 25 to 27 presented particular situations involving profit, and interest, with children being asked to justify them. Questions 28 to 30 examined their understanding of the role of the bank as economic entity. Again the questioner was attempting to assess the extent to which children referred to reciprocal relationships in their explanations.

Questions 31 to 40 relate to rewards for labour. The first four of these were designed to test the child's concept of work through reference to family and personal experience. Questions 35, 36 and 37 asked the child to express an opinion about the nature of jobs and at the same time asked for criteria for occupational classification. These general questions allowed the child freedom both in choosing occupations and selecting criteria. Question 38, on the other hand, presented the child with a number of specific occupations and asked that they be ranked under three criteria, "good", "medium" or "not so good". Questions 39 and 40 focused the child's attention upon the income aspects of jobs and asked children to express an opinion why there should be income differentials between jobs.

Question 41 introduced a visual dimension into the interview, presenting the child with 12 pictures involving income differentials. Before the children made a decision on each situation, the pictures were explained in simple terms to ensure that children were clearly apprised of the economic relationships. While not all pictures required the same amount of explanatory comment a number presented more complex situations than others, eg. A, C and J. (See Appendix B)

Question 41 required children to arrange a number of occupations in a hierarchical order on the basis of income earning and also to justify the income ranking they produced. (See Appendix C)

### 3.5 Interview Procedure

While the three sample interviews represent some of the factual material arising from interviews across the three age levels, they do little to acquaint the reader with the procedures adopted by the interviewer, the attitudes he adopted and the observations he made to the children's responses. In order to provide this insight it is proposed to examine an interview transcript in some depth before wider consideration is given to the substantive material emanating from the great

mass of interviews later in the study. While it would be mistaken to think of any children's interview as "typical" of any age group it is possible to select one that contains many responses typical of the age range being interviewed. Such is the one chosen for detailed comment. It records the responses of a primary three child and selects its material from all of the conceptual areas of buying goods, exchange, value and incomes covered by the full interview. While a few questions have been omitted, the great majority have been included with verbatim records of the child's responses and the interviewers additional questions, the latter being recorded in capital letters. Observations made by the researcher on the qualitative aspects of the child's responses, with the benefit of hindsight, are shown in brackets. While three sample interviews have been included in the appendices, it is proposed to examine a transcript interview before considering the substantive material emanating from interviews that is analysed in the central chapters of the investigation. It is not intended to cover all questions but rather to present sample responses in different conceptual areas as exemplifying research procedures and children's behaviour.

What follows now is a verbatim selection of responses of a primary three pupil to the questionnaire, highlighting the techniques used in the eliciting of responses, with the researcher's comments made in brackets, and questions represented by capital letters.

INTERVIEW QUESTIONS

INTERVIEWER'S QUESTIONS ARE IN CAPITAL LETTERS THROUGHOUT

Question 1

CAN YOU TELL ME WHAT MONEY IS?

It's metal things with markings on them and you use them for getting things and buying things in shops. (Obviously the child was thinking primarily of coins).

ANY OTHER FORMS OF MONEY

(A supplementary question of this nature was generally required to elicit further examples).

Paper, pounds, cheque.

(While the first two were common in this age group, "the cheque" was atypical).

Question 2

WHERE DO PEOPLE GET MONEY?

If they have a job they get it from the job.

HOW DO THEY GET IT FROM THE JOB?

Once they have worked for a certain time they get money. That's their pay.

IS THAT THE ONLY WAY YOU CAN GET MONEY, BY WORKING?

You could find it in the ground easily. (This child obviously understood that money was a reward for labour and the additional questions were asked to discover whether he realised that money could come from other sources, eg. from the bank, building society, being left money in a legacy, etc.

Question 5

COULD YOU BUY SWEETS WITH MONEY?	Yes
COULD YOU BUY A T.V. SET WITH MONEY?	Yes
COULD YOU BUY A HOUSE WITH MONEY?	Yes
COULD YOU BUY A CAR WITH MONEY?	Yes
COULD YOU BUY A SCHOOL WITH MONEY?	No

WHY?

That's a place where people work and teach.

COULD YOU BUY A COW?

Yes, at the markets.

COULD YOU BUY A TREE?

If it was young you could buy it, but you couldn't buy it and uproot it and take it to your garden.

(This kind of response was typical of this age group. Children appeared perplexed by the immobility of objects such as trees).

COULD YOU BUY A BABY?

No, because you have your own ones.

(The human aspect of birth was commonly mentioned by children).

COULD YOU BUY A FARM?

No because there would be people working at it probably. It would be their jobs as well so I don't think you could.

(This child has previously used the human element in eliminating the school and this is a reinforcement of that justification. The farm is rejected as saleable on the grounds of size by the majority of P3 respondents.

#### Question 9

TELL ME SOMETHING THAT COSTS A LITTLE MONEY?

A pocket watch costs a little money. That costs a little money.

(The child pointed to a small book).

WHY DOES THAT COST SO LITTLE AND YOUR HOUSE COST SO MUCH?

(Child had cited a house in previous question as being a high cost good).

Because that (the book) would not take long to make and they just make it in a machine.

(It is interesting to note how this child introduces a number of qualifying variables into the question, eg.

"big", "old", "digital" and makes his assessment on the basis of these rather than the two goods as given in the question. This is not common until primary six. The watch is usually taken to be more costly on the grounds of its functional importance and its metallic composition).

(3) A BICYCLE (OR A DOLL) OR A FOOTBALL?

(Boys were asked about the football, girls about the doll).

A bicycle because it is quite difficult to make a bicycle and a football is just made of rubber and you sew it together then it goes into this special machine that pumps in air. It isn't so easy with the bicycle because you have to weld up the pieces together and then fix on the wheels and the tyres. It would have taken them longer and it would be really difficult.

(Again the child stresses the difficult process of producing one object, the bicycle, in contrast with the simpler one involved in the production of the other, the football. While time is not specifically mentioned the detailed description of the numerous processes involved, clearly indicates that the child appreciates the time-consuming nature of bicycle manufacturing. Conspicuously absent are references to the greater durability of the good and its superior functionality).

(4) A KNIFE OR A LOAF OF BREAD?

The knife because it could be used in more different ways. It is very useful.

BUT IF WE DID NOT HAVE BREAD WOULD WE NOT DIE?

It is quite useful but not as useful as a knife because if you wanted to cut through something you could use the pocket knife but you couldn't use bread. That is just something for eating.

(For the first time the child uses functional criteria for justifying higher price. On this occasion he eschews time, labour, raw materials. This response is highly typical of this age group).

(5) A HOUSE OR A CAR?

The house of course.

WHY?

The house is needed in many ways but the car is not needed in so many ways because you could walk on foot or

could go on bicycle.

DOES THAT MAKE IT CHEAPER?

They have to make a house with men and machines and it takes them a very, very long time for the house.

WHAT DO THEY DO WITH THE CAR?

The car is for driving around in.

It's quite useful but I usually travel on foot. A house is very useful but it was minus 16 outside.

(In this response the child draws upon the criteria of functionality and time, omitting raw materials and difficulty, although he does allude to labour inputs. It is unusual for children of this age to advance as many criteria in justifying their answer).

#### Question 11

DO DIAMONDS COST A LOT OF MONEY?

Yes because they are very pure and they take a long time to find.

BUT THEY ARE AWFULLY SMALL AREN'T THEY?

But even though they are very small they are very pure.

WHY DO THEY COST ALL THAT MONEY?

CAN WE NOT JUST GO OUT AND GET DIAMONDS?

You have to go to a volcano to get diamonds because it is a volcanic rock and they are thrown up.

DO YOU JUST PICK THEM UP?

No you dig deep, deep, deep down. If it was not an extinct volcano it would be very dangerous.

(References to the purity of the good are fairly common but detailed comment on the contextual difficulties are less frequent. Time, danger and labour all appear in this child's cost aggregation and could be regarded as atypical of this age group).

#### Question 12

WHY DO WE HAVE TO GIVE MONEY WHEN WE GET THINGS IN THE STORE?

If you didn't you would just be taking things and not giving anything back. You have to give money to get

things.

IF WE DIDN'T GIVE MONEY WHAT WOULD WE HAVE TO DO?

Steal it.

ANY OTHER REASON?

It took them a long time to make the goods. You have got to give money because of the time and difficulty it took.

Question 13

WHAT DOES THE PERSON AT THE STORE DO WITH THE MONEY WE GIVE HIM?

He gives it to the manager of all the stores which are in a special company which makes all the food which goes to that store.

WHAT HAPPENS TO THAT MONEY THEN? CAN YOU GIVE ME AN EXAMPLE OF A STORE THAT WOULD GET A LOT OF MONEY AND TAKE IT BACK TO A MAIN STORE?

Safeways.

WHAT HAPPENS NEXT?

They use it to pay their workers.

DO THEY PUT IT ANYWHERE AFTER THAT OR DOES IT JUST GO BACK TO THE WORKERS?

The workers might be able to use it.

WHAT HAPPENS TO THE MONEY THEN?

It would be used again right round in a circle.

(This child's responses reveal a developing construct of economic linkages, albeit a rather rudimentary one. There is the idea that stores have to pay bigger stores for their goods. The cost of labour too is mentioned. There is also reference to a circular flow. While a fair number of children have a notion of the store's expenses, few can carry the flow concept outwith the store itself).

Question 16

CAN YOU THINK OF ANY REASONS WHY CHOCOLATE COULD BECOME DEARER?

Some chocolate like a milky way bar doesn't cost very much but if you got really pure like Russian chocolate because it is very pure and it is very good chocolate

like Black Magic.

LET'S SAY THOUGH THE CHOCOLATE COSTS 5p. AND AFTER TWO OR THREE MONTHS THE SAME CHOCOLATE IS 7p. COULD YOU THINK OF ANY REASONS WHY THAT COULD HAPPEN?

Because they just change things, the prices, and get more money.

SO THEY JUST MAKE IT DEARER?

Yes. Just a little bit dearer so may be somebody will not notice it.

(A typical response to this question is to enlarge the chocolate and so justify the increase in price. This child introduces other variables by referring to different kinds of chocolate. He makes no attempt to explain a differential price on the same chocolate. Rather, he considers dearer types of chocolate. This interpretation, stressing quality rather than quantity is unusual).

#### Question 25

IMAGINE YOU BOUGHT SOMETHING FROM THE STORE FOR £1 AND SOMEONE SAID, "I'D REALLY LIKE THAT, WOULD YOU SELL IT TO ME FOR £2?", DO YOU THINK IT WOULD BE ALL RIGHT FOR YOU TO SELL IT FOR £2 IF YOU BOUGHT IT FOR £1?

No.

WHY?

You should keep it at the manufacturer's price. He would think it was the proper price it should be because the person chose it.

EVEN IF HE SAID "I WANT IT SO MUCH I'LL GIVE YOU £2", IT STILL WOULDN'T BE ALL RIGHT?

I don't think so.

(This response is representative of this age group who

unanimously reject the mark-up price as being unacceptable. Reduction of the price to just above £1 level in no way alters their unanimous rejection of a higher price level. The "proper price" is an equivalent price and the profit aspect of the transaction is ruled out of court as being immoral. This child, however, does not comment upon the unfairness of the action which is common among his peer group).

#### Question 26

IMAGINE THE STOREKEEPER BOUGHT SOMETHING FROM THE FACTORY FOR £1. WOULD IT BE ~~AL~~ RIGHT FOR HIM TO SELL IT FOR £2?

No because that would be the same sort of thing.

SO THE MAN IN THE SHOP JUST SELLS IT FOR EXACTLY THE SAME AS HE BOUGHT IT FOR?

He might change the price by taking off the sticky bit and changing it.

WOULD THAT BE FAIR IF HE MADE IT BIGGER?

It wouldn't really be very fair but if he made it cheaper that would be fair.

BUT IF HE MADE IT DEARER IT WOULD BE FAIR?

I don't think it would be because if it was quite high up it wouldn't be.

IF IT WAS LOW DOWN IT WOULDN'T BE?

If it was just a little bit lower it would be. If you had a house at £1000 and you changed it to 10p I don't think it would be fair but if you had a house at £1000 and you changed it to £1,000,000 that wouldn't be fair either.

(In refusing to differentiate between the friend and the storekeeper this child is responding in a similar fashion to the great majority of his age group. There is no

acknowledgement of the storekeeper's entitlement to profit for his services. In fact the child considers a lower price as being reasonable which appears to assume that the article has been depreciated by use. The final part of the response, reveals the very limited capacity the child has for applying principles to different situations. The entire response epitomises the consumer-oriented viewpoint adopted by children at this age level, a feature of his behaviour upon which comment will be made in later parts of the study).

#### Question 38

HERE ARE SOME JOBS PEOPLE DO. I WANT YOU TO TELL ME WHETHER THEY ARE GOOD, MEDIUM OR NOT SO GOOD AND GIVE A REASON FOR YOUR ANSWER.

(1) DOCTOR?

Is a medium job because you may get too many patients but if you only get a few patients it would be quite good. If the patients were quite difficult to cure it would be quite hard.

(The concept "medium" presents difficulties involving balance of advantages and disadvantages at this age level. Middle might be preferable and was used in later interviews. This child has some notion of plus and minus factors. More children tended to select "good" or "not so good" headings, in this age range).

(2) RUBBISH COLLECTOR?

It is quite a bad job because you would smell bad. The people who hang onto the back might fall off. (This is a typical response).

(3) POSTMAN?

Quite good. You just go round putting the letters in the letter box. It would be an easy job, not much to do.

(This is a typical response).

(4) BUSDRIVER?

Medium because it is quite easy to drive the bus and you get a lot of pay too.

SO THAT WOULD MAKE IT GOOD, SO WHY IS IT MEDIUM?

I mean good.

(Child has introduced the economic variable of income into his assessment, conjoining this to conditions. This economic criterion differentiates this response from the normal one).

(5) WAITRESS?

Medium You got to be careful not to drop the stuff on the floor. It is really quite an easy job but it is difficult to carry the things over and remembering which table to go to.

(Child does attempt to balance variables and produces a more informed response than the majority of children).

(6) BANKER?

Quite a good job. Because it is very easy to do and I don't know how much pay you get. I think it would be quite a lot because you are helping people keep their things. You have got to keep it safe.

(The economic variable of earnings is again introduced and this is coupled with the helpful aspect of the work. The first is uncommon but the second is extremely common. So far this child has

not used this as a factor in his assessment -

(7) TEACHER?

Medium. Sometimes you get headaches. It is quite an easy job because usually you just sit down or you get a sore voice.

(Not a common response where the helpfulness of the teacher is usually remarked upon. Obviously influenced by classroom experiences and teacher's behaviour).

(8) GARAGE MAN?

If you were good at garaging, if you were good at cars it would be quite a good job and if you weren't good at mechanics it would be a bad job.

(A rather tautological response. Atypical of this child but not uncommon type of response with poorer children).

Prior to question 41 the researcher took some time to explain the various pictorial situations involving the different employees (See Appendix B) to the children. This was to ensure that all children were made aware of the relevant issues represented in the pictures and the roles of the different employees. It was only after this description had been given that the children were asked to quantify their income differentials.

Question 41

WHO EARNS MORE AND WHY?

- (a) WHO SHOULD BE PAID MORE MONEY. THE EARNER IN PICTURE 1 OR THE EARNER IN PICTURE 2?

The man in the first picture because if they are pulling him to get the job it must be a really difficult job.

AND WHAT SEEMS TO BE HAPPENING IN PICTURE 2?

Lots of people are wanting to get the job so probably it is a very easy job.

(Only a minority of children gave the correct answer to this question and few answers, even if the correct picture was chosen, provided economic explanations. The relationship between the numbers of job applicants and job opportunities was rarely mentioned. This child has alighted upon the literal aspects of the situation and has derived a response from these. The physical efforts being expended by the two men in picture 1 have persuaded this child of the employee's utility. Notice that he makes no mention that there is only one employee. His singularity goes unremarked by the child. The job's difficulty takes precedence. In the second picture he again refers to the easiness of the job but omits to mention the excess number of employees who are competing for it.)

- (b) WHO SHOULD BE PAID MORE MONEY:

- (1) The air pilot or  
(2) The man putting fuel into the aircraft?

The man in the second picture because it would be

difficult to climb up and put in the fuel. You might have to hold it for quite a while.

(This was a minority response as the airline pilot was given as the greater earner. This child argued his case on the physical merits of the case, considering the maintenance man to have to endure difficult conditions. Most children, however, thought that the danger of flying the plane and the skill needed gave the pilot a decided edge and merited higher earnings).

(c) WHICH ARTIST SHOULD EARN MORE FOR HIS PAINTING?

The artist in picture one because he has a picture and nearly everyone is wanting it but here (picture two) nobody is wanting the picture. Maybe because it isn't very good.

(The child has appreciated the relevance of greater demand in the first picture as being the reason for the 'greater price' of the painting. Children in this age group have difficulty in identifying this causal factor. Some children try to justify a differential price on the quality of the pictures without reference to the auction response).

(d) WHO SHOULD BE PAID MORE MONEY: THE DOCTOR OR THE WAITER?

The doctor should because it is difficult if you were working with someone with arthritis you might get it yourself and it is very dangerous and if you do something wrong it could kill the person.

WHAT ABOUT THE WAITER?

It is quite easy.

(This response is typical in that the child

attributes greater importance to the role of the doctor than to the role of the waiter. Criteria of danger, difficulty and responsibility are compounded. Few children were capable of producing such a wide range of criteria).

- (e) WHO SHOULD BE PAID MORE MONEY: THE SERVER OR THE SCIENTIST?

The scientist because it takes a very long time to discover things. It is very difficult. (A fairly common response).

- (f) WHO SHOULD BE PAID MORE: THE SKI-INSTRUCTOR OR THE GYM TEACHER?

The ski-instructor because you would have to show them what to do. How to stop your skis if you were on a cliff and how to go faster.

WHAT ABOUT THE GYM TEACHER? WHY SHOULD HE GET LESS?

He has to show the people what to do and tell them.  
(This proved to be a difficult question for

children. The majority favoured the ski-instructor because of the difficulties involved in ski-ing. Generally functionally superior work was alluded to as is indicated in this response).

- (g) WHO SHOULD BE PAID MORE: THE HOLE DIGGER OR THE HOLE DRILLER?

The hole digger because it is a very dangerous job. You might fall down the hole. If it was a gas pipe you might gas yourself.

WHAT ABOUT THE OTHER MAN?

He couldn't fall down his holes because they are very small.

(The majority of P3 children thought the hole digger merited greater reward than the driller and the reasons were similar to those advanced by this

child. The greater physical effort and even the size of the relative holes were cited as important factors in justifying differential incomes. The skill component was unanimously ignored).

- (h) WHO SHOULD BE PAID MORE: THE LION TAMER OR THE BALLOON SELLER?

The lion tamer because it is a very dangerous job. Lions eat men sometimes if they are not tamed properly. It is quite easy to be a balloon seller and shout "Roll up, Roll up".

(Responses referring to danger were in the majority).

- (i) WHO SHOULD BE PAID MORE: THE LORRY DRIVER OR THE VAN DRIVER?

The lorry driver because it is quite difficult to drive a lorry. For one thing you might do a mistake, and it would be very serious if you did a mistake. But I don't think it would be very serious if you did it in a van.

(Most children felt that the lorry driver deserved a higher wage on the grounds that his vehicle was larger and more difficult to handle. This is a variant on that theme in that an element of greater responsibility is introduced).

- (j) WHO SHOULD BE PAID MORE: WORKER IN PICTURE ONE OR IN PICTURE TWO?

Worker two because there is only one factory the man can easily go to but he couldn't decide which one to go to. You might not go to all four of them.

(This situation presented children with difficulties and the majority were unable to provide correct responses to the question. As in the case of this child they failed to see how the different demand

and supply variables affected the workers income level).

- (k) WHO SHOULD BE PAID MORE: WORKER ONE OR WORKER TWO?  
(As this question elicited a unanimously correct response, it was not necessary to analyse responses.

All pupils associated increased quantities with increased income).

- (1) WHO SHOULD BE PAID MORE: THE CLERK OR THE BOSS?

The boss because he has a bigger job because most of the people will come to the boss because he is the biggest person and he is probably best at it.

(The use of the word "bigger" points backwards to the accentuation of physical attributes but the child does relate it to importance of the job and the qualities required of the boss).

#### General Observations on the Interview

While the transcript has focused attention upon particular questions and the interviewing procedures involved, it has of necessity avoided reference to a number of important questions of a more general nature. These involve the interviewees themselves, the quantity and quality of the replies and the overall economic structure of the interview itself.

While primary three and six children responded readily to the interview, primary one children experienced some difficulty in expressing their views. Their age and inexperience were obviously factors in inhibiting their responses. Account also had to be taken of their unfamiliarity with the interview procedure. These difficulties were offset by enlisting the active assistance of the infant mistresses in the five primary schools. They ensured that the researcher was introduced sympathetically into the infant classroom. The researcher also spent some time before each interviewing session in the classroom itself talking to and mixing with the children themselves. The interviews were then conducted with individual children in another classroom. These preliminary activities greatly helped to breakdown the children's shyness and few interviews were affected by this inhibition. Most children were able to offer responses to the majority of questions. The children were selected by the teacher and made up a representative sample of the class. About two out of three children in each primary one class were interviewed.

As has already been remarked the transcript and the sample interviews in the appendices must not be regarded as the norm for each age group of children.

Their inclusion is warranted on the grounds that each sample interview produced replies to all questions so that the reader is presented with a wide variety of responses at the three different age levels. Where some interviewees found difficulty in responding to questions efforts were made to encourage them to reply by repetition of the questions. Sometimes questions were slightly modified to elicit responses. These sample interviews contain typical as well as atypical responses.

On occasion the interviewer would probe more deeply.

Sometimes more intensive questioning elicited more sophisticated responses on other occasions, however, the responses revealed contradictions and inconsistencies in the children's thinking. These were sometimes revealed in the responses involving demand and supply variables and further consideration will be given to them in Chapter 5.

## CHAPTER 4

### Concept of a Good

In attempting to measure a child's conception of economic relations, one is very conscious of the abstract content of economics. The need for concrete referents, however, is imperative if the researcher is going to elicit meaningful and spontaneous responses. A useful starting point is the concept of the commodity, definable as an object of utility that is produced for exchange rather than for direct consumption. Its merits lie in the fact that it has an everyday commonsense significance for the child. It is something that is taken for granted. Few question that an object of utility should also be an object of exchange. In addition it has fundamental relationships with a whole series of major economic concepts, relating to consumption, exchange and production.

Historically the evolution of the commodity as a characteristic of economic life has been a fairly recent development. One economist considers the emergence of modern capitalist society as a process of the progressive integration of wider and wider domains of material culture into the structure of commodity production accompanied by a corresponding dissolution of other forms of productive relations (POLANYI) The Great Transformation.

Whether or not the expansion of the commodity forms warrants such extreme statements is debatable, but there is no doubt that the commodity schema is an extremely important structuring concept in everyday economic understanding. Given its significance it would appear to be a fruitful and necessary exercise to find out how it develops ontogenetically in the course of the child's cognitive socialisation.

No investigation of a child's conception of the commodity can be effective unless one identifies the essential criteria for recognising the concept. Classification of something as a commodity demands that it can be bought and sold. Unless the child grasps the action sequence of these processes it is extremely doubtful whether he or she comprehends the commodity schema. Children were therefore asked questions involving examples of goods which could be bought and sold (Q4). They were then asked to select items from a list, saying whether each item could be bought and sold (Q5). Only where they indicated a good could not be bought were they asked to supply a reason for their answer. Finally, they were then asked to list articles that could not be bought and sold (Q7). The responses to these questions provided the researcher with a classificatory matrix of commodities and non-commodities as well as a child-centered set of criteria for commodity definition.

TABLE 4.1  
PUPIL'S EXAMPLES OF GOODS AND NON-GOODS

% Response Classifying Object as a Good	Food	Clothing	Baby	Farm	Tree	School	Cow
	%	%	%	%	%	%	%
Primary I N = 17	100	100	15	65	12	18	35
Primary III N = 20	100	100	0	73	16	70	52
Primary VI N = 16	100	100	0	100	70	80	100

At this point Piagetian findings on the child's conception of environmental objects merit attention as the features he identified appear to have close similarities to the child's perceptions of objects as commodities. In "The Child's Conception of the World" (1929) he identified three pervasive features that are present throughout the preoperational sub period from speech to six or seven years of age.

These are animism, where the child endows an object with life and capacity for thought; artificialism, which attributes human creation to an object; and finalism, which assumes that an object owes its existence to human needs. These last two classifications would appear to be relevant in the consideration of the commodity schema as economic goods have their *raison d'être* in their satisfaction of man's needs. Piagetian findings,

relating to animistic and finalistic tendencies might be taken to imply that all goods could be bought and sold. This supposition is not however confirmed on analysis. Children's responses in the youngest age group revealed a much more restricted definition of saleable goods/services.

As one would expect given the limited buying experience of the children, the great bulk of their responses to question 4 covered commodities such as food, particularly with reference to sweets, toys and clothes. In the youngest age group the children have very limited experience of buying a wide range of goods and visits to the local sweet shop and supermarkets with mother conditioned their responses. Independent purchases by the five year olds usually involved inexpensive sweet buying.

#### 4.1 Categories of Saleable/Non-Saleable Goods (25)

Replies to what goods could, or could not be sold, were more interesting and varied, in that a number of particular categories were identified, with different age groups applying different criteria. While there were considerable variations in the specific nature of the children's responses the examples listed below provide a representative sample of the range and content.

- (1) "You couldn't buy a tree. (Why not?) You could buy seeds for trees. (Why not the tree?) It would be too heavy to carry it".
- (2) "You couldn't buy schools because they are too big".
- (3) "You couldn't buy walls because you can't move them".
- (4) "You couldn't buy a baby because it's your mummy who has it and you don't have to buy it".
- (5) "You couldn't buy a baby because it is born and belongs to its mother".
- (6) "Schools because you can't sell schools. (Why not?) Because all the teachers work in the schools".
- (7) "You can't buy grass because it grows in the ground".
- (8) "You couldn't buy a life because nobody can sell you a life".
- (9) "You couldn't buy friendship.
- (10) You couldn't buy happiness.

Study of these responses, identified four categories as being present. Responses one to three typify those that advanced physical properties as the determinants of non-saleability. Responses four and five concentrated on the human aspect, in this case, on that of the baby for rejection of commercial exchange. Response six introduced a human aspect into school exchange situation and used this to prevent buying or selling.

Responses seven and eight stressed the natural processes usually of growth as being impediments to saleability.

Responses nine and ten identified the abstract nature of the object as placing it outside the market process.

While these categories are in no way definitive they do provide a useful framework for classification. The "natural" and "human" criteria are by no means mutually exclusive but they are used separately often enough by children to justify separate categories.

Reference to TABLE 4.2 indicates a number of important variations occurring with regard to age and reasoning. The youngest children were heavily reliant upon physical characteristics, relating to size and quantity as their criteria. The size of buildings and the immobility of objects were readily advanced by them. By the primary six stage children had relegated physical characteristics to a less significant position, preferring to draw upon natural, human and abstract variables in justifying non-saleability. The remainder of the chapter will devote itself to consideration of the children's responses in relation to age.

TABLE 4.2  
CRITERIA OF  
NON-SALEABILITY

Class	Size/Immobility	Natural %	Human %	Abstract %
P.1 N = 17	50	21	23	6
P.III N = 17	20	45	30	5
P.VI N = 15	22	24	42	12

Moving from the descriptive to the analytical aspect of this inquiry one finds that the responses on what can be bought and sold reveal important qualitative differences with regard to age and reasoning. The youngest children advanced simple criteria, strongly dependent upon visible characteristics while older children tended to introduce criteria more influenced by human activity or social relationships pertaining to the commodity.

Throughout the remainder of this chapter the four categories will be referred to by using abbreviations as follows: P (physical properties), H (human), N (natural) and A (abstract).

#### Primary One Children

Only when children rejected an object as saleable were they asked to produce reasons for their rejection. As TABLE 4.1 indicates certain objects fail to satisfy the five year old's commodity schema in particular - cow, school, tree, baby and farm. Exclusion from this category is due in the main to the possession of physical properties which prevent a sales operation taking place. The cow's physical bulk makes buying and selling impossible and explanations of the following kinds are common:

- (1) "It's too big to get into the house".

(2) "You couldn't carry it about".

"A school" is categorically rejected on the grounds of size. "A tree" falls into the same category as the school but its exclusion is further substantiated by its immobility. Responses such as, "it is deep in the ground" and "you can't take it out of the ground", reinforce the size criterion and place "a tree" outside the commodity category for the great majority of the youngest children.

The purchase of a baby was generally rejected with reasons stressing biological factors such as:

- (1) "You can't buy a baby because its in your mummy's tummy".
- (2) "Babies can't be bought because they've got to be born".

What emerges from these varied responses is a strictly restricted concept of buying and selling of commodities. The predominant characteristics are the physical properties of commodities. If the child cannot visualise the transaction within the setting of the store with goods passing into the hands of the consumer he or she rejects them as marketable commodities. Without these perceptible cues children have difficulty in locating objects within the saleable category. Consequently trees, cows, farms and schools are regarded by most children as non-commodities.

### Primary Three

Important changes are discernible at this stage not only in the statistical returns as shown in TABLE 4.1 with regard to the categorisation of saleable items, but also in the criteria used to justify or exclude these items.

More children were now prepared to accept that farms, trees, cows, and schools could be bought. While this is an important difference, of greater moment were the reasons given by the children to justify their conclusions. While the older children still advanced quantitative factors, they did not place the same heavy reliance upon them as did the younger ones. Qualitative differences began to appear in their explanations. The following examples highlight this changing emphasis.

Schools were previously rejected as saleable entities for their physical characteristics (P) and for some of the older children these were still valid obstacles to saleability. But for the first time some children rejected them for social impediments (H) as exemplified by the following:

- (1) You can't buy a school because it's a place where people work and teach.
- (2) You can't buy it because the headmaster has it and he wouldn't let you buy it.

Babies too were excluded from the commodity category on

the grounds that it is socially and morally (H) undesirable to buy people with money. These prohibitive criteria were added to the physical impediments relating to a child's birth which had characterised previous responses of primary one children.

### Primary Six

The diminution of dependence upon physical properties as essential criteria is clearly evident at this stage and trees, cows, farms and schools are regarded as acceptable commodities by the great majority of the oldest children.

Where goods are excluded, the grounds for exclusion have a social justification. Schools were rejected as they were useful to the community at large and owned by the corporation. Responses such as the following were forthcoming:

- (1) You can't buy a school because it belongs to the public and it's for everybody.
- (2) You can't buy a school because hundreds of boys and girls go to the school.

Where trees were excluded from the commodity category the grounds were different from those advanced by younger children. Immobility and size (P) which had figured prominently before as reasons were superseded by more "natural" objections, alluding to the tree's independent existence.

"A tree cannot be bought as it grows on its own in the ground"

For the great generality of children however, as Table 4.1 reveals, their commodity category has expanded considerably and only in exceptional cases are exclusions made.

#### 4.2 Conclusions

The youngest children's responses indicate that their commodity schema is extremely narrow and ill-formed. This ignorance is not only in terms of the process of buying and selling, but also in the goods that can be bought and sold in the market place. These deficiencies disappear with age and at the primary six stage children have a much clearer comprehension of what commodities can be bought and sold.

There are signs that the child's commodity schema evolves through a series of stages. At the primary one level children rely heavily on perceptual cues, which by their nature, severely constrict their concept of what a commodity is. The physical act of transfer is the essential element and this conditions children's thinking to include only goods that can be physically acquired and transferred. This construct is unable to

accommodate a number of goods such as school, farms and trees which lack the physical attributes of manageable size and portability.

Children in primary three (while still respecting the physical properties of these objects) begin to refine their gross physical criteria. Experiential activities have obviously played a part in this extension of the commodity schema. Their conception of extrinsic exchange is now acquiring a social dimension which transcends the mere simple act of transfer. In addition children are able to devise techniques for overcoming physical impediments with trees being chopped down and transported, cows going in trucks to the market.

These findings in some ways appear to contradict Piaget's. In investigating children's understanding of physical causality he has observed that children of four to six years have great difficulty in drawing distinctions between physical determinism and moral necessity on the one hand and moral or social laws on the other. In order to make sense of physical phenomena children under eight structure their occurrence in terms of social laws. Numerous types of causality are cited by them which indicate this confusion in the child's mind between physical determination and social

process. In the case of economic exchange the practice appears to be reversed in that the youngest children conceive of it in terms of the physical act in itself, to the exclusion of its social contexts and it is only later that the social linkages are more fully comprehended. Too much should not be read into this apparent contradiction. The laws of physical causality require a comprehension of a number of diverse and complex variables quite outwith the intellectual capacity of children under eight and it is not surprising therefore that they structure causality in terms of either human activities or magical processes. Piaget alludes to "feelings of participation accompanied by magical beliefs: the sun and moon follow us and if we walk, it is enough to make them move along". As the child matures these participations decline as he rids himself of his egocentricity. Realism then gives place to reciprocity which is in turn superseded by the third stage where realism gives place to relativity.

A similar progression occurs in the evolution of the commodity schema. In perceiving the exchange of goods in physical terms the child is interpreting the simple physical transfer of goods and this schema eliminates commodities that lack

portability, especially on the grounds of size or immobility. That simple construct fails to take cognisance of the social dimension of the sale of goods and services and wider social linkages are gradually comprehended as the child matures. These economic relationships become meaningful as the child begins to decentre himself from objects and appreciates the reciprocal nature of economic transactions.

In short the child's understanding of the commodity concept moves from the simple aspects of physical transfer to the more complex economic scheme embracing a multiple number of diverse objects. In the area of physical causality the child moves from a social construct involving human or magical intervention such as *primum movens* to a more complex explanation involving understanding of the physical mechanism of phenomena. Each representation in its own way is making sense of different economic and physical happenings and the modifications that occur in these representations as the child ages can be said to mark a developmental progression.

## CHAPTER 5

### CONCEPT OF VALUE

#### 5. VALUE

The theory of value has always held a key position in economic thought, its linkage with the theory of distribution forming the theory of price. The price of a commodity may be defined as its value in terms of money and the theory of value is therefore concerned with the relative prices or exchange values of goods and services. Since these are demanded because of their capacity to satisfy human wants, they also have value in use. Water is valuable not because of the price it commands but because it has "utility"; the power to satisfy a human want. It is with these two different aspects of value and how the child comes to understand them that this chapter is concerned.

Value in use is not an intrinsic quality of a commodity but rather its capacity to satisfy a human want. Use value is therefore a relatively uncomplicated category in that it defines a concrete relation between the consumer and the object or service consumed. Its origin, meaning and scale must be measured against the nature of human wants and the ability of certain objects or services to satisfy them. The physical and technical attributes of a commodity will be

apprehended before its economic and social aspects are understood. Indeed it is wrong to attach a particular economic significance to this aspect of value. Objects of human appetites for all ages and every society express their value in this way.

Use value however must be sharply distinguished from exchange value which is definitely an economic and social category and economics abounds with theoretical problems that exchange value presents.

Concrete and perceptible attributes do not necessarily determine the value of an object. For a commodity to have exchange value, it must have "utility" or more strictly it must give the promise of utility so that it is desired, and it must be capable of being exchanged. It acquires the property of exchange value not because of its physical attributes but because of a particular set of social relations such as those obtaining in a market economy. Unless one has an awareness of these interacting economic variables and relationships, one has difficulty in grasping the meaning of exchange value.

The questions asked of children were chosen to analyse their understanding of these differing concepts; the economic schema of value and their responses will be evaluated later in this chapter.

Before this is done however, attention should be given to an hypothesis advanced by Piaget on cognitive development which is pertinent to this inquiry. He suggests that, once a concept is constructed, it is immediately externalised so that it appears as a perceptually given property of the object - independent of the subject's own mental activity. Heider's research findings support those of Piaget and he refers to the individual's tendency to interpret the consequences of interactions between objects as the invariant properties of the objects themselves.

In the concept of exchange value there is ample scope to test out this hypothesis as an ontogenetic profile of the children is constructed.

5.1 The Child's Understanding of Exchange Value  
(Questions 8-20)

Questions eight and nine asked children to identify a good that cost a lot of money and another costing a small amount, giving reasons for their selection of each good. Question ten asked them to select the dearer good from six pairs of goods and to supply reasons for their choice of each good. Question eleven asked them whether diamonds cost a lot of money or not and required them to give

reasons for their answer. Questions twelve to nineteen required them to explain price levels for a variety of goods in terms of supply and demand factors. Finally, question twenty examined their awareness of price levels of goods in general and in particular situations.

#### 5.1.1 Questions 8-10

From the responses to these three questions it was possible to establish the different criteria the children used to justify differential price indices. As a result of their analysis three distinguishable conceptions of exchange value emerged. Three distinct categories of explanation appear in differing frequencies at different age levels and appear to follow a sequential pattern in a child's cognitive development.

1. Explanations expressing exchange value as a direct correlative of physical size. Responses of the following kind were indicative of this trend:

"A house costs a lot because it is big".

"A sweet costs little because it is small".

This logic of physical size was generalised into statements such as "big things cost more than little things".

2. Explanations equating exchange value with use value; introducing gradations of utility as determinants of value to the consumer. Responses could be divided into two sub-groups - one stressing function, the other durability.

Typical of the replies justifying value in terms of a rudimentary hierarchy of functions were the following:

Shoes cost more than a bar of chocolate because you can't eat shoes but can eat chocolate.

A pair of shoes costs more than a bar of chocolate because you can wear them and they are more important to you than sweeties and chocolate and things.

A wrist watch costs more than a book because you can tell the time from a watch and learn things off it and you can't get up in the morning hearing a book ring.

(Why does a bicycle cost more than a football?)  
Well, the football's round and can get burst but if your bike gets broken a bit you can mend it all right... because it's stronger than a ball.

The durability criterion was frequently evident as the following quotations attest:

A pair of shoes lasts longer than sweets so they cost more.

Shoes are made of leather so they last longer than sweets.

3. Explanations emphasising the importance of factors contributing to the production of the object,

referring to the nature, quantity and cost of inputs. Responses in this category could also be divided into two sub-groups with one covering raw materials , the other labour costs. The following examples alluded to the contribution made to exchange value by raw material costs:

Shoes are more valuable than chocolate because chocolate is only made of milk and shoes are made of leather. There are laces and they have silver things on them.

A wrist watch costs more than a book because it has got a lot of tiny works in it - it has got the date and tells you the time. A book is only made of paper.

A bicycle costs more than a football because it has got bells and a seat and handles and all the other gear with the pedals and the wheels and they are all made of metal.

Less common were responses that referred to the labour and time inputs that contributed to the object's price but a few children did reveal their awareness of the importance of these factors in the following extracts:

Houses cost a lot of money because they take a long time to build and you need a lot of men like joiners to build them

Cars and schools were also regarded as lengthy time-consuming products with stress laid upon the time/labour element of cost.

Another significant feature that emerged from

children's responses was consistency. Children for example who explained economic value for one commodity in terms of physical size tended to evaluate the economic value of other objects by the same yard stick.

Table 5.1 reveals a close relationship between the kind of pupil response and the age level of the respondent. The major criteria of evaluation have been identified: one emphasising the physical properties of the object, the second selecting the functionality/durability significance of the object, and the third one giving precedence to the inputs of labour, time or raw materials needed to produce the commodity. The evidence clearly indicates a profound difference in value judgement at each age level, so pronounced as to prompt one to see these three age levels as marking discrete stages of development in the evolution of a concept of exchange value.

TABLE 5.1  
PUPILS CRITERIA FOR ASSESSING COMPARATIVE ECONOMIC  
VALUE OF GOODS  
 (Question 10)

Class	Physical Properties	Functionality/ Durability	Raw Materials/ Labour/Time
DISTRIBUTION OF RESPONSES			
Primary I N = 20	80 (77%)	4 (18%)	2 (5%)
Primary III N = 30	54 (27%)	102 (46%)	54 (27%)
Primary VI N = 17	21 (13%)	59 (38%)	76 (49%)
Table excludes "Don't Know" responses and records number of responses in each category and percentage of responses in each category. TOTAL = 67			
SCARCITY WAS NOT USED AS A CRITERION AS IT WAS NOT MENTIONED IN PUPILS' RESPONSES.			

There appear to be two elements needed for the evolution of a concept of exchange value. The first problem for the child is to identify some common characteristic of goods or their relations as the basis of exchange value. Secondly, there is a need to calibrate or quantify exchange values on some reliable scale. The conjunction of these two

factors, that of locating and quantifying, is essential to the construction of an exchange value concept and there are signs that children pass through a stage-like process in their acquisition of the concept. It is now proposed to analyse the childrens' responses to questions relating to value at the three different age ranges.

#### 5.1.2 Primary one

Responses at this age level centred almost totally on the physical attributes of the objects. The great majority of children stressed size as the major correlative of economic value. The following set of responses from one respondent indicates the extreme reliance upon the criterion of size as the determinant of worth:

"The pair of shoes is worth more than the chocolate because the chocolate is smaller than the shoes... The book costs more than the watch because it is bigger than the watch... The loaf is bigger than the knife so it costs more... The house is bigger than the car so it costs more. One apple is bigger than a peach so it costs more... But say they are the same size? Then they would cost the same."

While not all respondents were as narrowly consistent as this one, the dependence upon the physical attributes as the arbiter of exchange value is clearly evident. The social dimension of exchange value was virtually ignored by all

children, and the focus of their assessment was physical size. In no other age group was there such a reified construct of exchange value, which isolated a commodity from all social relationships and which ascribed supreme importance to the natural attributes possessed by the good itself.

This propensity to concentrate upon the perceptible physical properties of the object to the exclusion of social considerations has parallels in Piagetian findings relating to "realism". "Realism" is defined as the tendency to materialize and internalise the contents of the mind. In both the "Child's Conception of the World" (1929) and "The Moral Judgement of the Child" (1929) he identifies three "adualisms" in which the child reveals confusion. Firstly, there is the failure to distinguish between "the sign and the thing signified or the mental object and the thing it represents". Secondly, there is an inability to separate the internal from the external, and finally there is confusion between thought and matter. These three varieties of realism are distinguished by Piaget in terms of names and dreams and manifest themselves at different age levels. In analysing the children's conception of names his investigations showed that until the age of six or seven names come from the things

themselves. "They were discovered by looking at the things. They are in the things... and form a part of the object in the same way as do colour or physical form. "Indeed children cannot conceive of the thing's existence without or prior to its name.

The first and crudest form of the confusion disappears somewhere between the age of seven or eight. The disappearance of the comparison between the internal and external comes at about nine or ten, when names are first localised "in the head". This continuous and progressive differentiation of signs and things, together with the realisation of the subjectivity of thought, appears gradually to lead the child to the notion that thought is immaterial.

What psychological factors are responsible for this progressive discrimination between signs and things are obviously difficult to determine. A child's growing awareness of his or her own thought which occurs between the ages of seven and eight plays an important part in this process but this awareness itself is heavily dependent on social factors as Piaget's findings show.

If one considers the primary one child's conceptualisation of exchange value one finds that it reveals the general tendency towards realism at

this age. Like names, economic values are located within the physical characteristics of the commodities. The social dimension of economic value is conspicuously absent within the quantitative physical properties of the object. As in the conceptualisation of names, the confusion of sign with the signified is replicated and social subjectivity and material objectivity are undifferentiated.

Within this age group a very small minority of children did refer to the utilitarian aspects of the object as affecting its exchange value. Shoes were known to last longer than chocolate and a penknife was known to be sharp but these responses were exceptional. Where they were made, they were clearly given a much inferior standing, with the responses stressing size very much the superior criterion for assessing exchange value.

### 5.1.3 Primary Three

Responses at this stage indicate a pronounced shift in the criterion on which assessment of exchange value is based. Physical properties decline in importance, being superseded by the criterion of utility. While the external features of the object still are important, the object's value is no

longer self-contained within those external material dimensions. These physical attributes now tend to be set within the context of human consumption. The child appears to sense in a very primitive way, the demand aspects of exchange value. This represents a change in attitude as compared with pupils at the primary one level.

Responses indicate that children are dissatisfied with the previous rationale and attempt to develop a more effective measuring device. In an effort to quantify exchange worth, children begin to evolve a rudimentary scale of utilities. This yardstick is highly subjective as they personalise objects' worth in terms of their likes and dislikes, and moral value, but in spite of these personal intrusions there are signs that functional differentiation is becoming an important aspect in the child's thinking. The following extracts reveal this new emphasis:

- (1) "The watch costs more because it always tells you the time and you can only read the book.."
- (2) "The watch because you use that a lot more than the book.."
- (3) "The knife costs more than the bread because it can be used in more different ways. It is very useful. (But if we did not have bread would we not die?) It is useful but not as useful as a knife because if you wanted to cut through something you could use the pocket knife but you couldn't use bread.

That's just something for eating".

Another criterion is also introduced at this stage - that of durability. That younger children do not introduce this time dimension into the value construct is of some importance and Piaget's conclusions in "The Child's Conception of Time" (1929) support the view, fortified by our own research, that younger children lack the capacity for abstraction needed in quantifying time.

#### 5.1.4 Primary Six

Among pupils of this age level definite changes have occurred in conception of economic value. The social conception of value is now much more clearly evident. References to physical dimensions are set within the context of production. Objects are considered from a more objective standpoint and value is viewed as a product or compendium of "inputs" which are compounded in terms of amount, quality and expense of factors involved in the production process. These changes are clearly discernible in Table 5.2 which makes a finer subdivision of the three categories used earlier in Table 5.1.

5.2 Differential Prices

TABLE 5.2

PUPILS' CRITERIA FOR ASSESSING COMPARATIVE ECONOMIC VALUE OF GOODS

Class	Physical Properties	Functionality	Durability	Raw Materials	Labour/ Time
DISTRIBUTION OF RESPONSE					
Primary I N = 20	80 (77%)	3 (12%)	1 (6%)	2 (5%)	
Primary III N = 30	54 (27%)	57 (29%)	35 (17%)	46 (23%)	8 (4%)
Primary VI N = 17	21 (13%)	46 (29%)	13 (9%)	64 (41%)	12 (8%)
Excludes "Don't know" responses					
NB <u>Scarcity</u> was not used as criterion as it was not mentioned in the pupils' responses.					

In their responses children reveal a greater awareness of the many different raw materials that are required to produce the finished product. Clearly the listing of these in an attempt to resolve the problems of assessing exchange value is not a final solution as it merely regards the object's value as the sum total of its material ingredients. It does however mark a shift from the simple schema - using physical properties as value criteria. Responses such as the following were

common with the children devising a quantifying schema by stock piling material inputs:

- (1) "Shoes are dearer because of leather and the heels and the soles. The people that make them have to charge the shop the amount of money it takes to put the leather on and the rubber on..."
- (2) "The bicycle costs more because it has metal, rubber, the grips, the pump, the brakes, and the pedals..."
- (3) "The house costs more because it's got split new stuff in it (What sort of stuff?) Baths, toilets, windows, walls..."

Children were also ready to differentiate between the relative values of the inputs themselves;

"A house is dearer because it's bigger than a motor car. It's got more things in it. (Could there be motor cars that cost more than houses?) Yes. Rolls Royces. Usually the house is more valuable. But the house has got a bathroom, a livingroom, kitchen and things like that. You don't get these in a car. (Anything else that makes it dearer?) The field and property and all the things you have got to buy for it makes it more expensive..."

In addition to quantifying inputs in terms of number and relative worth children in this age group also introduced a labour-time element into their cost calculus. For the first time reference is made to the time scale involved in the production of a good. Before this, if time is introduced at all, it appears only on the consumption side - the production aspect is ignored. Responses such as the following indicate

this embryonic application of the dual relationships of consumption and production in price determination:

"A house costs more because it is bigger... and also because the house takes longer to build than the motor car.

"The pair of shoes costs more because it takes a long time to make them but it's easy to make a bar of chocolate..."

It should be noted that such responses were not typical of this age group but a small minority of children made them. There are signs that this new quantification schema is a development of that used at an earlier stage by children where time was equated with durability in terms of the good's value. For some of the older children that schema is considered inadequate and a time criterion is being applied to the production process.

The interview also contained a number of other questions (11-20) designed to examine the nature, range and developments of the child's concept of economic value in slightly different ways. The remainder of this chapter will be devoted to analysing empirical data elicited by these questions in an attempt to determine whether or not they represent different ontogenic profiles with regard to economic understanding.

5.3 Value in terms of a specific good - Diamonds

(Question 11)

Question 11, relating to why diamonds cost so much, proved extremely important in that it did not involve a comparison, as was demanded in the other questions relating to economic value, but directed children to identify specific criteria determining one object's worth, in this case diamonds. In addition, the object was small, and yet valuable, which presented many of the younger children with a difficult dilemma as for many of them size was directly correlated with value.

Responses (QUESTION,11)

Primary One

Children were unanimous in regarding diamonds as valuable commodities and were quite prepared to ignore their small dimensions, even if they had used size as a critical factor in their assessment of other goods' values. Responses of the following kind were fairly typical of their age group.

- (1) "They are nice and shiny. (Are there any other reasons?) Don't know".
- (2) "Because they're nice? (What makes them nice? Can you describe them to me. What are they like?) Shining, hard, and glittery..."

The whole emphasis of these responses rested on the external characteristics with size, for all its power in determining price in other examples, completely abstracted from this cost schema. It would appear that these children had all come to accept that diamonds were valuable regardless of size and that other characteristics must be more important. Other physical properties therefore had to be examined and their shiny exterior became the major factor in determining their high value.

### Primary Three

All the primary three children still strongly favoured the diamonds' physical characteristics as value determinants. Gross descriptions such as "glittery" and "shiny" are replaced by more perceptive adjectives such as "pure" and "hard". While this reference to hardness did not extend to their cutting properties, some children did mention the functional attributes of diamonds. The following replies were fairly typical of this changing emphasis:

- (1) "They're dear because they're nice. They are used for putting in necklaces and rings".
- (2) "A diamond will cost a lot because if it goes with a necklace, the necklace could go with it. And on a ring... (Is there any other reason why?) I mean you could put a bit of glass in a ring. (Would that be as good as a diamond?) No! (Why not?) The glass would smash. (Ah. What about the diamonds?) The

diamonds will last longer..."

A very small percentage of responses alluded to the scarcity of diamonds and the labour - time inputs that are critical factors in determining their economic value. Mention was made of them being "hard to find" and reference was made to the fact that "men had to dig down deep for them". These responses were however atypical of primary three pupils.

#### Primary Six

Pupils in primary six responded in substantially different ways from primary three pupils. Where appearance is mentioned it is done in a very perfunctory way and little weight is attached to external factors as final determinants of exchange value. Pupils' responses indicate a more sophisticated awareness of the importance of economic interrelationships and pupils are able to trace these connections in a sequential and relational way. The following examples reveal this significant development in their assessment of the exchange value of diamonds:

- 1) (Why are they valuable then?) Because before they become diamonds they are thousands of years old... under the ground. (But are they not just bits of glass?) No, they are very hard to break. (Anything else about them?) You have to dig deep to get down to them.

(Does that make any difference to the cost?) Yes, because you need drills to get down to them and have to pay well for some of the price of what they dug down for them. (I see, because you just get a drill and dig down for them). No, you have to have a big company. Because you have to have a mine to get down to the diamonds..."

- 2) "You normally get them out of Africa. (Why does that make them cost a lot?) To get them to the countries costs a bit and also buying them. If you've got something to declare you've got to pay more. (Anything else that makes them cost a lot?) You have got to spend quite a long time shaping the diamond. (How is that done? With an axe?) No, no you need special equipment..."
- 3) "Yes they are so valuable and you find a lot of diamonds. They're in the ground and you've to dig for them. (Why does that make them cost a lot?) It makes a difference to the cost because some times you might dig in a piece of land that you had to rent or pay money to go on".

While not all pupils were able to engage in economic dialogues of this length, very few pupils in this age group were reliant upon the appearance as a prime correlative of exchange value. Even those who mentioned appearance went beyond the simple adjectival level previously mentioned. References were made to the "different kinds of colours in them" as compared with glass, and their "rainbow colours", but this kind of justification was always supported by other criteria as well.

The pattern of responses to this question, as can be seen from their distribution within Table 5.3, is not dissimilar to the one that emerged from the

comparative analysis of exchange value described earlier, with 90% of the responses stressing physical attributes. While the criterion of physical size is not appropriate in the diamond example, children at age five still construct their value schema on the physical properties of the diamond. Extrinsic or intrinsic factors are cited as value determinants with little regard being shown for social aspects of exchange worth. At primary three level only 54% of the responses founded their value schema on physical appearance and there are indicators that other qualitative factors are being considered as a basis of the value equation with labour/time, functionality and durability all figuring to some degree. Among the oldest children the consideration of scarcity and of labour time elements mark a qualitative change in evaluation of exchange with children beginning to develop connecting economic linkages. As in the comparative analysis of exchange value children in this age group have a wider understanding of the production process and are able to detach themselves from the narrow view point of consumption. They are also beginning to compound the various elements that are aggregated in a diamond's final cost. In addition there is an appreciable rise in the number of children that allude to the scarcity factor as a determinant of

economic worth. References are made to their being "rare" and to the fact that "they are difficult to find". In very rudimentary ways children appear to be appreciating the imbalance between demand and supply factors. As can be seen from the statistical findings children in primary three did not consider the scarcity aspect of a diamond's exchange value, concentrating far more upon the perceptible attributes of the stone.

TABLE 5.3  
PUPILS' CRITERIA FOR  
DIAMONDS' WORTH

	CRITERIA OF EXCHANGE VALUE				
	APPEARANCE	SCARCITY	FUNCTIONALITY % RESPONSES	DURABILITY	LABOUR/TIME
Primary I N = 20	90%	0%	5%	5%	0%
Primary III N = 30	54%	7%	13%	13%	13%
Primary VI N = 17	28%	26%	8%	12%	26%

5.4 Value in Terms of Supply and Demand (Q 12-19)

Questions twelve and thirteen asked children to explain why two specific goods, chocolate and skate boards had become dearer and cheaper: Questions fourteen and fifteen asked the children to cite examples of goods that had become dearer or cheaper in their daily lives. In spite of this wide scope, indeed it is arguable that this "freedom" was illusory - the younger children especially had great difficulty in responding to these questions. Very few indeed were able to give answers at all. The most common response simply identified "cheaper" with smaller and "dearer" with larger. This quantifiable response coincided closely with the use of the referant of physical size which typified many responses to the "worth of goods" questions. In the two younger age groups this kind of reply was the only one made. This may have been due to the open ended nature of the question and the limited experiential background upon which the younger children were able to draw.

At the primary six stage however, a number of responses was elicited which indicated that a very small minority of the children was able to identify some of the variables affecting the price of certain goods. The following examples represent a

sample of explanations of why certain goods have increased in price:

- (1) "Petrol has got dearer because there is less of it. (Why is that?) Because we've taken it to put in our cars. (What happens then?) If we've taken it, it isn't there any more, so we have to dig for it. (What happens if we dig for it?) It costs more and more."
- (2) ("Why should something become dearer?) Because there's a shortage of things you need to make it. (Can you tell me something like that?) Milk - because there might be less cows because they might have died for some reason."

Responses of this quality were unusual and the majority of the older children had difficulty, both in offering explanations for, and in citing examples of, dearer commodities.

Similar problems were experienced by the older children in their explanations of cheaper prices. It was not however beyond the capacity of a small number of them to offer economically sound reasons as the following examples attest:

- (1) ("Can you think of any reason why anything has got cheaper?) People won't buy it at the price it is. (So what have the people making it got to do?) They have to lower the price. (And what can happen if they lower the price too much?) They all get sold out too quickly."
- (2) (Why are skateboards cheaper than they were before?) Because they are not as popular as they were last year. Everybody used to buy them but now they are not all that popular. If they want people to buy them they've got to make them cheaper.

As can be seen from Table 5.4, pupils responses alluded to demand and supply factors with fewer of the older children using changes in physical size as an important factor in justifying price changes.

In explaining cheaper skateboards the great majority cited consumers' changing taste as of major importance while dearer prices were more often justified on changes in supply conditions. These questions caused children considerable difficulty and the number of children unable to offer satisfactory explanations was higher than in the other questions.

TABLE 5.4

REASONS WHY GOODS BECAME DEARER/CHEAPER

Class	% Responses		
	Physical Properties	Demand Factors	Supply Factors
Primary VI N = 13	16	42	38
Excludes "Don't Know" responses			

#### 5.4.1 Value in Terms of Supply and Demand (Q 16-19)

The paucity of data elicited from these questions prompted the researcher to probe children's knowledge more deeply by asking them when certain commodities were cheaper or dearer throughout the year. A number of articles with which children might be familiar was selected, including tennis racquets, bathing costumes, tomatoes and clothing. The children were then asked to select a time when these goods would be cheaper or dearer justifying their answers. Questions were framed in the following manner: (see interview questions in Appendix A).

Q.16 At what time in the year - summer or winter - would it be cheaper to buy a tennis racquet? Why?

Q.17 At what time of the year - summer or winter - would it be dearer to buy a bathing costume? Why?

Q.18 At what time of the year - summer or winter - would it be cheaper to buy tomatoes? Why?

Q.19 At what time of the year - summer or winter - would it be dearer to buy a suede coat? Why?

Even at the primary six stage pupils had considerable difficulty in responding correctly to these questions, although a small number of them were able to offer logical explanations; an example of which is the following:

("If I wanted to buy a suede coat more cheaply would it be better to buy it in the winter or the summer, Gillian?) The summer. (Why is that?) Because it is a fur coat or something to keep you warm. They are not likely to sell many in the summer."

(How does that affect the price?)

Reduce them.

(Does that happen to anything else? Would that happen to tomatoes?)

Yes, they would be cheapest just after the season had finished for them.

(What about the time when they are at their ripest?)

The prices would go up.

(Are you sure?)

If there is a lot of them, they will go down."

Responses of this quality were, however, atypical. It was more common for the respondents to offer an admixture of both correct and incorrect replies which revealed the difficulties pupils experience of objectifying their assessment.

These are exemplified in the following extracts:

- (1) A tennis racquet would be cheaper to buy in the summer time. (Why?) Because if you bought it in the winter time you would not get to play with it because it would be all snow.
- (2) Tomatoes would be dearer in the summer because people always buy them. (And that makes them dearer?) Yes.
- (3) A tennis racquet would be cheaper in the summer because it's the time of the year for

tennis. (Would a lot of people wanting them make a difference?) Yes there would be more people coming to buy them and that would make them cheaper.

- (4) Suede coats are cheaper in the winter because you get more customers coming in to buy them.

Of the twelve pupils who were asked these additional questions only three were able to answer all questions correctly with another three answering two out of the four questions correctly. The remaining six pupils were unable to provide more than one correct response. Responses to other questions relating to exchange value (see Chapter 6) offer some explanation of these results. Correct responses relating to price levels require understanding of both consumption and production factors and as has been demonstrated younger children tend to explain economic operations in terms of their own consumption activities. Until the child is able to detach himself or herself from this narrow viewpoint of consumption he or she is unable to appreciate supply variables.

At the primary six stage children appear to be oscillating between these two standpoints which results in inconsistent explanations. The lower order egocentric explanations cannot adequately explain price variations but the eleven year old has difficulty in abandoning them or modifying them

in response to changes in supply factors.

#### 5.5 Monetary Value (Question 20)

As can be seen from the questions relating to value and exchange no attempt has been made so far, to ask pupils to attach specific prices to goods. Comparative cost judgements, involving pairs of commodities and casual explanations have been elicited, but no questions relating to particular prices have been asked. There are signs that their responses in these areas are influenced by their awareness of prevailing price levels. Question 20 attempted to examine the consistency and accuracy of their prices indices, by asking them to identify goods in appropriate price ranges. In addition to this question children were given a price association test (see Appendix E) which gave them a further opportunity to demonstrate their price awareness. Table 5.5 records the distribution of their responses. Only correct replies were tabulated.

#### Primary One

Primary one children experienced the greatest difficulty in relating goods to appropriate price levels and this difficulty increased as the goods'

value increased. Their price concept was extremely limited and where answers were given in the upper monetary range they were widely inaccurate and uninformed. If children at this age have a construct of monetary value at all it is highly personalised, fixating upon particular goods and lacking coherence. Children who did produce responses to the upper monetary values had recourse to the same physical attributes of size and number used in other interview questions relating to value. Examples typifying their responses included the following:

(1) £1,000 - a house; £10,000 - 3 houses

(2) £100 - a shop; £1,000 - a bigger shop

Is there something else?

A big school; £10,000 - the world cup

£100,000 - 6 double decker buses.

The majority of children in this age group were unable to give meaningful responses in the £100,000 range and "don't know" responses were common.

### Primary Three

At the primary 3 stage the distribution of responses changed appreciably with children showing an improved capacity for citing acceptable responses in the £10 - £100 range and also in the

£100,000 category. The simplistic rationale, used by younger children, which correlated physical attributes with monetary worth has undergone modification. While its influence was still apparent there were indications in the responses of a greater awareness of variables, other than size, in determining monetary value.

TABLE 5.5  
VALUE IN MONETARY TERMS

Value	N = 20 Primary I	N = 20 Primary III	N = 15 Primary VI
	RECORD OF CORRECT RESPONSES IN % TERMS		
up to £10	35	45	93
£10-£100	10	40	93
£100-£1000	0	15	26
£1000-£10000	5	5	53
£10000-£100000	0	25	60

The following examples are indicative of these trends:

- (1) £10 - a small toy; £100 - a bicycle; £1,000 - a car; £10,000 - a big house:
- (2) £10 - a pair of shoes; £100 - a diamond; £1,000 - a flat:
- (3) £10 - a game; £100 - mini-metro; £1,000 - a cortina; £10,000 - 48 diamonds.

Quantitative factors are obviously still important

### Primary Six

At the primary 6 stage the responses indicated profound changes in all monetary assessments.

Very few children were unable to volunteer correct answers in £1-£100 ranges and correct monetary associations were markedly increased in £1,000-£10,000 ranges. Scale still influenced choice but more subtle factors were obviously appreciated in determining monetary values.

The following examples attest these changes:

- (1) (Anything that costs up to £10) A pet  
(What about £100?) A lounge suite  
(What about something that costs between £100 and £1,000?) A foreign holiday  
£10,000 A flat  
(And now £100,000?) A mansion  
(And £10000,000?) A gold mine

(2) £10? A wristwatch  
£100? maybe an armchair of some sort  
£1,000? a motor bike £10,000? a motor car  
£100,000? A Trident missile

(3) Something that costs £10? A watch  
£100? A bike  
£1,000? Furniture  
Anything in particular? A unit  
£10,000? A motor car £100,000? A holiday  
(It would be a good holiday for that) Yes,  
Disneyland.

It is also noteworthy that those who gave the most sensible answers to these questions also revealed a greater awareness of labour/time and material inputs.

The task facing interviewees in question 20 was a matching one requiring pupils to recall a variety of goods in terms of a number of different prices. For many pupils the recall element may have presented problems and their performance in evaluating monetary worth might have been impaired by their inability to recall, not their ability to evaluate the object's worth.

#### 5.6 Object/Price Association (Question Appendix E)

A variant on this question was therefore devised (see Appendix E) where both goods and monetary values were supplied at the same time. Initially it was proposed to use this grid with primary three and primary six children but it was quickly

apparent that primary three children had great difficulty in following the written instructions so the test was modified to suit their more limited reading ability.

Eleven cards were produced with visual representatives of each of the objects listed, and the child was given five envelopes with different monetary values. The five values included £1, £10, £100, £1,000 and more than £1,000. The child was asked to insert each object into the envelope which carried the price nearest to the value of each good. To ensure that the children were fully aware of what was required of them they were taken in groups of five and supervised by the interviewer as they performed the task. Children at the primary one stage experienced some difficulty in following instructions and in handling the materials effectively. They were organised in twos to provide greater oversight of the task.

Three frequency tables were produced as a result of this matching experiment and the following observations are offered on the data they represent.

Primary One

The most remarkable feature of primary one's responses was the extreme scatter of pupil responses throughout Table 5.6.

TABLE 5.6

PRIMARY 1's RESPONSES TO MONETARY VALUE QUESTIONS N = 21

OBJECT	£1	£10	£100	£1000	£1000+
Oilwell	4	4		6	4
Skates	5	4	5	3	4
TV Set	3	7	5	1	5
School	4	4	4	5	4
VTR	4	3	3	6	5
Motorbike	1	5	5	8	2
House	4	3	6	6	2
Cycle	3	4	5	4	5
Suit	3	6	4	3	5
Dress	2	5	5	6	3
Motorcar	4	1	4	1	11
	37	46	49	49	50

Only three boxes on the entire grid were not used by the children in their valuations. Only in the case of the motorcar were more than fifty percent of the responses correct. Children were shown to be incapable of valuing both low and high priced items. Consumer durables such as the TV set, the VTR, the cycle, the motorbicycle and the dress were the items most accurately priced, but none by the majority of children. The question of physical size and value has been already discussed, and it is interesting to note that while the two goods with the greatest dimensions are the school and the house, neither of these has been placed in the largest valuation category by the majority of children.

A number of suggestions may be offered in explanation. The pictures of the oilwell and the house may not have conveyed the scale of these physical dimensions to the pupil. The enormous measurements of a typical oilwell were probably unknown to most children unless they had actually physically seen one in situ or as it was being built. Indeed it is possible that some children in valuing it between one pound and ten pounds may have assumed it to be a toy. The house valuations are more difficult to explain as house size is more easily appreciated. The picture may again have

scaled down these dimensions.

### Primary Three

The responses of this age group as Table 5.6.1 reveals were less widely dispersed and showed more consistent pricing decisions. Some of the gross errors recorded by the primary one children were no longer evident. Oilwells, houses and motorcars ceased to appear in the £1 column while the oilwell and the school appeared more in the highest priced column. There was a tendency for responses to bunch around the correct price and also a degree of fairly consistent underestimation. This was most evident in the case of skates, schools, motor bicycles, cycles, dresses and motorcars. In the higher priced goods viz. oilwells and schools, children produced more correct responses than primary one children.

TABLE 5.6.1

PRIMARY III RESPONSES TO MONETARY VALUE QUESTIONS N = 16

OBJECT	£1	£10	£100	£1000	£1000+
Oilwell	1		2	2	11
Skates	8	3	1	2	2
TV Set	-	5	7	3	1
School	-	3	2	4	7
VTR	-	3	4	7	2
Motorbike	2	1	8	3	2
House		2	4	7	3
Cycle	1	10	4	1	-
Suit	3	10	1	2	-
Dress	7	4	2	3	-
Motorcar			8	7	1
	22	41	43	41	29

Primary Six

It should first be noted that this table differs from the previous two in having seven rather than five monetary values. It calls for more careful discrimination above the £1,000 mark than was asked of primary one and three children. In spite of this wider price range, children have narrowed their range of price indices. Far more responses

were focused in the correct price range than in the previous tables. The majority of children knew the correct prices of TV sets, VTRs, motorbikes, bicycles, suits and motorcars. Apart from the oilwell and the school, where the responses were well scattered, there was a noticeable concentration of responses around two or at most three of the monetary values of each good. Only two valuations were chosen in the case of skates, TV sets, bicycles and dresses. If one discounts single responses this trend was common in the remaining estimates.

TABLE 5.6.2

PRIMARY SIX RESPONSES TO MONETARY VALUE QUESTIONS N = 26

OBJECT	£10 or Less	£11-100	£101-1,000	£1,001- 10,000	£10,001- 100,000	£100,001- 1,000,000	£1,000,000+
OILWELL		4	6	3	4	4	5
SKATES	24	2	-	-	-	-	-
BLACK/WHITE TV SET	-	14	12	-	-	-	-
SCHOOL	-	-	2	9	9	5	1
VTR	1	5	16	4	-	-	-
MOTORBIKE	-	1	17	7	1	-	-
HOUSE	-	1	1	13	9	1	1
BICYCLE	-	19	7	-	-	-	-
SUIT	9	15	1	1	-	-	-
DRESS	15	11	-	-	-	-	-
MOTORCAR	-	-	9	13	2	1	1
	49	72	71	50	24	11	8

## 5.7 Conclusions

Taking account of the findings or responses to exchange questions there is evidence that the exchange value concept evolves in a stage-like manner, involving different location and quantification indices. In the first of these the perceptual cues pertaining to the object's appearance, particularly size, are essential criteria for determining its value. In the second stage, involving primary three children, the indices have changed appreciably and children view the physical attributes in terms of consumption. A more general sophisticated quantification index is also developed with an object's functional importance being assessed in relation to that of other goods. The functionality criterion, however, is also combined with a durability index where the object's time scale is used as a direct correlate of its value. The oldest children, while still influenced by the object's functionality and durability, begin to assess its worth from the standpoint of production, with raw materials, time and labour inputs being compounded.

There are grounds for asserting that these stages exhibit the four criteria advanced by Piaget as being characteristics of cognitive development. Firstly, they represent qualitatively different

ways of conceptualising exchange value by children at different age levels. Secondly, the coincidence of these different conceptualising modes with the different age ranges suggests that they occur sequentially. Further longitudinal analyses are needed to substantiate that tentative conclusion and some such evidence will be advanced in chapter six. Thirdly, there are grounds for regarding these modes as being identifiable constructs in their own right. Their applicability across a whole range of objects and their parallels in other areas identified by Piaget furnish evidence for considering them as structured wholes. Finally, there is evidence that these stages represent hierarchical integrations. The highest stage, that drawing upon production inputs, represents a more powerful tool for economic analysis than the reification construct or the consumption indices. This does not, however, mean the complete rejection of the less powerful schemata. Elements of the lower order schemata are often incorporated in the higher and a dialectic process occurs.

These results, while not going so far as to confirm Piagetian findings, may be interpreted in the following way. The equilibrium of each stage is gradually disturbed by the assimilation of new criteria that force the child to modify his or her

concept of exchange. For example, size is still advanced in stage two, but is quickly superseded by functionality and durability indices as these are likely to yield more acceptable results. Within each stage one is conscious that a dynamic process is occurring influencing both the social environment and the evaluational development of the child with assimilation gradually giving place to accommodation. Out of these multiple interactions the higher order exchange value construct emerges.

The responses to monetary value questions (Q20 and Appendix E) are less easy to interpret and are not wholly consistent with the pattern described above although they do exhibit similar underlying trends.

In offering their own matching items to satisfy the different price levels the youngest children relied heavily upon the goods' physical properties.

Primary three children showed signs of modifying that position although physical attributes still played a part in their price indices. The oldest children however revealed a sophisticated and discriminating capacity by producing more consistent and accurate responses across the whole range of prices. Their selections of goods indicated an awareness of price graduations which were not correlates of quantities but of social and economic demands. Diverse commodities such as

holidays and diamonds were cited as monetary examples by the oldest children.

Two final observations require to be made. The first highlights a curious anomaly relating to the exchange value concept. While to the adult the concept of a good's exchange value is only meaningful in a social and economic context, to the young child its worth is synonymous with its physical attributes. Only at stage two does the child modify this complete dependence upon an object's reification in accepting human needs as an important factor in determining its value. With the evolution of the third stage the child's viewpoint shifts from consumption to production but still his or her explanations draw strength from the preceding reified stage with the good's raw materials inputs and/or labour/time factors being cited as the quantitative elements determining its worth. In short the physical dimension although displaced, still exerts an influence in the child's social compendium of exchange value. The anomaly lies in the child's development of the value concept which appears to reverse the usual Piagetian order. Value criteria of physical properties for the youngest children are succeeded by personal and social factors at the primary three levels and are conjoined in an almost dialectical

process with production variables at the primary six level.

A concluding statement requires to be made on the child's understanding of demand and supply variables. As only primary six children were examined on this study it is not possible to analyse cognitive development in relation to age change. It is apposite to draw some comparisons with primary six children's comprehension of circular flow and demand and supply factors. In both situations the child must appreciate the importance of reciprocal relationships. As has been demonstrated children view exchange from the standpoint of consumption and have some difficulty in according the seller an economic role in commercial transactions. By primary three there is a growing awareness of his economic functions and some appreciation of the economic ramifications of the money flow generated by exchange between buyer and seller.

Demand and supply factors present the child with even more complex problems as they are less visible than those produced between buyer and seller. The store provides children with a focus for buying and selling with which he is relatively familiar while market interactions have a more abstract dimension.

Children had great difficulty in providing correct responses to demand/supply questions. Few children were able to justify a rise in price in terms of an increase in demand or a fall in supply, or a fall in price based upon an over-supply or a decline in demand. Inconsistencies in their responses were common and their responses oscillated wildly.

Whether these erratic responses were attributable to child's incapacity to decentre himself or herself from the situations upon which or she had to comment is open to doubt. There is evidence however, indicating that primary six children have considerable difficulty in understanding the relevance of interacting variable. Feffer's research (1959, 1966, 1970) on "decentring" and cognitive development have an application in the area of economic cognition. He argues that "decentring" occurs at different levels of cognitive maturity and can be applied to the structuring of events. The dovetailing of responses involved in effective social interaction requires that each participant modify his/her behaviour in anticipation of the other's reaction to this behaviour. In order to anticipate accurately this reaction one must be able to view this intended behaviour not only from the other's perspective but also from one's own perspective at

the same time. Primary six children experienced difficulties in viewing the perspectives of demand and supply simultaneously. They tended to oscillate between the two perspectives and to adopt a sequential approach with one of the perspectives being considered with little reference to the other.

## CHAPTER 6

### THE CONCEPT OF EXCHANGE

Exchange is a central concept in economics and together with consumption, distribution and production, has been used as a major sub-division of economic activities. It is definable in terms of a transfer of a commodity or service from one person or institution to another in return for a commodity, service or money. Adam Smith regarded exchange as an innate human propensity "to truck, barter and exchange one thing for another" and while modern sociological and anthropological research would dispute the alleged a priori nature of the existence of the concept, it is of fundamental importance to economic understanding. As Polanyi (1957) avers economic exchange must be understood as a socially instituted process, dependent less upon the form of individual behaviour than upon the presence of definite motivational preconditions. Motives of self-interest may exist, but unless they are regularised and directed within a market system they will not produce an exchange system. Considerable variations are to be found in different cultures pertaining to the degree to which exchange relations are integral to the distribution of goods. It is not, however, the intention to engage in cross-cultural evaluation of these multiple exchange patterns: it is merely pointed out that exchange must be viewed as a socially constructed category and not merely a product of man's "natural" self-interest. Its

development as a concept in the course of cognitive socialisation however appears to be more important in this investigation.

#### 6.1 Development of Exchange Concept

A child's early notion of exchange does not necessarily imply economic relationships. Its currency is far wider and applicable to quite diverse activities, involving brothers, sisters and peers. Exchange transactions can often embrace intangibles such as friendship, threats, secrets, favours. "I'll be your friend if" is a powerful inducement when tricycles or dolls are coveted, and it often leads to successful exchange with younger children. An understanding of the basic notion of reciprocity appears to be fairly well developed in the five year old child: that X's performance of an action for Y is conditional upon Y's performance of some action for X. There are also indications that the child is aware that a decision has been taken which is beneficial to his other interests.

It is not the intention to pursue these interesting and wider aspects of how the exchange schema developed but to concentrate on the elaboration of that notion with specific regard to economic relations. Accepting the pre-existence of an

elementary schema of exchange, we shall examine how that framework acts as a basic structuring principle in his or her cognition of economic activities. For the economic concept of exchange to be meaningful the child must include within the schema, money's functioning as a medium of exchange, an understanding of the rules governing economic exchange, and an awareness of motives that initiate and legitimise the activities that occur.

To probe the evolution of the exchange schema a number of questions were asked (21-24) relating to the reasons why and how money plays a part in exchange transactions in the store. Further questions (25-30) dealing with profit and money use were asked to gauge the limits of the exchange concept in the maturing child.

Children's responses at the different age level reveal substantial differences and it is proposed to examine these in some detail, beginning with those of typical five year olds in primary one.

#### Primary One (Questions 21-24)

While responses indicated an understanding of the notion of exchange in their family and peer relationships, it was evident that important

economic aspects of exchange were not included within this comprehension. Children at this age failed to appreciate the reciprocal element involved in economic transaction where value of something, in this case money, is measurable against something else of value - a good. The co-occurrence of the acts is explicable only by categorising non-compliance as immoral, as stealing. The question on why money had to be given at the store (Q21) elicited responses emphasising the moral imperative. Examples:

1. Because you would be stealing.
2. Because can't take things from the store without paying.

The great majority of replies were of this type and clearly indicated little grasp of the reciprocal nature of an economic transaction. In this age group children tend to view exchange from the perspective of the buyer with the moral imperative incumbent upon him or her. The exchange of money that coincides with the acquisition of goods appears to have a ritual significance. It appears to serve no rational purpose, with the action occurring in terms of a categorical imperative or because of a fear of punishment. See Table 6.1.

The moral defensive posture adopted by children here is rather similar to that taken up by children playing games investigated by Piaget in the "Moral Judgement of the Child" (1960). The less sense a rule makes to the child, the less it can be related to some need or subjectively understood purpose, the more sacred and objective it appears.

Further evidence of the five year old's inability to comprehend the rational workings of monetary transactions emerges from the question of what the person at the store does with the money given to him (Q22) as the following examples illustrate:

1. He puts it in the till. (Does he do anything else with it?) No.
2. They give you change and give you the thing you want. (What happens to the money then?) They put it in the till. Then they use it for change. (Is that all?) I don't know.

In seeing the store as the terminal point in the exchange transaction, the child has only a very partial grasp of the exchange schema. The act of purchase is regarded as self-contained and the child isolates it from the other economic acts that occur in the productive process.

Another common misconception that emerges from the questioning is that children think that money originates within the store itself. The bank too is regarded as original source of money not a place where money is lodged for safe keeping. Very few children mention work

as the means through which money is obtained.

Children within this age group do not conceive of money as a medium of exchange and so miss the vital factor that makes the pursuit of profit on exchange a meaningful endeavour. To make sense of exchange the child attempts to explain it in terms of a moral/legal imperative which Piaget identified in his research. The store is merely carrying out its appointed role - serving the public, and the storekeeper is obligated to serve the community and not act out of self-interest. This logic is applied by the child to workers who have to perform their social functions out of obligation not for material gain.

Such a construction of economic functioning of society is not surprising when one analyses childrens' responses relating to the circulatory flow of money. Money linkages between the productive sectors are hardly possible when the storekeeper appears to sterilise money in the till or merely returns change to consumers of goods.

#### Primary Three (Questions 21-24)

At this stage children's responses exhibit significant differences and there are indications that the reciprocal element implicit in exchange is being appreciated. Replies to question 21 stress the goods are "worth"

something and that something is identified as money which compensates the store for the loss of the goods. Other responses explain the transfer in terms of direct substitution of one thing, money for the other, a good. Only a small proportion of replies justify the transaction in terms of the moral/legal imperative which the great majority favoured at the primary one stage. (See Table 6.1).

TABLE 6.1  
REASONS GIVEN FOR MONEY PAYMENTS ON EXCHANGE  
EXPLANATIONS (Q21, 22)

	<u>Non-Reciprocal</u>	<u>Reciprocal Relationships</u>	<u>General Economic Factors</u>
	(1) Moral/Legal (2) Money for Money	(1) Money - Goods (2) Money - Values	Stores' Expenses
		% Response	
P I N = 20	(1) 72% (2) 28%	0%	0%
P III N = 39	(1) 20% (2) 10%	(1) 30% (2) 35%	5%
P VI N = 24	(1) 0% (2) 0%	(1) 25% (2) 5%	70%

While the obvious explanation would seem to lie in the greater practical experience these older children have had in commercial transactions and there is no doubt that this is important, there are grounds for arguing that

this is too simplistic a construction to place upon the evidence. Children's replies indicate that their awareness of reciprocity in commercial transactions is not merely an experiential development. Whereas in the earlier age group children have great difficulty in comprehending the role of the seller in the exchange transaction, the older children appear to be able to make this distinction. Piaget (1928, 1950) argues that the younger children's incapacity for relational thinking is attributable to egocentricity which he considers of major importance in the study of causality. "There are for him two forms of egocentricity, logical and ontological.. Just as the child makes his own truth so he makes his own reality; he feels the resistance of matter no more than he feels the difficulty of giving proofs.. At the root of both lie some illusions, namely confusion between one's own thoughts and that of others and confusion between the self and the external world". Trapped within this web of intellectual egocentricity. Piaget argues that the child's capacity for relational thinking is severely limited. More detailed consideration of the relevance of egocentricity to the child's concept of exchange will be given in the concluding parts of this chapter.

There are also indications that the older children have a greater capacity for abstract thinking. Critical to the idea of exchange is the judgement of equivalence. Unless one is able to abstract some common denominator - called

"Value" from the objects involved in exchange the transaction ceases to have an economic dimension. This is no simple process as the responses of five year olds reveal. They have to work within a perceptual strait jacket with spatial dimensions dominating evaluation (see previous chapter). The younger child cannot therefore make economic sense of transactions involving vastly disparate commodities such as money and various goods, as he or she is unable to grasp the notion of value which is a construct of these objects' relationships to certain human activities. Economic "perspectivism" is however clearly discernible in the responses of primary three children to question 21 (see Table 6.1) in which the pupil is asked what the storekeeper did with the money received. No longer does the older child view the storekeeper only from the standpoint of the buyer, functioning as a provider of change for other buyers. While the older child does not yet see him as a specialist buyer of goods with all that role connotes, he or she does mention spending patterns which include food and family needs. This marks a shift from the isolated and narrow consumer viewpoint, to one which attempts to give an economic locus to the seller as well.

Responses could be subdivided into two categories. (1) Those which merely project the consumer's buying habits onto the storekeeper and obviously neglect his specialist expenditures; and (2) The others, which refer to his

specialist buying practices that he must pursue to achieve his business objectives.

Typical of the first category are the following in response to question 22.

- (1) He spends it on clothes, food, rings, television and toys
- (2) He uses it to keep himself living

Those in the second category are typified by the following:

- (1) I think he buys more food and sells it again and again
- (2) He puts it in the till. It stays in the till, then he puts it in the bank. (Does it stay in the bank?) Yes.
- (3) The man puts it in the till. (Does it stay there?) No, he gives the change back.

Despite this marked shift in the child's thinking from the individual consumer's standpoint it would be a mistake to read too much depth into this awareness of the seller's role.

Even the most convoluted explanations however, fail to make full sense of the economic linkages. The circulatory flow tends to end up at the till or the manager as these extracts attest:

"They put it in the till. (What happens then? Do they just leave it in the till?) No. (What do they do then?) When people need change they give them it. (Is that all that happens to the money?)

What happens to the money when the shop closes?  
The man gives it to the manager. (What does he do with it?) Takes it home, puts it in a jar and brings it back the next morning".

Pupils' responses generally reveal an imperfect awareness of the circulation of money, commodities and the interdependence of economic relationships.

## 6.2 PROFIT

### Primary Three (Questions 25-26 relating to profit) Table 6.2

Questions twenty five and twenty six relating to profit and its justification were beyond the capacity of the primary one children and the responses of primary three children were unanimous in rejecting profit as illegitimate. No child was prepared to defend the propriety of the transaction either between friends or between shopkeeper and consumer. Similarly the banks' entitlement to interest charged on money lent was rejected as morally indefensible. (Questions 25-26) Responses from this age group were typified by the following:

- (1) No, because I would let them give me the right price. £1. No more.
- (2) No, because he would be cheating them.
- (3) No, because it was £1 and if you sell it for two pounds it is stealing.

Pupils do not at this stage distinguish between the two

different transactions and concentrate their attentions upon the disparity in the monetary transaction only.

In both transactions the £2 charge was regarded as indefensible. (See Table 6.2). children were also unprepared to accept any figure above £1 level as being acceptable. Nor did the status of the participants in the exchange influence the children's appraisal of the legitimacy of the transaction. Both the friend and the storekeeper are expected to conform to the same code of conduct. The transaction is only conducted according to the proper principles when an exchange of equivalents is effected. To exchange the object bought for £1 at a figure greater than that sum violates the canon that equal value should be given equal value and is therefore summarily rejected by primary three children.

Even the introduction of a number of other extenuating factors failed to change their opinions on the moral indefensibility of the higher price. It was suggested that a friend had queued all night for a ticket for a pop concert or a football match. This however was not considered a sufficiently powerful factor to warrant a price increase.

Primary Six (Questions 21-24)

The pattern of responses underwent considerable change at this stage and there were clear indications that pupils were more fully aware of the interdependence of economic relationships and functions. As can be seen from the table 6.1 responses favouring the moral/legal imperative aspect of the trading transaction in the store no longer predominated and explanations located the exchange in a wider economic context. While previously children's explanations were set firmly within the physical and economic confines of the store, they now tended to incorporate economic linkages outwith that area of economic relationships. The following examples are indicative of this growing awareness of the wider economic transactions that govern exchange:

- (1) "I think he would put some to fuel bills and things like that. He would give quite a lot to restock the goods and things like that. (I see where else would the money go?) Maybe in his bank account. (Would he keep it if he was store manager?) Not for very long, I don't think. Because he'd soon have to buy more things..."
- (2) He puts it in the till and then it goes to the bank. (Does it stay there?) No, he gets it from the bank to pay for goods in the store.
- (3) He puts the money in the till. (Is that all that happens?) No he puts it in bags and a van comes and takes it to the bank. (Does the money stay in the bank?) He takes some of it to pay workers and buys things. He has to share it out with other people.

These responses reveal a greater appreciation of the

dynamic aspects of the economic system than is shown by the replies of primary three pupils. It should also be noted that their replies concentrated more heavily on the need for money to replace the store's goods rather than upon its running expenses.

Not only were the older children more fully aware of factual details relating to these economic relationships they also appeared to make qualitative changes in their mode of reasoning.

(Questions 25, 26)

TABLE 6.2

CHILD'S CONCEPT OF PROFIT (Q25, 26)

Class	No Profit £1 sale for £1 purchase		Profit £2 sale for £1 purchase	
	Individual	Store	Individual	Store
PIII N=39	100	100	0	0
P VI N=24	90	30	10	70

Analysis of the responses of primary three and primary six children to Questions 25 and 26 indicated significant differences in use of economic knowledge. With many of the younger children appreciate that the storekeeper used the money he received from consumers. Below are some responses when these situations were hypothesised:

- (1) (Say you had queued all night for your £1 ticket and because you could not go you decided to sell it for £2. Would that be fair?) It might be fair if I had got wet and had stood all night.
- (2) (Could you sell your ticket to your friend for £2 if you'd bought it for £1?) No. (Even if you had to stand in the rain all night?) No.

In the case of the shopkeeper and his profit margin there is not quite the same resistance to the charging of an increased price by the retailer and a clear majority of the primary six children supported it as a defensible act although a minority were not prepared to legitimise it.

Examples of responses to the question of the retailer's profit were typified by the following:

- (1) "The man at the store can charge more than £1 as he has to pay for all goods he has to buy for the store."
- (2) "He can charge more because he has to pay for all the things in the store. (What things?) The lights, the food and the people's wages."

"It would be all right for him to sell it for a bit more

so as to make a profit. (Why should he make a profit and you can't from a friend?) Because the shop needs more money to keep going."

There are indications that children at this age are beginning to differentiate between an economic activity at the level of personal relations and a similar activity taking place in the market. This distinction in pupil responses was not a feature at the primary three stage. It would however be an overstatement to say that this dichotomy between the private and the public sphere is clear cut. Older children still hedge their answers with numerous qualifications, indicating how difficult they find the resolution of the profit question. Their responses indicate that profit must merely cover expenses of the store and the payment of employers' wages. The return to the storekeeper over and above these costs is not regarded as a legitimate element in their concept of profit. His risk taking or his organisational skills are discounted in the pupils' computation of final profit.

### 6.3 Questions Relating to Interest and Banks

(Questions 27-28)

Responses to the questions 27 and 28 relating to banks further reinforce the impression that children are reluctant to accept or legitimise the profit element in economic transactions. Primary

three pupils were unanimous in declaring that a £100 loan from the bank should impose only a £100 repayment upon the lender. Simple equivalence of quantities satisfied this situation and there was no justification in their rationale for extra payments.

### 6.3.1 Interest

#### Primary Six

At the primary six stage, however, the unanimity is broken and there are variations in the response. While for some the equivalence schema still provides a reliable yardstick, for others it is rejected for more subtle economic costs that are integral to the provision of a service. Comments such as the following reveal the children's growing awareness of the need for more aggregative costing:

(1) "You should pay a bit more. (Why?) Because of interest. (Why?) Banks have to make a profit because if they didn't make a profit they couldn't pay the people and they couldn't pay bills they had to pay".

(2) (Would it be the same, or more or less than £100. More because you have to pay interest on it. (Why is that when it's just the same £100 you gave the bank?) Because the bank has to make money it loans to you. It's got to pay for the things that you use in the bank like the tills, and the safe and the carpets and the tables".

As in the case of the storekeeper the older children

began to aggregate the various costs that have to be borne by the bank and these became the basis for a sum greater than £100 being a justifiable return to the bank.

They do however appear to have greater reluctance to compound the variables than they did in the shop example.

This may be due to the fact that the supermarket exhibits its functions and costs more explicitly than does the bank, where most of these are more subtle and less easily assessed.

This partial understanding of the interest concept was similar to the child's limited awareness of the economic role of the storekeeper alluded to earlier in this chapter. The older children alone began to comprehend the economic reasons why he had to charge more for retail goods than he acquired them for wholesale. In the storekeeper's case however the linkages are easily perceived in the stores' running costs as children have direct experience of shopping. The bank's economic connections with the business world are more subtle and less perceptible, so it is not surprising that a child's experience offers him or her fewer criteria for making accurate judgements.

### 6.3.2 Questions Relating to the Functions of the Bank

(Questions 28-30)

The questions relating to why people put money in

the bank and the purposes to which banks put this money elicited a varied set of responses which indicate how children are beginning to evolve their primitive representation of the economic system. The questions were designed to allow children to trace economic relationships and to see whether they saw the importance of reciprocal connections.

### Primary Three

For primary three children the supreme reasons for depositing money in the bank were safety and security. Responses such as the following indicated their preoccupation with the need for protection of financial resources:

- (1) Sometimes people, if you don't put money in the bank so you can get robbed. Robbers come and steal your money but if it's in the bank, it's usually in the safe and it has a special code and only the people that work in the bank know the code.
- (2) To save it. (Is that the only reason? Could I not just put it under my bed and save it?) Then you might forget it.
- (3) Because they don't want to leave it lying around in their purse. (What's wrong with that?) Because if they left it lying around and a burglar was in the store or any place they could just come in and take it away.

These explanations reveal how difficult it is for children to make sense of the circular flow of money and

the reciprocal economic advantages that accrue as it is routed through the banking system. Children appear to be preoccupied with the physical aspects of the money itself and the safe deposit side of banking. These comments indicate clearly that children at this age tend to see the banking deposits as conferring no advantages upon the bank but merely benefiting the depositors. In short, there are no reciprocal financial benefits in the transaction, and the bank occupies a position of terminal importance in the accumulation of money.

#### Primary Six

At the primary six stage there is evidence of a shift in this perspective. Safety and security were supplemented by an awareness of financial advantage accruing to the bank. The older children are still not clear about what happens to the money deposited but some are aware that the bank lends money to people. Some too know that interest is paid on money deposited in the bank and they are prepared to mention interest as a reason for the depositing of money.

It was only primary six children that translated the bank from a simple terminal money depository to a financially dynamic institution. Even in this age group, only a small minority alluded to its intermediary role as a facilitator of financial activity. Even the most articulate and well informed older children had a rather

static concept of money when it was lodged in the bank as the following extract attests:

- (1) They keep the money in the safe in special compartments with your name on them... (Do you get the same notes back that you put into the bank?) I think so. (So everyone has a little pile of their money in the bank ready for them to get the same money back?) Yes. (How does the bank lend money then, Colin, if that's the case?) They would have to give you less back...

Even where older children have correctly answered Q27, justifying a bank's entitlement to a greater return on £100 lent, they fail to utilise this awareness in answering question 29. This would seem to imply that their understanding of the concept of "interest" is extremely tenuous. It is not seen in an economic context with the bank's profit arising out of differential interest rates. "Interest" merely means that more money is given back to the bank than was borrowed from it. This narrow view of interest prevents the children from seeing it as a meaningful concept, so enabling them to articulate the bank into the economic system as both a borrower and lender.

Consequently, they simply verbalise "interest" in their responses using it to explain the bank's charge upon use of the client's money but fail to see how differentially the rates of interest bring the banks a working profit margin.

#### 6.4 Conclusions

The concept of exchange is of pivotal importance in economics and children within the age ranges of five to eleven years experience difficulties in grasping it. Implicit to its understanding is an appreciation of reciprocity. Unless one has a construct, involving the different roles of the buyer and the seller one has not a meaningful exchange schema. In the youngest children it is doubtful if such a perspective of the dual roles is present and it is perhaps appropriate here to examine the findings of Piaget on the subject of egocentricity. There is no doubt that the youngest children in this investigation see exchange solely in terms of the buyer. Whether or not such a standpoint is determined by egocentricism or not, is not within the scope of this inquiry. It does however, require us to examine Piagetian findings on how egocentricism affects cognitive development in other disciplines. These parallel studies may provide answers to some of the questions being asked in this inquiry into how economic cognition develops.

According to Piaget (1928, 1950) egocentricism, characterises the young child's functioning in virtually all spheres of activity. With regard to

the social sphere Piaget (1950) described the young child's early encounters with social communication in the following way: "However dependent he may be on surrounding intellectual reference, the young child assimilates them in his own way. He reduces them to his point of view and therefore distorts them without realising it, simply because he cannot yet distinguish his point of view from that of others through failure to coordinate or group the points of view. Thus both on the social and on the physical plane, he is egocentric through ignorance of this subjectivity". Elkind (1967) put this even more succinctly: "For the child there are no problems of epistemology". (p 1028)

As the child matures, he or she becomes more facile in various forms of cognitive skills. In addition to the effects of motivation of biologically programmed "structures" the child gains cognitive facility because of the changing nature of his interaction with his and her social environment. This egocentric erosion, particularly after 7 or 8 years, is brought about through reinforcements, both positive and negative, arising from interactions with peers. Flavell (1963) put it thus: "In the course of his contacts (and especially his conflicts and arguments) with other children, the child increasingly finds himself

forced to re-examine his/her own percepts and concepts in the light of those of others, and by so doing gradually rids himself/herself of cognitive egocentrism." Piaget (1928) highlights the importance of the social dimension in accelerating the decline of egocentricism: "The social need to share the thought of others and to communicate our own with success is at the root of the need for verification."

This remission of egocentricism is not just a cognitive phenomenon. The disequilibrium initiated by communication conflicts also possesses an affective dimension. Langer (1969) draws attention to the child's feelings and argues that this sensitivity coupled with intellectual dissatisfaction, is necessary before cognitive change and development can occur.

There are numerous examples of how this decentring incapacity reveals itself in the behaviour of pre-operational children with the water level experiment perhaps the best known.

Ability to decentre has been studied as a function of several variables. Success in decentring has been shown to correlate with age. (Elkind & Scott 1962; Houssiadas & Brown 1967; Stuart 1967;

Sullivan & Hunt 1967). Studies by the same three groups of researchers have also established positive relationships of decentring with regard to intelligence levels. Moral and casual judgements have also shown similar correlations. Looft (1972) and Rubin (1973) tested the "centration hypothesis" using correlational analysis found significant interrelationship between the decline of egocentricism and experience and maturation. Weinberg (1963) has established positive correlation of decentring within evolution of categorisation ability. Finally Danziger's kinship relationship study (1957) reveals the difficulty experienced by the five year old in relating to how own brothers and sisters in the following example. While experiencing no problem in responding affirmatively that he had a brother, one child denied that his own brother had a brother.

These findings on egocentricism have a pertinence to this research in economic comprehension. Unless the child is able to "decentre" himself or herself from the economic concept of exchange the schema for understanding is deficient. A uni-dimensional view of exchange solely in terms of the child - the buyer - is both incomplete and inaccurate. Children of five years of age have difficulty in grasping the relational aspects of exchange, while

those of eight years of age indicate an awareness of interaction and reciprocity with the buyer and seller each gaining economic advantage from the transaction. It is only when this level of detachment is achieved that the child appreciated the different view points of the participants.

CONCEPT OF LABOUR

As one of the factors of production, labour is like other commodities in that it can be bought and sold in the market place and its distribution in terms of competing alternatives is determined by prices obtaining in the market. Moreover in the modern economy, highly sophisticated specialisations of labour have occurred which have resulted in hierarchical organisation with complex stratifications in terms of relative value and status. Obviously an understanding of these complicated patterns of distribution takes time to develop, but little is known of how and when this development takes place. This chapter attempts to question children in their cognition of certain key concepts relating to work and leisure, to hierarchical relationships in work situations, to occupational stratification, and to income differentials and wealth.

Work and Leisure

To the economist labour is any physical or mental effort performed for financial return and would seem to be an easily recognisable concept: but it would be a mistake to regard labour too simplistically. Today labour, in becoming a commodity which is exchanged for income, has lost its previous autonomy in being an activity for the direct satisfaction of needs. Work has developed a separate identity marking it off from family and private

life, and making the work/leisure dichotomy a feature of modern society. Two critical factors differentiate these activities. Firstly, work involves a compulsive rather than a voluntary element, with motivation of an extrinsic nature, eg. in the form of a wage being a quid pro quo. Secondly, the worker usually experiences some loss of autonomy in respect of time and control of his efforts and products. In short, work involves some loss of control and individual freedom not sacrificed in leisure activities.

For these reasons work is regarded as a separate entity whose *raison d'être* is the acquisition of money to sustain one's family needs and leisure activities. Employment is a necessary evil for survival in the modern economy. While these facts appear self-evident to the adult, to the child they have no such obvious meaning. While the adult environment reinforces them, significantly, the pupil's social experience is far removed from the sphere of work. What effect has this upon a child's conception of work and related concepts?

The questions in this part of interview schedule were designed, firstly to examine at what age level children conceptualise work in economic terms: secondly to investigate their understanding of occupational status and thirdly to study whether they have any economic rationale for differential incomes. The questions

appearing in the interview were therefore sub-divided under the following headings:

The questions may be divided in 3 sub-sections.

#### 7.1 SECTION 1 WORK AND THE CHILD

Questions 31-34 were of an exploratory nature to see how much children knew of their own parents' occupations and to elicit definitions of work as they saw it.

#### 7.2 SECTION 11 (OCCUPATIONAL STATUS)

Questions 35-38 moved from the personal and particular to the more general and covered their impressions of occupational status. They were required to offer their criteria for classifying occupations as either "good" or "bad"; and were then asked to apply these criteria to a selected number of occupations listed in question 38.

#### 7.3 SECTION 111 INCOME DIFFERENTIATION

The final set of questions (39-42) concentrated attention upon income differentials and their justification. Questions 39, 40 required children to express a general view on the justification for differential rewards for labour. Question 41

presented them with pictorial situations where they were expected to make decisions on differential incomes of employees, justifying these decisions on rational criteria. A wide variety of factors influencing income differences were exemplified in these questions such as supply and demand, skills, education, training, dangerous and unpleasant work. The last question<sup>42</sup>, was also pictorial, and related to a number of different occupations which were represented on 12 cards. The children were required to arrange these in a ranking order and to justify their differential income rankings.

(See Appendix C).

While the original intention was to cover all children between the ages of five and twelve, it was quickly apparent that five year olds were unable to make meaningful responses to the more difficult questions (34-42), so the investigation was confined to the primary three and six children only with respect to these questions.

## 7.1 SECTION 1 WORK AND THE CHILD

### Primary One

Children in this age group rarely viewed work as a

means to an economic end - the earning of income. "Job" was definable in terms of "anything done" or "had to be done" and most of their responses used the school environment for their examples. "Jobs" at school cited in their examples included "doing sums".

Question 34 asking them to differentiate between work and leisure reinforced the same trends. Children stressed the intrinsic value of the actions performed, disregarding the social context or motivation. Typical replies include the following:

- (1) You play games if you are playing and you work hard if you are working.
- (2) Work is hard and play is fun.
- (3) Work is like doing sums but play is painting and sewing.

### Primary Three

Different forms of explanation occurred at this age group, with emphasis upon the directive aspects of work and references to rewards. Eight year olds' responses included the following:

- (a) "Playing you can do all sorts of things, handstands and things, but at work you have got to do things, you're told to do so".
- (b) "Working is better than playing because you get stars for working".

(c) "Adults get harder work than children. They get money".

The children are now aware of the reciprocal aspects of work in that money is a return for labour and "job" is no longer attributed to all forms of activity. For examples they still draw upon household experience and the school environment although there are exceptions where work is contextualised in the labour market.

#### Primary Six

By this age children have a much clearer concept of work. Responses emphasising the reciprocal nature of work for wages were common and the idea of compensation for effort and time spent was readily accepted as a feature of employment. The social experience of the classroom was no longer the main context for examples as the following extracts attest:

(1) "Work is different because you have to keep doing it even if you don't like it. You get paid for doing it".

(2) "You can play when you like but when you work you have to do what you are told but you get money for working".

#### 7.2 SECTION 2 OCCUPATIONAL STATUS (Interview questions 35-38)

From a very early age children express views that indicate they have a perception of occupational differences and it is important to try and assess how significantly this awareness affects their thinking on income differentiation. A number of researchers have already conducted inquiries into how children perceive social stratification. Jahoda (1959), Tudor (1971), and Stendler (1949) have employed pictorial procedures in their analyses. Tudor used matching photographs of men, women, houses and cars at different socio-economic levels; Jòhoda asked children to assemble "socially congruous" pictures from puzzle-like drawings and Stendler also used pictorial selection involving class distinctions.

A further variant upon this research has been developed by Weinstein (1958) who has specifically concentrated upon children's perception of occupational status. He asked 10, 11 and 12 year olds, "Suppose there were 100 grown-ups in a room and you wanted to find out how important each one was. What would you want to know about them?" He discovered that all respondents mentioned occupation either alone or in conjunction with some other criterion, and in a further inquiry asked children to give examples of jobs under the headings of "very important", "medium important"

and "least important". A 5-point scale classification of occupational ranking was used by Simmons and Rosenberg (1971) with children from grades 3 to 12. Lauer (1974) set children varying in age between 10 and 14 an occupational ranking task involving 14 different occupations. All studies found high correlations between adult and child evaluations of occupational status. These findings prompted this researcher to investigate whether similar reasoning to that shown by adults underpinned the children's selection of criteria for their ranking order of occupational status. To this end children were asked to express their views on "what made jobs better" (question 35) and then to classify jobs as "good" or "bad" in questions 36 and 37. These unstructured questions encouraged children to express their views freely without reference to particular occupations. Question 38, on the other hand, presented them with a more structured situation involving a triple classification of "good", "medium" and "not so good" jobs. Children were required to justify their classifications under these headings and their replies were analysed, tabulated (see Tables 7.2 and 7.5). A number of different characteristics were advanced including, responsibility, income, education, skill and training and consideration was given to how these

criteria differed with respect to the age of the respondents.

Discounting the 15% of primary three children interviewed who were unable to offer any criteria for differentiation between jobs, two major categories were identified as forming the basis for the classification of some jobs as better than others. The first of these alludes to the conditions which the work involves. Typical responses in this category were the following:

1. "Working in a shop with a till would be a better job because it would be quite easy. You just have to press the thing, you don't have to think".
2. "Selling cars would be a good job. If you fix cars you get all oil but if you sell them, you don't get oil".

The second category covers the level of income the jobs commanded. While many of the children's responses indicated aberrant notions about the rewards pertaining to different occupations they were ready to advance this factor as a critical one in placing a job into the "better" category. See Table 7.1.

### Primary Three

The two major criteria were "conditions of work"

and "income" with the former given greater prominence than the latter (see Table 7.1).

In referring to conditions of work the children adopted a highly personalised viewpoint. "Good" or "better" jobs earned their categorisation often as a result of some pleasant situation involving the interviewee. Nurses and doctors were cited in this category. Just as readily however, unpleasant associations, even with the aforementioned groups, could relegate workers to the "bad" category. Oscillations and inconsistencies of this nature were characteristic of these children's responses. These variations will be referred to again when the responses to questions are analysed.

#### Primary Six

Primary six children placed a greater emphasis on income as the significant factor in their classifications. The following responses exemplify this:

1. An electronics engineer is a good job because he is paid a lot of money for doing it.
2. A director of a board is good job because he gets paid a lot of money.

What was probably more significant was the way in which linkages were established between monetary

factors and conditions of service.

1. Some jobs are better than others because maybe one person is more qualified than others. (Could you give me an example?) A dancer is better qualified than a road sweeper. And he gets more money than a road sweeper because his job is more difficult to do.
2. My dad's a manager. He makes quite a lot of money from it. (Any other reason?) Yes, he enjoys doing it.

Primary three children rarely made associations of these kinds but tended merely to offer single statement responses.

Another feature of the older children's responses was their use of comparisons to demonstrate and justify a job's merits. Question 38 revealed this to a much greater extent and will be commented upon more fully when data relating to that question is analysed later in the chapter.

TABLE 7.1

CHILDREN'S CRITERIA OF JOB ASSESSMENT (Question 35)					
% Response					
	Conditions of Work	Income	Help- ful to Others	Functionally Superior	Skill/ Education Training
Primary III N = 17	50	36	7	7	0
Primary VI N = 17	42	49	9	0	0

The next stage was to allow children the opportunity of applying these criteria to a selected number of everyday occupations on a scale consisting of three grade values, "good", "medium" and "bad". The results of this grading exercise are detailed in Tables 7.2, 7.3, 7.4 and 7.5.

### Primary Three (Question 38)

A number of general observations can be made on primary three responses to question 38, see Table 7.2. Firstly, their replies were heavily weighted to the "good" classification. Of the eight occupations only one, that of "rubbish collector" was below 56% in this category and seven occupations were classified as "good" by the majority of the respondents. This meant that the other two classifications were used by only about 1/3rd of the respondents.

The ranking criteria used by the children also tended to be rather narrow in their range. Two categories predominated in pupil assessment: "conditions" and "helpful to others" with each category attracting an average response of 46% of the children's responses (see Table 7.3). Personal involvement, especially with regard to whether the employee hindered or helped the respondent, often

determined the classification. "Income" at 3% played only a peripheral role in the employee's rating and it appeared in only two of the six occupations while the other categories of "danger", "work/effort", "functional superiority" were barely mentioned. These findings contrast significantly with those recorded in Table 7.1 where "conditions of service" covered 50% of pupil responses and "income" 36%. "Helpful to others" and "functional superiority" each embraced 7% of total responses.

Finally, the quality of the responses merits comment. The majority of children responded in a very simplistic manner, with single sentence, mono-causal explanations. The pivot for their replies was personal experience. The following responses were typical of this age group:

- (1) The garage man is bad because if you go under the car you would get oil on you.
- (2) The rubbish man is good because you don't have to collect your rubbish.
- (3) The bus driver is good because he can take you to the bus station. (Why is that good?) Because if you have a sore leg you can wait at the bus stop.

Rarely did children in this age group offer more than one reason to justify their classification and their explanation was usually definitive in that no amplification was forthcoming after the statement

was made. It is noteworthy too that children did not attempt to compare or contrast any of the other employees with the one about whom they were being questioned.

TABLE 7.2

PRIMARY THREE: OCCUPATIONAL RANKING

% Response

N = 18

Occupations	Good	Medium	Bad
DOCTOR	94	6	0
RUBBISH COLLECTOR	17	28	55
POSTMAN	67	6	27
BUSDRIVER	67	23	10
WAITRESS	67	23	10
BANKER	84	6	10
TEACHER	70	11	17
GARAGE MAN	56	27	17
AVERAGE	65	16	19

TABLE 7.3

PRIMARY THREE: CRITERIA FOR OCCUPATIONAL RANKING  
 % Response N = 18

Occupations	Work/ Effort	Functionally Superior	Income	Danger	Conditions	Helping
DOCTOR		6			17	77
RUBBISH COLLECTOR					72	28
POSTMAN	7				18	75
BUSDRIVER	13		13		61	13
WAITRESS					50	50
BANKER				6	44	50
TEACHER			8		54	38
GARAGE MAN			6		59	35

Average = 3% 1% 3% 1% 46% 46%

Figures rounded up to whole numbers

## Primary Six

Marked differences are discernible in the primary six children's classificatory responses as well as in the criteria advanced to justify their decisions.

Firstly, there are important changes in the distribution of responses grading occupations on the three grade scale. The "good" category has ceased to have the heavy concentration of responses found among the younger children. An average of 65% in this category has given place to an average of 40%. This distributional shift was accompanied by a greater concentration of answers favouring the "medium" and "bad" categories. This will be used later in the chapter as evidence of qualitative changes in the thinking of the older children.

An explanation of these classificatory changes is found in the widening range of criteria used to justify these occupational rankings. While the older pupils still attach a considerable importance to "conditions" and "helpful to others", (cf Table 7.3) they also import a number of other variables, disregarded by the younger respondents. "Income", "Work/Effort", and "Danger" are now compounded in the overall assessment. see Table 7.5

"Income" is introduced in some cases to boost an occupational ranking, as in the case of the doctor or in other cases such as the rubbish collector to diminish the ranking.

These findings in Table 7.5 reveal significant differences from those recorded by the same primary six children in Table 7.1 where the categories of "conditions of work" and "income" contained 92% of the responses. "Conditions of service" are not significantly different, but there has been a shift from the "income" criteria of 49% in Table 7.1 to an average response of 7% in Table 7.5. The "helpful to others" category in Table 7.1 has also increased appreciably from 9% to an average response of 27%.

A shift of this magnitude in categories is difficult to explain. Its origins may be in the different questions that were asked of the children. Question 35 was couched in general terms, asking children what made jobs better than others. They then drew upon their limited experience of occupations, classifying them in terms of "better" than others. No examples of jobs were provided so their choice was unstructured. Question 38 on the other hand presented them with

eight particular occupations asking them then to classify them in terms of "good" "bad" and "medium" categories. The children had a number of definite constructs on which to focus their attention and the selection was made so as to include occupations with which most children were familiar.

Further investigation is needed to resolve these substantial differences in criteria and it makes one extremely cautious in advancing definitive conclusions. The style, the content and the language used in questioning children must be subjected to the most searching scrutiny before deductions are drawn on the typical criteria that children of different ages advance.

It should also be noted that the eight occupations all represented a service element to a greater or lesser degree which predisposed the children to view them from the standpoint of "helpful to others". This selection might have been varied to include more employees involved in the manufacturing or primary sector of the economy to create a more balanced occupational distribution.

Finally, reference must be made to the responses themselves as there are indications of qualitative changes in the presentation of criteria by the

older children. Some pupils for the first time offered balanced answers in categorising employees in the medium ranking. The following responses typify this change:

- (1) "The petrol attendant is a middle job because he helps people with their car but there is a lot of petrol around and there might be an explosion."
- (2) Waitress is a middle job because if you went to an hotel you wouldn't get your breakfast if there was no waitress. But you might have to carry the plates up the stairs and you might fall."

It is not only in the "medium" category that plus and minuses are considered. Similar evaluations are being made in the justifying of the other categories as well. The following examples reveal a development in the child's discriminating capacity:

- (1) "The banker is good because people might not be able to save money at home. They might stay in a place where there are a lot of break-ins. The banker could help them save. It is not as dangerous as a miner and you don't have to walk about as much as a postman and you just have to sit about and get people's money and put it in."
- (2) "The rubbish collector is good and bad. It's good because he clears rats, but it's a mucky job. (Should you get well paid for that)? I don't know what he gets paid but he should get well paid. (Should he get as well paid as a doctor)? No. Because doctors work harder."

While responses such as the above are by no means

the norm they do start to appear at this stage. Younger children were quite incapable of detaching themselves from the situation in this way. These answers are not merely longer. They are different in the manner in which they make use of relevant facts, and introduce simple relationships to justify their assertions.

TABLE 7.4

N = 17                      PRIMARY SIX: OCCUPATIONAL RANKING                      % Response

OCCUPATIONS	GOOD	MEDIUM	BAD
DOCTOR	88	6	6
RUBBISH COLLECTOR	0	24	76
POSTMAN	18	54	28
BUSDRIVER	24	52	24
WAITRESS	47	47	6
BANKER	60	18	22
TEACHER	60	24	16
GARAGE MAN	24	24	52
AVERAGE	40	31	29

TABLE 7.5

N = 17                      PRIMARY SIX CRITERIA FOR OCCUPATIONAL RANKING    % Response

OCCUPATIONS	Work/ Effort	Functionally Superior	Income	Danger	Conditions	Helping
DOCTOR	5	20	15	5	25	30
RUBBISH COLLECTOR	5	-	20	-	60	15
POSTMAN	10	-	-	-	56	34
BUSDRIVER	10	-	10	10	60	10
WAITRESS	14	-	-	-	58	28
BANKER	-	-	12	40	-	48
TEACHER	-	-	9	-	46	45
GARAGE MAN	-	-	-	10	80	10
Average -	5	3	8	8	48	27

7.3    SECTION 3    INCOME DIFFERENTIATIONS

The next set of questions attempts to probe children's awareness of income differentials. Firstly, in Question 39 children were asked whether different incomes are paid to employees and the reasons for their differences. Secondly, in Question 40, they were asked if equal payments would be acceptable to them with a justification required for their responses. These questions

allowed children to advance their own economic rationales for differential earnings, without providing them with any structured questions relating to specific employees.

INCOME DIFFERENTIATION (CHILDREN'S GENERAL CRITERIA) (Q. 39/40)

The most common explanation advanced to justify differential rewards cited the volume of work done and the amount of physical effort expended in the performance of the worker. (See Table 7.6). Typical of this quantitative kind of reply were the following:

- (1) Because some people work harder than other. (Could you give me an example?) Well, a man digging holes has to work hard.
- (2) Because some people work longer hours. Sometimes my dad does overtime and gets more money.
- (3) Some work is very hard and a man gets very tired so he is paid a lot of money.

Other explanations offered for differential returns stressed the importance of the work done and its beneficial effects, and discriminated in terms of a primitive functional hierarchy. Responses exemplifying this trend were of the following kind:

- (1) A doctor should get more money than others because he saves people more.

- (2) You shouldn't get so much money if you are a typist because you are sitting down all day typing or scriimpling up paper and throwing it in the bin.

TABLE 7.6

Criteria for Differential Incomes			
% of Responses			
Class	Quantitative Factors	Functionally Superior Work	Qualitative Factors
Primary III N = 21	72	28	-
Primary VI N = 17	47	41	12

In addition to the quantitative and functional criteria a third set of responses was distinguishable in that it stressed the importance of the "inputs" element in an occupation's income. Certain jobs were regarded as being superior to others with regard to the time, effort and ability required to master their intricacies. As in the study of value pupils began to composite a number of variables and form an opinion after an aggregation was made. Factors such as skill, education, training, responsibility, and dangers

were alluded to by pupils as determinants of income differentiation. These were subsumed under the heading "qualitative factors" in Table 7.6. The following extracts are a representative sample of the different reasons advanced to justify differential incomes:

- (1) Some jobs are more important than others. (Could you give me some examples.) An emergency surgeon's very important because he has somebody's life in his hands. A doctor just gives pills and things.
- (2) Some people do dangerous jobs and they should get more. (Give me some examples). Mining is a dangerous job so miners should get more money.
- (3) Some people are much more clever at doing jobs than others.
- (4) Doctors do important jobs and they have to be intelligent to do difficult jobs. (What are difficult jobs?) Operating on somebody's heart.

As Table 7.6 shows there is a clear connection between pupil age and the type of explanation offered to justify income differences. Quantitative criteria predominate at the primary three level with the great majority of children favouring either time or effort, or both. Type two explanations are based upon functional significance with quantitative criteria playing a secondary role. The third type of justification, qualitative factors that evaluate job characteristics and personal capabilities, is found only among <sup>P7</sup> P6 children and then only from a small minority.

The distribution of these responses appears to form a developmental sequence with the crude quantitative schema satisfying the simple measuring requirements of the primary three children in the majority of cases, but failing to fulfill the more stringent standards placed upon it by the older children. The emergence of a functional schema that partly supersedes, but yet overlaps the quantitative one, is an indication of how children attempt to grapple with more complex issues. The development of a third explanation involving personal capabilities and job characteristics represents an even more sophisticated scheme designed to respond to the challenge of more difficult problems.

#### INCOME DIFFERENTIATION BY PAIRED COMPARITORS

(Q.41 "Who earns more?")

The pupils were next presented with a number of pictorial situations involving income comparisons (See Appendix B ). In each of these twelve situations the child was asked to identify the worker who should earn the greater income. The child also had to justify his/her response. The criteria advanced in justifying their decisions were then collated, analysed and tabulated in Tables 7.8, 7.9, 7.10.

In order that the reader is clearly apprised of the answers expected of the children the following grid (Table 7.7) has been prepared. It indicates firstly the higher paid employee in each of the twelve questions by means of an asterisk and secondly, it displays the range of criteria that might be used to justify each employee's higher earning capacity. While it was not expected that all these factors would be advanced by children they provide standards against which children's responses may be assessed.

Six criteria were used for grouping responses with the first five, demand/supply, responsibility, danger, unpleasantness, training/education/skill preoccupying the researcher's thinking in the early interviews. It was not long before a seventh one was required to accommodate the spontaneous responses of the children who offered explanations where they commonly referred to one employee's work as basically inferior to that of his/her comparator.

The functionality criterion was used on all twelve pictures with the exception of pictures J and K and responses indicated that pupils were prepared to justify differential earnings on a primitive hierarchical scale of job importance.

Immediately prior to the beginning of this test the interviewer gave each child a verbal explanation of each situation so that all children were aware of the conditions in which the different workers were involved. These explanatory comments were also designed to provide children with a common corpus of information on which to base their decisions.

PRIMARY THREE:

MATRIX OF PUPILS' CRITERIA FOR GREATER EARNINGS

NUMBER OF RESPONSES

TABLE 7.7

CRITERIA	A One * worker (1) many workers (2)	B Pilot* (1) Tech- nician (2)	C Auction (1) Auction (2)	D Waiter * (1) surgeon (2)	E Server (1) * Scien- tist (2)	F Ski- * Inst- (1) Gym Teacher (2)	G Digger (1) * Driller (2)	H Lion- * Tamer (2) Balloon Man (1)	I * Lorry Driver(2) Van Driver (1)	J Worker Wanted (1) (2)	K One days * work (1) (2)	L Clerk * (1) Boss (2)
Demand Supply	✓		✓							✓		
Respons- ibility		✓			✓							✓
Danger		✓			✓				✓			
Unpleas- antness												
Training/ Skill/ Education		✓		✓	✓	✓	✓					
Greater Output/ Effort									✓		✓	
Function- ally more important work		✓		✓	✓	✓	✓	✓	✓			✓

### Primary Three

Table 7.8 contains the number of correct and incorrect responses made by both primary three and primary six children. Question K proved to be a poor discriminator as all children got it correct. The average of correct responses attained by primary three equalled 69.5%. In only two situations (D) and (E) did primary three children record a higher percentage of correct responses than that recorded by primary six children.

What is of more significance to this investigation however are the reasons advanced to justify children's pictorial selections. The distribution of these reasons is contained in Table 7.9 and it is now proposed to examine this as it related to the primary three children.

Two criteria loomed large in this table, those of "functional superiority" and "greater output/effort", with either one, or both these categories in all the situations. Discounting the seventeen responses made to question K, where greater output was mentioned by all pupils, "functional superiority" was clearly the most important factor in justifying differential incomes.

The following replies are a fair cross-section of the variants upon levels of functionality:

Picture D(1) (Who should get more, the doctor or the waiter?) The doctor should get more because he's helping people. (But this man is helping people by giving them food. So should he not get the same?) No, the doctor is stitching people.

Picture F(2) The ski-instructor should earn more because he learns people to do ski-ing. The teacher just learns them how to train.

Picture B(3) The pilot should get more than the man who puts the fuel in. He drives the aeroplane and the other man just puts fuel into the plane.

There is little attempt to develop this schema in any detail but the primary three children find it a useful device for rationalising their answers to questions of differential earnings. Words such as "just" and "only" are readily used to relegate one of the earners to an inferior role which legitimises his or her lower earning position.

TABLE 7.8

RESPONSES OF P. III AND P. VI PUPILS TO "WHO EARNS MORE"

PICTURES	% N=21 P. III		% N=17 P. VI	
	CORRECT	WRONG	CORRECT	WRONG
A	47	53	93	7
B	75	25	100	0
C	89	11	93	7
D	83	17	82	18
E	67	33	72	28
F	40	60	70	30
G	52	48	60	40
H	52	48	100	0
I	71	29	100	0
J	33	67	60	40
K	100	0	100	0
L	87	13	95	7
AVERAGE	69.5	30.5	85.25	14.75

As can be seen from the statistical return, the great majority of responses fell into this category. It provided children with a simple and definitive method of justifying their conclusions.

One other criterion - "greater output and/or effort" - was also commonly used by Primary Three pupils. The quantitative aspects of this category are obvious and children were quick to emphasise the physical effort entailed in job performance. Their reasoning did not always produce the correct response. In pictures B and G a fair number of pupils based their answers on greater effort, with the maintenance mechanic working harder than the pilot, and the hole digger expending greater energy than the hole driller. The higher skills possessed by the pilot and the driller went unnoticed and were not compounded in the earnings assessment.

The criteria of "responsibility", "danger" and "training/skills/education" were sparsely used by the children in this age group except in picture H, involving the lion tamer. The abstract nature of criteria such as responsibility, training/skill/education appears to have affected their inclusion. Children draw heavily on perceptible criteria at this stage and build their evaluative scheme on the immediate visual presentation.

Questions relating to demand and supply (A/C/J)

Pictures A, C and J differed from the others in

that they presented demand/supply situations. In all three cases the pupil was asked to justify his answer in terms of inadequate supply and excessive demand. Situation C elicited the most correct responses with children appreciating this relationship and selecting the correct answer without much difficulty. Questions A and J proved much more difficult to answer. In situation A 47% gave the correct answer but very few could explain their reasons for their answer. Answers such as the following were given, indicating the different interpretations made by the children:

- (1) (a)1 Because if they are pulling him to get the job it must be a really difficult job. (And what seems to be happening in (a)2?) Lots of people are wanting the job so probably it is a very easy job.
- (2) (a)1 The man on his own will get more because they can't pay all these men a lot of money.
- (3) (a)1 Because lots of men are going for it. Because sometimes men in factories want to have lots of people so that they can do it fast.

These replies were typical of primary three children's justifications of their choice of (a)1. Connections between the number of workers offering their services and the income offered by employers were not seen as having critical importance in determining rewards for labour.

Similar difficulties appeared in children's

analysis of situation (j). The shortage of labour was highlighted in j(1) with four factories looking for employees, with one employee only offering his services. In this situation primary three children found demand/supply relationships difficult to explain. Even where correct answers were advanced they were often supported for the wrong reasons:

- (1) j(1) should get more because there is only one man and he is doing four factories.
- (2) j(1) should get more because they are looking for more men than j(2). (Why should that make a difference?) Because they might get paid for collecting more men than the other one does.
- (3) j(2) should get more because he will get wages from all the four factories while the man in j(1) will get only one wage.

TABLE 7.9  
 PRIMARY THREE MATRIX OF PUPILS' CRITERIA FOR GREATER EARNINGS : Number of pupil responses occurring in category) N = 21

	A One Worker (1) many workers (2)	B Pilot (1) Technician (2)	C Auction (1) Auction (2)	D Waiter (1) Surgeon (2)	E Server (1) Scientist (2)	F Ski-Instructor (1) Gym Teacher (2)	G Digger (1) Driller (2)	H Lion-Tamer (1) Ballroom Man (2)	I Lorry-Driver (1) Van Driver (2)	J Worker Wanted (1) (2)	K One Days Work (1) (2)	L Clerk (1) Boss (2)
Demand Supply	3		9							1		(13)
Responsibility		2		3	1	2			1			3 (12)
Danger		1		1		1	2	9	1			(15)
Training/Skill/Education				1								(1)
Greater Output/Effort		7		2	2	3	7		6	2	17	5 (51)
Functionally more important work	2	7	4	10	8	7	9	7	6	-	-	7 (67)

TABLE 7.10  
 PRIMARY SIX MATRIX OF PUPILS' CRITERIA FOR GREATER EARNINGS (Number of pupil responses occurring in each category) N = 17

	A One Worker (2) many (1) workers	B Pilot (1) Tech- nician (2)	C Auction (1) Auction (2)	D Waiter (1) Surgeon (2)	E Server (1) Scien- tist (2)	F Ski- Instr- (1) Gym (2) Teacher	G Digger (1) Driller (2)	H Lion- Tamer (1) Balloon man (2)	I Lorry- Driver (1) Van (2) Driver	J Worker (1) Wanted (2)	K One Days (1) Work (2)	L Clerk (1) Boss (2)
Demand Supply	5		6							5		
Respons- ibility		1										8
Danger		5			1	1	3	12	2			
Condit- ions		3				1			1			
Training/ Skill/ Education		2	1		4			2				1
Greater Output/ Effort		4	1	1	5	5	9		12	2	17	5
Function- ally Superior		7	1	13	12	6	2	3	2			4

### Primary Six

Two general observations can be made in comparing the responses of the two different primary classes.

Firstly there is an appreciable improvement in correct responses given by the primary six children as compared with the younger children (see Table 7.8). This in itself however, is not a convincing index and these results must be taken in conjunction with the reasons given by pupils to justify their responses. There are indications that the older children draw upon a much wider repertoire of criteria in justifying their decisions on differential incomes. Criteria involving responsibility and skill/training/education in particular, were given a low priority among the younger children but they play a much more important part in the older children's thinking, even though "functionally superior" and "greater effort/output" were still important. In the younger children's answers however, these last two criteria had a summative importance in that they are offered without amplification. In the older children this stage is superseded in that they cite examples demonstrating "functional superiority" in the paired studies.

Situations B, D, E, F, G, H, I, L require

consideration of criteria involving responsibility, danger, training, skill, and experience to some degree, and it is noteworthy that primary three children made only perfunctory mention of these important variables. As can be seen from the matrix this was not the case with primary six children, whose responses placed a much heavier reliance upon them. Whereas the younger children had accentuated explicit features represented in the situation itself, the older children drew upon implicit factors with the picture providing a trigger for their activation. A variety of answers illustrates the development of this wider perspective with the older children.

Situation B: "The airline pilot should earn more because he is flying people to different countries and the other man's only filling up the tank. (But if the pilot doesn't have fuel in the plane it won't fly. Does that not mean he should get more for filling it up?) No, the pilot's got to train to do that. (Anything else about the pilot?) He's got to have control of the plane because if he hasn't he could crash.

Situation E: "A person working in the laboratory should earn more because she is helping people with science. (But is the other lady not helping to serve people with food?) No, well scientists need a lot of training to do what they do and serving behind a counter you just have to push a button for orange juice."

Situation L: "The boss because he's in charge and he has more experience of going the job. (But both are doing the same

thing at the till, does that mean they should get the same?) No, because the boss is in charge of everybody and he's sort of manager and knows what to do."

These responses indicate a capacity to relate the specific or the particular to the more sophisticated and general. This capacity was conspicuously absent among the younger children who were unable to find an adequate number of clues within the pictures to substantiate their answer in economic terms. They tended to allow the literal aspects of the situations to dictate the limits of their criteria while the older children contextualised the occupation within a more general set of economic principles.

#### QUESTIONS RELATING TO DEMAND AND SUPPLY

Questions A, C and J were similar in that they asked pupils to make a decision relating to the interaction of demand and supply variables in determining incomes. In terms of correct responses (A) and (J) appear to be clear discriminators, while (C) produced almost similar results. The nature of the responses from the primary six children further reinforces this discrimination. The older children supported the correct responses by commenting upon the relational aspects of the

situations, referring to the over supply of labour in question (A), the excess demand for labour in question (C) and (J). The following extracts should be compared with those already cited earlier in the criteria given by primary three children.

Pictures: A1/A2

(1) A1. The man in A(1) is being pulled by the two men because he is wanted by both of them. (What seems to be the case in A(2)?). Thousands and thousands of men are wanting a job. (What does that mean as far as the money the worker gets?) Well not many of them are going to get a job as they won't get very much money.

Pictures: A1/A2

(2) A1. Because there is only one person and that person should be able to choose which one to work for. (What should happen if he went with that person there?) That man should pay him more for going to him instead of to the other person. (Does it make a difference in A(2) because there are more men?) Yes because there's only one man wanted and if there was a lot of men they would have to choose one and then they would not have to pay him so much.

Pictures: C1/C2

(3) I think that C(1) should get more because all the people are bidding against each other for his picture and if they all want his painting so badly they are bound to pay more for it than for the other pictures.

(4) C1 will get most money because there is hardly anyone in C2 and there's lots of money there. (What do people seem to be doing that will help the artist to get more money?) They are bidding and the person with the most money will get the picture.

Pictures: J1/J2

(5) J(1) because there's more factories wanting him to work for them and they will be trying to get him and paying him more.

(6) J(1) because everybody wants the worker and whoever gets him will be grateful and pay him more.

Qualitatively these responses differ considerably from those given by the younger children. They reveal an awareness of demand and supply factors and appreciate some of the relationships that exist between them. Primary three children were often unable to make sense of these. In addition the younger children often imported extraneous factors into the situations relating to the qualities of the workers themselves. This tendency was not common among the older children.

### 7.3.2 INCOME DIFFERENTIATION

In the interview questions relating to "Who earns more?" the children were asked to justify the differential earnings between two employees only and their responses were applicable to a number of particular situations.

The final part of the investigation into their conception of income differentials attempted to present children with a wide range of occupations in less structured situations to see whether they could apply criteria for income ranking for themselves. To this end a set of twelve cards were prepared representing a number of different occupations.

This contained 12 skilled and unskilled occupations (see Appendix C). For the primary three children these were pictorially represented and the names of the workers were written in longhand underneath each employee. It was felt that children in this age group would have difficulty in reading so the visual dimension ensured that all were clearly able to identify each occupation in a similar way. All pictures were drawn to a similar pattern and scale. Primary six children were merely given cards with the occupations printed without visual representation.

In each experiment children were asked to arrange the cards in a certain manner. The occupations were to be arranged into 2 groups of six; one six were to include those that were thought to earn the greater income and the remaining six to include those earning smaller incomes. Children then selected three from the top six and placed them in descending order of earnings. In like fashion they selected the bottom three earners from the lower earning group. They were then asked for their reasons for their final arrangement of occupations.

#### Primary Three

The younger children presented a number of

difficulties because of their age. As they were unable to write easily the researcher interviewed them individually after each child had arranged the sets of cards in the manner described above. The interviews were tape recorded and verbatim transcripts were made of these sessions. The results were then analysed and the following findings emerged.

Children produced no clear cut conclusions in their ranking profiles. Table 7.11 reveals a highly diffused pattern of responses with nearly all occupations finding locations in the top and bottom rankings. One or two occupations such as the policeman, the fireman, the miner and the car mechanic were recorded more frequently in the top echelon, but for some children these occupations were also deserving of rating in the lower category. Similar overlaps occurred in the lower classification where the rubbish collector, the postman, hairdresser, baker, miner and janitor appeared more frequently than in the upper category.

TABLE 7.11

FREQUENCY OF TOP AND BOTTOM RANKINGS FOR EACH OCCUPATION

Primary 3 N = 24

	1	2	3	10	11	12
HAIRDRESSER	1	-	-	2	2	2
FIREMAN	1	6	7	2	1	11
WAITRESS	-	2	-	1	2	1
PLUMBER	2	-	4	1	-	-
CAR MECHANIC	1	3	4	-	1	-
BUS DRIVER	2	3	1	1	2	1
MINER	2	4	3	4	-	3
JANITOR	2	1	1	3	2	2
RUBBISH COLLECTOR	1	-	-	3	2	4
POLICEMAN	9	1	2	1	2	-
POSTMAN	-	1	3	1	3	4
BAKER	2	1	-	3	3	2

The criteria advanced by the children in justifying their income ranking go some ways to explaining these erratic conclusions. The table below identifies the variety of criteria used. There is a very heavy dependence upon two variables "helpfulness" and "functional superiority" in determining hierarchical order and each criterion is worthy of further attention. The "helpfulness" criterion or its deficiency emerges as a highly personalised yardstick and rarely provided an objective measurement. Responses such as the following attest this assertion:

- (1) ("You placed the postman as third top in earnings. Why was that?)  
"Cause he brings us letters from our aunties".
- (2) ("Why did you put the bus driver at the top?)  
"Because he drives me where I want to go."

This egocentric perspective provided a highly unstable yardstick for establishing a meaningful hierarchy of incomes and its variability explains the diffusion of responses represented in the income table for this age group. (See Table 7.12)

Table 7.12  
Primary 3

N = 24

Criteria for Justifying Income Differentials

CRITERIA	% of Responses
1 Conditions of Work	11
2 Demand/Supply	-
3 Responsibility	2
4 Skill/Education/Training	-
5 Functionally Superior	35
6 Greater Effort/Work	11
7 Danger	7
8 Helpful to Others	34

(Note: Some children used more than one criterion)

The "functional superiority/inferiority" criteria reveals the same indiscriminate approach. While some children are beginning to appreciate that some occupations require greater skill than others they cannot express this in particularities. They resolve their difficulties by prefacing occupational activity with the adverb "just". The hairdresser is relegated to an inferior income ranking because she "just fixes hair"; the miner because he "just digs coal"; the janitor because he "just walks around the playground"; the baker because he "just mixes things" and the bus driver because he "just drives around". This device allows the younger children a great facility for explaining differential incomes but still the question begs the hierarchy it justifies. The "just" explanation is a terminal one and no amplification is made when the younger children are questioned further as to its importance.

It is also noteworthy that the functionality criterion is used almost entirely negatively rather than positively. It is not used to justify the top income earners, but rather to confirm the earners' inferiority. Skill education and training which are constituent elements in functional superiority are not regarded as important elements in establishing the children's hierarchy.

Another significant omission was that no attempt was made by the children to compare or contrast any occupations in the formulation of the income hierarchy. Their ranking order is not a result of examination of relative occupational merits but more a selection of individual occupations mainly dictated by personal likes and dislikes.

#### Primary Six

The collation of primary six children's responses presented fewer difficulties. Because they were more capable of making written responses the interview was replaced by a questionnaire asking for ranking order of occupations and reasons for occupational ranking (see Appendix C). The same structuring involving the top three and bottom three careers was asked for, and the results were recorded as shown on grid (see Table 7.12).

The sum total of these results obtained from forty-eight primary six children was then recorded on the two tables, one indicating the order selected and two detailing the criteria justifying pupils' choice. The top three occupations were clearly identified as policeman, fireman and miner, respectively first, second and third. Of these three only the miner also appeared in the three

lowest rated jobs. Responses selecting the three bottom occupations were not as conclusive. Only the rubbish collector was clearly bottom of the ratings. The janitor, bus driver, waitress, and postman all figured in the lowest rated categories with the postman rated eleventh by nine pupils and the waitress rated as tenth by seven pupils.

The criteria advanced to support this income hierarchy revealed similar patterns to those that emerged from the "Who earns more?" analysis. Higher earnings were justified on three major criteria: functional superiority, helpfulness to others and danger. (In combination these factors merited very high returns). Most pupils alluded to two of these criteria in defending their selection of higher earning employees (see Table 7.13).

TABLE 7.13  
PRIMARY SIX PUPILS

N = 26 Frequency of TOP & BOTTOM Rankings for Each Occupation

	1	2	3		10	11	12
HAIRDRESSER	-	-	-	.	6	3	4
FIREMAN	18	19	10		-	-	-
WAITRESS	-	-	-		7	6	2
PLUMBER	-	7	4		3	2	2
CAR MECHANIC	2	2	7		4	6	2
BUS DRIVER	-	-	2		4	6	8
MINER	7	8	12		4	2	3
JANITOR	-	-	-		4	7	8
RUBBISH COLLECTOR	-	-	6		11	2	14
POLICEMAN	22	15	8		-	-	-
POSTMAN	-	-	-		3	9	2
BAKER	-	-	3		2	4	2

TABLE 7.14

PRIMARY SIX

Criteria for justifying income Differentials

N = 26

CRITERIA	% of Responses
1 Conditions of work	17
2 Demand/Supply	-
3 Responsibility	2
4 Skill/Education/Training	1
5 Functionally Superior	32
6 Greater Effort/Work	10
7 Danger	21
8 Helpful to Others	17

In selecting the lowest wage earners the children used similar criteria, but in a more negative manner: having identified the positive virtues of "helpfulness" and "functional superiority" they then assessed the other jobs against these standards.

"Helpfulness" of itself was not advanced as a sufficient reason for high financial reward as the

three lowest earners were all deemed to provide desirable services to the public. Their "functional inferiority", in that they performed functions requiring little skill, however, was given greater weight on their final placement on the earnings' table. None of them also was exposed to the dangers run by the policeman, fireman or miner, so no financial bonuses were allocated to reimburse risk. Typical of the responses given were the following:

- (1) I think the hairdresser should get the least money because we could do our hair ourselves.
- (2) The hairdresser should get less, for her work is less dangerous than a miner's.
- (3) The bus driver should not get a high wage because he just drives about all day and does not get tired.

Two other criteria were also offered by the Primary six children involving "conditions", and "harder work/longer hours", and these figured in some of the assessments. Conspicuously lacking were references to variables that most adults would have advanced to justify higher earnings. No weight was attached to "skill, education and training". "Responsibility" was referred to by two pupils only, and generally was overlooked by the children.

These findings differ in some respects from the

distribution of responses elicited in the "Who earns more?" experiment, where variables such as "responsibility" "skill/education/training" were more often advanced by the Primary six children. The visual dimension of the previous experiment may be significant here. Pupils were provided with far more visual stimuli and were asked to focus on two employees only in each situation. In the second they were merely given cards with the occupation printed upon them, and asked for an earnings ranking of these occupations.

#### 7.4 Conclusions

As has been already remarked only two age groups of primary three and primary six have been examined in this chapter so that the three stage analysis cannot be conducted as in previous chapters. Examination of these two age groups has <sup>revealed</sup> however a number of trends in cognitive development relating to occupational status and income differentiation.

In justifying general occupational rankings the younger children relied heavily upon quantitative factors supplementing them in a peripheral way with functional criteria. The responses to the "good", "medium" and "bad" ratings of occupation reinforced this trend. "Functionality" however occupied a

more important position with "helpfulness" also figuring prominently as a criterion of occupational worth. The last variable was often personalised in terms of the child's pleasant or unpleasant experiences with doctors, teachers, bus drivers and postmen.

The older children exhibited differences both in the criteria they used to justify their responses and in the manner in which they responded. Much greater weight was attached to the intrinsic nature of work undertaken. Developmental trends were also revealed in the more discriminating ways in which children compared one job with another using the criteria. Relational thinking of this nature was not employed by the younger children.

Similar patterns were distinguishable between the two age ranges in the section dealing with differential incomes. Primary three children relied heavily upon quantitative criteria, involving time and effort pertaining to the occupations in the "Who earns more" questions. A vague concept of "functional superiority" was advanced, with one of the employee's occupations being down-graded in terms of "just" or "only" without further amplification. Younger children also drew their criteria almost wholly from the

pictorial representation, and failed to appreciate many of the intrinsic qualities that the different occupations required. The supply and demand relationships in questions (a) and (k) were outwith the comprehension of the younger children interviewed.

The older children not only achieved more correct responses to question 41 but they also produced responses that were qualitatively different. While they included "quantitative factors" and "functional superiority" in their criteria they no longer used these in a definitive manner. Children amplified "functional superiority", in terms of responsibility assumed, training undertaken or experience gained. The pictures were no longer the terminal points for job analysis, with the older children importing other criteria into their calculus to justify differential incomes. Questions (a) and (k) highlighted these differences. While not all of the older children were able to explain the relationship of demand and supply factors it was only the older children that were able to offer reasonable explanations.

Given the limited nature of this investigation into the child's conception of occupational status and differential incomes, only very tentative

conclusions may be suggested. There are some indications of sequential development in the cognitive awareness of the two groups of children. Quantitative and functional criteria precede those in relation to the intrinsic nature of the occupations. The personalised and egocentric approach precedes that which uses relationships and comparisons. While there is insufficient evidence for designating these as distinct stages forming structured wholes, there are signs that the lower order schema, dependent upon quantitative and functional factors, is gradually modified by the higher order schema, involving qualitatively different characteristics. The process is not a simple one and varies considerably from one child to another. The lower order schema acquires greater power through the incorporation of a greater number of variables including responsibility, skill, education, etc. These responses of primary six children are not merely of greater length; they are characterised by a more objective perspective which makes use of rudimentary economic relationships.

## CHAPTER 8

### Biographical Differences and Economic Cognition

While the greater part of this research endeavour has been devoted to investigating relationships between children's ages and their representation of economic ideas and reasoning, variations in children's responses in each age have provoked further inquiry to try to establish the causes for these differences. A number of biographical variables such as sex, socio-economic status and academic ability may all have some effect upon economic cognition and each will be analysed in relation to age grouping and the different economic categories covered in the experiment.

#### 8.1 Sex Differences

Virtually no research has been conducted in the United Kingdom on how sex differences affect economic understanding among children under twelve years of age. Linton's findings relating to school children of eleven and twelve indicate no significant differences but his sample involved only 5 primary schools in Scotland, (LINTON 1979) and was limited to primary six and seven classes only. There has, however, been a much greater volume of American investigation in this field

although the results of the various studies are somewhat ambivalent. In the light of these equivocal findings it was decided that each of the basic concepts should be analysed separately by sex at each age level. The patterns of responses given by boys and girls could then be compared for significant differences.

The analysis revealed marked similarities between responses of boys and girls at all three age levels in areas of commodity, income differentials and occupational ranking. This similarity also extended to the correctness of replies to factual questions. Particular attention was given to analysing sex differences in the conceptual development of value and exchange as Burris's research (1976) pointed to the existence of differential responses between the sexes in these conceptual areas.

#### 8.1.1 Value

Table 8.1 represents the responses by the sexes and there are no indications that the sexes responded differently in stating exchange value criteria. Burris' hypotheses derived from the traditional role situations adopted by the male and female in that the male has tended historically to be a

producer and the female a consumer. His limited research findings detected a trend of this nature in his exchange value analysis, with boys particularly, citing raw material and production inputs at ages seven and eight. No such trend was detected in this study.

Both sexes in P3 emphasised the 'durability' and 'functionality' criteria with girls if anything showing a greater readiness to introduce the raw materials and labour/time factors. This slight deviation however, was not evident at the P6 stage, where the distribution of response criteria are virtually indistinguishable in terms of sex differences.

TABLE 8.1

PUPILS' CRITERIA FOR EXCHANGE VALUE  
IN TERMS OF SEX DIFFERENCES

Class	Sex	Numbers	Physical	Functional	Durab-	Raw	Labour/	Scarcity
			Proper- ties	Utility	ility	Materials	Time	
P1	Male	8	6	1	1			
	Female	9	9	2	1			
P3	Male	6	5	4	5	2		
	Female	8	6	3	4	4	2	
P6	Male	9	3	6	3	7	5	3
	Female	8	2	6	2	6	5	1

Number of responses exceeds number of respondents because of multiple responses

8.1.2 Exchange

In only one other conceptual area, that of exchange, was there a slight deviation in the response of male and female pupils (see Table 8.2).

At P3, girls appeared to have a greater awareness of the reciprocal nature of the exchange transaction than boys. It is possible that this difference can be explained by the greater experience of girls in shopping transactions, or simply in terms of greater maturity at that age. This trend did not reveal itself at P6 where the sexes' responses reveal no significant difference with both equally appreciating the reciprocal element in the exchange and both equally conscious of the store's transaction in terms of a wider economic process.

TABLE 8.2

Concept of Exchange in Terms of Sex Differences

Class	Sex	References to Reciprocity	No Mention of Reciprocity	Total System Explanation
P3	M N=12	2	12	-
	F N=11	5	6	-
P6	M N=10	10	-	7
	F N=12	12	1	7

Number of responses exceed number of respondents because of multiple replies

## 8.2 Socio-economic Differences

As was mentioned the research data were drawn from 5 schools with varying environmental conditions. Parental socio-economic backgrounds differed considerably in these schools. The importance of class differences on cognitive development is a highly researched field and it is not the intention of this research to expatiate upon that literature.

Its more modest aim was to classify pupils' parental socio-economic status on a 3 point scale and analyse their responses in terms of this coding. Category one included unskilled and semi-skilled workers; Category two covered skilled and supervisory employees and Category three comprised managerial, professional and business employers and employees. Using these definitions, an attempt was made to analyse the importance of class differences in the evolution of the following economic concepts: value, occupational ranking and income differentiations. No differences were detected in the other conceptual areas.

### 8.2.1 Value

Table 8.3 illustrates the influence of class differences in the emergence of the concept of economic value. At P1, socio-economic factors

appear of minor importance in that all pupils structured their responses in a similar way, relying heavily upon perceptual cues involving size and other physical properties. P3 pupils still attach significance to the objects' physical features.

TABLE 8.3

CRITERIA FOR ECONOMIC VALUE  
IN TERMS OF PARENTAL SOCIO-ECONOMIC STATUS

C l a s s	N u m b e r s	S o c i e t a r y S t a t u s	Physical Properties	Functional Utility	Durability	Raw Materials	Labour/ Time	Scarcity
			NUMBER OF RESPONSES					
P1	N=6	1	6	1		1		
	N=5	2	5	-		2		
	N=1	3	1	1		-		
P3	N=5	1	3	5		2	2	
	N=14	2	9	10		8	4	
	N=4	3	2	4		-	4	4
P6	N=6	1	2	4		3	3	1
	N=10	2	4	6		5	9	6 1
	N=6	3	2	6		3	6	6 1

CATEGORY 1 = Unskilled/Semi Skilled  
2 = Skilled/Supervisory  
3 = Managerial, Professional, Executive

"Durability" and "functionality" assume greater currency and together became representative criteria for this age group. In terms of the parental socio-economic grouping, children in categories one and two made similar responses in terms of these criteria. This shift from the consumer viewpoint to that of the producer is more commonly present at the later stage as is shown by the distribution of pupil responses at P6. Responses there indicated a much greater awareness of the economic workings of the production process.

All socio-economic groups alluded to production inputs in general to justify an object's greater worth, although it is noteworthy that children in categories two and three drew more commonly upon labour/time elements in their cost calculus. They also tended to integrate raw materials and labour/time elements into a meaningful pattern more than those children in category one who tended to cite raw materials with little or no reference to the productive process within which they were used.

#### 8.2.2 Occupational Ranking

In listing their criteria for occupational status P3 pupils appeared to be less influenced by class differences than those at P6. As has already been recorded in Chapter 7, Tables 73/7.5, nearly all the

responses (92% at P3, and 75% at P6) were classified on just two categories - "conditions" and "helpful to others". Both of these criteria also figured prominently in Table 8.4 and all socio-economic groups found them extremely useful in differentiating occupations. Over 90% of all responses fell into these two categories and none of the three pupil classifications was distinguishable in using the more sophisticated criteria that might have figured in this hierarchical assessment of occupational ranking. The other four criteria on the matrix were rarely used by respondents in this age group and none of their distributions revealed significant correlations with socio-economic factors.

The P6 table reveals similar trends in that the majority of responses - 83% - fall into the same two categories. The balance has however shifted in favour of "conditions" rather than "helpful to others". It is also noteworthy that although the numbers are small, pupils in classification 3 tend to favour this category less than the other two groups and to use another criteria, that of income, in their occupational assessment. There is however, no evidence to suggest that pupils in classifications one and two diverge in their criteria as their responses indicate a similar

heavy reliance upon the "helpfulness" concept. The quantifiable data is so limited as to invite caution in attributing importance to socio-economic factors.

TABLE 8.4

CRITERIA FOR OCCUPATIONAL RANKING BY PARENTAL SOCIO-ECONOMIC STATUS

Average Number of Responses Per Child

Primary 3				Primary 6			
Category	Criteria			Category	Criteria		
	Condit-ions	Helpful-ness	Income		Condit-ions	Helpful-ness	Income
1 N = 6	1.50	4.7	0.3	1 N = 7	4.4	3.4	1.0
2 N = 17	2.1	3.2	0.3	2 N = 6	3.7	4.0	0.2
3 N = 3	1.0	2.7	0.3	3 N = 7	4.1	1.3	1.9

8.2.3 Income Differentiation

Before considering the children's responses to the income differentiation questions on the "Who earns more"? test, a few observations require to be made on the actual returns themselves. Firstly, only a small percentage of the twenty six pupils at the primary three level was able to offer reasonable

criteria for justifying greater earnings see Table 8.5. Category 1 pupils had the greatest difficulty in answering the twelve questions. Category 2 pupils also found problems, with only questions B, E, F, G, K and L producing more than six responses from the seventeen pupils interviewed. Numbers in Category 3 were so small as to make analysis unprofitable. The great bulk of pupil responses fell under the two criteria of "output/effort" and "functionally superior work". Class differences among children however, did not appear to provide significantly different responses. All three categories drew upon the same two general criteria with few children, regardless of their class background, alluding to the other four criteria listed in the table. It may well be that at this early age children are not sufficiently mature to derive advantages from socio-economic factors in this kind of exercise.

Table 8.5 also represents the responses of primary six children and here again the great majority of answers favoured similar criteria to those used by primary three pupils. What is noticeably different is that the other criteria were more extensively used in exemplification of the "output/effort" and "functional" criteria than previously. There was also a marked increase in the number of correct

responses given to the questions, with multiple responses much more in evidence than at the primary 3 level. That these changes were significantly affected by socio-economic factors is difficult to substantiate from the distributions of responses recorded in the table. Burris' research (1976) in a similar area found that middle class children differed considerably from working class children in their listing of criteria for occupational status. He found that they were significantly more likely to include factors such as income and those factors relating to the intrinsic nature of the work done. His research however, was limited to two schools, one with middle class white children in Princetown, New Jersey and the other coloured working class children in Trenton, New Jersey. The findings of this research do not confirm his findings. Children in Category 3 did not appear to have a more advanced concept of the multiple variables that influence income returns than those in categories 1 and 2. All P6 pupils cited more variables than were cited at the primary three stage. But there is insufficient evidence to differentiate the quality of responses in terms of class differences.

TABLE 8.5  
Pupil Criteria for Income Differential in Terms of Parental  
Socio-Economic Status  
Average Number of Responses per Child

P3		Criteria		P6	
Category	Output/Effort	Functional Superiority	Category	O/E	F/S
1 N = 6	1.0	0.2	1 N = 7	4.2	4.0
2 N = 17	0.9	1.7	2 N = 6	3.7	3.5
3 N = 3	1.3	1.7	3 N = 7	2.7	4.0

Socio-Economic Scales

Category 1 = Unskilled/Semi-Skilled

Category 2 = Skilled

Category 3 = Professional/Managerial

8.3 Academic Differences

The third factor that was considered of potential importance in influencing economic understanding was that of academic ability and the teachers were asked to classify pupils on a five point scale. The responses to interview questions were then analysed against those rankings. Differences were observed only in the conceptual areas of value and income differentiation.

### 8.3.1 Value

The results recorded on Table 8.6 (see p 213) indicated that academic ability produced no differential performance at the primary one level where pupils located exchange value almost wholly within the object's physical attributes.

At the primary three level a linkage with academic ranking was revealed with children in the 3, 4 and 5 scales drawing less upon the physical variables and incorporating raw materials and production inputs such as labour/time into their value compendium. This was particularly true of the pupils in the 5 category where nearly all the children alluded to these criteria.

At the primary six stage it is noteworthy that the above average pupils coupled the raw materials with the labour/time component more commonly than those of children in categories 1, 2 and 3.

TABLE 8.6

Criteria for Economic Value  
In Terms of Pupils' Academic Status  
Number of Responses in Each Category

	Academic Rating	Physical Properties	Functionality	Durability	Raw Materials	Labour/Time	Scarcity
P R I M A R Y 1	N=3 1	3	-	-	-	-	
	N=2 2	1	1		-	-	
	N=6 3	5	-	1	-	-	
	N=3 4	2	1	-	-	-	
	N=3 5	3	-	-	-	-	
P R I M A R Y 3	N=2 1	1	2	1	1		
	N=8 2	6	3	2	-	-	
	N=6 3	3	3	3	2	1	
	N=7 4	3	4	4	2	1	
	N=7 5	2	5	2	6	4	
P R I M A R Y 6	N=5 1	1	4	-	5	2	
	N=1 2	1	-	1			
	N=5 3	2	6	2	4	1	
	N=6 4	1	3	4	5	3	
	N=5 5	1	5	2	5	4	

Academic Scales 1 - 5  
1 = Well below average  
2 = Below Average  
3 = Average  
4 = Above Average  
5 = Well Above Average

Total Number of Pupils: P1 = 17  
P3 = 30  
P6 = 22

8.3.2 Income Differentiation

Table 8.7 presents the results attained by pupils in P3 and P6 grouped on the five point scale already defined. The numbers in some categories are so small as to warrant caution on findings but there does appear to be a significant relationship between levels of academic ability and the level of correct results especially in categories 3, 4 and 5 at the P3 stage. Answers were classified as correct only if pupils provided a reason for their selection in addition to the correct answer.

TABLE 8.7  
Performance Scores of Pupils on "Who Earns More" Test

% Scores					
No of Pupils	Academic Ability Category	P3	No of Pupils	Category	P6
2	1	10	4	1	70
2	2	20	2	2	70
5	3	40	8	3	55
8	4	50	7	4	69
3	5	61	5	5	90

#### 8.4 Conclusions

On the evidence of this chapter a number of conclusions may be drawn. Firstly, there are no significant differences between the sexes in comprehending the major concepts considered. The slight advantage apparent in P3 girls in appreciating the reciprocity of exchange conferred no advantage at P6 where no such differences were observed. Whether this earlier understanding among the girls could be attributed to greater experiential involvement in shopping or greater maturity is open to question. In all other conceptual areas similarity of responses was evident.

Secondly, socio-economic factors appear to play a slightly more important role in influencing economic cognition although they only produce variations in pupil responses within stages. It would not be true to say they alter the nature and sequence of these stages. These variations are discernible in pupil responses to questions relating to exchange value where category two and three children in P3 stress factor inputs appreciably more than category one pupils. This emphasis is more commonly a P6 type of response. In the responses to occupational ranking and income

differentiation there are no significant differences attributable to socio-economic status.

Finally, there are indications that academic ability exerts some influence upon pupil's economic responses. Exchange value returns show that the children in academic categories three, four and five rely more heavily upon factor inputs in their response than those in categories one and two. Such responses are more typical of P6 pupils. Children in these three categories also recorded significantly higher scores than those in categories one and two in the "Who Earns More" Test and their results approximate closely with those recorded by P6 children.

These findings should be seen as indications of possibly significant variations in economic cognition.

A study more dedicated to discovering subgroup differences will be needed if such effects are to be established reliably.

## Chapter 9

### LONGITUDINAL STUDY OF ECONOMIC CONCEPT DEVELOPMENT

#### Introduction

In the preceding chapters the analysis has been conducted across the three age groups involving some ninety children in five different primary schools. This has produced a cross-sectional sample in each of the differing age groups. It remains to add a longitudinal dimension to this analysis. This has been achieved by re-interviewing a number of children as they progress through the primary school.

P1 and P3 children were re-interviewed when they reached P3 and P6 stages respectively, and their responses were then analysed and compared with those that had been elicited in the larger cross-sectional study and also with their previous responses in the initial interviews. It was not possible to complete a full longitudinal profile from P1 to P6 because of wastage and time considerations, so a total of 20 pupils, 10 from P3 and 10 from P6, was thought to be a representative sample for research purposes.

As in the major investigation, pupils' responses were

grouped under the four main categories already used goods, value, exchange and income, including rewards and occupational status, and longitudinal analyses were conducted.

## 9.1 GOODS

### PRIMARY I - PRIMARY III

Table 9.1 below represents the responses made by the ten children at P1 and P3 stages and attention has been focused on the four most important objects where children had previously expressed doubts about their saleability in the cross-sectional study. (See Chapter 4). Similar difficulties confronted the ten selected for longitudinal comparisons with the majority rejecting the tree, school, and cow as possible purchases. They defended their rejection on the grounds of immobility, size and natural attributes as the cross-sectional group had done.

At the P3 stage there was considerable extension of the saleable range of goods, with the majority of pupils incorporating the farm, school and cow into its ambit, but there was still reluctance to accept the tree in this category. The tree's natural location was an impediment to its purchase. The

factor of size no longer prevented transactions as can be seen from the acceptance of both the farm and the school as saleable entities.

TABLE 9.1

NUMBERS OF PUPILS CLASSIFYING OBJECTS AS SALEABLE

CLASS	FARM	TREE	SCHOOL	COW
P r i m I a r y N=10	5	1	2	3
P r i m I I I a r y N=10	7	2	6	6

9.1.1.1 GOODS

PRIMARY III - PRIMARY VI

P3 children produced very similar results to those recorded from the other ten children in the longitudinal survey and from those in cross-sectional study (see Table 9.1.1). Significant changes were recorded after their progression to the P6 stage with only a very small

minority of them rejecting the farm and cow as non-saleable commodities. As in the other surveys the tree's physical characteristics still constituted an obstacle to its being classified as a good.

TABLE 9.1.1

NUMBERS OF PUPILS CLASSIFYING GOODS AS SALEABLE

CLASS	FARM	TREE	SCHOOL	COW
P r i m I I I  a r y N=10	6	1	6	6
P r i m V I  a r y N=10	9	6	10	9

9.2 VALUE

PRIMARY I - PRIMARY III

Table 9.2, recording the value criteria of children at the P1 and then at the P3 stages, goes some way to confirm the findings that emerged from the cross-sectional study in the earlier parts of the research. All P1 children made physical dimensions

their basic norm - with size, weight, appearance, featuring in their rationale of differential worth.

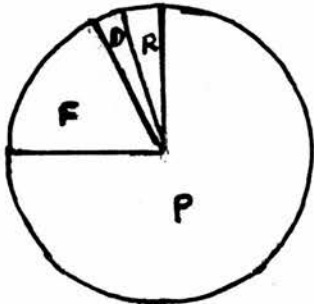
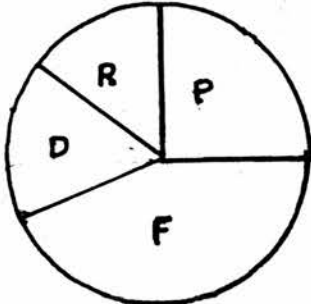
References to other criteria were elicited but these were peripheral, with "physical properties" attracting 75% of all responses made at this stage.

The part of the table representing P3 responses reveals a significant shift in the hierarchy of variables, with the perceptual factors of size and appearance assuming a more marginal role and "functionality" and "durability" superseding them. "Functionality" figures more prominently than "durability". This may well be explained in terms of the age of the children whose time scale of durability is extremely short. "Functionality" however, is more easily appreciated as an extension of the physical properties.

These two criteria together accounted for 60% of all responses made by P3 pupils, compared with 46% on the cross-sectional findings for similar pupils in chapter 5 and with 57% for P3 pupils in the longitudinal analysis in Table 9.2.1.

TABLE 9.2

COMPARATIVE DISTRIBUTION OF CRITERIA OF PI THROUGH PIII TO JUSTIFY DIFFERENTIAL VALUES OF GOODS

PI	CRITERIA	PIII
	Physical Properties (P) Functionality (F) Durability (D) Raw Materials (R) Labour/Time (L) Scarcity (S)	

While the longitudinal findings confirm those deriving from the cross-sectional study they reveal no first-hand evidence of how individual children's responses changes over the two year period between interviews. The examples below are introduced to help correct that omission. The responses of two of the children in the longitudinal sample to questions on the comparative value of shoes and chocolate, and that relating to diamonds, are quoted below:

Child 1, Primary 1 - Shoes cost more because they are bigger and they are nice and shiny. (Anything else?) They've been polished.

Child 1, Primary 3 - Shoes last longer than chocolate. (Anything else?) Because you can use them more than a bar of chocolate. It is only little and you eat it and it melts away.

Child 2, Primary 1 - They cost a lot because they

are nice? (Why are they nice?) People like them.

Child 2, Primary 3 - Diamonds cost a lot because they are beautiful and shiny, they last a long time. (Are they not glass?) No they don't break like glass.

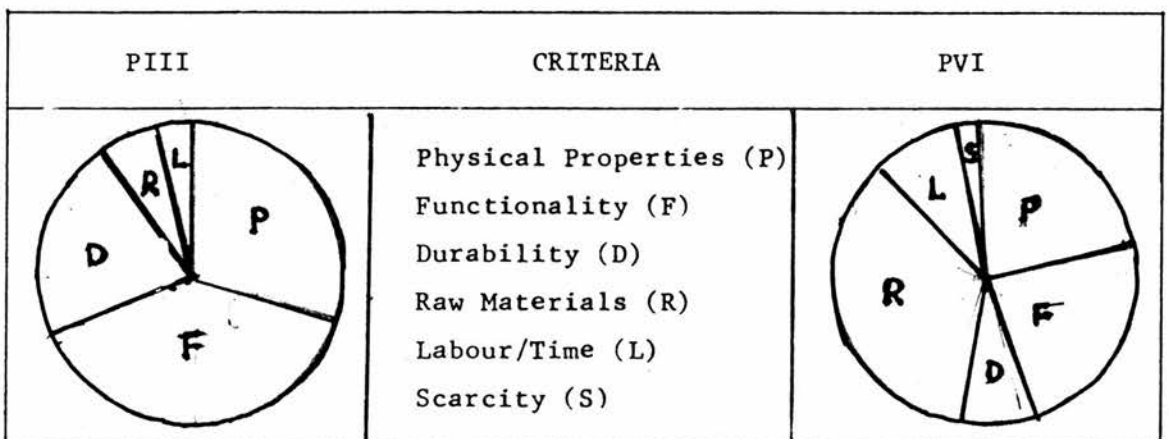
9.2.1 VALUE

PRIMARY III - PRIMARY VI

Table 9.2.1 represents the individual responses of the same ten children as they progress from P3 to P6 and reveals similar trends to those identified in Chapter 5 of the cross-sectional analysis. While the younger children still attach significance to physical properties, they combine these criteria with those of "functional utility" and "durability". These latter criteria account for 57% of all their responses.

TABLE 9.2.1

COMPARATIVE DISTRIBUTION OF RESPONSES OF PIII THROUGH PVI TO JUSTIFY DIFFERENTIAL PRICING OF GOODS



These same children at the P6 stage, however, reveal a marked change in the distribution of their responses. There is a significant decline in their reference to "physical properties" "functional utility" and "durability", and a compensatory dependence upon raw materials and labour/time inputs with 51% of all responses subsumed within the latter criteria. While this distributional shift is significant in itself, its importance is made greater by the qualitative change in the nature of the responses it contains. Children's responses indicate an awareness of differential costs of raw materials and labour as the following P6 examples illustrate:

(1) A pair of shoes costs more than a bar of chocolate because they cost more to make. (What costs more?) "There is the cost of buying the leather and the soles. Chocolate is made in bulk and shoes are made separately".

(2) A pocket knife costs more than a loaf of bread because there is craftsmanship used in making the knife. (What about a loaf of bread? Bread is very important yet it doesn't cost much). The ingredients are not as expensive as the metal in the knife.

None of the ten children at P3 was capable of responding in this way. While not all respondents in P6 were as well endowed as these, most of the older children were conscious of how cost factors

involving raw materials and time and labour affected final price in the market place.

While it is not possible to record all the individual responses of the children at the two stages at which they were interviewed, it is necessary to cite a representative sample of responses in order to exemplify the ways in which the older children's concept of value alters:

Child 1 (P3) - A pair of shoes cost more than a bar of chocolate because it is little and there is more in a pair of shoes. (Can you think of any other things that make shoes cost more?) No.

Child 1 (P6) - A pair of shoes, because they might cost five pounds and a bar of chocolate only costs nineteen pence. (Why is there such a difference?) Because the chocolate might have sugar in it and it might not be as good as the shoes. (Are there any other things that make the shoes cost more?) They might be leather or suede and they are all done up neatly and sewn up. (Why does sewing them up cost a lot of money?) Because it has been done neatly.

Child 5 (P3) - (Why do diamonds cost a lot of money?) Because they are made of a special sort of stone stuff. Because men have to go down pits and things and dig them up. (Why does that make them cost a lot?) I don't know.

Child 5 (P6) - They cost more because they are supposed to be the most precious thing in the world and they can't break. (Anything else that makes them cost more?) Because they glitter. (Is there anything else about them? Do you just go out and find them?) No, you have to dig for them. (Does that make any difference to the price?) Maybe not. (Where do you get them from?) From America. (Say you get them from America. Does that make any difference to the price?) Because you have to sail with them.

### 9.3 EXCHANGE

#### PRIMARY I - PRIMARY III

In the cross-sectional analysis of the evolution of the exchange concept, three stages were identified corresponding with the ages of the respondents. The longitudinal study, involving the ten pupils as they moved from P1 to P3 produced the following responses and went some way to confirming those findings.

At P1 none of the children represented exchange as a relational concept involving both buyers and sellers. As Table 9.3 indicates, responses emphasised the "moral/legal" and "change" aspects of the transaction and these findings replicated those already analysed in the chapter on exchange.

The trend towards more relational understanding, while present in the responses of P3 children, was not as significant as in the cross-sectional analysis. The "till" and the "bank" however, were both mentioned as money depositories, but no real awareness of their economic functions was displayed by the pupils. Their pre-occupation was with the physical movement of money, not with its financial importance and its relevance to the service

providing agency.

Traces of their previous reliance upon "moral/legal" sanctions and "money for money" remained, but their importance has considerably diminished as Table 9.3 shows.

TABLE 9.3

DISTRIBUTION OF RESPONSES FOR MONEY PAYMENTS ON EXCHANGE (PI - PIII)

P1	N - R (1)		N - R (2)		<u>Explanations</u> A. <u>Non-Reciprocal</u> (N-R) 1. Moral-Legal (1) 2. Money for Money (2) B. <u>Reciprocal</u> (R) 1. Money-Goods (1) 2. Money-Values (2) C. <u>General Economic Factors</u> eg. Store's Expenses (G)
	N - R (1)		N-R(2)	R(1)	

9.3.1 EXCHANGE

PRIMARY III - PRIMARY VI

Table 9.3.1 represents the distribution of responses to exchange questions and reinforces the hypothesis that P3 children are more conscious of

the reciprocal nature of exchange than P1 children. They did not discard completely non-reciprocal explanations but rejection of the moral-legal criterion is clearly evident with only 25% of responses alluding to it.

As in the cross-sectional study the majority of the ten children were aware of some relational aspects of exchange but their responses still demonstrated a very rudimentary understanding of the interactive nature of commercial transactions. The dispersion of consumers "money" through wages, costs, and profit was not mentioned. Banks and tills were regarded as terminal points in the physical movement of money and the dynamic aspects of monetary flows were ignored in the children's explanations. Typical of P3 responses made were the following:

#### Question 22

(1) They put it in the till? (So that's where it stays?) No they give you some money back. (Does anything else happen to it?) People come and get it. (What do they do with it?) They get change as well.

(2) Give it to the man or lady and he'll put it in the till (Does it stay there?) No. They take it home and count it. Then they put it in the bank. (What happens to the money then?) They might look after it.

TABLE 9.3.1

## DISTRIBUTION OF REASONS GIVEN TO EXPLAIN EXCHANGE

P3	N-R(1)	N-R(2)	R(1)	R(2)	G	<u>Explanations</u> <u>Non-Reciprocal (N-R)</u> 1. Moral-Legal (1) 2. Money for Money (2) <u>Reciprocal (R)</u> 1. Money for Goods (1) 2. Money-Value of Goods (2) <u>General Economic Factors</u> eg. Stores Expenses
P6	N-R(1)	R(1)	R(2)	G		

The distribution of the same ten children's responses at P6 indicated a substantial shift into the area of "General economic factors". More significant, however, was the change in the quality of children's replies as the following examples reveal. Here are the responses of the same two P3 children quoted previously but now having reached P6.

Question 22

(1) They spend the money on more things. (What sort of things?) Food. (For themselves?) No, for the store. (Do they use it for anything else?) For the wages.

(2) They give the money back to the people who made them so they can make more. (Now what does the person at the store do with the money we give him?) He counts it then takes some of it for a profit and then he hands it back to the people who made the goods. (Might anything else happen to the money?) It might be put in the bank.

While not all ten children had as clear an understanding of the economic process as these cited, seven were able to offer explanations indicating an awareness of inter-connections. None of these was able to produce similar responses at the P3 stage when interviewed in a similar manner. Both qualitatively and quantitatively there was evidence of an appreciable change in older children's awareness of the exchange concept.

9.4 PROFIT

PRIMARY III - PRIMARY VI

As in the cross-sectional study, the ten P3 children unanimously rejected a profit margin for friend (Q25), storekeeper (Q26) or bank (Q27) as being morally indefensible. At P6 their unanimous opposition was modified by economic justification.

TABLE 9.4

CHILD'S CONCEPT OF PROFIT  
PUPIL RESPONSES EXPRESSED AS PERCENTAGES

CLASS	NO PROFIT		PROFIT	
	£1 sale for £1 purchase		£2 sale for £1 purchase	
	INDIVIDUAL	STORE	INDIVIDUAL	STORE
PIII	100	100	0	0
PVI	80	60	20	40

Differential responses were given to two situations involving profit and Table 9.4 represents the degree of this change. Here again the statistical change, particularly in the case of the store's profit and the bank's interest, was marked but the nature of the reasoning used to justify responses commands even greater attention.

(a) "It would be ~~an~~ right for him to sell it for a bit more to make a profit? (Why should he be able to make a profit?) Because the shop needs more to keep going".

TABLE 9.4.1

CHILD'S CONCEPT OF INTEREST  
PUPIL RESPONSES EXPRESSED AS PERCENTAGES

CLASS	INTEREST £100	NO INTEREST
PIII	100	0
PVI	30	70

The majority of children still found the legitimacy of the bank's interest (see Table 9.4.1) more difficult to justify than that of the store's profit, although three children were able to identify cost factors, involving workers, cashlines, etc. The difficulty of disaggregating the "hidden" costs involved in banking vis a vis the store's expenses still persisted, and children

were much more reticent in advancing specific inputs to justify banking profits. Three children only were prepared to support the view that the bank should receive more than £100 for its £100 advance. The remainder were unprepared to accept that, convinced that an equivalent return only was justified.

#### 9.5 OCCUPATIONAL RANKING - PRIMARY III - PRIMARY VI

The distribution of the responses of the ten P3 children as shown on Table 9.5 indicates a marked preference for the "good" category with only the rubbish collector ranked by fewer than five children in this category. At the P6 stage this pattern has changed with fewer than 50% of the children categorising the occupations in the "good" column, preferring to locate more of their responses in the medium category. This shift is accompanied by a reliance upon a wider range of criteria. At the P3 stage, the ten children draw heavily upon "conditions" and "helping" criteria to justify their ranking with almost 90% of their total responses in these two categories. When the same children advanced to the P6 stage, that figure has fallen to 75% (see Table 9.6.1). These distributions approximate very closely to those returned in the cross-sectional findings recorded

in Chapter 7. Qualitatively the children's responses have altered as well, and a number of the older children introduce variables such as income, and functional comparisons to justify their rankings, especially in the 'medium' category. Under similar interviewing conditions such responses were conspicuously absent when the children were at the P3 stage. This capacity to objectify - albeit in a very rudimentary manner - contrasts strongly with the egocentric viewpoint adopted by the same children at the P3 stage and confirms the findings of the cross-sectional study (see Chapter 7).

Child 1 P3 - (Is the rubbish collector's job good, medium or bad?) Its bad. (Why?) He has to collect a lot of smelly dirty things and I don't think that is nice.

Child 1 P6 - (Is the rubbish collector's job, good, medium or bad?) He's in the middle, his job is good and bad. (Tell me why it is good?) Well the rubbish collector cleans all the rubbish from the street and keeps it clean. (What is bad about it?) He doesn't get much money for it.

TABLE 9.5

PRIMARY THREE: OCCUPATIONAL RANKING  
TOTAL NUMBER OF RESPONSES

N = 10	GOOD	MEDIUM	BAD
DOCTOR	9	-	1
RUBBISH COLLECTOR	3	2	5
POSTMAN	5	3	2
BUSDRIVER	6	1	3
WAITRESS	7	2	1
BANKER	7	-	3
TEACHER	6	1	3
GARAGE MAN	5	1	4
TOTAL	48	10	22

TABLE 9.5.1

PRIMARY THREE: CRITERIA FOR OCCUPATIONAL RANKING

N = 10	TOTAL NUMBER OF RESPONSES EXPRESSED AS PERCENTAGES					
	Work/ Effort	Functionally Superior	Income	Danger	Conditions	Helping
DOCTOR					1 (10%)	9 (90%)
RUBBISH COLLECTOR					7 (70%)	3 (30%)
POSTMAN				1 (10%)	7 (70%)	2 (20%)
BUSDRIVER	1 (10%)		2 (20%)		4 (40%)	3 (30%)
WAITRESS					5 (56%)	4 (44%)
BANKER				2 (20%)	3 (30%)	5 (50%)
TEACHER			1 (10%)		3 (30%)	6 (60%)
GARAGE MAN			1 (10%)		6 (60%)	3 (30%)
TOTAL	1		4	3	36	35

TABLE 9.6

PRIMARY SIX: OCCUPATIONAL RANKING  
TOTAL NUMBER OF RESPONSES

N = 10	GOOD	MEDIUM	BAD
DOCTOR	6	3	1
RUBBISH COLLECTOR	2	1	7
POSTMAN	4	4	2
BUSDRIVER	5	2	3
WAITRESS	5	2	3
BANKER	7	3	-
TEACHER	6	3	1
GARAGE MAN	3	2	5
TOTAL	38	20	22

TABLE 9.6.1

## PRIMARY SIX: CRITERIA FOR OCCUPATIONAL RANKING

N = 10	TOTAL NUMBER OF RESPONSES EXPRESSED AS PERCENTAGES					
	Work/ Effort	Functionally Superior	Income	Danger	Conditions	Helping
DOCTOR			1(7%)		5(36%)	8(57%)
RUBBISH COLLECTOR	1(7%)	2(13%)	2(13%)		9(60%)	1(7%)
POSTMAN	2(14%)		1(7%)		7(50%)	4(28%)
BUSDRIVER	1(7%)				5(36%)	4(28%)
WAITRESS	1(9%)	1(9%)	2(18%)		2(18%)	5(46%)
BANKER			5(38%)	1(8%)	3(23%)	4(31%)
TEACHER		3(24%)			5(38%)	5(38%)
GARAGE MAN	1(10%)			1(10%)	6(60%)	2(20%)
<i>AVERAGE</i> TOTAL	6	6	11	2	42	33

## 9.6 INCOME DIFFERENTIALS

### PRIMARY III - PRIMARY VI

The ten children were given the "Who Earns More?" test at P3 and later at P6 and the following results were recorded (see Table 9.7). Substantial improvements in performance were recorded with an average correct number of responses rising from six to nine. More significant were the changes in the distribution of responses giving criteria for income differentiation. 70% of the younger children's responses stressed two categories greater "output/effort" and, "functionally superior", only, with no reference to responsibility, education/skill/training. In short, their range of criteria was dictated by the visual stimuli presented in the pictures.

They also experienced great difficulty in evaluating the importance of demand/supply variables which were present in pictures A, C and J, with only two respondents capable of interpreting these factors. In the retest situation the same children gave vastly different responses. "Greater output/effort" and "superior work", while still prominent in their assessment, represented only 48% of all their responses. These criteria were no longer offered as definitive but

were supplemented by other factors which referred more to the intrinsic nature of the work. Education/skill/training and responsibility were cited as additional determinants of income differentials. The pictorial situations were contextualised in a wider economic way than previously and the more simplistic criteria were modified to incorporate a more complex set of variables.

Noteworthy also was the same children's capacity to grasp the significance of demand/supply factors in questions A, C and J, with the majority of them producing correct responses in two of the three situations. Their explanations also were more relevant. Previously they tended to miss the explicit imbalance between supply and demand factors and introduce irrelevant factors, in order to justify their pictorial choice.

TABLE 9.7

COMPARATIVE CRITERIA USED BY SAME PUPILS AT PRIMARY III  
AND PRIMARY VI LEVELS TO JUSTIFY INCOME DIFFERENTIALS

	Pupil	Demand and Supply	Responsi- bility	Danger	Education Skill Training	Condi- tions	Greater Output Effort	Superior Work	Number of Correct Responses Max = 12
P R I M A R Y I I I	1						2	2	3
	2			1			2	2	5
	3			1			5	1	3
	4	3		1			4	3	8
	5	2		1			2	1	5
	6			3			1	3	5
	7			1			2	3	6
	8	1		1			4	4	9
	9	1		3			4	4	8
	10	3		2			1	4	8
TOTAL		9		14			27	27	Av = 6.0
P R I M A R Y V I	1	2	1				2	5	9
	2	1	2	2			3	3	9
	3	2	1	1	1		5	2	7
	4	3	2	4	1		3	3	11
	5	2	-	2	1		3	3	9
	6	1	1	4			3	3	5
	7	3	1	3		1	2	3	11
	8	1		1			3	4	6
	9	3	3	4	1		3	4	11
	10	3	1	1	4	1	2	5	12
TOTAL		21	12	22	7	2	25	35	Av. = 9

9.7 Conclusions

The findings of the longitudinal study go some way to substantiating those deriving from the cross-sectional one. The importance of age in determining the kind and quality of responses is clearly revealed in all the four major conceptual areas of economics considered. The full range of longitudinal change from primary one to primary six has not been investigated and this must be an objective of further investigation.

SUMMARY AND CONCLUSIONS

This research has concentrated on a child's understanding of four basic economic concepts pertaining to goods, value, exchange and income and has investigated how economic cognition is affected by a number of different variables, such as sex, socioeconomic status and academic ability. A longitudinal study has also been conducted to add a vertical dimension to the more general cross-sectional study of children at ages five, eight and eleven years. In the course of the study a number of hypotheses have been advanced relating to the child's understanding of economic processes, activities and institutions. In this final chapter a collation and summary of these findings will be attempted. The empirical results arising from the interviews may be summarised under the following heads:

10.1 UNDERSTANDING OF SPECIFIC ECONOMIC CONCEPTS

10.1.1 GOODS

In conceiving a good, that is an object of commercial intercourse, the primary one child starts from a very imperfect and limited construct of a good's saleability. Fixating upon the

physical characteristics of a commodity the very young child forms an extremely narrow view of what can be commercially exchanged. As the child ages this range of goods widens.

Co-incident with this expanding schema of goods there develops a qualitative change in the cognitive development of the child. While the primary one child measures a good's commerciality in terms of its physicality, the primary three child introduces an economic and social dimension. This change is demonstrable both in the cross-sectional and also in the longitudinal analyses. It is this knowledge of the social and relational aspects of the good's cognition and use that appreciably alters the child's valuation of the good's worth. By primary six this repertoire of commodities has widened even further and only a very small minority of children is incapable of differentiating between saleability and non-saleability.

#### 10.1.2 VALUE

The evolution of the concept of value can also be described in a series of stages. The feature of primary one responses is reliance upon perceptual clues, especially those of size, in determining

relative value. This primitive quantitative schema gives place to a consumer oriented evaluation of an object. This egocentric yardstick is more complex than that previously employed but gradually its limitations on the production inputs side are exposed. As the decalage occurs raw materials are simply referred to in a peripheral way by a minority of primary three children but gradually by primary six they are integrated into a wider schema where they are conjoined with labour and other production costs. This stage is also distinguishable from the previous ones by qualitatively superior responses from the oldest children.

The responses of primary three or six children to the factors of supply and demand further help to substantiate this stage-like development. For primary three children "cheaper" or "dearer" are synonymous with "smaller" or "bigger" quantities of commodities, while for primary six children demand and supply forces are of greater importance than physical properties. This marks a move away from the egocentric viewpoint to a more objective awareness although it is true to say that demand, rather than supply explanations, are still more common among the oldest children.

### 10.1.3 EXCHANGE

The empirical data also suggest that there are three developmental stages in the child's understanding of exchange. Stage one is characterised by egocentricity with the child viewing exchange from a narrow individual viewpoint. The essence of exchange - reciprocity - is simply disregarded by the child and the buyer - seller relationship is replaced by a schema stressing the moral/legal imperative. Stage two alludes to relationships but sees them in very simplistic terms. Casual explanations are extremely short-term and monetary movements are equally simple. Primary six responses represent stage three in their acceptance of the reciprocal element exchange involves, and also in their allusions to the dynamic, interconnective nature of commercial transactions. The longitudinal studies further reinforce this stage-like evolution of the exchange concept.

Additional confirmation of stage three derives from an analysis of responses to bank profit and of supply and demand questions. At the primary three level children view the bank only from a consumption angle in that it provides a safe repository for valuables and money but deriving no

monetary advantage for so doing. It is only at primary six that children are aware that the production side of banking merits reward in terms of profit and interest.

Responses to questions relating to supply and demand factors elicit qualitatively different responses from primary three and primary six children. At the primary three stage, goods were thought generally to be cheaper or dearer where change in quantity occurred. While that factor was not disregarded by the primary six children it was supplemented by reference to demand and supply variables. Shortages were cited in explanation of rising prices and gluts cited in explaining falling prices. While their understanding of market forces was evidently rudimentary it is noteworthy that younger children were demonstrably incapable of advancing similar explanations in similar interviewing conditions.

#### 10.1.4 OCCUPATIONAL RANKING

The questions in this part of the interview presented particular problems for the youngest children and this can be explained by their lack of contact with the world of employment so the analysis was confined to the primary three and primary six children only. For the former,

occupational ranking is a highly subjective process with the child's personal involvement the determinant of an employee's occupational standing.

Employees were graded in so far as they helped or hindered the childish respondents. Children therefore produced highly individualistic rating scales lacking objective criteria. Final statements were made with no justification. Intrinsic criteria such as responsibility, income, skill, education were disregarded by the great majority of primary three pupils.

Among the older children greater discrimination is evident with pupils offering a compendium of factors in addition to "helpfulness" and "conditions". Responses drawing upon comparisons and contrast of one employee with another are also a feature of this age group. There is a shift from the egocentric stance to a more detached one, which is not dissimilar to the shift occurring in the child's concept of value and exchange. For the first time children's responses were characterised by a measure of perspectivism.

#### 10.1.5 INCOME DIFFERENTIATIONS

Analysis of criteria advanced by the primary three and primary six children indicates that

significant changes occur in their conception of income differentials. The younger children are heavily reliant upon quantifiable criteria involving output and effort, as well as on an indiscriminately vague criterion of functionality. This simplistic device provided this age group with an effective yardstick for differential classification of incomes. Few of the younger children were conscious of its economic shortcomings and few incorporated other variables into their differential schema. By contrast the older children found these criteria provided an inadequate construct for justifying income differentiation. Perceptible output and effort differences, which satisfied the younger children as definitive criteria, are relegated to a more lowly position, being compounded with a number of intrinsic factors, involving education/skill/training and responsibility. While trace elements of the lower functional schema remain the higher order schema, with its wider economic perspective emerges, becoming typical of the older pupils' responses. Class differences also affected the criteria advanced by the older children in their explanations of greater occupational status and greater earning capacity producing variations in the quality of responses.

In the remainder of this chapter a number of general observations will be made on this study, relating to educational implications and cognitive development.

## 10.2 Educational Implications

First, attention must be drawn to the educational interest that prompted this research, that concerning the teaching of economics within the primary school. One of the most formidable arguments advanced against such a curricular development has been the academic nature of the subject and the young child's incapacity to comprehend its concepts. The findings of the Feasibility Study on Economics in S1 and S2 (1978) and LINTON (1979) are the only two British inquiries that have attempted to challenge this presumption of the child's incapacity. The findings of this inquiry are supportive of the positive conclusions of these two investigations in identifying latent economic understanding among primary school children. Pupils between primary three and six appear cognitively capable of making sense of a number of basic economic ideas. In Piagetian language children within these age levels approach certain economic concepts with a set of "spontaneously and undeveloped intuitions"

which could well provide the structure for the teaching input of economic ideas. The manner in which economic knowledge is symbolised and codified has not been touched on in this study but considerable work has already been done in the United States (KOURILSKY et al) in this area and there is scope for developing similar materials in this country.

Before consideration is given to questions of curricular change and educational strategies designed for its attainment, it is important to ask whether or not it is educationally desirable and beneficial to introduce economic concepts into the primary school. One certainly cannot argue for their inclusion on the evidence of a concerted campaign by educationists and teachers. The absence of such demand however should not be misconstrued. There is considerable ignorance of what economics as a discipline has to offer in the upper primary school. There is an educational need to present economic concepts in a meaningful way to primary teachers and then allow them to decide upon the discipline's educational utility and relevance in the primary school curriculum. American example has much to commend it for there a positive effort has been made to relate economic ideas to the elementary school environment.

It should be noted that American curricula in economic education are underpinned by important developments in learning theory, particularly the work of Bruner whose 'spiral curriculum' has provided a useful vehicle for articulating the concepts. The recurring nature of economic ideas has made it possible to design curricula which develop greater depth and complexity as the children mature. Educationally it is argued that an early exposure to these basic ideas will allow children to internalise these concepts and gradually understand the significance of more complex economic relationships and causal connections. Provided that primary courses containing economic ideas are carefully graduated to pupils' abilities and meaningfully contextualised, it is argued later schooling will be able to extend and deepen pupil comprehension. In the pilot schools in this country where such courses have been developed, teachers have been persuaded of the feasibility of teaching economic ideas. Educational scepticism about the benefits of economic education however still remains and there is a substantial need for in-service courses to heighten awareness of what economic education has to offer.

This scepticism must also be countered by the

production of curricular materials which represent economic ideas which are both comprehensible to primary school pupils and acceptable to their teachers. To develop these from scratch represents a considerable educational challenge, but one is able to draw upon exemplary curricula that have been developed by American researchers and educationists.

Over the last two decades the majority of American states have modified their elementary school curricula to include a significant element of economic education. This has been the outcome of concerted pressure from the teaching profession and from commercial interests. The Joint Council for Economic Education centred in New York, funded by national and international business corporations, has co-ordinated this movement to promote economic literacy in elementary and secondary schools. Teachers have therefore been supplied with the materiography including text books, tests, tapes and videos to implement this change. Extensive sponsored in-service courses have ensured that these adjuncts have been properly deployed and exploited by teaching personnel.

Similar procedures and funding would not

necessarily produce curricular change in this country but there are lessons to be learned from transatlantic example. Teachers in primary schools must be provided with materials that contextualise economic ideas in the primary school curricula. Senesh's work offers a useful framework for developing an economic rationale that is meaningful at this level of instruction. Other programmes could be developed from that exemplar and the content of environmental studies could be used to articulate these ideas.

Environmental studies derives its educational rationale from the Primary Memorandum (1965) and is identified in the following terms:

"The scientific and technical revolution is causing the most striking changes in the working lives of modern man and woman. New inventions and techniques are revolutionising most branches of trade and commerce, the operations required of individual workers are becoming simpler as machinery grows more complex... the demand for one particular area may cease as another elsewhere supersedes it..." "To an increasing extent, the need of our present day society is for men and women who are capable of adapting themselves to changing tasks and problems..." "A further feature

of modern living which presents a challenge to education is the increasing amount of leisure in the lives of most adults."

Dated though the Memorandum is, there are clear opportunities for primary teachers to develop economic topics and perspectives within these terms of reference.

The Committee on Primary Education's Report (1980) has further enhanced the potentialities of environmental studies in its economic dimension in identifying a number of important unifying concepts such as adaptation, cause/consequence, independence/interdependence and location. These have already provided the focus for the development of a number of pilot studies in primary schools involving economic concepts such as scarcity, industry, the market, standard of living, money and trade. Important though these experimental schemes have been in stimulating interest, they lack direction and width. If there is to be a self-sustaining lift-off in economic education in the upper primary and lower secondary schools a national initiative must be taken.

There are signs, however, evidenced by the emergence of two recent Reports, that economic

education is being accorded a higher priority in the school curricula. These Reports emanating from the Consultative Committee on the Curriculum have strongly supported the case for curricular change. The first of these has been produced by the Scottish Central Committee on Business Subjects and states "emphatically that all people should, before they leave school, have a basic knowledge of the workings of the economic and business components of society". In defence of this assertion the authors cite "Working Papers" by H. M. Inspectorate (Department of Education and Science, 1977) which argue the case for "instructing young people in economic competence in schools since there is nowhere else that this task can be undertaken methodically for all citizens. If left to mere chance it would probably mean depriving vast numbers of people of an understanding of the very processes and issues which affect their lives as citizens and workers". Two recommendations are made for the attainment of these objectives:

- (1) There should be units of study in economic awareness for all pupils (4.02).
  
- (2) Education in money management should be available for all pupils from S1 onwards. (9.12)

Of even greater educational significance, given the scope of the study and width of its circulation, is the second Report, that on 10 - 14 Education (1986). Its first contribution is in the area of curriculum content and design where it argues the case for inclusion of "subjects" in the 10 - 14 curriculum in the "insecure if not universal category": such as economics, money management and consumer education. It also admits that commendation of their educational worth is no guarantee of their inclusion because of curricular pressure.

Secondly, it identifies a number of strategies for curricular change involving both primary and secondary schools. These include "integration into already existing departmental provision", "curriculum inserts", and "collaboration in the construction and teaching of courses".

Finally, the professional implications are spelled out in terms of pre-service and in-service provision for the teaching profession. Allocations of money and personnel have also been proposed and time scales projected.

The Report therefore identifies priorities,

details strategies and allocates resources for the provision of "coherent continuous and progressive" education and it remains to examine its specific significance in furthering the development of economic education.

Educational energies must focus on two equally important areas, those of pre-service training and in-service provision.

In the first of these there is scope for flexibility, especially in the new B.Ed courses that are now being developed in Scottish Colleges of Education.

The new B.Ed courses are malleable enough to accommodate curricular modifications and the strategy of "integration" could be used to introduce economic elements into social environment programmes. The creation of curricular inserts, short courses or modules involving economic concepts would be a possible development. It is more difficult to see courses of academic economics being offered at student level in colleges of education, but "mini-specialist" optional courses in economics might be provided in the final year of the degree.

Of equal importance is the in-service provision of courses of economic education and here again the 10 - 14 Report points the way ahead. For these courses to be successful they must forge educational linkages between P6 and P7 classes and those in S1 and S2. A number of central concepts in the area of economics, consumer education and money management could be identified and developed over these four years. Concepts such as money, the market, standard of living, industry could be used as integrative topics in environmental studies and articulated more fully in S1 and S2 through collaboration with home economics and business studies departments.

These backward and forward linkages could be highly beneficial to all the teachers concerned, with the subject expertise of the secondary specialists helping to supplement content deficiencies of the primary staff, while their contribution would be to widen the educational horizons of their secondary colleagues.

While pre-service and in-service courses are necessary prerequisites for meaningful economic education their effectiveness would be much enhanced by another educational provision which has done much to accelerate developments in the

United States. This has involved film and video cassette materials that present economic concepts dynamically and imaginatively for the children between the ages of nine to thirteen. Using a variety of dramatic situations the "Trade Off" series exemplifies fundamental economic ideas in relevant real life situations and then offers techniques for dealing with economic choices. The great merits of this series are that it provides a flexible set of procedures for both teachers and children, yet it also introduces a corpus of recurring ideas that are fundamental to economic understanding. While one is conscious of the financial difficulties in producing a similar scheme in this country one can derive considerable educational benefit from its conception, presentation and procedures. Less financially ambitious schemes of a similar nature might be imitated in colleges of education and these could be disseminated throughout the school system.

It remains to collate and summarise the educational views expressed on the locus and development of economic education in Scottish primary schools. There are clear indications deriving from this inquiry that a number of basic economic ideas are within the cognitive capacity of primary children within the primary three to

six age range. There remain however two considerable obstacles to actualising economic education in primary schools. Firstly there is the problem of curricular inertia. Unless teachers are persuaded that an economic perspective in environmental studies substantially enriches its educational dimension they will be reluctant to introduce such a perspective. Secondly, economic ideas must be carefully and systematically codified to meet the educational requirements of the much younger consumer. Neither of these objectives is attainable without a concerted campaign of national proportions providing adequate costing and resources. There are signs in the 10 - 14 Education Report that a greater sense of urgency is present in high places and that the attainment of a meaningful level of economic understanding will be possible within the upper primary school in the foreseeable future.

### 10.3 Methodological Issues

Of pivotal importance in this investigation has been the clinical interview which has been justified on the ground that it allows the interviewer a wide degree of flexibility for probing and eliciting information in the light of children's different responses. It would however, be naive not to

admit to its shortcomings as well. An interview comprising forty two questions is bound to have ambiguities of language and expression for different age groups of children. Pictorial representations are not always as straight forward as they appear to adults and lack of response may be attributable to confusion in the material presented not ignorance in the child. Donaldson (1978) counsels caution in overestimation of childrens' understanding of language. She has also drawn attention to the attitudes adopted by interviewer, and the dangers of preconditioning children to give certain responses rather than others because of the manner in which the interviewer asks questions. The specimen interviews were included to show how questions were handled and developed. Throughout the interview attempts were made to counter these weaknesses and it is felt that this sensitivity ensured that ambiguities were clarified and questions modified as the interviewer became more experienced.

For all its flexibility the interview is heavily dependent upon the child's capacity for linguistic interpretation. Literate adults in our culture commonly conceive of language as having what GRICE (1968) calls "teachers meaning" meaning that

is frozen and fixed, not liable to vary according to context. Unless one takes account of the totality of events within which language occurs one may form erroneous judgements on the young children's capacity for conceptual understanding. This has been admirably demonstrated by Donaldson (1974) in her Teddy Bear Experiment on conservation. There appears to be a need for varied contextual examination of a similar nature to this in the area of economic cognition. Unless this is done there is danger of attaching too much significance to responses deriving from the interview alone.

Involving children in child-centred economic situations might elicit different responses from those emerging from interview procedures, especially with younger children. Particularly pertinent to this approach is the work of KOURILSKY (1974, 1977) on her "Mini-society" and "Kinder-Economy" experiments which involves children of five and six years of age in role-playing and simulation activities exemplifying economic concepts.

#### 10.4 Cognitive Development

As has been already noted, this investigation was

partly motivated by a desire to test out the applicability of Piaget's theory of cognitive development in a social science discipline, economics. His particular configuration of cognitive structures has been used throughout as a framework within which a number of economic concepts have been examined and analysed. In adopting the Piagetian stage hypothesis one is very conscious of the definitional ambiguities pertaining to the "stage" concept as well as the methodological problems confronting research in this area of cognition. No attempt has been made to solve these problems. "Stages" have been taken to represent heuristic descriptions of cognitive structures that emerge as the child interacts with his or her environment - by-products of the ongoing processes of assimilation, accommodation and equilibration. In enunciating this disclaimer one is aware of the dangers implicit within this approach - that of an uncritical acceptance of stages per se. This is readily acknowledged but it would require a different research stance to investigate these issues than that adopted in this inquiry.

What can be said is that, given the above limitations, the findings of this inquiry do appear to support more than to weaken the

Piagetian stage-hypothesis. This however, is a highly tentative conclusion. It must be remembered that few researchers have considered Piagetian cognitive theory in the social science field. Most inquirers have focused on the physical and mathematical disciplines. A vast number of experiments has been devised to measure conservation in terms of volume, mass and number. No such battery of experimental testing has taken place in economics and its subject matter may not lend itself to such procedures. There are however, identifiable concepts, as indicated in this study, that can be examined at different age levels. While no one would claim that the investigative techniques matched the range and variety of those used on the physical and mathematical disciplines, the interview and visual representations elicited qualitatively different responses across the three age groups.

The question of the relative importance of cognitive development and experiential learning in developing economic understanding requires further examination. One is conscious that the younger children's misguided responses to interview questions might simply be a reflection of their minimal levels of experiential involvement. It might be further hypothesised that these

deficiencies in economic knowledge would be remedied as experiential learning is extended as the child becomes more conscious of his or her environment. This contention fails to give due regard to the significance of cognitive capacity in promoting economic understanding and the remainder of this chapter will attempt to justify that assertion. To this end it is proposed to examine a number of important economic ideas, including demand and supply, interest, profit, circular flow and income differentiation.

Of all the questions asked, those pertaining to demand and supply variables posited the greatest cognitive difficulties for the child. Primary three children simply could not offer meaningful responses. It made no difference that the questioning involved familiar articles and that children were clearly aware that the prices of these goods could fluctuate. It is true that the oldest children offered more correct responses, but they too experienced considerable difficulties. There were no signs that their greater experiential background provided them with a more consistent set of criteria for justifying their responses. The concepts of equilibrium and its dissolution implicit within variations in price schedules were conspicuous by their absence

from even their responses. The cognitive complexity of simultaneously processing both demand and supply factors was clearly beyond the capacity of most twelve year olds.

A further constraining factor that impeded their understanding was a predilection to examine situations from a subjective consumption standpoint. While it has been argued that generally egocentricity tends to be declining at the primary three level it still figured prominently even among the oldest children in this conceptual area. Their experiences, deriving from personal consumption, took precedence over supply considerations and had the effect of markedly skewing their economic perspective. It is doubtful if they would have been able to process and relate supply factors to demand variables even if these had been presented to them. Correctness in one demand/supply example was no guarantee that this knowledge was transferable to others where similar economic principles were being exemplified.

While interest as an economic concept represents a less complex economic idea than the equilibria and disequilibria of demand and supply factors it still made considerable demands on the cognitive

capacity of the children. Three requirements appeared necessary for children to make economic sense of interest. Firstly, they had to be able to see beyond the notion of simple equivalence or, to put it another way, they had to be able to think in terms of the "quid pro quo", not merely "the quid pro quid". Secondly, they had to grasp the meaning of reciprocity as it affected the two parties involved in the monetary transaction. Finally, they had to be prepared to recognise the differential payment implicit within the concept as being morally acceptable.

Primary three children simply rejected interest as morally indefensible, - as a deviation from the norm of simple equivalence. Some of the oldest children were however prepared to accept the economic justification for interest on the grounds that the banks incurred economic costs on the performance of their economic functions. The rigid application of the rudimentary moral imperative when equivalence was violated was modified, albeit in a minority of cases in this age group. There is little evidence amongst the oldest children however, that experiential factors were influential in producing this change. Even the oldest children had experienced very little economic socialisation that could be said to have

heightened their awareness of the banking process. No attempt was made to examine their knowledge of the subtler aspects of differential interest rates existing between the banks' borrowing and lending activities, but on the evidence of their limited knowledge already mentioned it is reasonable to assume that these processes were outwith their understanding. Whether teaching intervention using visual and diagrammatic representation might have assisted the cognitive process is an open question and worthy of further research.

While the concept of profit has similarities to that of interest it is arguably slightly less complex. Commercial transactions involving the sale and resale of goods at differential prices might appear to be experientially meaningful to children. Stories and fables alluding to profit are fairly common in primary school. This presumption however, was not substantiated by their responses which revealed the same cognitive shortcomings as were evidenced in the responses to questions relating to interest. Unanimous rejection by the primary three children was backed up by similar criteria used to reject interest. Only among a minority of the older children was there a capacity for discrimination exhibited, with the storekeeper's profit being distinguished

from that accruing to a friend. This economic justification arose out of a more sophisticated awareness of equivalence which involved a compounding of a number of disparate costs incurred by the businessman. There was still however a reluctance among the older children to relax from their absolute moral stance although they were more aware of costs incurred by the businessman.

Circular flow involving the movement of money from the buyer to the seller might appear also to be a meaningful concept particularly in the light of its reinforcement through every day commercial transactions. This impression however is not fortified by evidence. Children's experience if anything tended to impede rather than promote economic understanding with primary three children regarding the store's till as a terminal part of the circular process.

Indeed the limited physical dimensions of the store appeared to constrict their cognitive capacity to appreciate the wider dimensions of circular flow. The dyadic transaction, involving money transfer from buyer to seller for goods received, was understood but the monetary flows that were occasioned and sustained by that

business transfer were beyond their cognitive grasp. This is not surprising when one examines the nature of the dynamic processes that were set in train by that initial transaction. Money disappears and reappears in a multiple number of different forms as the storekeeper performs his commercial role as a retailer. Goods, services, wages and costs are all manifestations of monetary flows. The essential element that makes economic sense of these kaleidoscopic changes as money moves through the economic system is that of conservation.

The oldest children were able to make partial sense of these complex relationships, but they too had some difficulty in tracking the flow of money. They did however have much more sophisticated notions of equivalence and conservation and were able to accommodate and make sense of some of these complex monetary interactions. The evidence would suggest however, that the more informed responses were not a product of their greater experiential involvement but an outcome of the cognitive developments alluded to above.

The final major conceptual area relating to income differentiation differed from the other areas in that visual stimuli were used to elicit responses

from the children. Children were asked to make observations upon a number of different occupations. The pictorial representations acted as trigger mechanisms which activated their limited experiences. The cognitive limitations of the primary three children were clearly exposed by their simple reliance upon highly personalised criteria such as helpfulness and quantitative factors. Children in this age group also tended to rely almost exclusively upon one criterion or two at most. The highly subjective stance adopted by these children was extremely prejudicial to their critical judgement and their responses were of a highly inconsistent nature.

The oldest children also drew heavily upon experiential factors in justifying income differentials and this repertoire provided them with a wider range of criteria than the younger children. They also revealed signs of deeper cognitive understanding particularly in their capacity to draw comparison and contrasts between different wage earners. Some too showed a partial awareness of some factors relating to supply and demand.

What emerges from this examination is that cognitive development appears to be of greater

significance than experiential learning in determining the levels of economic understanding in the five substantive areas of economics considered above. It should be remembered that none of the children interviewed had experienced any formal economic education. What economic knowledge they exhibited was a fortuitous amalgam of related school subjects such as environmental studies and arithmetic, and of economic socialisation in their daily experiences. It was not therefore surprising to find that their responses were often ill-informed and erratic.

While readily admitting that in certain conceptual areas the children lacked cognitive ability, one would not be prepared to argue that these cognitive shortcomings make the teaching of economics impracticable in the primary school.

There is a considerable body of evidence that strongly supports the contention that teacher intervention can substantially improve the levels of primary children's economic cognition. In other parts of this inquiry references have been made to experimental work in this country and in the United States where primary school children have attained results in validated tests of

economic understanding which support the view that they have the cognitive capacity to make economic sense of some of these difficult economic ideas provided that the experiential input is carefully monitored and contextualised within the children's environment.

## 10.5 Developments of Economic Cognition

### 10.5.1 Egocentrism

While an analysis of egocentrism and its relation to economic cognition was not a central issue of this study there are a number of occasions where the child's individual viewpoint was strongly represented in his or her responses. Questions involving egocentricity have attracted the attention not only of Piaget, but also of many of his disciples and opponents, as it has been argued by him that a child's inability to accommodate to another person's point of view may impair his capacity to understand concepts. There are indications among the youngest children of this narrowly individualistic standpoint. In exchange the buyer/seller relationship involving reciprocal benefits is unmentioned, transactions being explained in terms of the moral/legal imperative, with the onus upon the buyer. Similarly, in the

areas of profit and interest the consumer stance was adopted even at the primary three level, with children categorically rejecting both returns as illegitimate. Only at the primary six level were some children prepared to legitimise these in terms of relational advantages.

Whether or not this incapacity of the youngest children to appreciate these concepts is due to egocentricity is not within the compass of this research. Causal connections of this nature are very difficult to determine and no attempt has been made to consider this relationship in detail. Questions were not framed in such a way as to measure levels of egocentricity but to elicit economic understanding. Whether children would have been unable to "decentre" themselves more if they had been placed in different economic situations is still an unexplored question. Donaldson's research (1978) indicates that egocentricity is modified in younger children when they have to deal with situations that make "human sense", that is where the motives and intentions of the characters are comprehensible to them as children. While situations have been developed in the physical science, such as those relating to conservation, none have been created in economics. The interview used in this study is a relatively

blunt instrument for measuring concepts such as egocentricity, and its findings, while in many ways supportive of Piagetian findings, must be considered very critically.

#### 10.5.2 Development of Morality

As a social science economics is influenced by value judgements, philosophical preconceptions, and ideological biases, which affect objectivity. In some of the questions the children adopted a moral stance in their responses and this is of some interest as such attitudes and cognitive development have been analysed by Piaget. In "Moral Judgement of the Child" (1929) he hypothesised a parallel relationship existent between morality and cognitive development and while the main thrust of this investigation has not been directed to a consideration of such a relationship there have been some occasions where questions of morality and economic cognition have emerged in close proximity. In three areas, in particular, the children were prepared to adopt a moral position in their responses. (Question 21 and questions 25 - 27).

It should be stated at the outset that no attempt will be made to deal with the widest aspects of

morality. Instead a narrower definition involving "fairness", that which is "accurate and right" will be considered. This aspect of morality was identified by Piaget in the "marbles game", and a good game was one which conformed to the official rules. These were respected as sacred and untouchable, emanating from adults and lasting indefinitely. Alternatives to these were regarded as transgressions. For the five year old child this is, for Piaget, a morality of egocentric absolutism. By about eight years of age the child comes to consider fairness as whatever facilitates the most effective interaction between players. For Piaget, this second stage is evidence of a powerful principle of reciprocity. But there is no "moral implication" at this point. It is not even distributive justice, simply pragmatism.

It remains to analyse the moral positions adopted by the children in question 21 and questions 25 - 27 both chronologically and qualitatively. For the majority of the youngest children the most important aspect of question 21 was that relating to punishment for non compliance with payment. This breach of rules merited retribution for stealing. The viewpoint assumed was that of the buyer, and the morality was explained in terms of duty incumbent upon the buyer. Children's

responses gave no indication that they comprehended the rational economic importance of exchange in terms of reciprocal benefits accruing to buyer and seller. The introduction of the moral or legal imperative calls to mind the marbles example where similar status was accorded to the sanctity and absolutism of rules by very young children.

By primary three this moral standpoint has been extensively eroded and replaced by an awareness on the child's part of the reciprocal advantages that emanate from exchange. Whether this is an outcome of decreasing egocentricity, both social and cognitive, is an open question. The child does appear however, to be able to differentiate between buyer and seller and to see equivalences in the economic transaction. To this extent there is a fairness about the transaction. The child no longer makes specific mention of moral imperatives as a factor of importance.

In questions 25 - 27 more complex issues appear to be raised and the question of "fairness" was not so easily apprehended by the children. Question 25 involved the concept of profit and the purchase of goods from another person. Primary three children unanimously rejected this profit as

illegitimate on moral grounds: there being no entitlement to the acquisition of a sum greater than the cost to the seller. Questions 26 and 27 posited similar questions, but this time involving the storekeeper, and also the payment of interest to the bank. These were both rejected on the grounds that they were wrongly taking money, as it was in excess of the original sum expended.

By the primary six level the majority were prepared to accept the storekeeper's profit as fair in the light of the costs that he had to meet in running his business. This stage would be explicable in Piagetian terms as "equity" and it would involve a more relativistic extension of equality.

In the case of the bank's interest even greater complexities are involved in measuring "equity", and therefore there is a reluctance to legitimise interest. Whether greater information through teaching intervention would accelerate this acceptance merits further consideration. For the majority of children the concept of interest does not fit satisfactorily into their schema of rules and is therefore rejected as unfair.

While there is the obvious danger of pre-judging

issues when one uses the Piagetian stage structure: there are signs of similar patterns emerging in this study to those identified by Piaget. The absolute dependence upon rules is a central feature of the youngest children's moral stance. But there are also indications that reliance on rules continues up to the primary three level as well in their rejection of profit and interest. Their lack of knowledge of the underlying factors would appear to be important here. They appear to rely upon their earlier concept of "fairness", which involves an exchange of equivalences. While their concept of reciprocity helps them to make sense of exchange in the context of the store, it does not find a utility in the more complex issues of interest or profit. The oldest children however do utilise this concept and some are prepared to justify profit and interest as being "fair" and "reasonable". As in the case of rules, there is an increase in the cognitive complexity of the variables. As he or she becomes increasingly aware of alternative rules, the child appears to be able to evaluate the differentiating factors that justify the payment of profit and interest. Here is the dearest example of a Piagetian sort of development involving increasing elaboration of a consistent moral principle.

### 10.5.3 Physical To Social Perspective

Attributions of moral and social laws by young children to the behaviour of physical phenomena have been much analysed by Piaget and there is evidence to indicate that they often explain such forces in terms of human intentionality. The movement of clouds, sun and moon have been cited as examples. In this inquiry this transference is not apparent. Indeed there are indications that the youngest children rely much more heavily upon the physical properties of the objects involved rather than upon their social and economic significance. Buying and selling are represented as physical acts in themselves. Goods are evaluated in terms of their physical properties. Older children gradually differentiate between the economic and the physical factors that determine monetary values. The oldest have begun to compound a number of variables and develop a primitive hierarchy of their significance in price determination.

This development is not too dissimilar to the process by which the young child makes sense of physical laws. In attributing human intentionality to vast physical phenomena the child is scaling them down from the macro to the

micro level. He or she is setting them within a meaningful context.

The economic phenomena are not of such awesome magnitude. They are already contextually within the child's everyday world. Monetary measurements of goods are part and parcel of his daily life. The economic complexities that determine prices are subtle and invisible. There is no need to scale economic activities down as in the case of physical phenomena. Prices of goods can be explained simply by using their clearly discernible attributes such as size, appearance etc. Quantifiable indices such as these provide a temporary, albeit erratic, yardstick for money values.

Gradually, however, these simple perceptible criteria are superseded by the emergence of modes of representation that take some cognisance of economic inputs and market forces that differentiate goods in terms of monetary values. Through aggregation and selection of these variables the child makes greater sense of the economic world.

In explaining the development of children's economic understanding, it is important to

highlight two conceptual issues that appear central to its promotion. Firstly, references have been made to the moral stances adopted by children in certain conceptual areas of economics, notably those pertaining to exchange, income differentiation, profit and interest. The youngest children's concept of "fairness" is totally circumscribed with rules but this reliance is gradually modified by what Piaget would label "cool" cognition. Profit, interest and income differentials are no longer seen as violations of rules relating to equivalence by some of the oldest children, but as justifiable in the light of an aggregate of variables which merit additional monetary rewards. Social cognitive development appears to modify the rigidity of the moral stance adopted by the youngest children and cognition gains ascendancy over affect. Whether this social cognitive development can be accelerated by explicit teacher intervention remains an open question and an objective for more detailed research.

Secondly, the emergence of an overarching concept, that of "equilibrium" has been noted. Its relationship to Piaget's concept of equivalence is fairly obvious but there are certain points of difference that should be noted. The static

nature of equivalence should be contrasted with the dynamic elements implicit within the concept of equilibrium. In the latter, one is more concerned with a process involving adjustments needed to restore changes in the equilibrium. Its central importance in many economic contexts and processes may provide a key to economic understanding. Economic choices depend upon evaluating economic advantages and disadvantages of different courses of action. Interest is a return for money lent, and profit for risk taken. Price is supply and demand in equilibrium. At what ages children can perceive and grasp the economic significance of these different equilibria is a question demanding further enquiry. Some states of equilibrium are more complex than others and the child's capacity to think relationally has been shown to be rather limited below P6. In spite of these limitations in the child's cognitive ability there may be educational advantages in presenting a variety of different concepts emphasising this recurrent underlying principle. Through its reinforcement in a number of core economic concepts in different contexts, modified to suit the child's experiential background, it might be possible to develop economic awareness more effectively than through the teaching of specific concepts

themselves.

#### 10.6 Economic Education In The Curriculum

While all these issues merit further consideration they must give place to the wider and longer term educational implications of this investigation.

The evidence adduced in this investigation reveals an incipient, albeit instructured, awareness of a number of economic ideas among primary school children. Some of these among them exchange and money concepts acquire greater coherence and complexity as the children mature. Others such as income, profit, interest, demand and supply lack such coherence even among the oldest children and they fail to make economic sense of the interacting variables involved in their comprehension. In identifying these early thresholds of economic understanding this research is setting out markers for the teaching of economic ideas at the primary school level. These findings would discourage too early exposure to economic concepts relating to income differentials, demand and supply, and profit and interest. There is an obvious need to probe more deeply into levels of children's economic understanding using instruments less blunt than

that of the clinical interview. Experimental situations, involving children in economic decision making might be used to attempt to measure gradients of economic understanding across a wide spectrum of economic ideas. Similar techniques might be used to develop and reinforce this understanding in courses of economic education. The educational thrust of this research will have little worth, unless it activates curricular changes. There now appears scope for the introduction of more economic concepts into primary school curricula. Developmental schemes of economic ideas have been introduced into many elementary schools in the United States and while educational transatlantic transplantations are not advocated their curricular rationales and methodologies may offer fruitful exemplars for curricular innovations in this country. Nearer home the experimental work of Linton (see diagram G. ) in Lothian and Fife primary schools provides a working example of economic restructuring of environmental studies at the primary six and seven level. This pilot scheme involved five Scottish schools and preceded this inquiry into levels of economic cognition. Its findings confirm the view that children in the upper primary are capable of understanding a number of basic economic ideas. Statistical

findings and teacher impressions substantiate this assertion. Interviews also revealed that teachers generally agreed that the economic rationale gave "greater cohesion, continuity and relevance to environmental studies" than had previously been the case. On the basis of these findings there are grounds for extending this experimental scheme to more primary schools.

Curricular changes involving economic education will, however, founder unless they are serviced by effectively trained and adequately motivated teachers. At present there are few teachers with sufficient knowledge of economics to be prepared to undertake such experimental programmes. The need for in-service courses, demonstrating the utility and relevance of economic education, within the context of environmental studies, is paramount. It is only through these that research findings can be meaningfully translated into economic education strategies for classroom teaching. These would also provide the opportunity to demonstrate the educational advantages of introducing an economic dimension into this subject, providing it with greater coherence and relevance.

## REFERENCES

- Adelson, J. and O'Neill, R. P. (1966) Growth of Political Ideas in Adolescence: The Sense of Community. *Journal of Personality and Social Psychology*, 4. pp 295-306.
- Berger, P. and Luckmann, T. (1967) "The Social Construction of Reality: A Treatise on Sociology of Knowledge". Doubleday, New York.
- Berger, P. and Pullberg, S. (1966) Reification and the Sociological Critique of Consciousness. *New Left Review*, No. 35. January/February, pp 56-71.
- Biggs, J. B. and Collis, K. F. (1982) "Evaluating the Quality of Learning. The Solo Taxonomy". pp 3-31. Academic Press, New York and London.
- Brainerd, C. J. (1978) The Stage Question in Cognitive-Developmental Theory. *The Behavioural and Brain Sciences*, 1. pp 173-182.
- Brown, G. and Desforges, C. (1979) "Piaget's Theory". Routledge and Kegan Paul, London.
- Bruner, J. S. (1960) The Process of Education. pp 52-54. London.
- Burris, V. L. J. R. (1976) The Child's Conception of Economic Relations: A Genetic Approach to the Sociology of Knowledge. Unpublished PhD. Dissertation, Princeton.
- Cairncross, A. C. (1966) Introduction to Economics. Butterworth & Co., London.
- Carmichael, L. (1970) Piaget's Theory in Mussen. P.H. (Ed.) "Manual of Child Psychology", 3rd Edition, 1. Wiley, New York.
- Collis, K. (1982) The Structure of Learned Outcomes: A Refocusing for Mathematics Learning. "T.P. Carpenter, J.M. Moser, and T.A. Romberg (Eds) Addition and Subtraction: A Cognitive Perspective". Erlbaum Associates Publishers, New Jersey.
- Consultative Committee in the Curriculum (1986) The Scottish Central Committee on Business Subjects. Draft Curriculum Bulletin.
- Consultative Committee on the Curriculum (1986) Education (10 - 14) in Scotland. A Discussion Paper.
- Consultative Committee in the Curriculum (1980) Environmental Studies in the Primary School. The Development of a Policy.

- Cowan, P. A. (1966) Cognitive Egocentrism and Social Interaction in Children. *American Psychologist*, 21, p 623.
- Danziger, K. (1957) A Child's Understanding of Kinship Terms: A Study in the Development of Relational Concepts. *The Journal of Genetic Psychology*, 91, pp 213-232.
- Danziger, K. (1958) Children's Earliest Conceptions of Economic Relationships. *Journal of Social Psychology*, 47, pp 231-40.
- Danziger, K. (1971) "Socialisation". Penguin, Harmsworth.
- Davison, D. G. and Kilgore, J. H. (1971) Primary Test of Economic Understanding. University of Iowa, Bureau of Business and Economic Research.
- Davison, D. G. and Kilgore, J. H. (1971) A Model for Evaluating the Effectiveness of Economic Education in Primary Grades. *Journal of Economic Education*, 3, pp 17-25.
- Davison, D. G. and Kilgore, J. H. (1972) An Evaluation of Second Grade Economic Materials in Arthur Welsh (ED); *Research Papers in Economic Education*, Joint Council for Economic Education pp 182-202, New York.
- Dawson, G. (1969-71) Recent Research in Economic Education in (Economic Education Experiences of Enterprising Teachers). (Vol. 6. 58-59; 7. 72-107; 8. 92-119). George Dawson, Editor, New York. (Joint Council on Economic Education) This series comprises 13 volumes.
- Donaldson, M. and McGarrigle, J. (1974) Some clues to the nature of Semantic Development, *Journal of child Language*. 1, pp 185-194.
- Derosier, R. F. (1970) A Comparison of the Effectiveness of Two Widely Used Sets of Social Studies. Instruction and Allied Materials in Teaching Economics at First Grade, PhD Dissertation (University of Connecticut).
- Elkind, D. (1961) Piaget's Conception of Right and Left. Piaget's Replication Study IV. *Journal of Genetic Psychology*, 99, pp 269-276.
- Elkind, D. (1962) Children's Conception of Brothers and Sisters. Piaget's Replication Study V, *Journal of Genetic Psychology*, 100, pp 129-136.
- Elkind, D. (1967) Egocentrism in Adolescence. *Child Development*, 38, pp 1025-34.

- Elkind, D. and Scott, L. (1962) Studies in Perceptual Development. 33, pp 619-630.
- Feffer, M. H. (1959) The Cognitive Implications of Role Taking Behaviour, Journal of Personality. 27, pp 152-168.
- Feffer, M. H. and Suchotliff, L. (1966) Decentring Implications of Social Interaction, Journal of Personality and Social Psychology. 4, pp 415-422.
- Feffer, M. H. (1972) A Developmental Analysis of Interpersonal Behaviour, Psychological Review. 77, pp 197-214.
- Fisher, H. L. (1973) Children's Learning of Concepts and Application Skills in Economic Education. Unpublished Ed. D. Dissertation (University of California, Los Angeles).
- Grice, H. (1968) Utterer's Meaning, Sentence Meaning and Work Meaning. Foundations of Language. 4, pp 215-244.
- Gunn, B. (1964) Children's Conception of Occupational Prestige. Personality and Guidance Sound, 42, pp 558-563.
- Housiadas, L. and Brown, L. B. (1967) The Co-ordination of Perspectives by Mentally Defective Children. Journal of Genetic Psychology, 110, pp 211-215.
- Inhelder, B. (1969) "Memory and Intelligence in the Child; Studies in Cognitive Development". pp 337-363, OUP, New York.
- Jahoda, G. (1959) Development of Perception of Social Differences in Children from 6-10. British Journal of Psychology, pp 159-176.
- Karplus, R. (1981) Education and Formal Thought: A Modest Proposal. in Sigel, I. E. Brodzinsk, D. H., and Golinkoff, K. M. (EDS) "New Directions in Piagetian Theory and Practice", Lawrence Erlbaum, New Jersey.
- Kitchener, R. F. (1978) Epigenesis: The Role of Biological Models in Developing Psychology in Human Development. 21, pp 141-160.
- Kolhberg, L. Stage and Sequence. The Cognitive Development Approach to Socialisation in Handbook of Socialisation, Theory and Research (ED) in Gosline, D. A. Rand McNally, Chicago.
- Kolhberg, L. and Mayer, R. (1972) Development as the Aim of Education. Harvard ED. Review, 42, pp 449-96.

Kourilsky, M. L. (1974) "Beyond Simulation: The Mini-Society Approach to Instruction in Economics and Other Social Sciences": Educational Resources Association. Los Angeles.

Kourilsky, M. L. (1979) "Economic Socialization of Children: Attitude Towards Distribution of Rewards". University of California. Los Angeles.

Kourilsky, M. L. and Hirshleifer, J. (1976) Mini-Society vs. Token Society. An Experimental Comparison of the Effects of Learning and Autonomy on Social Emergent and Imposed Behaviour Modification, Journal of Education. Research, 69: 10, pp 376-81.

Kourilsky, M. (1977) The Kinder-Economy: A Case Study of Kindergarten Pupils' Acquisition of Economic Concepts. The Elementary School Journal, 77, no. 3, January. University of Chicago.

Joint Council on Economic Education (1978) "Trade-Offs". A Series in Economic Education, New York.

Lauer, R. H. (1974) Socialization into Inequality: Children's Perception of Occupational Status; Sociology. Social Research, 58, No. 2, January pp 176-183.

Langer, J. (1969) Disequilibrium as a Source of Development. In Mussen, P., Langer, J., and Covington, M. (EDS) Trends and Issues in "Developmental Psychology". Holt, Rinehart and Winston. New York.

Larkins, A. G. and Shaver, J. P. (1968) Comparison of Yes-No Matched Pairs, and all-No Scoring of First Grade Economics Achievement Test. Proceedings of the Utah Academy of Sciences, Arts and Letters, 45, pp 110-117.

Larkins, A. G. and Shaver, J. P. (1969) Economic Learning in Grade I: The Utah State University Assessment Studies. Social Education. Research Supplement, 33, 158-63.

Linton, T. M. (1979) Economic Concepts in the Scottish Primary School. M.Ed. Thesis, University of Edinburgh.

Lipsey, R. G. (1975) "An Introduction to Positive Economics". Weidenfeld and Nicolson.

Looft, W. R. (1972) Egocentrism and Social Interaction Across The Life Span. Psychology Bulletin. 78, pp 73-92.

McKenzie, R. B. (1969) Economic Literacy of Pupils in the Elementary Grades. Radford College Economics Department, Radford, Virginia.

- McKenzie, R. B. (1971) An Exploratory Study of the Economic Understanding of Elementary School Teachers. In Journal of Economic Education. 3, pp 26-31.
- McKenzie, R. B. (1972) Economic Education in Virginia's Elementary Schools. Radford College, Radford, Virginia.
- Marshall, H. R. and Macruder, L. (1960) Relations Between Money Education Practices and Children's Knowledge and the Use of Money. Child Development, 31, pp 253-284.
- Marton, F. (1981) Phenomenography: Describing Conceptions of the World Around Us, Instructional Science, 10, pp 117-200.
- Miller, L. N. and Horn, T. D. (1955) Children's Concepts Regarding Debt. Elementary School Journal, 55, pp 406-12.
- Navarra, J. G. (1955) "Development of Scientific Concepts in Young Children" New York Bureau of Publications, TC, Columbia.
- Peel, (1971) "The Nature of Adolescent Judgement". Staples Press, London.
- Piaget, J. (1956) The General Problems of the Psychological Development of the Child. In J. M. Tanner and B. Inhelder (Eds) Discussion on: Child Development, IV. the Fourth Meeting of the W.H.C. Study Group on the Psychobiological Development of the Child, pp 3-27. Tavistock Pub., Geneva, London.
- Piaget, J. (1928) "Origin of Intelligence in Childhood". Kegan and Paul, London.
- Piaget, J. (1928) "Judgement and Reasoning in the Child", Kegan Paul, Trench, Trubner and Co. Ltd., London.
- Piaget, J. (1929) " A Child's Conception of the World". Kegan Paul, Trench, Trubner and Co. Ltd., London.
- Piaget, J. (1950) "Psychology of Intelligence". Routledge and Kegan Paul Ltd., London.
- Piaget, J. (1951) "The Child's Conception of Physical Causality". Routledge and Kegan Paul Ltd., London.
- Piaget, J. (1952) "Child's Conception of Number". Routledge and Kegan Paul Ltd., London.

Piaget, J. (1960) The General Problems of the Psychological Development of the Child. In Tanner, J. M. and Inhelder, B. (Eds). Discussion on Child Development. vol. IV. The Fourth Meeting of the W.H.O. Study Group. Geneva 1956. Tavistock Pub. pp 3-27. London.

Piaget, J. (1960) The Moral Judgement of the Child. Routledge, Kegan and Paul Ltd., London.

Piaget, J. (1960) "The Child's Conception of Geometry". Routledge, Kegan and Paul Ltd., London.

Piaget, J. (1964) "The Early Growth of Logic in the Child: Classification and Seriatim". Routledge, Kegan and Paul, New York.

Piaget, J. and Inhelder, B. (1969) "The Psychology of the Child". Basic Books. New York.

Piaget, J. (1969) "The Child's Conception of Time". Routledge, Kegan and Paul Ltd., London.

Piaget, J. (1969) "Six Psychological Studies". (Ed. Elkind, D.) University of London Press, London.

Piaget, J. (1970) "The Child's Conception of Movement and Speed". Routledge, Kegan and Paul Ltd., London.

Piaget, J. (1971) "Biology and Knowledge". University of Chicago Press, Chicago.

Piaget, J. (1971) "Construction of Reality in the Child". Ballantine Books, New York.

Piaget, J. (1972) "Principles of Genetic Epistemology". Routledge, Kegan and Paul Ltd., London.

Pinard, A. and Laurendeau, M. (1969) "Stage" in Piaget's Cognitive - Developmental Theory: Exegesis of a Concept. In Elkind, D. and Flavell, J. M. (Eds) Studies in Cognitive Development, Essays in Honour of Jean Piaget, OUP, New York.

Polanyi, K. (1957) "The Great Transformation". Boston Press, Boston.

Polanyi, K. (1969) The Economy as Instituted Process. In Leclaire, E., and Schneider, M. (Eds) Economic Anthropology, Readings in Theory and Analysis, pp 122-143, Holt, Rinehart & Winston, New York.

Psychological Corporation (1970) Evaluation Report. Conceptual Teaching of Economics, K-12 (Wisconsin D.E.E.P.), Psychological Corp. New York.

- Ritt, S. (1969) An Experimental Study of the Capacity of Fourth and Fifth Grade Children to Understand Selected Economic Concepts. In Research in Elementary School Economics Industrial Relations Centre, University of Chicago, Chicago.
- Rubin, K. H. (1971) Egocentrism in Early and Middle Childhood: A Factor Analytic Dissertation. Unpublished Doctoral Dissertation. Pennsylvania State University.
- Rubin, K. H. (1973) Egocentrism in Childhood: A Unitary Construct. Child Development, 44, pp 102-110.
- Russell, D. H. (1956) "Children's Thinking". Ginn, Boston.
- Saunders, P. (1964) The Lasting Effects of Elementary Economic Courses: Some Preliminary Results in American Economic Review, 54, pp 397-402.
- Schuessler, K. F. and Strauss, A. L. (1950) Study of Concept Learning by Scale and Analysis. American Sociological Review, 15, pp 752-762.
- Science Research Associates (1964) Test of Economic Understanding: Manual. S.R.A., Chicago.
- Senesh, L. (1964) "Our Working World". S.R.A., Chicago.
- Showkier, J. R. (1969) Economic Understanding Among Selected Sixth Grade Pupils in Research in Elementary School Economics. Industrial Relation Centre, University of Chicago, Chicago.
- Sigel, I. E. et alia (1981) (Eds) New Directions in Piagetian Theory and Practice. Lawrence, Erlbaum, Hillsdale.
- Silverman, H. A. B. (1964) "Substance of Economics". Pitman, London.
- Simmond, R. and Rosenberg, M. (1971) Studies in Children's Perception. American Sociological Review, 36, (April) pp 235-249.
- Smith, A. (1911) An Inquiry into the Nature and Causes of the Wealth of Nations. J. M. Dent and Sons Ltd., London.
- Spears, S. (1967) Children's Concept Learning in Economics under Three Experimental Curricula. Doctoral Dissertation, University of California, Los angeles.
- Speier, M. (1970) "The Everyday World of the Child in Understanding Everyday Life". Aldine Publishing Co. pp 188-217, Chicago.

- Stanlake, G. F. (1983) "Introductory Economics". Longman Group Ltd.
- Stendler, G. B. (1949) "Children of Brasstown". Urbana, University of Illinois Bulletin, Chicago.
- Strauss, A. (1952) The Development and Transformation of Monetary Meanings in the Child. American Sociological Review, 17, pp 275-86.
- Stuart, R. B. (1967) Decentration in the Development of Children's Concepts of Money and Casual Judgement. Journal of Genetic Psychology, III, pp 59-68.
- Sulkin, H. A. and Pranis, R. W. (1969) Effect of Elementary School Economics Program on Children of Lower Economic Status in Research in Elementary School Economics. Industrial Relations Centre, University of Chicago, Chicago.
- Sullivan, E. V. and Hunt, D. E. (1967) Interpersonal and Objective Decentring as a Function of Age and Social Class. Journal of Genetic Psychology, 110, pp 59-68.
- Sutherland, P. A. A. (1982) An Expansion of Peel's Describer-Explainer Stage Theory, Educational Review. 34, pp 69-76.
- Sutton, R. (1962) Behaviour in the Attainment of Economic Concepts. Journal of Psychology, 53, pp 37-46.
- Sutton, R. (1963) Words and Concepts Education, 83, pp 537-540.
- Sutton, R. (1964) Behaviour in the Attainment of Economic Concepts I. Journal of Psychology, 58, pp 407-412.
- Sutton, R. (1964) Attainment of Economic Concepts. Unpublished Paper read at AERA, February 20, Chicago.
- Tudor, J. F. (1971) The Development of Class Awareness in Children, Social Forces. No. 49, March, 47, pp 470-476.
- Wallach, M. A. (1963) Research in Children's Thinking. In H. W. Stevenson et al (Eds) Child Psychology: 62nd Year Book of National Society for the Study of Education, University of Chicago Press, pp 236-276, Chicago.
- Walstad, W. (1978) Economic Problem Solving in Elementary School: Specification and Estimation of Alternative Learning Models to Measure In-Service Program Impact. Unpublished Dissertation, University of Minnesota.

Washington, (1966) Seattle Development Economic Education Program. Economic Education for Washington School K-6.

Weinberg, N. H. (1963) Relativism, Self-Centring and Conceptual Child Development, 34, pp 443-450.

Weinstein, E. A. (1958) Development of Children's Conceptions of Occupational Stratification. Sociology and Social Research, 42, No. 3, pp 278-284.

Whiteman, M. (1967) Children's Conceptions of Psychological Causality. Child Development, 38, pp 143-155.

Williams, J. W. (1969) A Gradient of Economic Concepts in Elementary School Children and Factors Associated with Cognition. PhD Thesis.

Williams, J. W. (1970) A Gradient of Economic Concepts of Elementary School Children and Factors Associated with Cognition. Journal of Consumer Affairs, Winter, pp 113-123.

Zeller, R. A. and Carmines, E. C. (1980) "Measurement in the Social Sciences", pp 2-4, Cambridge University Press.

APPENDIX A

INTERVIEW QUESTIONS

1. Can you tell me what money is? Examples.
2. Where do people get money?
3. What can you do with money?
4. What kind of things can you buy with money?
5. Could you buy ... with money?  
Sweets, TV, House, Car, School, Tree, Baby, Farm.
6. Why can we buy so many things with money?
7. Can you think of anything (else) that cannot be bought and sold?
8. Tell me something that costs a lot of money.  
Example and Cost. Why does that cost so much?
9. Tell me something that costs a little money.  
Example and Cost. Why does that cost so little?
10. Which one of the following pairs costs more and why?  
a pair of shoes - a bar of chocolate  
a wristwatch - a book  
a TV set - a transistor radio  
a bicycle - a football or a doll  
a pocket knife - a loaf of bread  
a house - a motor car  
an apple - a peach

11. Do diamonds cost a lot of money? Why/why not?
12. Can you think of any reasons why chocolate could become dearer?
13. Can you think of any reasons why skateboards could become cheaper?
14. Can you tell me something that has become dearer lately and why?
15. Can you tell me something that has become cheaper lately and why?
16. At what time in the year - summer or winter - would it be cheaper to buy a tennis racquet? Why?
17. At what time in the year - summer or winter - would it be dearer to buy a bathing costume? Why?
18. At what time in the year - summer or winter - would it be cheaper to buy tomatoes? Why?
19. At what time in the year - summer or winter - would it be dearer to buy a suede coat? Why?
20. Can you tell me something that costs:
  - (i) £10
  - (ii) See Appendix (e)

£100

£1,000

£10,000

£100,000
21. Why do we have to give money when we get things at the store?

22. What does the person at the store do with the money we give him?
23. Do some things at the store cost more than others? Why?
24. Who decides what the price of things at the store will be? How does he/she decide what prices to put on things in the store?
25. Imagine you bought something from the store for £1 and someone said, "I'd really like that: would you sell it to me for £2?" Do you think it would be alright for you to sell something for £2 if you bought it for £1? Reasons.
26. Imagine the storekeeper bought something from a factory for £1. Would it be alright for him to sell it for £2? Reasons.
27. If you borrow £100 from the bank how much should you have to pay back to the bank? Why?
28. Why do people put money in the bank?
29. What does the bank do with the money that people put in it?
30. Why do people save money? Reasons and examples.
31. Does your father have a job? What does he do? Why does he do that job?
32. Does your mother have a job? What does she do? Why does she do that job?
33. Is going to school like having a job? Why/why not?
34. Tell me the difference between working and playing.
35. Are some jobs grown ups do better than other jobs? What makes a job better?

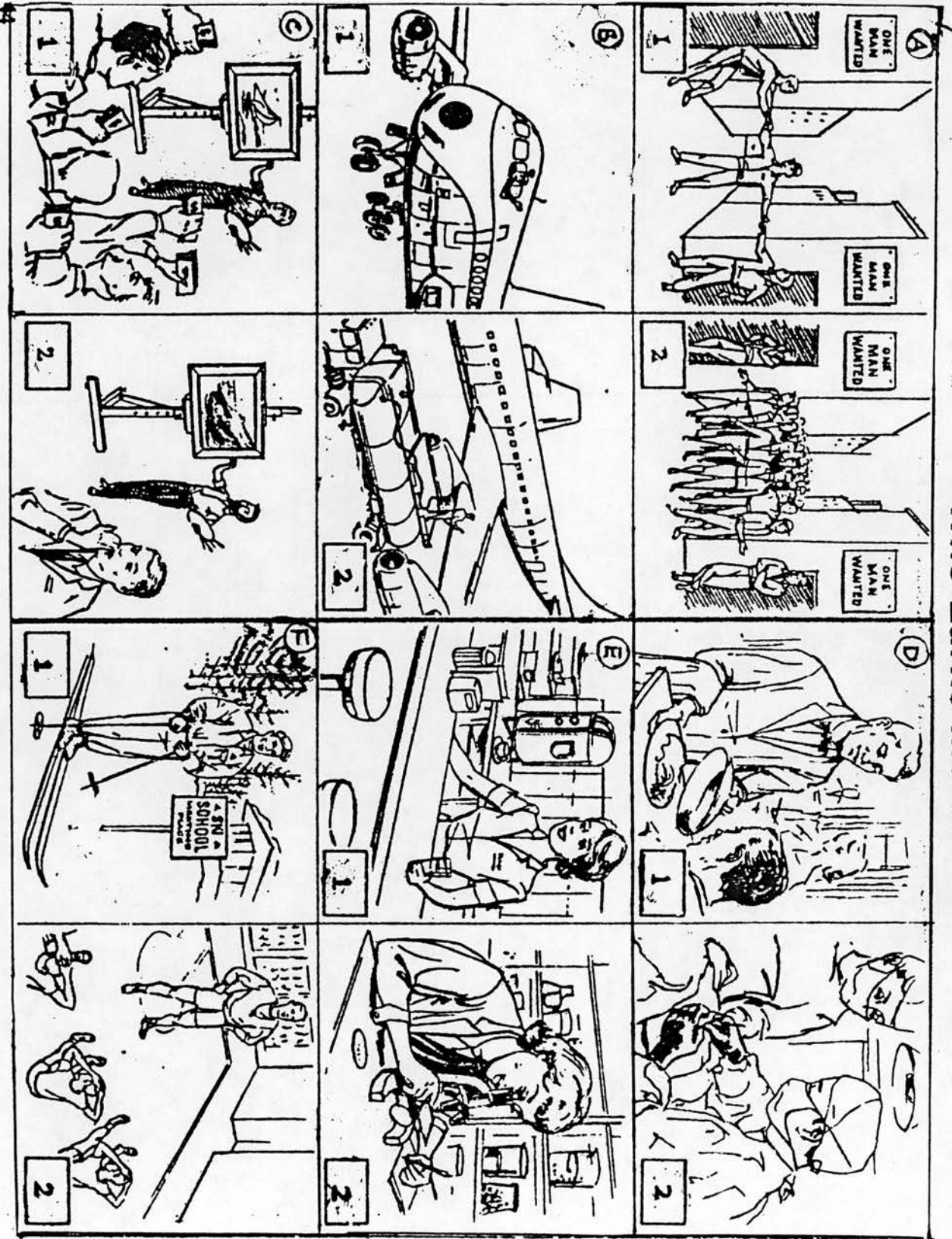
36. What are some good jobs? Why are they good jobs?
37. What are some bad jobs? Why are they bad jobs?
38. Here are some jobs that people do. I want you to tell me whether they are good, medium or not so good jobs and give a reason for your answer:

<u>Job</u>	<u>Good</u>	<u>Medium</u>	<u>Not so good</u>
Doctor			
Rubbish Collector			
Postman			
Bus Driver			
Waitress			
Banker			
Teacher			
Garage Man			

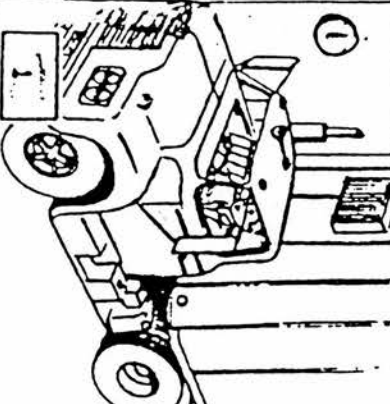
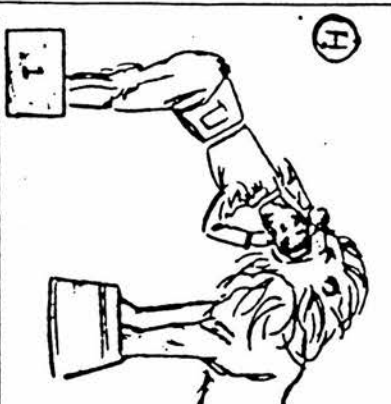

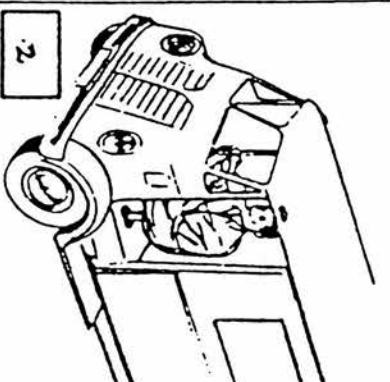
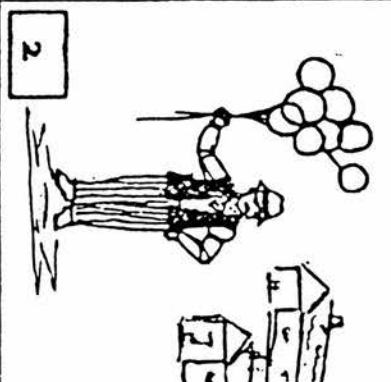


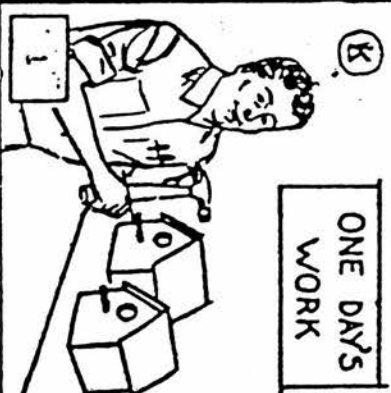
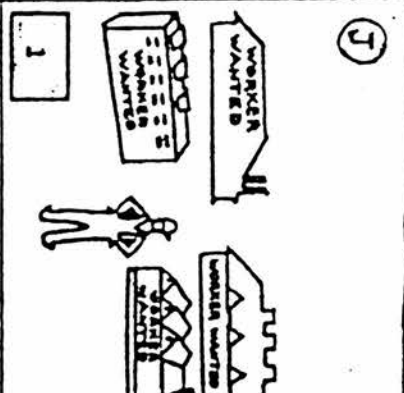
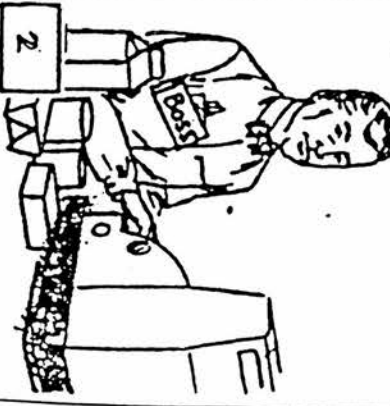

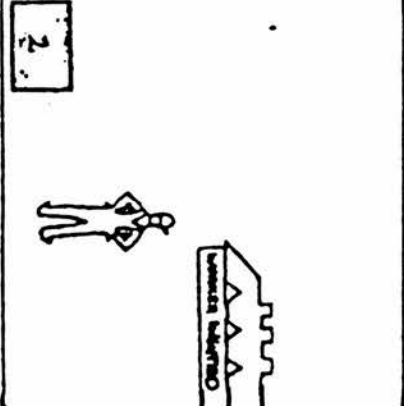
39. Do some people get paid more than others for the jobs they do? Why?
40. Would it be all right if everybody was paid the same money for their work? Why/why not?
41. Show pictures involving income differentiation ("Who Earns More?") (Appendix B)

A	G
B	H
C	I
D	J
E	K
F	L

Who Earns More?

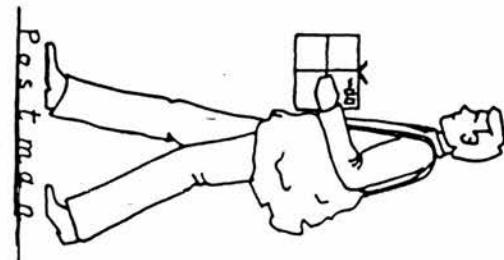
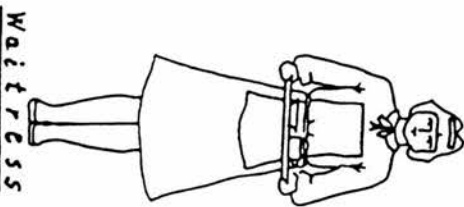
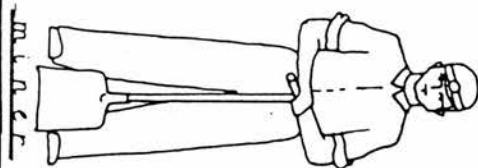
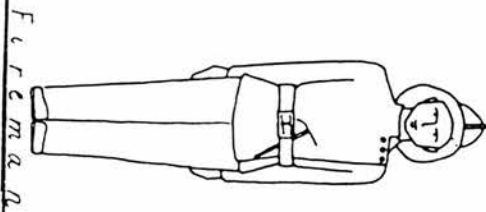
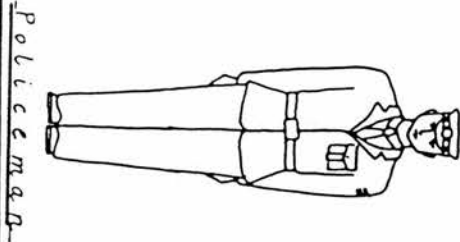
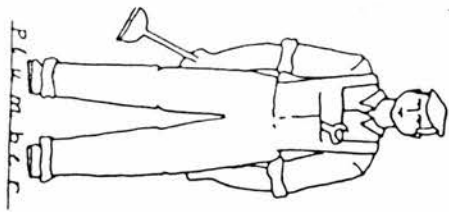
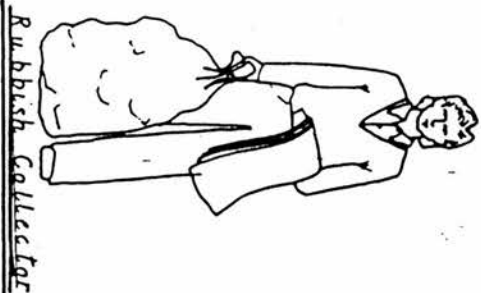
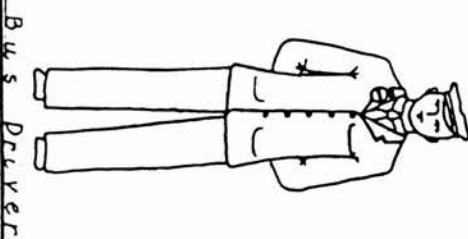
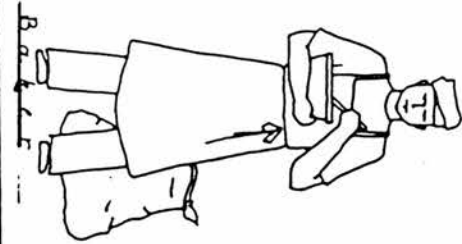
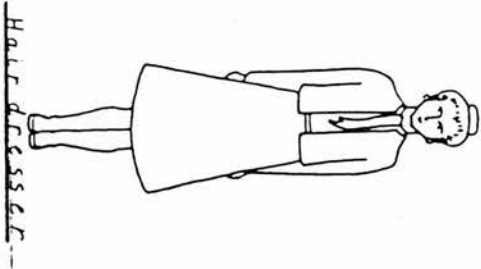
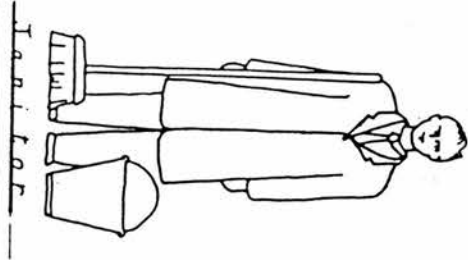
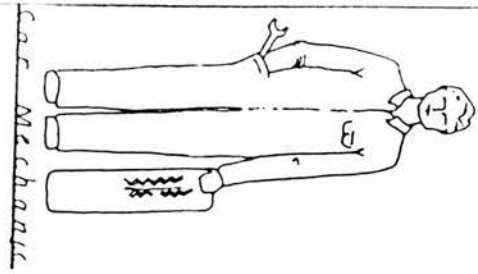


Who Earns More?

<p>①</p>  <p>1</p>	<p>④</p>  <p>1</p>	<p>⑤</p>  <p>1</p>
<p>2</p>  <p>2</p>	<p>2</p>  <p>2</p>	<p>2</p>  <p>2</p>
<p>①</p>  <p>1</p>	<p>①</p>  <p>1</p> <p>ONE DAY'S WORK</p>	<p>①</p>  <p>1</p>
<p>②</p>  <p>2</p>	<p>②</p>  <p>2</p> <p>ONE DAY'S WORK</p>	<p>②</p>  <p>2</p>

APPENDIX

Income  
Ranking  
Test



APPENDIX D(1)

SAMPLE INTERVIEW WITH PRIMARY ONE PUPIL

All Interviewer's questions and comments are in brackets.

1. Pence. (Is there any other money?) Pounds. (What are they called?) Pound notes, (yes).
2. The bank. (Is there any other place you can get money?) A Building Society. (Do you just go and ask a building society for money?) No. (What do you do first?)
3. Spend it.
4. Food.
5. Sweets - yes. TV - yes. House - yes. Car - yes. School - yes. Cow - no. (Why?) It gets born, you can't buy it. (What else would make it difficult to buy a cow?) Don't know - Tree - no. (Why?) Because it grows. Baby - no. (Why?) It gets born just like a cow. Farm - no. (Why?) Don't know.
6. Don't know.
7. Don't know.
8. Car. (Why?) Because it is so big. (Anything else?) It has got lots of things inside. (What things?) Steering wheel. (Anything outside that makes it cost a lot of money?) Wheels.
9. Sweets. (Why do sweets cost so little and cars cost so much?) Sweets are a lot smaller. (What is in sweets that makes them cost so little?) Sugar. (Why does that cost so little?) Because there is just a little bit.
10. Shoes. (Why?) Shoes are bigger than a bar of chocolate. Watch. (Why?) Because it is valuable. (What does that mean? Can you tell me something that makes the watch cost more?) Don't know. Radio. (Why?) It's a more important thing. (What does that mean?) Don't know. Bicycle. (Why?) Because it is bigger. (Anything else?) It has got two wheels. Brakes, handle bars. (What about a ball? Why does it cost so little?) Because it is only half the size of one wheel. Pocket knife. (Why is that because that is not as big as a loaf of bread is it? Why does it cost more? What about the loaf of bread?) Don't know. - House. (Why?) A house is bigger than a car.

(Anything else about the house because remember the car costs an awful lot of money?) Because there are windows and there are a lot of bricks. (So it is the bricks and the windows.?) Yes. (Is there anything else?) No.

11. Yes. (What makes them cost so much?) They are very valuable. (Can you tell me why? Are they big?) No. (Can you describe them? Are they black in colour?) No. (Tell me about their colour). They are white. (Anything about them that makes them valuable?) They are glittery.

Questions 12 - 19 elicited no meaningful responses from primary one children, so are excluded.

20. £10 - globe. £100 - house. £1000 - school. £10,000 - secondary school. £100,000 - railway.
21. You couldn't walk out. (What do you mean? What would happen if you did that?) They would take you to jail.
22. Gives you change. (Where does he put the change? In his pocket?) No. In the till. (What happens to it then?) To the till, the money in the till. (Does he leave it there all the time and go away?) No. (What happens then?) Don't know.
23. Yes. (Why?) Because some things are better than others. (Could you think of some thing that would cost more than some other thing?) A bunch of bananas.
24. The shopkeeper. (How does he decide about the prices he is going to put on things? Could he put £100 on a packet of crisps?) No. (Why?) Because it would be far too much. (What does he have to do with the prices?) I don't know.
25. No. (Why?) If she gave you £1 you would have to sell it for £1. (So you sell it to them for what?) £1.
26. No. (Why?) Because I would just have to give him £1. (Why?) Don't know.
27. £100. (Just the same? Why would you not give them any more?) That wouldn't be fair.
28. So that when you run out you can just go to the bank for more. (Any other reason why you would put money in the bank?) In case it gets stolen.
29. They put it in a till. (And they just leave it?) They lock the till up. (Do they just forget about it?) They have got to remember it is in the till. (What do they do then when they have remembered it is in the till?) Don't know.

30. (Do you save money?) Yes. (What do you save for? Do you save up for anything? Tell me something you save up for?) My bike. (Can you think of anything people save up for?) A car.
31. Yes. He is a secretary. (Why does he do that job?) To get money.
32. She is a nurse. (Why does she do that job?) She gets money.
33. No. If you have a job you have to work for a lot longer time. (Anything else? What do you do in school that makes it different from work?) You don't get playtime at work.
34. Working is a lot harder. (What do you do when you play?) You run about.
35. Don't know.
36. Don't know.
37. Don't know.
38. Doctor - good because they help people when they are ill.
- Rubbish collector - no because sometimes they lift big bags. They don't sweep it up all the time.
- Postman - good because you don't need to take it to the person's house all the time.
- Busdriver - good because you don't need to walk all the time.
- Waitress - good but I don't know why.
- Banker - good don't know.
- Teacher - good because they teach children to read and write.
- Garage man - bad because sometimes he spills it.
- Traffic Warden - bad because sometimes you can't get off.
39. Yes because some people work harder than others.
40. No. (Why?) A rubbish collector is a bad job. (He shouldn't get a lot of money then?) Don't know.

Questions 41 and 42 were omitted from Primary I interviews.

APPENDIX D(2)

SAMPLE INTERVIEW WITH PRIMARY THREE PUPIL

1. It's metal things with markings on them and you use them for getting things and buying things in shops. (Any other form of money?) Paper. Pounds. Cheque.
2. If they have a job they get it from the job. (How do they get it from the job?) Once they have worked for a certain time they get money. That's their pay. (Is that the only way you can get money by working?) You could find it on the ground easily.
3. Buy things. You could use it for going into a public toilet. Put it in the bank.
4. (What would that be for?) Saving it and then it increases and they use it for something. Then you get a few pounds added on. (What is that called?) I can't remember.
5. Sweets - yes. TV - yes. House - yes. Car - yes. School - no. (Why?) Because that's a place where people work and teach. Cow - yes at the markets. Tree - If it was young you could buy it but you couldn't buy it and uproot it and take it to your garden. Baby - no because you would have your own ones. Farm - no because there would be people working at it probably. It would be their jobs as well so I don't think you could.
6. There isn't really any other way except for trading because the money helps you if we didn't have money we wouldn't be able to have all the things in our homes and be able to have our homes.
7. You couldn't buy the whole universe. A public park, toilets.
8. House because it is very big and you live in it and it takes them a long time to build it. How much strain and time they take it makes it be costlier. (Why?) It would make the company work harder and that's their pay coming from you.
9. Pocket watch costs a little money. That costs a little money. That only cost 10p. (Why does that cost so little and your house so much?) Because that wouldn't take very long to make and they just make it in a machine. (Can you tell us what that

is?) It's a little book with markings. It didn't take them very long to make it either. It wasn't difficult to make it.

10. Shoes because it takes them longer to make a pair of shoes than chocolate. That just comes out of a machine. (Say you made shoes in a machine would that not speed it up a bit?) Some of it goes through a machine but then it has to be sewn together. (Why does that make it dearer?) It takes a longer time than a bar of chocolate. It is more difficult as well.

Watch or book - If it was a big book or old book it would cost more and if it was just a small snopy watch it wouldn't cost very much but if it was a digital watch and a book I think the digital watch would cost more. (On average would it be the watch or the book?) If it was a digital watch I would expect to pay more than the book because...

Bicycle or football - A bicycle because it is quite difficult to make a bicycle and a football is just made up of rubber and you sew it together then it goes into this special machine which pumps in air. It isn't so easy with the bicycle because you have to weld all these pieces together, then fix on the wheels and tyres. It would have taken them longer and it would be really difficult.

Knife or bread Knife because it can be used in more different ways. It is very useful. (But if we did not have bread would we not die?) It is quite useful but not as useful as a knife because if you wanted to cut through something you could use the pocket knife but you couldn't use bread. That's just something for eating.

House or car The house, of course, (Why?) Because the house is needed in many ways but the car is not needed in so many ways because you could walk on foot or you could go on a bicycle. (Does that make it cheaper?) They have to make a house with men but I don't think, and machines and it takes them a very, very, very long time for the house. (What do they do with the car?) The car is something for driving around in. It's quite useful but I usually travel on foot. A house is very useful but if it was minus 16 outside...

11. Yes because they are very pure and they take very long time to find. (But they are awfully small aren't they?) But even though they are very small they are very pure. (Why do they cost all that money? Can we not just go out and get diamonds?)

You have to go to a volcano to get diamonds because it is a volcanic rock and they are thrown up. (Do you just pick them up?) No, you dig deep, deep, deep down. If it was not an extinct volcano it would be very dangerous.

12. If you didn't they would just be taking things and not giving anything back. You have got to give money to get the things. (If we didn't give money what would we have to do?) Steal it. (any other reason?) It took then a long time to make it and if.. (Took them a long time to make what?) The goods. You have got to give money because of time and the difficulty it took.
13. He gives it to the manager of all the stores which are in the special company and then he gives it to the company which makes all the food which goes to that store. (What happens to the money then? Could you give me an example of a store that would get a lot of money and take it back to a main store?) Something like Safeways. (What happens next?) They use it to pay their workers. (Do they put it anywhere after that or does it just go back to the workers?) The workers might be able to use it. Because that would be their pay. (What happens to the money then?) It would be used again right round in a circle.
14. Yes they nearly all cost different. (Why?) Some of them are not very big and don't cost a lot and they didn't take very long to make. It wasn't very difficult either. But they had more valuable stuff at the side.
15. The big company gives them the prices and then they stamp it on to these little labels and the labels are put on to these things. (How does the manager decide what prices to put on things?) He decides by the value of the thing and the time and difficulty it took. (If I put £200 on a bag of crisps would that be right?) No. (Why?) Crisps are just something to eat like a snack and they don't cost very much and don't have very many uses at all.
16. Some chocolate like a Milky Way bar doesn't cost very much but if you got really pure like Russian chocolate because it is very pure and it is very good chocolate like Black Magic. (Let's say though the chocolate costs 5p and after two or three months the same chocolate is 7p could you think of any reason why that could happen?) Because they just change the prices and get more money. (So they just make it dearer?) Yes. Just a little bit

- dearer. So maybe somebody will not notice it.
17. Not so many people want them. It is because of the people not wanting them that it is getting cheaper, then there will be hundreds of people wanting them and then it will get dearer. (That's another way. Well done.)
18. (Have you heard your Mum talking about anything that has become dearer lately?) I don't usually hear her because she is in the kitchen most of the time.
19. No.
20. In the summer. (Why?) Because the tennis courts in the winter are covered with snow and you might slip.
21. In the summer because that is when everybody buys bathing costumes. (Why are they dearer?) Because everybody wants them.
22. In the summer because that is when tomatoes are ripe. (And what does that mean?) They are fresh.
23. In the winter because a suede coat is more use to you in the winter.
24. £10 - book. £100 - a diamond. £1000 - a ruby. £10,000 - a house. £100,000 - block of flats.
25. No. (Why?) You should keep it at the manufacturer's price. He would think it was the proper price it should be because the person chose it. (Even if he said I want it so much I'll give you £2, it still wouldn't be all right?) I don't think it would.
26. No because that is just the same sort of thing. (So the man in the shop just sells it for exactly the same as he bought it for?) He might change the price by taking off the sticky bit and changing it. (Would that be fair if he made it bigger?) It wouldn't really be very fair but if he made it cheaper that would be fair. (But if he made it dearer it wouldn't be fair?) I don't think it would be because if it was quite high up it wouldn't be. (If it was low down it would be?) If it was just a little bit lower it would be. If you had a house at £1000 and you changed it to 10p I don't think that would be fair but if you had a house at £1000 and you changed it to £1,000,000,000 that wouldn't be fair either.

27. I don't know. (£100? More than £100 or less than £100?) Less than £100. (Why is that?) Less than £100 and they would probably have something like an extra £100 in their own money and then put it as their own money and the extra, the money that they got back got put on because the people who used it had to give something back at least and that's the thing which is increasing by years. (So are you saying you should pay a little bit more back, if you borrowed £100 from the bank?) No, a little less back.
28. It keeps it really safe. (Anything else?) You get money on yours. (Why?) Yours will get a little bit used and the bank use it and then that gives you a little bit more on to it. You will have more than you started with. (Is that because they have used it?) Yes. Some of your money. (They can't use all of it?) They might, but if they had the same amount of money and a little bit more to put back.
29. I don't think it would be very good if you saw some rubbish and then you bought it. If you save money and you see something that you really need you would have the money for it. (And is that why we save, just to buy things?) Yes. (Could people save for any other reason?) I don't think so.
30. Yes. He works in a college. He is a teacher. (What college does he work in?) Bathgate. (Why does he do that job?) I don't know. (Just for fun?) Because it was probably a job that was quite easy for him to get. He thinks he could do it. (Any other reason?) So that you can get money for the family and you can buy food.
31. Yes. She goes to night school and teaches. (Why does she do that job?) Does she do it for fun?) No. She teaches Gaelic. (She likes to teach does she?) Yes. She goes to a class where she learns Gaelic and she teaches Gaelic too.
32. No. You have to do harder things when you have a job. (Is that the only reason?) Yes.
33. Working is doing something to help someone else, doing something for the person. Playing is fiddling about, you don't have to do it, you could read.
34. Yes because some jobs get more money than others. If its easier and you got quite a lot of money it would be very good.

35. Working in a shop with a till, because it would be quite an easy job, you just have to press the thing, you don't have to think. But you do have to think what button to press. If you press the wrong button you'd lose your job.
36. Coal mine. There is always danger of gas coming into the mine. (Does that make it a bad job?) And there are other dangers, you're risking your life because the tunnel might fall in or flood.
37. Medium - because you may get too many patients, but if you only get a few patients it would be quite good. If the patients were quite difficult to cure it would be quite hard.

Rubbish Collector - Bad job - It is quite a bad job, because you would smell bad. The people who hang onto the back might fall off.

Postman - Quite good - You just go round putting the letters in the ... It would be quite an easy job, not much to do.

Bus Driver - Medium - because it is quite easy to drive the bus and you get a lot of pay too. (So that would make it good, so why is it medium?) I mean good.

Waitress - Medium. You have got to be careful not to drop the stuff on the floor. It is really quite an easy job but it is difficult in carrying the things over and remembering which table they go to.

Banker - quite a good job. Because it is very easy to do and I don't know how much pay they get. I think it might be quite a lot because you are helping other people keep their things. You have got to keep it safe.

Teacher - Medium. Sometimes you get headaches. It is quite an easy job because you just sit there or you get a sore voice.

Garage Man - If you were good at garaging, if you were good at cars it would be quite a good job and if you weren't good at mechanics it would be a bad job.

38. (A) 1 Because if they are pulling him to get the job it must be a really difficult job. (And what seems to be happening in (a) 2?) Lots of people are wanting to get the job so probably it is a very easy job.

(B) 2 Because it would be difficult to climb up and put in the fuel. You might have to hold it for quite a long time.

(C) 1 Because he has a picture and nearly everyone is wanting it but here nobody is wanting the picture maybe because it isn't very good.

(D) 2 Because it is a very difficult job for one thing if you were working on someone with arthritis you might get it yourself and it is very dangerous and if you do something wrong it could kill the person... (What about the waiter?) It is quite easy.

(E) 2 Because it takes a very long time to discover things. It is very difficult.

(F) 1 Because you would have to show them what to do, how to stop your skis if you were on a cliff and how to go faster. (What about the gym teacher? Why should he get less?) He has to show the people what to do and then tell them.

(G) 1 Because digging is quite dangerous. You might fall down the hole. If it was a gas pipe you might gas yourself. (What about the other man?) He couldn't fall down his own holes because they are very small.

(H) 1 Because it is a very dangerous job. Lions eat men sometimes if they are not tamed properly. It is quite easy to be a balloon seller and shout "Roll up, Roll up".

(I) 1 Because it is quite difficult to drive a lorry. For one thing you might do a mistake and it would be very serious if you did do a mistake. But I don't think it would be very serious if you did it in a van.

(J) 2 Because there is only one factory the man can easily go to but he couldn't decide which one to go to you might not go to all four of them.

(K) 2 Because he has made more.

(L) 2 Because he has a bigger job because most of the people would come to the boss because he is the biggest person and he is probably the best at it.

APPENDIX D (3)

SAMPLE INTERVIEW WITH PRIMARY SIX PUPIL

1. Well it's just, you get it from the bank. The money's spent on things. (Could you tell me what it's like, money, all the forms of money?) £1 notes, £5 notes, £10 notes. (Good). 1p, 2p, 5p, 10p, 50p. (Good, now all the coins and notes, is there anything else that's money?) Gold bars. (Gold bars, good - you might use as money. All right, that's fine).
2. The bank. From the bank. (You just go in and ask and say you want money?) You have to give them your account number. If you haven't got any money in your account you can't get any money. (Right, is that the only place you can get money?) No. (No where about could you get money?) Well, you could get it as a present or ... (Yes, good that's fine). Or you could get it from a vault. (A vault, good, nowhere else?) Don't think so. (Right)
3. You could spend it on things like food, toys, holidays.
4. (What kind of things could you buy with money?) You could buy cars, sweets, boxes of things, glasses. (Glasses?) Cigarettes, drinks. (Drinks, anything else apart from the sweets or food, is there anything else you could spend money on?) Books. (Books, good).
5. (A house?) - yes. (A school?) - I don't think so. (Why not, you're not sure, right? Why are you not sure?) Let me think. An education officer would do something about it. (Is there any reason why you can't buy a school?) They're not in the papers. (They're not advertised, good, any other reason? What about a cow? Can you buy a cow?) Yes. (Tree?) No. (You can't buy a tree?) Yes you can. From the garden centre. (A farm?) Yes you can buy a farm.
6. Well, there are not many other things you can use. You could swap things but mostly it's money. (That's the only reason is it? I mean we don't use wood or anything for all the things. Why money?) Well, if you want something you have to pay for it. It's the person who's selling something's got to get some money for it. He wouldn't want any wood or anything like that. (Why's that?) If somebody

was selling a house they would be able to give back the money that they'd borrowed from the bank until the house is sold.

7. Country. (A country?) Yes. (You couldn't sell El Salvador, could you?) Well, I don't think so. (Could you sell Arran?) Maybe. (Why could you sell that?) Because it's got oil. It's got oil.
8. A Rolls Royce. (Why does that cost so much?) It's got all these fancy things on it like electric moving chairs and things. (Anything else that makes a Rolls Royce cost a lot?) A thing at the front, I think it's made of silver. It's very big. It's very big. (Excellent, can you think of anything else?) It runs so quietly and it's so comfortable. It's also used by very important people. (Right, good, right).
9. A bag of sweets. (Why is that?) Because they don't last very long. They cost about 20p. (Is that the only reason? Just because it's little and it doesn't last long?) Yes. (But there are little things that cost a lot of money?) Yes. (Why the sweets particularly?) Because they're not made of expensive things. (Good).
10. A pair of shoes or a wristwatch? A pair of shoes because they are made of leather. (Just think of all the reasons you can). They last much longer than a bar of chocolate. (Anything else?) You can wear them. They are important to you. (So you could wear them but you can't wear a bar of chocolate. Anything else?) I don't think so.

A wristwatch or a book? A wristwatch because it has got more functions... Quartz and fancy things on it like alarms and a book is just a book. (Say it was a very beautifully bound book with silver and gold lettering would that make a difference?) Yes I think so. (Would it be dearer than a wristwatch?) Some. (What would make the book dearer then. What would make the book dearer?) The gold and silver lettering. (Anything else about the book? ... these fancy things). A book you read just like that, wouldn't cost very much. Yes, hardbacks, paperbacks.

A T.V. set or a transistor radio? T.V. set. (Why is that?) It's much bigger and it's more useful and a transistor radio needs batteries and sometimes it just runs out. (Is a television set not run on batteries?) Well, maybe. (Anything else about the two things, that makes one dearer than the other?) You can watch the Tv. but you

can't watch the radio. It's more enjoyable to watch the T.V. than listen to the radio all the time.

A bicycle or a football? A bicycle. (Now why's that?) The ball could burst or you could lose it. A bicycle's handy. You can cycle around on a bicycle. (Anything about the bicycle that makes it cost more...?) The ten speed Tour de France ones, these cost about £300 or something. (World Cup football? Would that make a difference?) Yes. (Why would that make a difference?) Because it's been played by some of the top players. People would like to buy it. (Which would be the more expensive?) The bicycle.

A pocket knife or a loaf of bread? A pocket knife. (Why's that?) Quite a few of them have more things, cork opener, scissors whereas a loaf of bread, doesn't last all that long. (Doesn't last that long. Anything else about it? Bread, we'd be dead if we didn't have food wouldn't we? Yet a pocket knife costs more. Is that not strange, why's that?) Lots of them have many things and quite a few of them are quite big. They're very handy. (Good).

A house or a motor car? A house. (Why's that?) A house is much bigger than a motor car. It's got more things in it. (Could there be motor cars that are dearer than houses?) Yes a Rolls Royce or a Porsche. (A Rolls Royce or a Porsche, right). On average the house is more valuable. (Anything else about the house?) Well it's got a bathroom, a livingroom, kitchen and things like that. You don't get these in a car. (Anything else that makes it more costly?) The field and the property and all the things you have to buy for it makes it expensive.

11. (Do diamonds cost a lot of money?) Yes. (Why is that?) You can't rush out and order a big diamond. You normally get them out of Africa. (Why does that make them expensive?) Because they are very precious stones. (What does that mean though?) Precious, they're not like a bit of glass. (What else? They look the same as glass to us don't they?) Well it's not all that easy to smash them. It costs much more than steel, diamonds. (You said you had to get them from Africa. Does that mean there are any costs there that you wouldn't have in getting glass?) To get them to the countries costs a bit and also buying them. (What would that cost?) If you want to get things, if you've got something to declare you've

got to pay more. (You've got to pay more? Yes anything else about the diamond? You just get a diamond and that's a diamond, like an apple?) If you want to get diamonds you would have to pay a lot before they would be given to you. (Why's that?) Because you can't just give them away like a half pence or something. You can't just give it away when you want to. (Is it just like an apple though Colin, you go and pluck it off a tree. Is there anything that makes it more costly before the person like yourself gets it?) It's quite ... you have to spend quite a long time shaping the diamond. (Ah, you've got to shape it. Now what does that mean?) Cut it. (With an axe?) No. (No.) Special equipment. (You need special equipment) Yes. (Anything else?) Don't know. (Do people carry diamonds round? Is that how they are used?) Rings. (Ah rings. That's different. They don't carry them round in their handbag. That would be silly wouldn't it? OK. Good).

12. Well because, well normally chocolate biscuits you don't get pure chocolate, real chocolate but with chocolate bars they are quite big and ... (So you are paying more for them than for that? ... Well I saw an Easter egg the other day that's £8 and that'll have a lot of chocolate in it. (Any change in the world that might make chocolate dearer?) Well if it suddenly becomes hard to make any more. (Could you think of any reason why that could happen with chocolate? You know chocolate's made from cocoa? Right. You know what might happen there, that makes chocolate dear?) Maybe cocoa runs out and there's none left. (Right).
13. Because they're not as popular as they were a couple of years ago. Everybody used to go round on them but now they're just not all that popular. (Does nobody buy them now?) Well maybe a few people buy them but they have to pay for the padding. (And why does that make them cheaper though Colin? Does somebody make them ... could they not take the same price?) If they want people to buy them. (Ah, if they want people to buy them they've got to make them cheaper. Does that mean they'll get what they made them for?) No. (What might happen?) The factory might close down.
14. Drinks and cigarettes. why have they become dearer?) It was in the budget and ... (What's the budget? What's that?) The Chancellor of the Exchequer decides to put up prices of things. (Right, right).
15. Twix bars have gone down 1p. (Is there any reason

why anything should become cheaper in the world for example?) Well, maybe something special and they decide to put it down so they hope people would buy it. (Is it just because something becomes special that they want people to buy it. Is there anything else in the world? Think of the world, not just Britain, they could make something cheaper. Remember you told me something else about the chocolate. Is there anything else in the world that might make something become cheaper?) Well, if there's a considerable amount of diamonds, millions of diamonds, it might become cheaper. (How could you stop that? Is there any way you could stop that happening. That's a good answer. Is there any way the diamond people could stop that happening?) They could stop it by having a special store place where they store them. And that would stop that then. (What would that stop?) That would stop them becoming cheaper because they could keep the same price and they wouldn't need to make them cheaper. They could just have the same amount of diamonds. (Good, that's good).

16. In the summer. (Why is that?) Because it's the time of the year for tennis. (Would a lot of people not be wanting to buy them, so would that not make a difference?) Yes (How?) There would be more people coming to buy them. (And how would that make the price change?) It would be cheaper.
17. In the summer because it's the time when lots of people want them. (Why would they be dearer?) Because so many want them.
18. Tomatoes would be cheapest just after the season has finished for them. (Is that in the summer or winter?) In the summer when they are at their ripest. What happens then? The prices go up, are you sure? No, if there's a lot of them the prices come down. (Good).
19. In the winter because it would be more use to you in the winter than in the summer. (Why is that Colin?) Because if it's a suede coat or something to keep you warm they are not likely to sell many in the summer. (How does that affect the prices?) Reduce them.
20. £10 - wristwatch. (Good). £100 - maybe an armchair of some sort. (An armchair, good). £1000 - motorbike. (A motorbike, good). £10,000 - motorcar. (Motorcar) £100,000 - a giant house. (A giant house. What about £1,000,000?) A Trident missile. (A Trident missile, right. good).

21. Because the store has to pay for the goods you buy and if they want to keep the store running you would have to sell them to buy other goods. (I see, good.)
22. I think he would put some towards fuel bills and things like that. (Fuel bills, good.) Lighting. (Lighting?) He would give quite a lot to restock the goods and things like that. (I see, where else might the money go?) Maybe in his bank account. (Bank account, right.) His own business. (Would he keep it if he was the store manager?) Not for very long I don't think. Because he'd soon have to buy more things. Right, fuel bills and so on. (Good.)
23. Yes. (Yes. Why's that?) Because maybe they're bigger. They're better. (Could you give me some examples). A packet of crisps is 9p. A big bottle of coke's about 69p or something.
24. The manager or the counter. (Does he just make these up?) Well, he has to make out the profit and decide a good profit for it so he can buy more goods. (Does he just put any price on to make a profit? Is that all he has to think about - is putting a price on to make a profit?) No he has to judge it so that it'll be good enough for people to buy it. If he puts it up too high nobody is going to buy it. (Right, O.K.)
25. No. Because if anyone found out about the real price they would start spreading it around that you bought it for £1. They would stop buying things. (That's good. But say they really liked it and they knew that would be fair? I mean, say someone really liked it and the weren't bothered how much you bought it for). Well, it wouldn't be all that fair in a way. (You wouldn't do it, would you?) Well if I did like it I would. (Yes, but would you sell it for more money? Remember you are selling it). No. (Why wouldn't you?) Because if you put it up by that much you could get in trouble if it only used to be £1. (Right, so you wouldn't be against putting it up though?) No. (No. but not by that amount?)
26. I think so. (Why is it different for the storekeeper than from you?) Because if he wants his store to be run he has to make a profit and pay the workers. (I see, so it would be fairer for him than for you because you don't have a store). Yes (Good).

27. Less. (Less, why should you pay less back? You borrowed £100 and about a year later you pay them back how much?) £80. (£80. Why do you feel that? Does something happen to the money?) No if you've got enough money in your account it might reduce it a bit. (I see. But, I mean, they've given you £100 for a whole year and you've gone away and bought something with it. You're only going to give them £80 back. Is that fair?) No. (No. Well, what would you give them back?) The same amount. (The same amount? Not more?) Maybe more because of the borrowing. (Ah. now what's that got to do with it?) Well, the bank can't just let anyone go and borrow money. If they do that then the bank's going to run out of money. So they have to give a... (So that would be fair would it if they charged you more? What do you think they should charge you?) Maybe £130. (£130).
28. Because they don't like keeping it in the house, in case it's stolen so they keep it in the bank and they can draw money whenever they want. (Good. Any other reason?) Put it under the bed, of course. (Yes, but if anyone found out they would probably take it away. So it's for that. Any other reason why you'd put it in the bank?) Because of cheques. If you've given someone a cheque it can go through a bank and they can get the money. (Would that just be the money they've put in?) No, the money you've put on the cheque they get. (I see, good).
29. They keep it in the safe, special compartments they'd have your name on. (Oh good. So you have your name on it and put it in the safe. And is that money you put in the same money that you'll get back? I mean, if I take a £1 along today, do they put it away and put my name on it and do I get the same money back. Is that the way it works?) Maybe you have to pay someone for keeping it in the bank. (Do you get the same money back, the same actual notes that you put in? If I put that note there in do I get that note back from the bank?) I think so. (You think so. So everybody has a little pile of their money in the bank ready for them to get the same money back?) Yes. (Good, how does the bank lend any money then Colin if that's the case?) They would have to give you ... (They would have to give you less back?) They would have to give you less back.... (You said to me that the bank did things with money, do they just put it in the safe and that's it finished. They put it in the safe and you come in and get it and that's all that happens between you and the bank?) Well, they don't just keep it there for when you want to get

it out. It's got to be with cheques. (I see.) If you give a cheque to a storekeeper ... then they would take it along and you would get your money. (I see).

30. So they can buy things. If they spend it all the time they won't be able to buy any more things. (Anything special they save for?) Maybe birthday presents, cars, houses. (Right, O.K.).
31. Yes. (What does he do?) He's Company Secretary. (Good, O.K. now why does he do that job?) He works, he interviews people to see if he's going to employ them. He kind of works out the profit. (Is that why he works there though? Is there any other reason why he does this?) So he can work out the amount of goods they get and then sell them in chemists. (Good. All right).
32. Yes. (What does she do?) She'll soon be starting a job at Craigcrook Castle. (Now why does she do that job? Does she do it for fun?) No. She does it for money. (She does it for money, ah. Does you Dad do it for money? ... You just said your Dad did things. Is there any other reason why your Mum does that job as against any other job?) She has to work out things like my Dad. Works at a desk and probably just like a secretary writes letters to people, things like that. (Good).
33. Well, in a way. (Why?) Because as soon as you get there you have to start working. (Is it like playing though? Let's just say, is there a difference between working and playing?) Yes. (What's the major difference?) Well at work you don't get a playtime, in the morning and at lunch time. You maybe get your lunch hour but you're not allowed to go out...(All right, would you want to do that though?)
34. Yes.(You would?) (Is there anything else about working and playing that makes them different?) It's much harder to work than to play. You can enjoy yourself more. (Anything else?) I don't think so.
35. He is maybe company director who's in charge of this company. (What does he really do, this boss?) He tells his men what to do. (Why is that important?) They would not know what to do.
36. Well, it's the money that you earn. (Ah, the money? Anything else about the things in the job that make it good or bad?) Things you have to do. (Could you give me an example?) If you have to

drive all the time, maybe an ambulance, it's not very enjoyable. (It's not enjoyable. So driving wouldn't be very pleasant. Anything else that would turn you off the job if you didn't like it?) Maybe if you were a policeman and have to go to accidents that wouldn't be good. (That wouldn't be good, O.K.)

37. Well, being an ambulance man, things like that. (You don't fancy ambulanceman, you don't fancy a policeman and you don't fancy truckdrivers, anything else?) Fireman. (Fireman? Now what's all these things that turn you off?) Quite a few of them are dangerous. A fireman's dangerous because you could get burnt, you could choke on fumes. On a building site you could get knocked out by a brick.

38. Doctor - Well it would be all right if you worked in a hospital and people came to see you. That would be quite all right. Medium. (Why is it not good or bad? You've put it in the middle. What are the good and the bad points?) It's bad because maybe you are running a surgery and you get an emergency patient in and you have to run up extra hours. (Excellent. What about the good things about it because you have put it in the middle?) The good things are maybe if it's just a surgery appointment and you go up, that's all right I suppose because you don't have to deal with anything if it suddenly happens.

A rubbish collector - I'd say bad. (Why's that?) The money isn't all that great. (The money's bad, is that all?) Well, I wouldn't fancy collecting rubbish all the time in a truck. The conditions there are not very pleasant.

A Postman - I would say I wouldn't fancy that. (That's bad, why's that bad?) Well, you have to trudge round every morning even in the snow and bad weather, things like that and freezing. (What about the pay there, would that not attract you?) No, I don't know. (You don't know.)

A Busdriver - No. (So that's bad again?) Yes, it's quite a boring job and stopping and starting. That would be really boring?

A Waitress - I wouldn't fancy that either. (Why not?) Running after everyone, dishes and things like that. That would be dreadful.

A Banker - I would say that was quite good. (Is that good or medium?) Good. (Why is it good?) The

money's quite good and it's quite enjoyable and you don't have to go out or anything. You just have to stay in the bank and give people money. (Would you not have any unpleasant things there too?) Yes, maybe if there's a holdup. (Oh, I see.) If there's a holdup that would be unfortunate.

A Teacher - I would say medium. (Medium, not good or bad, why not?) It's all right I suppose because teaching people you get musical things. You get good lunch hours. (Anything else that might make it good?) Maybe the money's quite good. The money's quite good, right. Anything else that might put you off it?) I don't think so but I think there's another reason why it might be a little big good. (Is it, why?) At christmas time you get quite a few presents from pupils. (Well what are the bad things? You've still got it as medium.) You can shout at people and explaining to a class if they still don't understand.

A garage man - (A petrol pump attendant, not a mechanic) No I don't fancy that. (Why's that?) I don't fancy asking the guy what he wants, for petrol, the smell and everything. (Is it just because of that? Anything else that would put you off it?) I am not sure about the money but I don't think that's great.

39. Yes. (Why's that.) Some jobs are more important than others. (You think so?) Yes. (Could you give me an example of some jobs that you think are important?) Emergency surgeon's very important because you have somebody's life in your hands. A doctor, you just tell them what's wrong. Give them pills, things like that.
40. No. (Why not?) Because some jobs are better than others and some jobs are worse. (If a dustman got the same as maybe a bank manager it wouldn't be all that fair. Why would that not be fair? What might happen if dustmen got the same as lorry drivers and bankers?) You wouldn't be able to afford special things like cars, if you get the same money as a dustman. (Would it not be fair because you don't like doing a dustman's job so should they not get more money because it's unpleasant. Whereas a banker's a nice job and should he not get paid less because he likes his job?) A dustman's just cleaning up streets. (What's the banker doing?) If it wasn't for him people couldn't come in with a cheque and say could I get this money please?

41. Pictures. Who earns more

(a) One man wanted and there's all these people there. It would suggest that it's not all that important. (What does it seem in picture 1 Colin from what you see?) Two factory men fighting over this man. (What seems to be happening in the second picture?) All these men coming for a job, and there seems to be only? (How many jobs?) One. (Now which of those do you think (a) 1 or (a) 2 should get more money then? And why?) (a) 2 I think. ((a) 2, now tell me why?) Because they would choose a man who's got experience in what they want and the rest wouldn't have that experience so they would pay him off. But there's more people wanting the job.

((b) 1 or (b) 2) The airline pilot. Because he's flying people to different countries and the man's only filling up the petrol tank. (But if he doesn't have the petrol in the tank he can't fly the plane. Does that not mean he should get the same or even more? Why should the pilot get so much more?) The pilot's got to train to do that and he's not got to train. (Anything else about his job?) He's got to have control of the plane because if he hasn't he could crash.

((c) 1 or (c) 2) (c) 1 because it's a nicer picture and the people are wanting it and there's only one man on the other picture and he's only standing and he thinks it's terrible.

((d) 1 or (d) 2) The surgeon. Because the surgeon's got to deal with people's lives. (Do we not need food though?) We don't need to have it in a restaurant. The surgeon's got to go inside people's body and it's horrible.

((e) 1 or (e) 2). The person working in a laboratory. Because the person working in a laboratory is helping with science. (But is she not helping to serve people? Should she not get more money for that?) No. Well scientists, they need to have a lot of training to do what they do and serving behind a thing you just have to push a button for orange juice.

((f) 1 or (f) 2) a ski instructor. (Why, you're not very sure. Tell me why you think he should. What does a ski instructor do?) He teaches you how to ski. (Right, now why should that get more than a gym teacher?) Well a gym teacher just does things like exercises and basketball and skiing is a real sport.

((g) 1 and (g) 2) The one drilling the hole. Because he's having to work with an electric drill and it's more dangerous than digging with a shovel.

((h) 1 or (h) 2) A lion tamer. Because he's playing around with wild life and you don't know what could happen to him and the man with the balloons is just selling things. Nothing could really happen selling balloons.

((i) 1 or (i) 2) The lorry driver. Because he's driving a bigger vehicle. (Is that the only reason he should get more?) They must have bigger cargo and be more dangerous to drive.

((j) 1 or (j) 2) (j) 1 (Why?) Because everyone wants the worker and whoever gets him will be grateful and pay him more.

((k)1 or (k) 2) (k) 2 because there are much more small bird houses.

((l)1 or (l) 2) The boss. Because he's in charge and has more experience of doing the job. (But they're both doing the same. Does that not mean they should be paid the same?) No because the boss is in charge of everybody and he's sort of manager and knows what to do.

APPENDIX E

(Extension to Question 20).

Here are a number of things that cost different amounts of money to buy. Look at these and decide what each object costs. Then write in the boxes the letter that stands for the object. For example, if a pair of skates costs £10 or less then write in the letter B) in the box under the heading £10 or less.

- A An oilwell
- B A pair of skates
- C A black and white TV set
- D A school
- E A video tape recorder
- F A motor bike
- G A house
- H A bicycle
- I A suit
- J A dress
- K A motor car

£10 or less

Between £10-£100

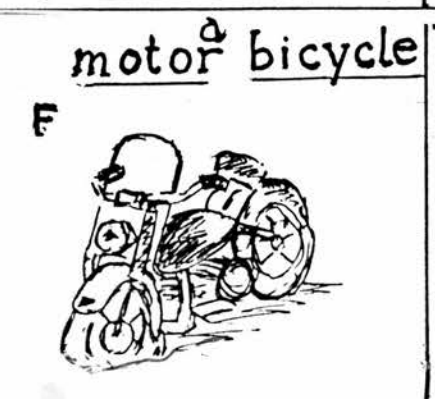
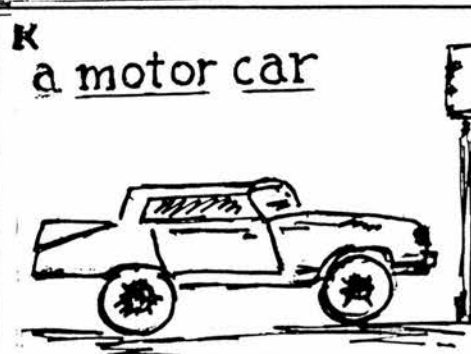
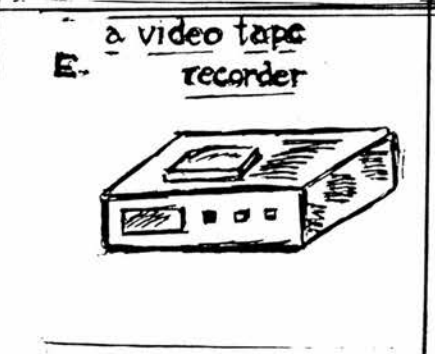
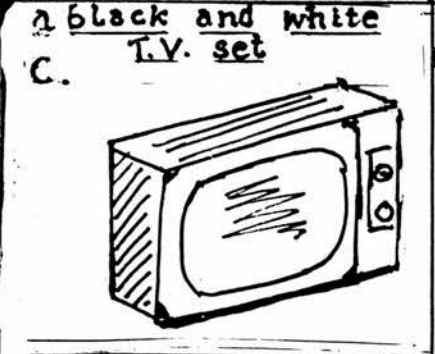
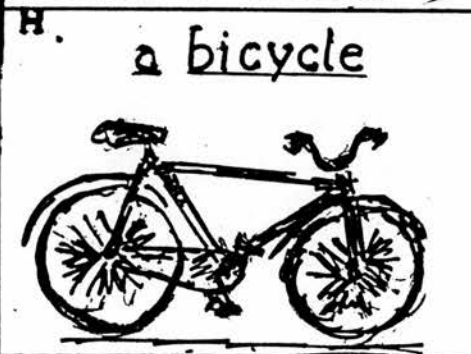
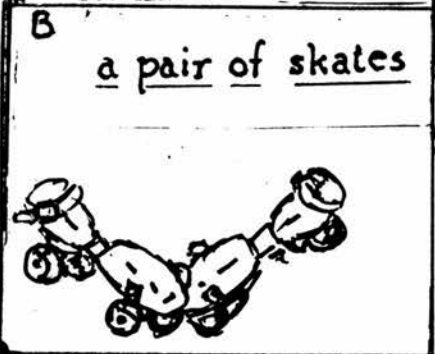
Between £100-£1000

Between £1000-£10000

Between £10000-£1000,000

Between £100,000-£1,000,000

Over £1,000,000



APPENDIX F

